

2007-09 ACCESSORIES AND EQUIPMENT

AcuraLink - MDX

COMPONENT LOCATION INDEX

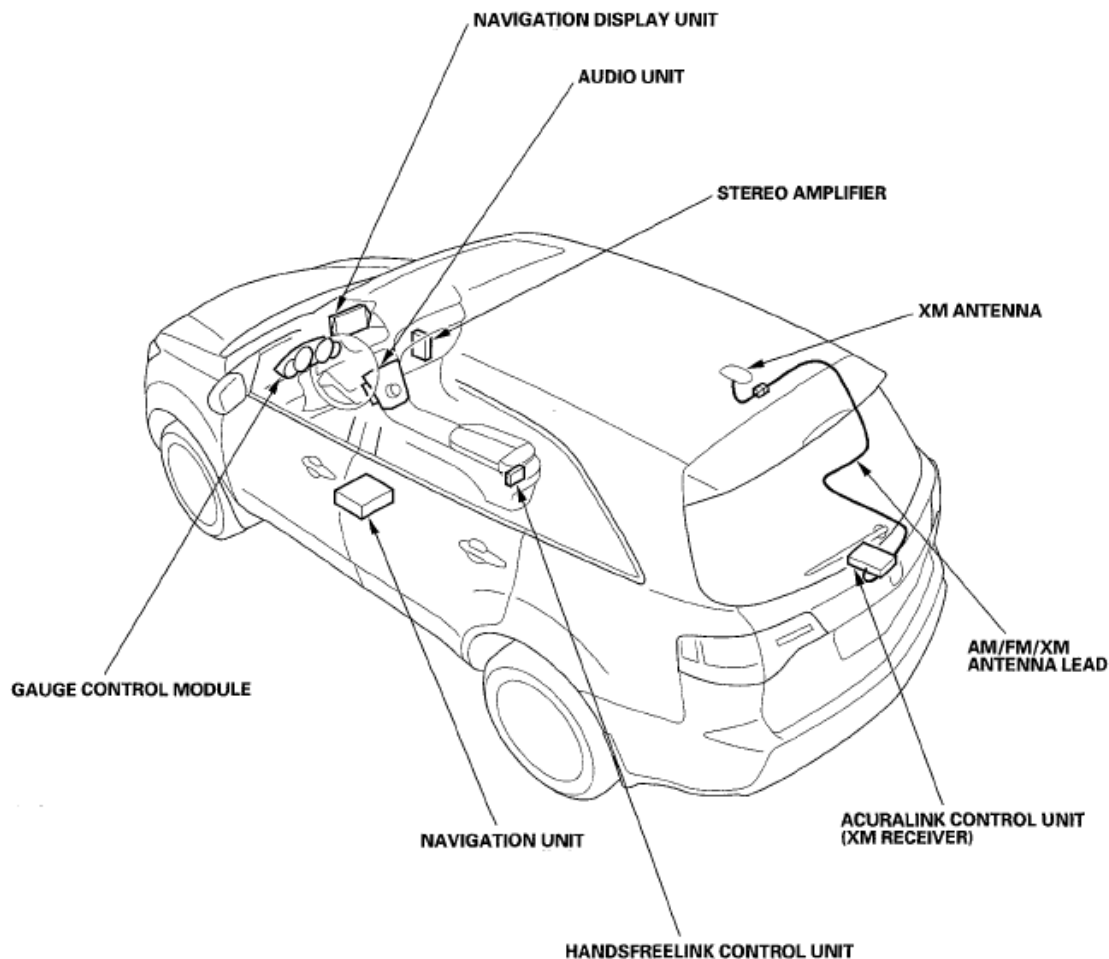


Fig. 1: Identifying AcuraLink Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

1. Make sure the ignition switch is in LOCK(O).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

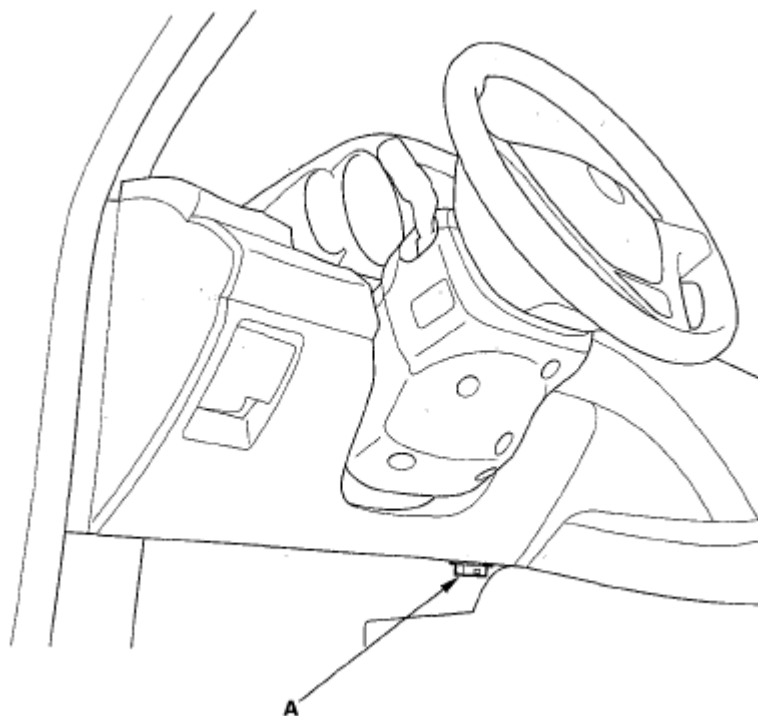


Fig. 2: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the AcuraLink control unit (XM receiver). If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select XM/HIP in the BODY ELECTRICAL menu.
6. Select DTCs in the XM/HIP menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated **DTC TROUBLESHOOTING**. If no DTCs are indicated, refer to **SYMPTOM TROUBLESHOOTING**.

NOTE: After troubleshooting, clear the DTCs with the HDS.

DELETING THE ACURALINK MESSAGES (WITH THE HDS)

To delete all messages including Recall and Diagnostic Info:

1. Connect the HDS to the data link connector (DLC).
2. Using the HDS, go to the BODY ELECTRICAL menu, select XM/HIP, then select HIP RESET menu, select DTC Log Data Clear and follow the HDS on screen instructions.

DELETING THE ACURALINK MESSAGES (WITHOUT HDS) (TO DELETE A SINGLE MESSAGE)

NOTE: Diagnostic info and recall/campaign messages can only be deleted with HDS.

1. Press the INFO button to bring up the Information screen.
2. Scroll to the Message option, then select it by pressing ENTER on the interface selector.
3. Select the message category that contains the message you want to delete.
4. Use the interface knob to scroll up or down to the message title you want to delete, and select it by pressing ENTER on the interface selector.
5. Scroll to Delete with the interface knob, and select it by pressing ENTER on the interface selector.

DELETING THE ACURALINK MESSAGES (WITHOUT HDS) (TO DELETE ALL MESSAGE)

NOTE: **The Delete All Messages command does not apply to Diagnostic Info and Recall messages. They can only be deleted with HDS.**

1. Press the SETUP button to view the setup screen.
2. Select MORE by pushing the interface selector to the right.
3. Use the interface knob to scroll to the AcuraLink/Messages button, and select it by pressing ENTER on the interface selector.
4. Scroll to the Delete Messages option, and select it by pressing ENTER on the interface selector.
5. Scroll to the category with the messages you want to delete, and select the category by pressing ENTER on the interface selector.

ACURALINK CONTROL UNIT UPDATING

Special tools required

- GNA600 kit and an iN workstation with AcuraLink update software
- 256MB PCMCIA Memory Card
- AcuraLink Reprogramming Cable
- AcuraLink Reprogramming Cable Adapter

- NOTE:**
- **Whenever you install a new AcuraLink control unit, you must update the control unit with the latest software.**
 - **The GNA600 is the only tool currently available to update the AcuraLink control unit.**
 - **If you are updating a control unit in a new vehicle, make sure all the fuses are installed.**
 - **Make sure the in workstation has the latest HDS software installed. (The AcuraLink update software is contained in the HDS update CD.)**
 - **The update may take up to 60 minutes.**
 - **You cannot update an AcuraLink control unit with its current or previous software versions. It will only accept a new software version.**
 - **Before you update the AcuraLink control unit, test the vehicle battery (see**

BATTERY TEST), and only proceed if the results are good. Make sure the battery is connected to a battery booster (not a battery charger) while updating the control unit. If the battery is not in good condition, or it dies during the updating procedure, you may damage the AcuraLink control unit.

- If you encounter errors in the software, follow the on-screen instructions, or if necessary, reboot the workstation, and try again.
- There are five process involved in updating the AcuraLink control unit:
 - Setting up the GNA600
 - Capturing the current program ID from the AcuraLink control unit
 - Download the new software to the GNA600
 - Update the software in the vehicle's AcuraLink control unit
 - Confirm the AcuraLink self-diagnosis
- Do the update with the ignition switch turned to LOCK (0).
- To prevent damage to the AcuraLink control unit, do not operate anything electrical (brakes, head lights, etc.) during the update.
- Check any official Honda service website for more service information about updating the AcuraLink control unit.
- To update the AcuraLink control unit, you must connect the GNA600 to the AcuraLink connector (A), not the DLC.
- Before you update an AcuraLink control unit, read the procedure. The order of connecting and disconnecting connectors is critical, and some steps must be done within a specified period of time. If the steps are not followed exactly, you may have to repeat the procedure from the start, and in some cases, you may damage the GNA600 or the AcuraLink control unit.

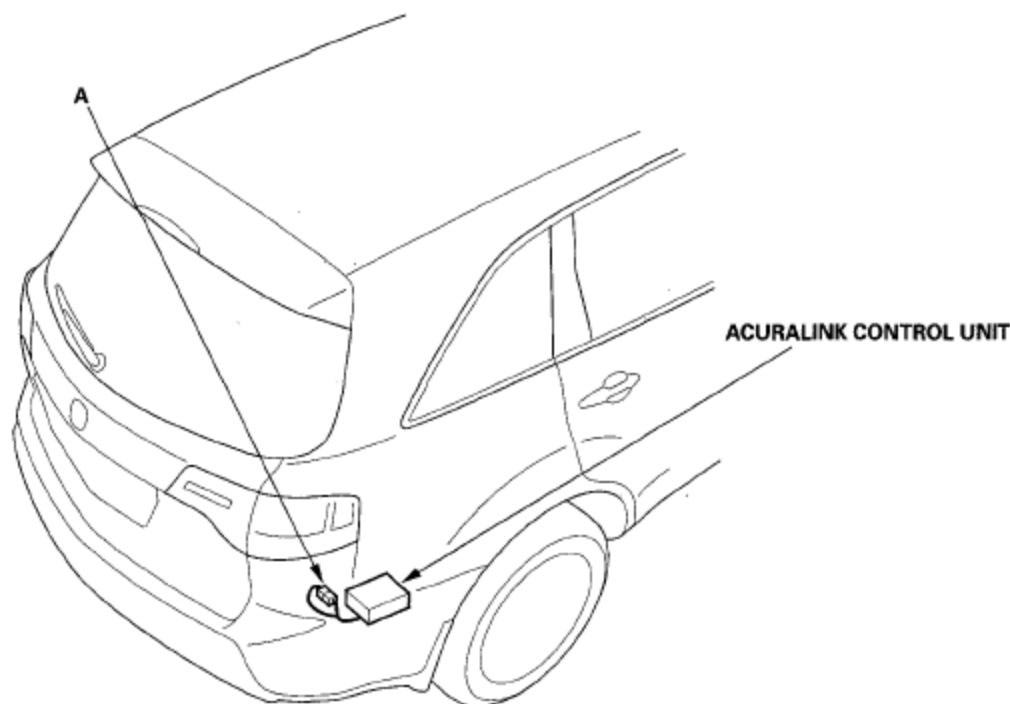


Fig. 3: Identifying Acuralink Control Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Make sure the ignition switch is turned to LOCK (0).
2. Remove the right rear side trim panel (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
3. Launch the AcuraLink Update program and follow the on-screen instructions to complete the update.

NOTE:

- If the software in the AcuraLink control unit is the latest, disconnect the update tool from the AcuraLink connector.
- If the update is part of a troubleshooting or a repair procedure, return to that procedure and continue troubleshoot or repairing the vehicle.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
AcuraLink service application does not work	Symptom Troubleshooting (see <u>ACURALINK SERVICE APPLICATION DOES NOT WORK</u>)	• Blown fuse No. 21 (7.5 A) and No. 32 (10 A) in the under-dash fuse/relay box • Poor ground at G606
		• Call Acura Client Services and request an activation.

AcuraLink services do not work after replacing the AcuraLink control unit (XM receiver)	Navigation System Symptom Troubleshooting (see <u>SYMPTOM TROUBLESHOOTING</u>)	• Call XM client care and register the replacement AcuraLink control unit (XM receiver). • The client must have an active XM account. Try several XM stations. If only channels 000,001, 174, and 247 can be tuned, the account is inactive, or there is a problem with the AcuraLink control unit (XM receiver).
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SYSTEM DESCRIPTION

The AcuraLink uses the client's cell phone or XM radio to transmit and receive information about the vehicle. In addition, the AcuraLink system has a Text-To-Speech engine, and will also have the capability to initiate voice or data calls with the HandsFreeLink control unit.

The AcuraLink control unit (HIP) is very similar in design to an XM receiver that has additional communication features. The main functions include:

- Receiving and playing XM stations. Displays station, song title and other information on the audio unit using the GA-Net bus.
- Receiving XM traffic channel data.
- Gives Feature Guide tips.
- Receiving AcuraLink messages and displaying them in the navigation display.
- Processing DTC (diagnostic trouble code) error messages from the PCM, the SRS and other systems and displaying them on the navigation display.
- Sending DTC information to the AcuraLink servers using the client's cell phone (only if client has set up and enabled this option).

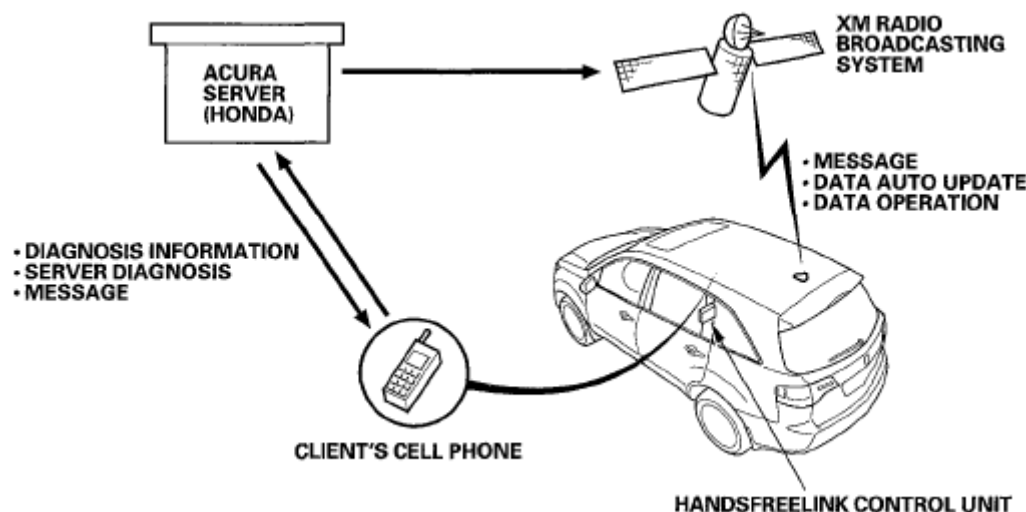


Fig. 4: Acuralink System Description

2008 Acura MDX
2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Service Application

- Malfunction indicator lamp (MIL) explanation (from server message and vehicle message)
- Service information message
- Recall Information
- Quick tips
- Place to provide feedback/view cautions that were not available when vehicle was initially sold
- Correction of address and full name that is registered
- Real time traffic information
- Maintenance information message
- Feature guide (90 days)

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

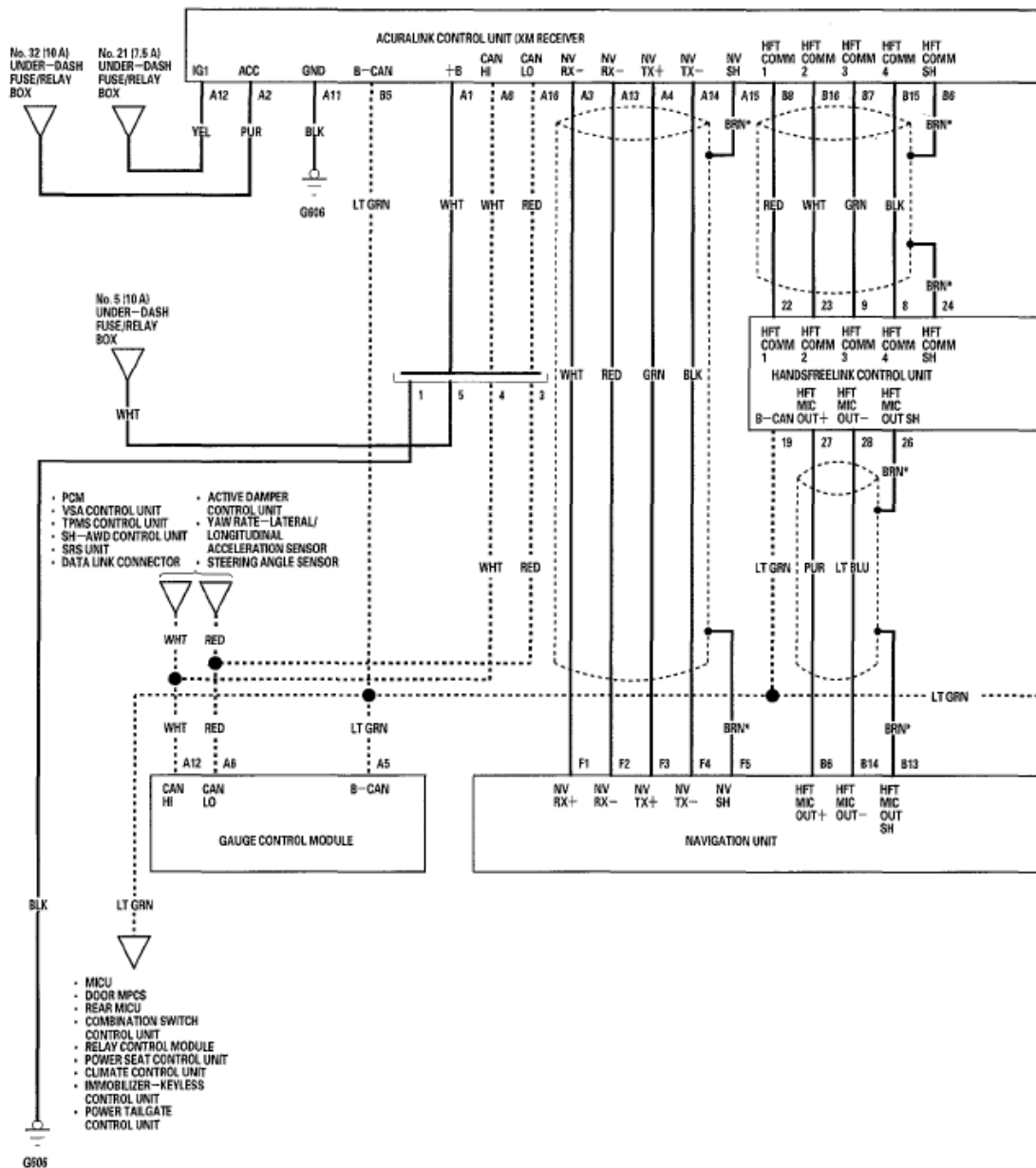


Fig. 5: Acuralink System Circuit Diagram (1 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

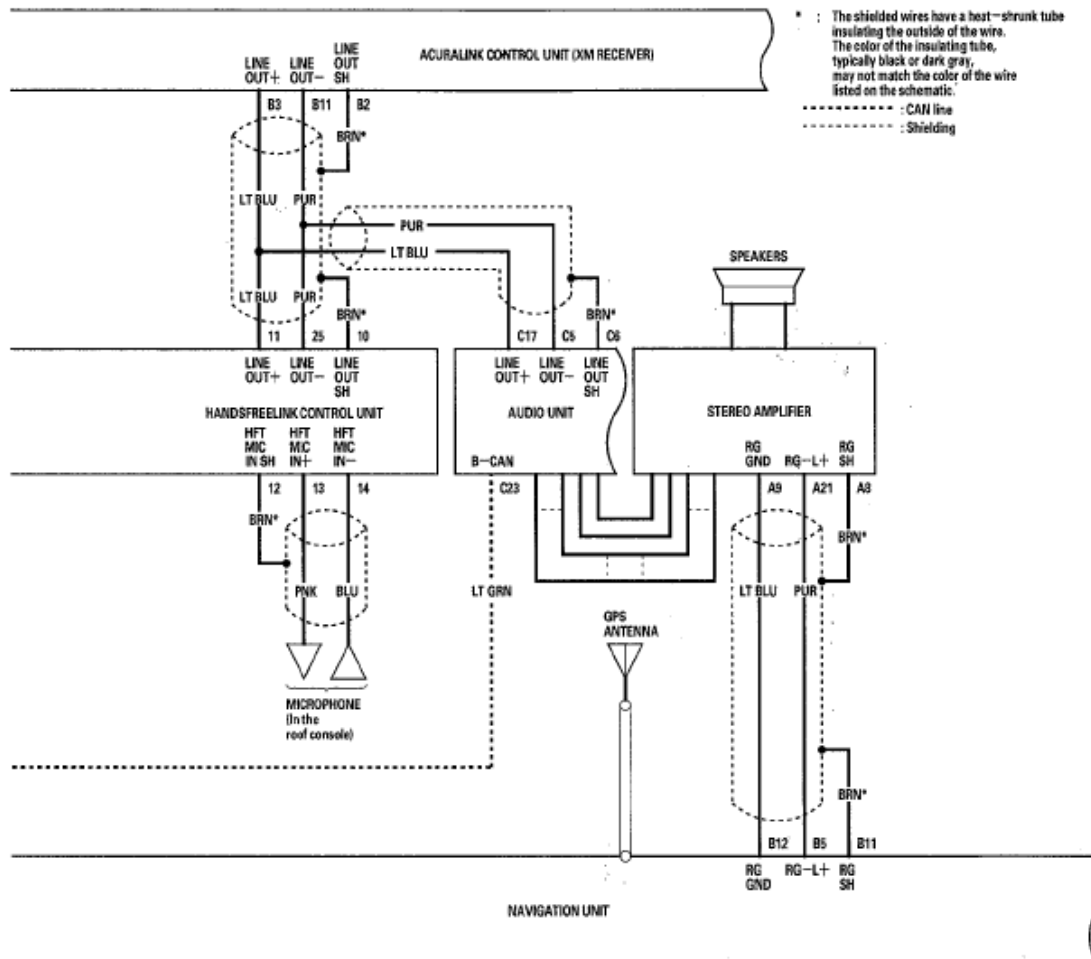
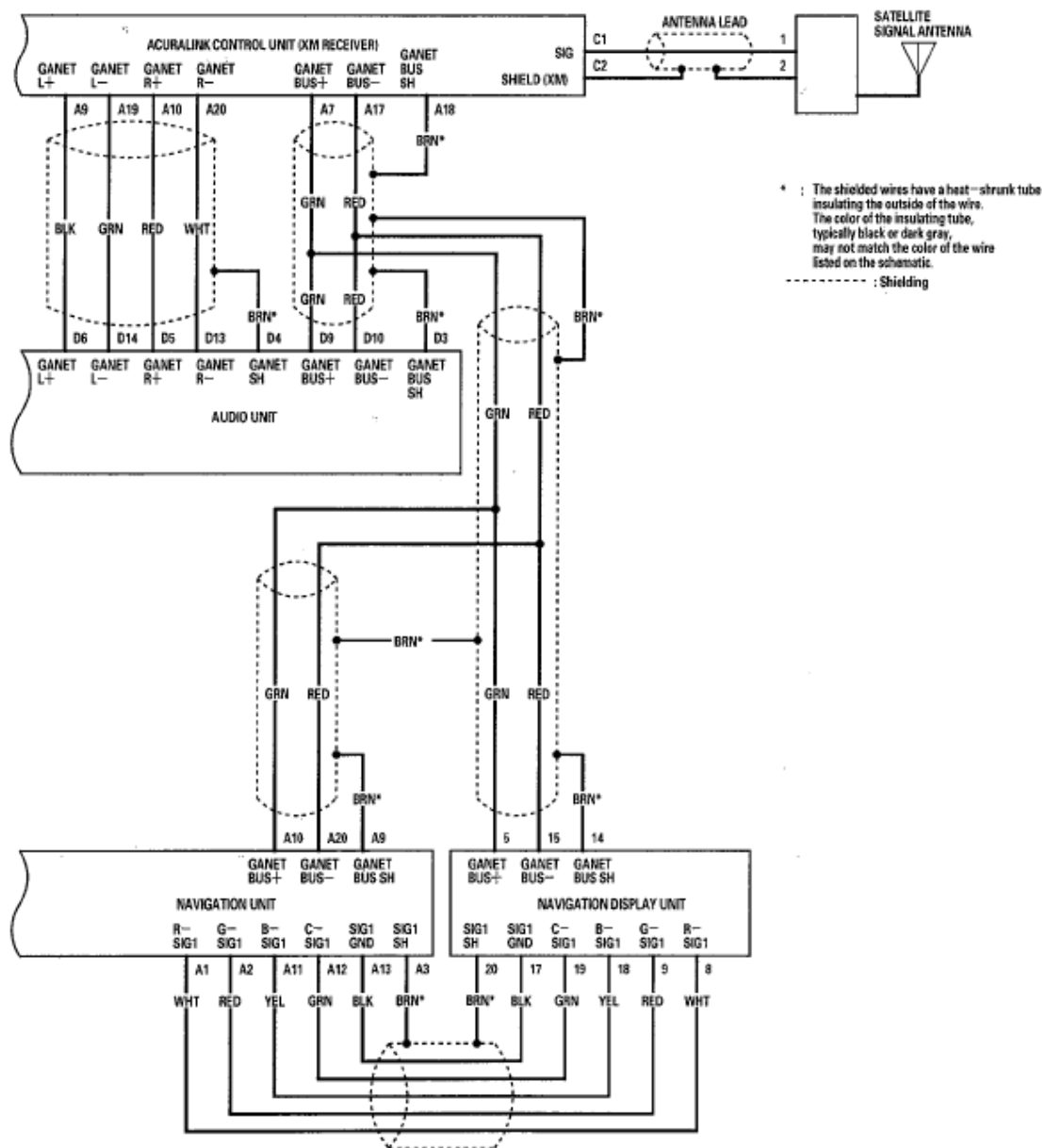


Fig. 6: Acuralink System Circuit Diagram (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Fig. 7: Acuralink System Circuit Diagram (3 Of 3)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

NOTE: Only select DATA RESET from the XM (HIP) ECU screen when instructed. Selecting DATA RESET will clear the AcuraLink registration, and the AcuraLink service will reset to the factory default. If the vehicle was already registered for the AcuraLink service, it will have to be reactivated by calling Acura Client Services before all features will be available.

The AcuraLink control unit (XM receiver) has a self-diagnostic function. To run the self-diagnostic function, do

the following:

HOW TO ENTER THE SELF-DIAGNOSTIC FUNCTION

NOTE: Always check for and repair any B-CAN or F-CAN DTCs before troubleshooting the AcuraLink system.

1. Turn the ignition switch to ON (II).
2. Press the interface dial.
3. Press and hold the MAP/GUIDE, CANCEL, and MENU buttons at the same time for 3 seconds more, and the self-diagnosis begins.

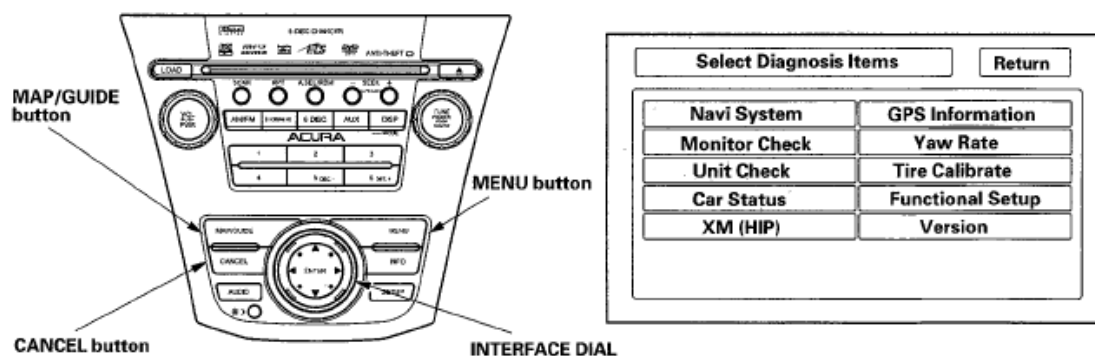


Fig. 8: Identifying MAP/GUIDE, CANCEL And MENU Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Using interface dial, select the NAVI System from the Select Diagnosis Items menu. Press the interface dial. The display indicates NAVI System Link, and will perform a Navi connection check for each device. If a connection is faulty, the place where it is faulty will be indicated with NG (red color). If the XM (HIP) indicator is NG (red color), go to step 5.

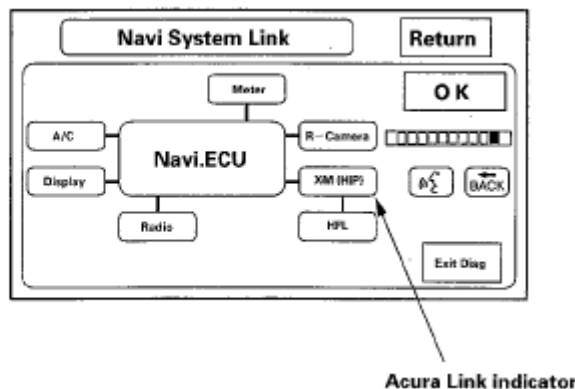


Fig. 9: Identifying Acura Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using the interface dial, select the Return from the Navi System Link. Press the interface dial.

6. Using the interface dial, select the XM (HIP) from the Select Diagnosis Items menu. Press the interface dial.

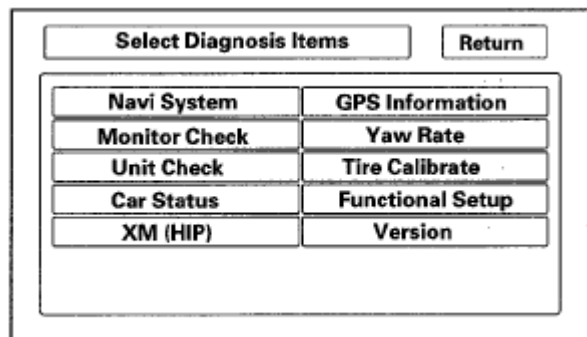


Fig. 10: Diagnosis Screen Display - XM (HIP)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Using the interface dial, select the XM (HIP) System Link from the XM (HIP) menu. Press the interface dial. The display indicates XM (HIP) System Link, and will do an AcuraLink connection check for each device. If a connection is faulty, the place where it is faulty will be indicated with NG (red color).

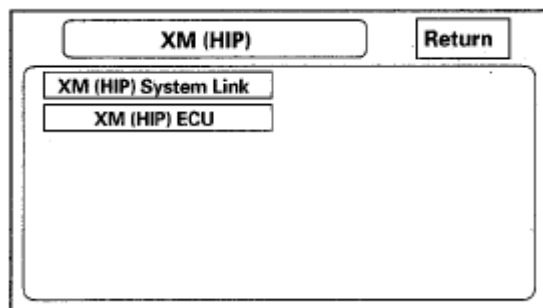
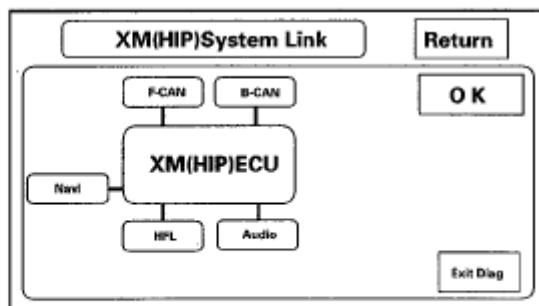


Fig. 11: Diagnosis Screen Display - XM (HIP) Menu
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Connection OK: Green color
Connection NG: Red color

Fig. 12: Diagnosis Screen Display - XM (HIP) System Link
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

8. When a red color is indicated, check the continuity between the XM receiver unit and the device indicated in red.

RED COLOR INDICATE DEVICE CONDITION

Red color indicate device	Test condition	Test: Desired result	Possible cause if result is not obtained
	XM receiver control unit connector A (20P) and Gauge control module connector A (12P) disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 12 terminal of the Gauge control module connector A (12P): There should be continuity.	An open in the wire
		Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 6 terminal of the Gauge control module connector A (12P): There should be continuity.	An open in the wire
	XM receiver control unit connector A (20P) and PCM connector A (49P) disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 48 terminal of the PCM connector A (49P): There should be continuity.	An open in the wire
		Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 49 terminal of the PCM connector A (49P): There should be continuity.	An open in the wire
	XM receiver control unit connector A (20P) and VSA control unit 46P connector disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 18 terminal of the VSA control unit 46P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 17 terminal of the VSA control unit 46P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 1 terminal of the TPMS control unit	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

	20P connector: There should be continuity.	
XM receiver control unit connector A (20P) and TPMS control unit 20P connector disconnected	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 11 terminal of the TPMS control unit 20P connector): There should be continuity.	An open in the wire
XM receiver control unit connector A (20P) and SH-AWD control unit connector A (20P) disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 10 terminal of the SH-AWD control unit connector A (20P): There should be continuity.	An open in the wire
	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 20 terminal of the SH-AWD control unit connector A (20P): There should be continuity.	An open in the wire
XM receiver control unit connector A (20P) and SRS unit connector A (27P) disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 11 terminal of the SRS unit connector A (27P): There should be continuity.	An open in the wire
	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 12 terminal of the SRS unit connector A (27P): There should be continuity.	An open in the wire
XM receiver control unit connector A (20P) and active damper control unit connector B (14P) disconnected	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 1 terminal of the active damper control unit connector B (14P): There should be continuity.	An open in the wire
	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 8 terminal of the active damper control unit connector B (14P): There should be continuity.	An open in the wire
	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 3 terminal of the Yaw rate-	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

	lateral/longitudinal acceleration sensor 4P connector: There should be continuity.	
XM receiver control unit connector A (20P) and Yaw rate-lateral/longitudinal acceleration sensor 4P connector disconnected	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the Non terminal of the Yaw rate-lateral/longitudinal acceleration sensor 4P connector: There should be continuity.	An open in the wire
	Check for continuity between the No. 6 terminal of XM receiver unit connector A (20P) and the No. 4 terminal of the Steering angle sensor 5P connector: There should be continuity.	An open in the wire
XM receiver control unit connector A (20P) and Steering angle sensor 5P connector disconnected	Check for continuity between the No. 16 terminal of XM receiver unit connector A (20P) and the No. 2 terminal of the Steering angle sensor 5P connector: There should be continuity.	An open in the wire
XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
	Check for continuity between the No. 1 and No. 6 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
	Check for continuity between the No. 1 and No. 16 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector. Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

XM receiver control unit connector A (20P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector. Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the Gauge control module
XM receiver control unit connector A (20P), Gauge control module connector A (12P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the PCM
XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector. Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the VSA control unit
XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the TPMS control unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

	XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/ longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the SH-AWD control unit
	XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the SRS unit
F-CAN	XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), Yaw rate-lateral/ longitudinal acceleration sensor 4P connector, Steering angle sensor 5P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the active damper control unit
	XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P),	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the Yaw rate-lateral/longitudinal acceleration sensor

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

F-CAN	Steering angle sensor 5P connector disconnected		
	XM receiver control unit connector A (20P), Gauge control module connector A (12P), PCM connector A (49P), VSA control unit 46P connector, TPMS control unit 20P connector, SH-AWD control unit connector A (20P), SRS unit connector A (27P), active damper control unit connector B (14P), Yaw rate-lateral/longitudinal acceleration sensor 4P connector disconnected	Check for continuity between the No. 6, No. 16 terminals of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the Steering angle sensor
	XM receiver control unit connector B (16P) and MICU connector G (6P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 1 terminal of the MICU connector G (6P): There should be continuity.	An open in the wire
	XM receiver control unit connector B (16P) and door MPCS connector A (40P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 28 terminal of the door MPCS connector A (40 P): There should be continuity.	An open in the wire
	XM receiver control unit connector B (16P) and rear MICU connector B (34P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 2 terminal of the rear MICU connector B (34P): There should be continuity.	An open in the wire
	XM receiver control unit connector B (16P) and combination switch 8P connector disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 4 terminal of the combination switch 8P connector: There should be continuity.	An open in the wire
	XM receiver control unit connector B (16P) and relay control module connector E (14P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 1 terminal of the relay control module connector E (14P): There should be continuity.	An open in the wire
	XM receiver control unit connector B (16P) and power seat control unit connector B (40P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No; 40 terminal of the power seat control unit connector B (40P): There should	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

	be continuity.	
XM receiver control unit connector B (16P) and immobilizer-keyless control unit 7P connector disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 4 terminal of the immobilizer-keyless control unit 7P connector: There should be continuity.	An open in the wire
XM receiver control unit connector B (16P) and power tailgate control unit connector C (14P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 7 terminal of the power tailgate control unit connector C (14P): There should be continuity.	An open in the wire
XM receiver control unit connector B (16P) and gauge control module connector A (12P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the Non terminal of the gauge control module connector A (12P): There should be continuity.	An open in the wire
XM receiver control unit connector B (16P) and HandsFreeLink control unit 28P connector disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 19 terminal of the HandsFreeLink control unit 28P connector: There should be continuity.	An open in the wire
XM receiver control unit connector B (16P) and audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 23 terminal of the audio unit connector C (24P): There should be continuity.	An open in the wire
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the wire
XM receiver control unit connector		

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and the No. 1 terminal of XM receiver unit connector A (20P) body ground: There should be no continuity.	A short in the wire
MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the XM receiver control unit
XM receiver control unit connector B (16P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the MICU
XM receiver control unit connector B (16P), MICU connector G (6P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector		

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

(14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the door MPCS
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the rear MICU
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the combination switch control unit
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the relay control module

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

28P connector, audio unit connector C (24P) disconnected		
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the power seat control unit
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the immobilizer keyless control unit
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the power tailgate control unit
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, gauge control module connector A (12P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

(HP), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), HandsFreeLink control unit 28P connector, audio unit connector C (24P) disconnected	5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the gauge control module
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), audio unit connector C (24P) disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
XM receiver control unit connector B (16P), MICU connector G (6P), door MPCS connector A (40P), rear MICU connector B (34P), combination switch 8P connector, relay control module connector (14P), power seat control unit connector B (40P), immobilizer-keyless control unit 7P connector, power tailgate control unit connector C (14P), gauge control module connector A (12P), HandsFreeLink control unit 28P connector disconnected	Check for continuity between the No. 5 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the audio unit
	Check for continuity between the No. 3 terminal of XM receiver unit connector A (20P) and the No. 1 terminal of the navigation unit connector F (5P): There should be continuity.	An open in the wire
	Check for continuity between the No. 13 terminal of XM receiver unit connector A (20P) and the Non terminal of the navigation unit connector F (5P): There should be	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

Navi	XM receiver control unit connector A (20P) and navigation unit connector F (5P) disconnected	continuity.	
		Check for continuity between the No. 4 terminal of XM receiver unit connector A (20P) and the No. 3 terminal of the navigation unit connector F (5P): There should be continuity.	An open in the wire
		Check for continuity between the No. 14 terminal of XM receiver unit connector A (20P) and the No. 4 terminal of the navigation unit connector F (5P): There should be continuity.	An open in the wire
		Check for continuity between the No. 3 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 3 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 13 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 13 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 4 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 4 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 14 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 14 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
		Check for continuity between the No.	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

	Navigation unit connector F (5P) disconnected	3 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 13 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the Non terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 14 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
	XM receiver control unit connector A (20P) disconnected	Check for continuity between the No. 3 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the navigation unit
		Check for continuity between the No. 13 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the navigation unit
		Check for continuity between the No. 4 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the navigation unit
		Check for continuity between the No. 14 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the navigation unit
		Check for continuity between the No. 8 terminal of XM receiver unit connector B (16P) and the No. 22 terminal of the HandsFreeLink control unit 28P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 16 terminal of XM receiver unit connector B (16P) and the No. 23 terminal of the HandsFreeLink control unit 28P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 7 terminal of XM receiver unit connector B (16P) and the No. 9	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

HFL	XM receiver control unit connector B (16P) and HandsFreeLink control unit 28P connector disconnected	terminal of the HandsFreeLink control unit 28P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 15 terminal of XM receiver unit connector B (16P) and the No. 8 terminal of the HandsFreeLink control unit 28P connector: There should be continuity.	An open in the wire
		Check for continuity between the No. 8 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 terminal of XM receiver unit connector A (20P) and the No. 8 terminal of the XM receiver unit connector B (16P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 16 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 terminal of XM receiver unit connector A (20P) and the No. 16 terminal of the XM receiver unit connector B (16P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 7 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 terminal of XM receiver unit connector A (20P) and the No. 7 terminal of the XM receiver unit connector B (16P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 15 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 terminal of XM receiver unit connector A (20P) and the No. 15	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

		terminal of the XM receiver unit connector B (16P): There should be no continuity.	A short in the wire
HandsFreeLink control unit 28P connector disconnected		Check for continuity between the No. 8 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 16 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 7 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 15 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the XM receiver unit
XM receiver control unit connector A (20P) disconnected		Check for continuity between the No. 8 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between the No. 16 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between the No. 7 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between the No. 15 terminal of XM receiver unit connector B (16P) and body ground: There should be no continuity.	A short in the HandsFreeLink control unit
		Check for continuity between the No. 7 terminal of XM receiver unit connector A (20P) and the No. 9 terminal of the audio unit connector D (14P): There should be continuity.	An open in the wire
		Check for continuity between the No. 17 terminal of XM receiver unit connector A (20P) and the No. 10 terminal of the audio unit connector D (14P): There should be continuity.	An open in the wire
		Check for continuity between the No.	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

Audio	XM receiver control unit connector A (20P) and audio unit connector D (14P) disconnected	7 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 7 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
		Check for continuity between the No. 17 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the wire
		Check for continuity between the No. 1 and No. 17 terminals of XM receiver unit connector A (20P): There should be no continuity.	A short in the wire
	Audio unit connector D (14P) disconnected	Check for continuity between the No. 7 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
		Check for continuity between the No. 17 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the XM receiver unit
	XM receiver control unit connector A (20P) disconnected	Check for continuity between the No. 7 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the audio unit
		Check for continuity between the No. 17 terminal of XM receiver unit connector A (20P) and body ground: There should be no continuity.	A short in the audio unit
NOTE: If the XM antenna connection condition is faulty, XM ANTENNA is indicated on the audio-HVAC sub display-clock.			

- If the indication does not go away, confirm DTCs, and refer to the relevant system troubleshooting and input tests.

Canceling the Self-diagnostic Function

- Use the interface dial to, select the Exit Diag. Press the interface dial to cancel the self-diagnostic function.

DTC TROUBLESHOOTING

DTC B2202: ACURALINK CONTROL UNIT EEPROM ERROR

NOTE: **Check the vehicle battery condition first.**

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II).
3. Check for DTCs with the HDS and DTC log data in the navigation system diagnostic mode (see **SYSTEM DIAGNOSTIC MODE**).

Is DTC B2202 indicated with HDS and on the navigation display?

YES - Intermittent failure. The system is OK at this time. Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver).

NO - Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver). If all connections are OK, replace the AcuraLink control unit (XM receiver) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

DTC B2204: B-CAN COMMUNICATION LINE ERROR

NOTE:

- **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).**
- **Check the vehicle battery condition first.**

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II).
3. Check for DTCs with the HDS and DTC log data in the navigation system diagnostic mode (see **SYSTEM DIAGNOSTIC MODE**).

Is DTC B2204 indicated with HDS and on the navigation display?

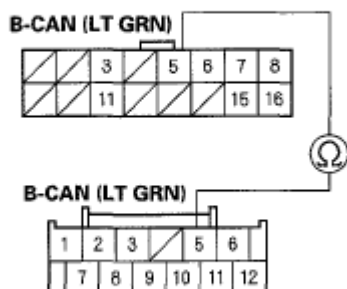
YES - Go to step 4.

NO - Intermittent failure. B-CAN communication line is OK at this time. Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver).

4. Turn the ignition switch to LOCK (0).
5. Disconnect the AcuraLink control unit (XM receiver) connector B (16P) and gauge control module connector A (12P).
6. Check for continuity between the AcuraLink control unit (XM receiver) connector B (16P) No. 5 terminal and gauge control module connector A (12P) No. 5 terminal.

**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR B (16P)**

Wire side of female terminals

**GAUGE CONTROL MODULE CONNECTOR A (12P)**

Wire side of female terminals

Fig. 13: Identifying Continuity Between Acuralink Control Unit B (16P) And Gauge Control Module A (12P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver). If all connections are OK, replace the AcuraLink control unit (XM receiver) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO - Repair open in the wire between AcuraLink control unit (XM receiver) and the gauge control module.

DTC B2205: F-CAN COMMUNICATION LINE ERROR

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).
- Check the vehicle battery condition first.

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II).
3. Check for DTCs with the HDS and DTC log data in the navigation system diagnostic mode (see **SYSTEM DIAGNOSTIC MODE**).

Is DTC B2205 indicated with HDS and on the navigation display?

YES - Go to step 4.

NO - Intermittent failure. F-CAN communication line is OK at this time. Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver).

4. Turn the ignition switch to LOCK (0).
5. Disconnect the AcuraLink control unit (XM receiver) connector B (16P) and gauge control module connector A (12P).
6. Check for continuity between the AcuraLink control unit (XM receiver) connector B (16P) No. 6, No. 16 terminals and gauge control module connector A (12P) No. 6, No. 12 terminals.

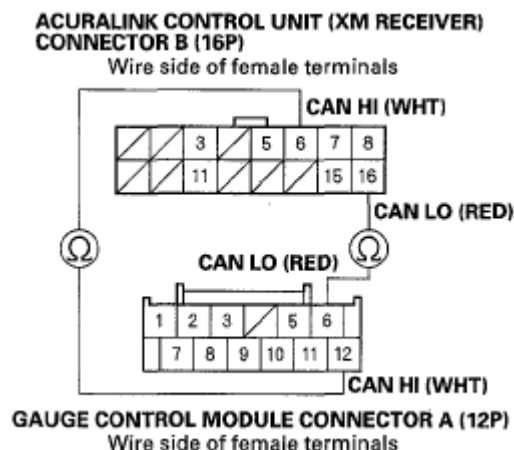


Fig. 14: Identifying Continuity Between Acuralink Control Unit B (16P) And Gauge Control Module Connector A (12P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections or loose terminals at the AcuraLink control unit (XM receiver). If all connections are OK, update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO - Repair open in the wire between AcuraLink control unit (XM receiver) and the gauge control module.

DTC B2207: NAVIGATION UNIT LOST COMMUNICATION WITH ACURALINK CONTROL UNIT

NOTE: Check the vehicle battery condition first.

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it ON (II) and wait 30 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B2207, B2208 indicated?

YES - Check the battery condition (see **BATTERY TEST**). If the system OK, replace the AcuraLink

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

control unit (XM receiver).

NO -

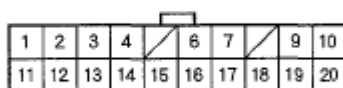
- If only B2207 is indicated, go to step 5.
- If only B2208 is indicated, refer to the **DTC B2208: HandsFreeLink Control Unit Lost Communication with AcuraLink Control Unit** .

5. Turn the ignition switch to LOCK (0).
6. Disconnect the AcuraLink control unit (XM receiver) connector A (20P) and navigation unit connector F (5P).
7. Check for continuity between the following terminals of the AcuraLink control unit (XM receiver) connector A (20P) and navigation unit connector F (5P) according to the table.

CONNECTOR TERMINAL REFERENCE

AcuraLink control unit (XM receiver) connector A (20P)	Navigation unit connector F (5P)	Wire color
A3	F1	WHT
A4	F3	GRIM
A13	F2	RED
A14	F4	BLK
A15	F5	BRN

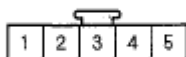
**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 15: Identifying Acuralink Control Unit (XM Receiver) Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT CONNECTOR F (5P)



Wire side of female terminals

Fig. 16: Identifying Navigation Unit Connector F (5P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to Step 8.

NO - Repair open in the wire(s) between AcuraLink control unit (XM receiver) and the navigation unit.

8. Check for continuity between body ground and AcuraLink control unit (XM receiver) connector A (20P) No. 3,4,13 and 14 terminals individually.

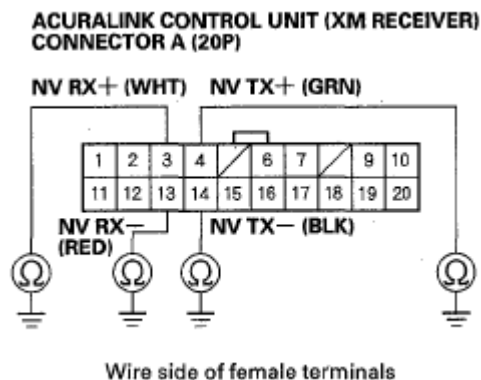


Fig. 17: Identifying Continuity Between Body Ground And Acuralink Control Unit (XM Receiver) Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the AcuraLink control unit (XM receiver) and the navigation unit.

NO - Go to Step 9.

9. Check for continuity between the terminals of AcuraLink control unit (XM receiver) connector A (20P) as follows.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A3	A4, A13, A14, A15
A4	A13, A14, A15
A13	A14, A15
A14	A15

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the AcuraLink control unit (XM receiver) and the navigation unit (replace the appropriate shielded harness).

NO - Go to Step 10.

10. Turn the ignition switch to ON (II), and measure the same terminals for voltage.

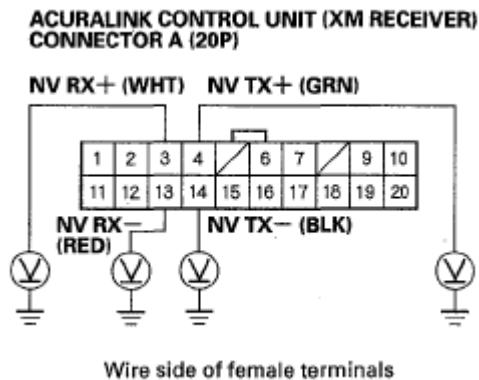


Fig. 18: Identifying Voltage Between Body Ground And Acuralink Control Unit (XM Receiver) Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s) between the AcuraLink control unit (XM receiver) and the navigation unit.

NO - Go to Step 11.

11. Turn the ignition switch to LOCK (0).
12. Reconnect the Acuralink control unit(XM receiver) connector A (20P).
13. Measure the resistance between AcuraLink control unit (XM receiver) connector A (20P) No. 3, No. 4, and No. 13, No. 14 terminals.

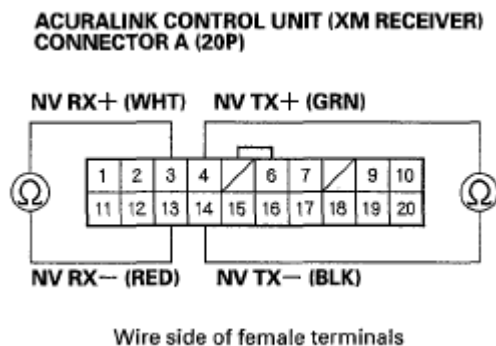


Fig. 19: Identifying Resistance Between Acuralink Control Unit (XM Receiver) Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than about 100k ohms?

YES - AcuraLink control unit (XM receiver) is faulty, update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see

ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION).

NO - Go to Step 15.

14. Reconnect the navigation unit connector F (5P).
15. Turn the ignition switch to ON (II).
16. Measure the voltage between the body ground and the AcuraLink control unit (XM receiver) connector A (20P) No. 3, No. 4 terminals individually.

**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR A (20P)**

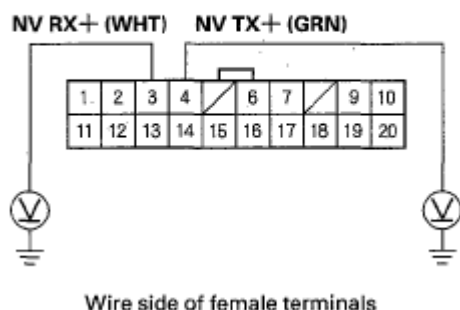


Fig. 20: Identifying Voltage Between Body Ground And Acuralink Control Unit (Xm Receiver) Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than about 3.5V?

YES - AcuraLink control unit (XM receiver) is faulty, update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION).**

NO - Navigation unit is faulty, replace the navigation unit.

DTC B2208: HANDSFREELINK CONTROL UNIT LOST COMMUNICATION WITH ACURALINK CONTROL UNIT

NOTE: Check the vehicle battery condition first.

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it ON (II) and wait 30 seconds or more.
4. Check for DTC with the HDS.

Is DTC B2207, B2208 indicated?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT AcuraLink - MDX

YES - Check the battery condition (see **BATTERY TEST**). If the system OK, replace the AcuraLink control unit (XM receiver).

NO -

- If only B2208 is indicated, go to step 5.
 - If only B2207 is indicated, refer to the **DTC B2207: Navigation Unit Lost Communication with AcuraLink Control Unit** .
5. Turn the ignition switch to LOCK (0).
 6. Disconnect the AcuraLink control unit (XM receiver) connector B (16P) and HandsFreeLink control unit 28P connector.
 7. Check for continuity between the following terminals of the AcuraLink control unit (XM receiver) connector B (16P) and HandsFreeLink control unit 28P connector according to the table.

CONNECTOR TERMINAL REFERENCE

AcuraLink control unit (XM receiver) connector B (16P)	HandsFreeLink control unit 28P connector	Wire color
B6	No. 24	BRN
B7	No. 9	GRN
B8	No. 22	RED
B15	No. 8	BLK
B16	No. 23	WHT

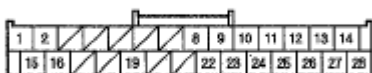
**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR B (16P)**



Wire side of female terminals

Fig. 21: Identifying Acuralink Control Unit (XM Receiver) Connector B (16P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying HandsFreeLink Control Unit 28P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to Step 8.

NO - Repair open in the wire(s) between AcuraLink control unit (XM receiver) and the HandsFreeLink control unit.

8. Check for continuity between body ground and AcuraLink control unit (XM receiver) connector B (16P) No. 7, 8, 15 and 16 terminals individually.

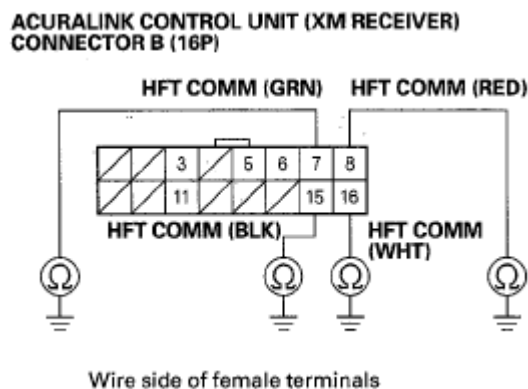


Fig. 23: Identifying Continuity Between Body Ground And Acuralink Control Unit (XM Receiver) Connector B (16P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the AcuraLink control unit (XM receiver) and the HandsFreeLink control unit.

NO - Go to Step 9.

9. Check for continuity between the terminals of AcuraLink control unit (XM receiver) connector B (16P) as follows.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
B7	B8, B15, B16, B6
B8	B15, B16, B6
B15	B16, B6
B16	B6

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the AcuraLink control unit (XM receiver) and the HandsFreeLink control unit (replace the appropriate shield harness).

NO - Go to Step 10.

10. Turn the ignition switch to ON (II) and check the same terminals for voltage.

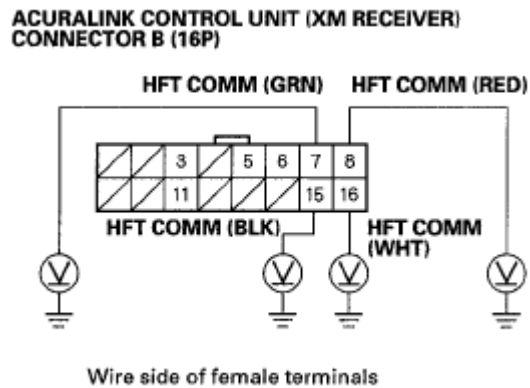


Fig. 24: Identifying Voltage Between Body Ground And Acuralink Control Unit (XM Receiver) Connector B (16P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s) between the AcuraLink control unit (XM receiver) and the HandsFreeLink control unit.

NO - Go to Step 11.

11. Turn the ignition switch to LOCK(0).
12. Reconnect the AcuraLink control unit (XM receiver) connector B (16P).
13. Measure the resistance between AcuraLink control unit (XM receiver) connector B (16P) No. 7, No. 8, and No. 15, No. 16 terminals.

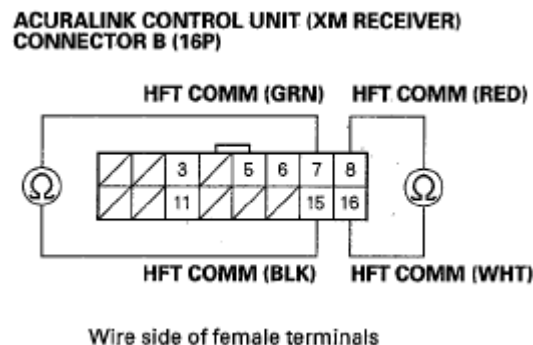


Fig. 25: Identifying Resistance Between Acuralink Control Unit (XM Receiver) Connector B (16P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than about 100k ohms?

YES - AcuraLink control unit (XM receiver) is faulty, replace the AcuraLink control unit (XM receiver).

NO - Go to Step 14.

14. Reconnect the HandsFreeLink control unit 22P connector.
15. Turn the ignition switch to ON (II).
16. Measure the voltage between the body ground and the AcuraLink control unit (XM receiver) connector B (16P) No. 7, No. 8 terminals individually.

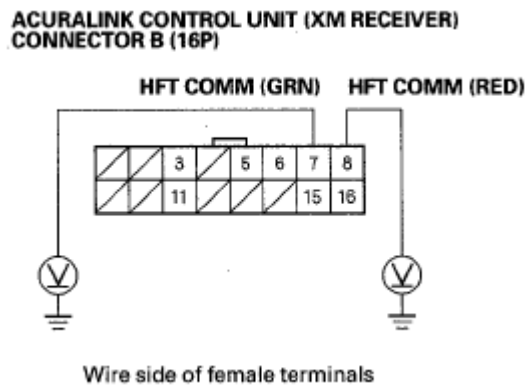


Fig. 26: Identifying Voltage Between Body Ground And Acuralink Control Unit (XM Receiver) Connector B (16P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than about 3.5V?

YES - AcuraLink control unit (XM receiver) is faulty, update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO - HandsFreeLink control unit is faulty, replace the HandsFreeLink control unit.

DTC B2209: ACURALINK CONTROL UNIT INTERNAL ERROR

NOTE: Check the vehicle battery condition first.

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it ON (II) and wait 30 seconds or more.
4. Check for DTC with the HDS.

Is DTC B2209 indicated?

YES - AcuraLink control unit (XM receiver) is faulty, replace the AcuraLink control unit (XM receiver).

NO - Intermittent failure, AcuraLink control unit (XM receiver) is OK at this time.

DTC B2240: XM ANTENNA ERROR

NOTE: **Check the vehicle battery condition first.**

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it ON (II) and wait 30 seconds or more.
4. Check for DTC with the HDS.

Is DTC B2240 indicated?

YES - Go to Step 5.

NO - Intermittent failure, XM antenna is OK at this time. Check for poor connections or loose terminals at the AcuraLink control unit(XM receiver) and XM antenna.

5. Check the XM antenna lead connection at the AcuraLink control unit (XM receiver) and at the XM antenna.

Is it connected properly?

YES - Go to Step 6.

NO - Reconnect the connector, and recheck the DTC.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the AcuraLink control unit(XM receiver) connector C (2P).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between the body ground and the AcuraLink control unit (XM receiver) terminal C (2P) No. 1 terminal.

**ACURALINK CONTROL UNIT (XM RECEIVER)
TERMINAL C (2P)**



Terminal side of male terminals

Fig. 27: Identifying Voltage Between Body Ground And Acuralink Control Unit (XM Receiver) Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

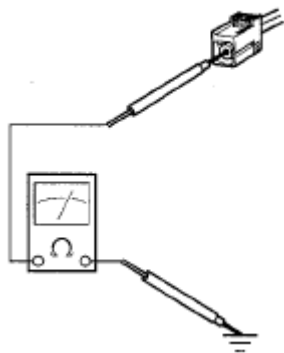
Is there about 4.5 V?

YES - Go to Step 10.

NO - AcuraLink control unit (XM receiver) is faulty, Update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

10. Turn the ignition switch to LOCK (0).
11. Disconnect the XM antenna 2P connector.
12. Check for continuity between body ground and XM antenna 2P connector No. 1 terminal.

XM ANTENNA 2P CONNECTOR

**Fig. 28: Identifying Continuity Between Body Ground And XM Antenna 2P Connector Terminal 1**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the antenna lead between the AcuraLink control unit (XM receiver) and XM antenna.

NO - Go to Step 13.

13. Check for continuity between XM antenna 2P connector terminal No. 1 and No. 2 (outside of the lead).

XM ANTENNA 2P CONNECTOR

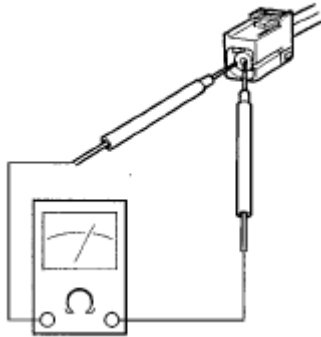


Fig. 29: Identifying Continuity Between XM Antenna 2P Connector Terminal 1 And 2 (Outside Of Lead)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the antenna lead between the AcuraLink control unit (XM receiver) and XM antenna.

NO - Go to Step 14.

14. Reconnect the AcuraLink control unit C(2P) connector.
15. Turn the ignition switch to ON (II).
16. Measure the voltage between the body ground and the XM antenna 2P connector No. 1 terminal.

XM ANTENNA 2P CONNECTOR

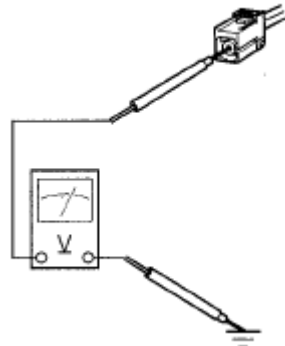


Fig. 30: Identifying Voltage Between Body Ground And XM Antenna 2P Connector Terminal 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 4.5V?

YES - XM antenna is faulty, replace the XM antenna.

NO - Replace the antenna lead between the AcuraLink control unit (XM receiver) and the XM antenna.

SYMPTOM TROUBLESHOOTING

ACURALINK SERVICES DOES NOT WORK

NOTE:

- In order for the AcuraLink service to work, the client must have an activated account with XM (receives all channels).
- Check the vehicle battery condition first.
- If you can only tune to channel 000,001,174, and 247, make sure that the audio unit is set to the channel mode (see owner's manual). If it is set to the channel mode, call XM radio customer support and check the account activation status.

1. Call Acura Client Services and verify the unit status. Request ACS to send an activation signal to the vehicle. Park the vehicle outside, and let the vehicle idle for about an hour.

Does the AcuraLink service application work?

YES - The vehicle is OK at this time.

NO - Go to step 2.

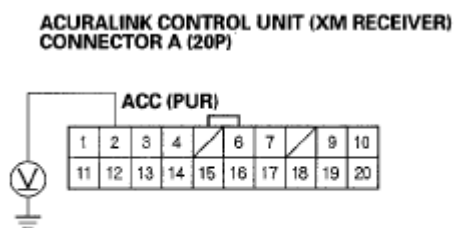
2. Check the No. 21 (7.5 A) fuse and No. 32 (10 A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 3.

NO - Replace the fuse(s), and recheck.

3. Turn the ignition switch to ACC (I).
4. Measure the voltage between the No. 2 terminal of the AcuraLink control unit (XM receiver) connector A (20P) and body ground.



Wire side of female terminals

Fig. 31: Identifying Voltage Between Acuralink Control Unit (XM Receiver) Connector A (20P) Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - Repair open in the wire(s) between the AcuraLink control unit and the No. 32 (10 A) fuse in the under-dash fuse/relay box.

5. Turn the ignition switch to ON (II).
6. Measure the voltage between the No. 12 terminal of the AcuraLink control unit (XM receiver) connector A (20P) and body ground.

**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 32: Identifying Voltage Between Acuralink Control Unit (XM Receiver) Connector A (20P) Terminal 12 And Body Ground

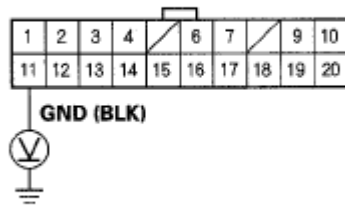
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire(s) between the AcuraLink control unit (XM receiver) and the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

7. Turn the ignition switch to LOCK (0).
8. Measure the voltage between the No. 11 terminal of the AcuraLink control unit (XM receiver) connector A (20P) and body ground.

**ACURALINK CONTROL UNIT (XM RECEIVER)
CONNECTOR A (20P)**

Wire side of female terminals

Fig. 33: Identifying Voltage Between Acuralink Control Unit (XM Receiver) Connector A (20P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES - Check for loose wires or poor connections at the AcuraLink control unit (XM receiver) connector A (20P). If the connections are good, substitute a known-good AcuraLink control unit (XM receiver), and recheck. If the symptom goes away, Update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO - Check for an open in the wire between the AcuraLink control unit (XM receiver) and body ground. If the wire is OK, check for poor ground at G606 (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

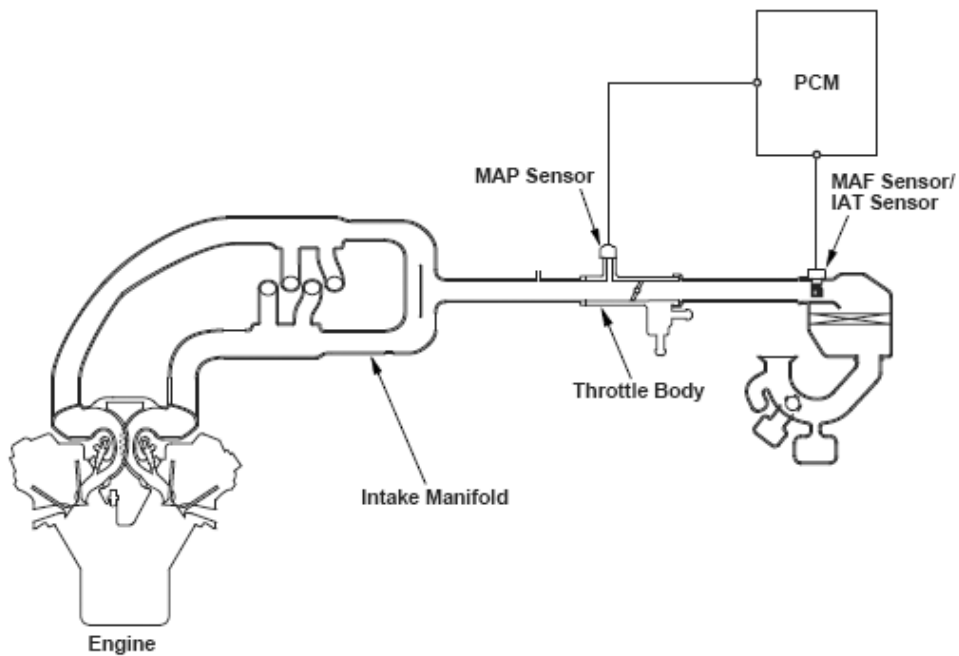
2008 ENGINE PERFORMANCE

Advanced Diagnostics - MDX

DTC P0101 (50): ADVANCED DIAGNOSTICS

DTC P0101: MASS AIRFLOW (MAF) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

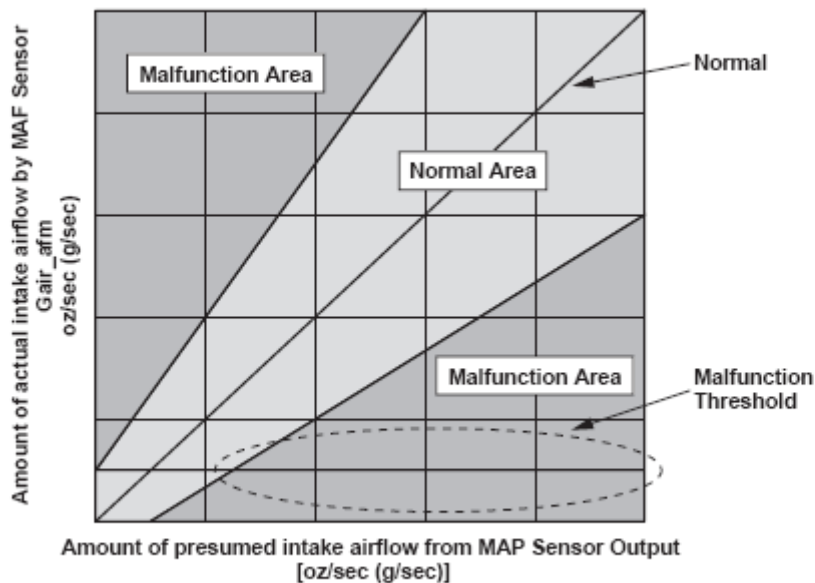
Outline of Engine System Structure



P0101-0774

Fig. 1: Mass Airflow (MAF) Sensor - System Diagram

Actual Intake Airflow versus Presumed Intake Airflow



P0101-0371

Fig. 2: Mass Airflow (MAF) Sensor Graph**General Description**

The mass airflow (MAF) sensor directly measures the amount of intake airflow into the engine, and the powertrain control module (PCM) controls the fuel injection based on the measured value. The manifold absolute pressure (MAP) sensor measures the intake manifold pressure and the PCM calculates the amount of intake airflow from the MAP sensor output and the engine revolutions.

The PCM compares the MAF sensor output (amount of intake airflow) and the amount of intake airflow calculated from MAP sensor output. If their difference is too large (in the malfunction area), the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum

Elapsed time after starting the engine	5 seconds	-
Engine coolant temperature	156°F (69°C)	-
Engine speed	650 rpm	2,100 rpm
No active DTCs	P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P1128, P1129, P145C, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

The difference between the amount of intake air measured by the MAF sensor and the amount of intake air calculated from the MAP sensor output is out of the normal area for at least 10 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

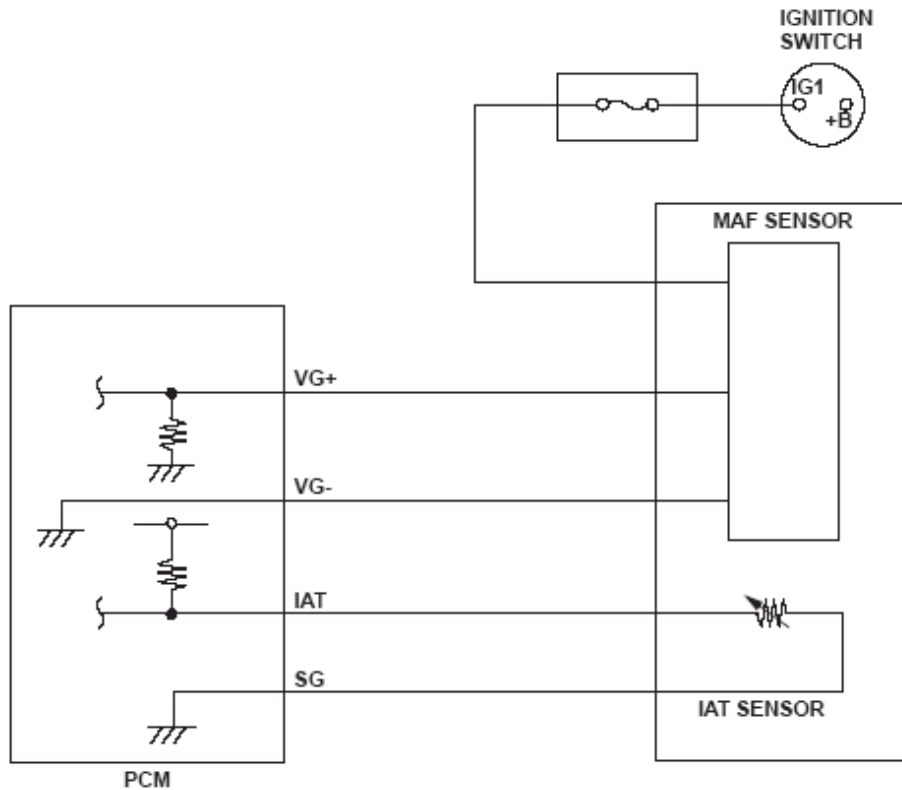
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

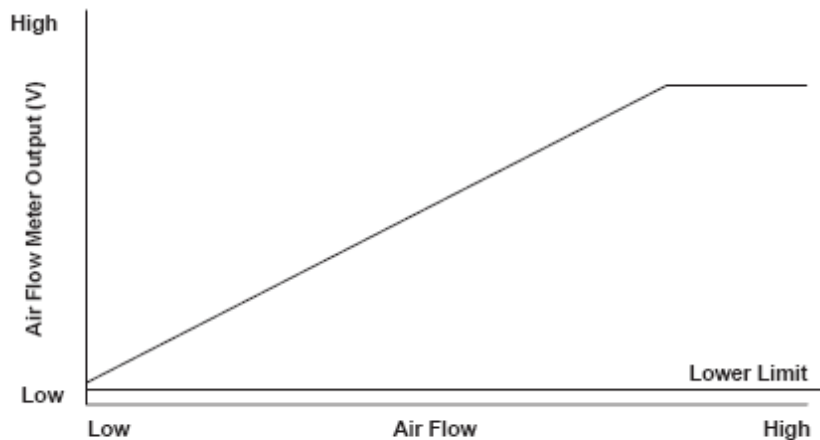
DTC P0102 (50): ADVANCED DIAGNOSTICS

DTC P0102: MASS AIRFLOW (MAF) SENSOR CIRCUIT LOW VOLTAGE



P0101-0602

Fig. 3: Mass Airflow (MAF) Sensor (Low Voltage) - Circuit Diagram



P0102-0370

Fig. 4: Mass Airflow (MAF) Sensor Voltage Graph

General Description

The mass airflow (MAF) sensor is attached to the intake air passage, and it measures the amount of intake airflow. The MAF sensor is a hot wire airflow meter. The airflow cools the electrically heated wire that is

mounted in the air passage. The powertrain control module (PCM) determines the amount of intake airflow by detecting the current that is required to keep the hot wire at a constant temperature. The lower limit of the MAF sensor output is specified. If the output is below that limit, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0103

Malfunction Threshold

The MAF sensor input voltage is 0.1 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

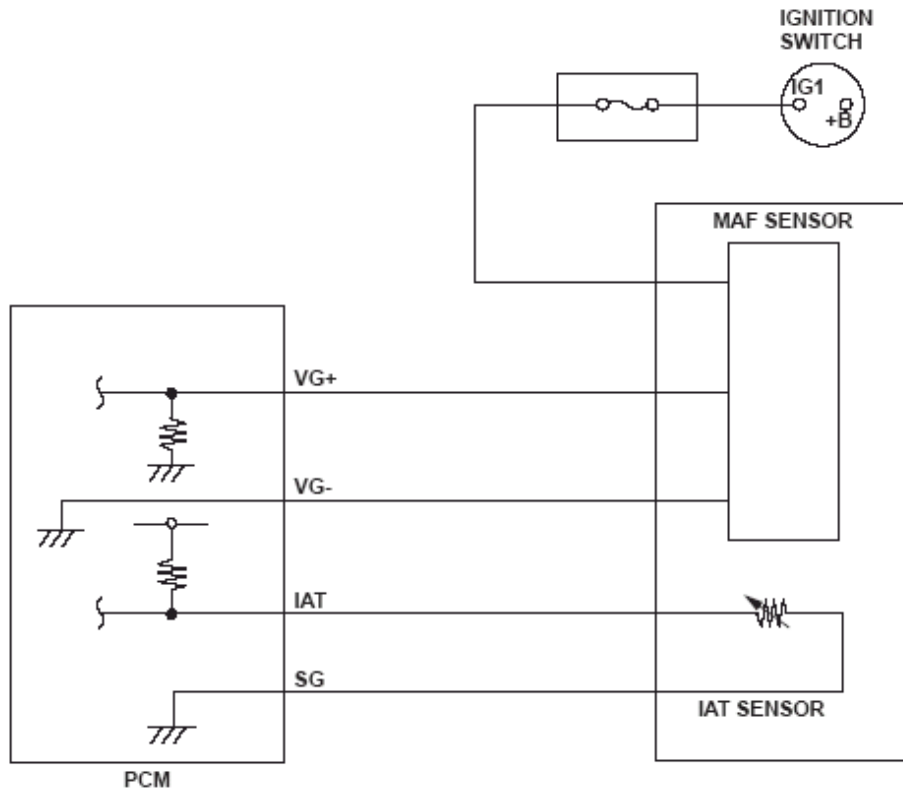
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

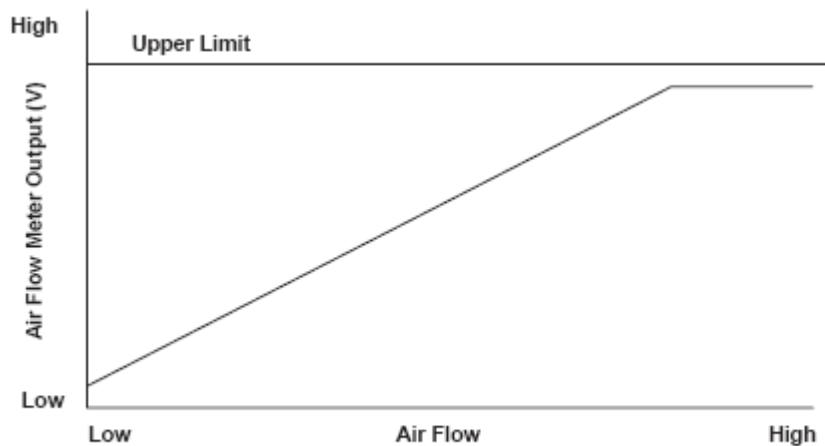
DTC P0103 (50): ADVANCED DIAGNOSTICS

DTC P0103: MASS AIRFLOW (MAF) SENSOR CIRCUIT HIGH VOLTAGE



P0101-0602

Fig. 5: Mass Airflow (MAF) Sensor (High Voltage) - Circuit Diagram



P0103-0370

Fig. 6: Mass Airflow (MAF) Sensor Voltage Graph

General Description

The mass airflow (MAF) sensor is attached to the intake air passage, and it measures the amount of intake airflow. The MAF sensor is a hot wire airflow meter. The airflow cools the electrically heated wire that is

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

mounted in the air passage. The powertrain control module (PCM) determines the amount of intake airflow by detecting the current that is required to keep the hot wire at a constant temperature. The upper limit of the MAF sensor output is specified. If the output is above that limit, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0102

Malfunction Threshold

The MAF sensor input voltage is 4.89 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

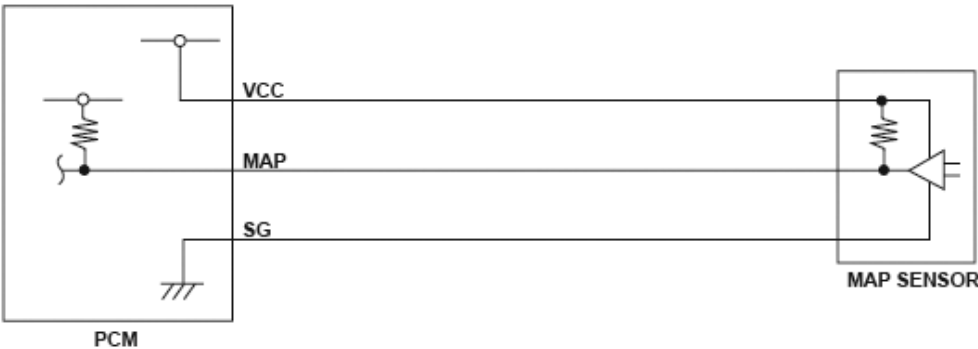
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

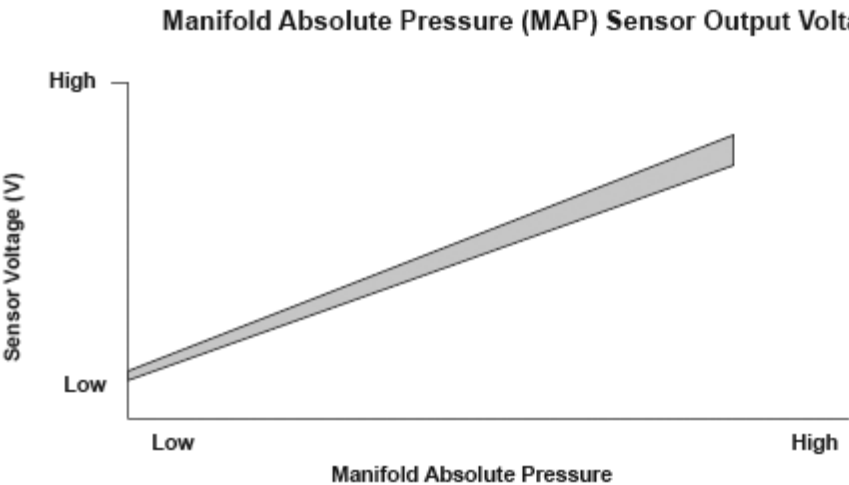
DTC P0107 (12): ADVANCED DIAGNOSTICS

DTC P0107: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT LOW VOLTAGE INPUT (EXCEPT PGM-FI SYSTEM)



P0106-9603

Fig. 7: Manifold Absolute Pressure (MAP) Sensor (Low Voltage Input) - Circuit Diagram



P0107-9671

Fig. 8: Manifold Absolute Pressure (MAP) Sensor Voltage Graph

General Description (Except PGM-FI System)

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (throttle valve closed) and high signal voltage at low-vacuum (throttle valve wide open).

If a signal voltage from the MAP sensor is a set value or less, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more

DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0108

Malfunction Threshold (Except PGM-FI System)

The MAP sensor output voltage is 0.23 V or less for at least 2 seconds.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0107 (3) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0107: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT LOW VOLTAGE (PGM-FI SYSTEM)



P0106-9603

Fig. 9: Manifold Absolute Pressure (MAP) Sensor (Low Voltage) - Circuit Diagram

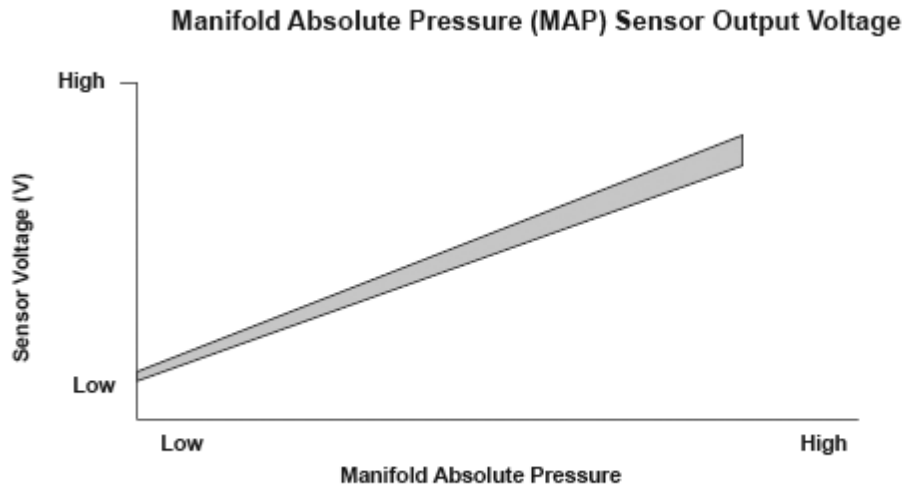


Fig. 10: Manifold Absolute Pressure (MAP) Sensor Voltage Graph

General Description (PGM-FI System)

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (throttle valve closed) and high signal voltage at low-vacuum (throttle valve wide open).

If a signal voltage from the MAP sensor is a set value or less, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0108

Malfunction Threshold (PGM-FI System)

The MAP sensor output voltage is 0.23 V or less for at least 2 seconds.

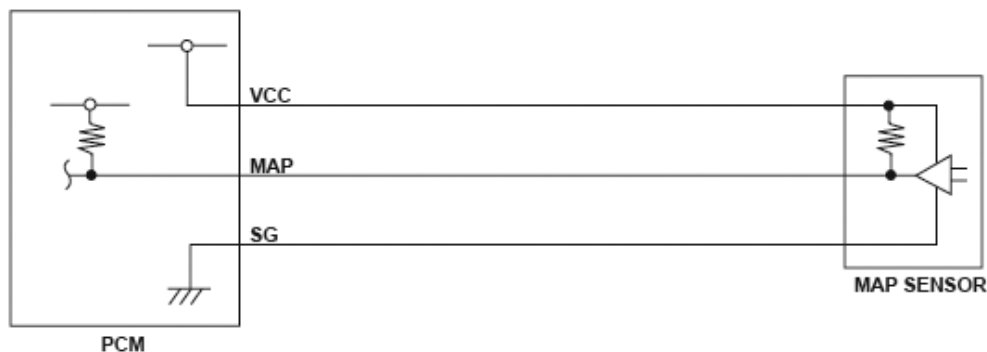
Diagnosis Details (PGM-FI System)**Conditions for illuminating the MIL (PGM-FI System)**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0108 (12): ADVANCED DIAGNOSTICS**DTC P0108: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT HIGH VOLTAGE INPUT (EXCEPT PGM-FI SYSTEM)**

P0108-9803

Fig. 11: Manifold Absolute Pressure (MAP) Sensor (High Voltage Input) - Circuit Diagram

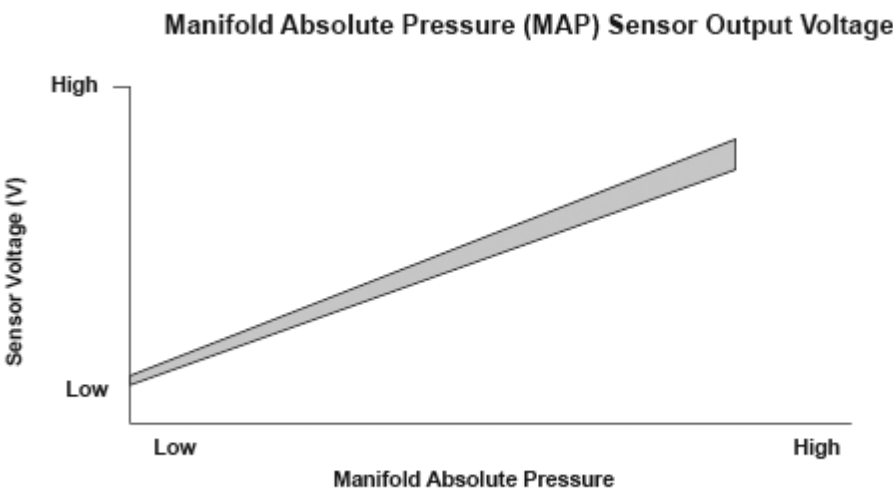


Fig. 12: Manifold Absolute Pressure (MAP) Sensor Voltage Graph

General Description (Except PGM-FI System)

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (throttle valve closed) and high signal voltage at low-vacuum (throttle valve wide open). If a signal voltage from the MAP sensor is a set value or more, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0107

Malfunction Threshold (Except PGM-FI System)

The MAP sensor output voltage is 4.49 V or more for at least 2 seconds.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

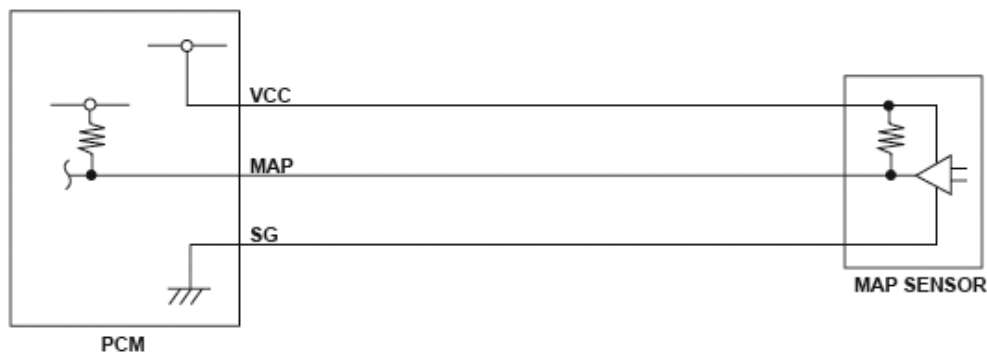
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

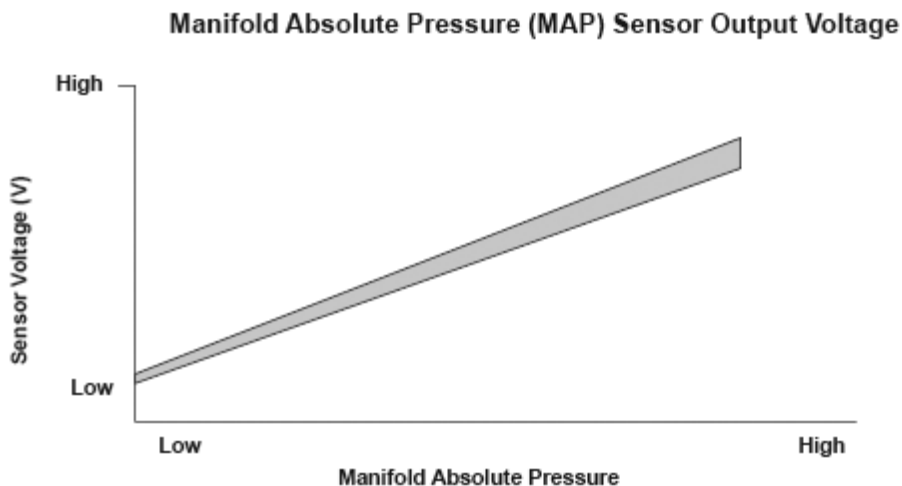
DTC P0108 (3) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0108: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR CIRCUIT HIGH VOLTAGE (PGM-FI SYSTEM)



P0108-9803

Fig. 13: Manifold Absolute Pressure (MAP) Sensor (High Voltage) - Circuit Diagram



P0107-9871

Fig. 14: Manifold Absolute Pressure (MAP) Sensor Voltage Graph

General Description (PGM-FI System)

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (throttle valve closed) and high signal voltage at low-vacuum (throttle valve wide open). If a signal voltage from the MAP sensor is a set value or more, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0107

Malfunction Threshold (PGM-FI System)

The MAP sensor output voltage is 4.49 V or more for at least 2 seconds.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0111 (10): ADVANCED DIAGNOSTICS

DTC P0111: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM

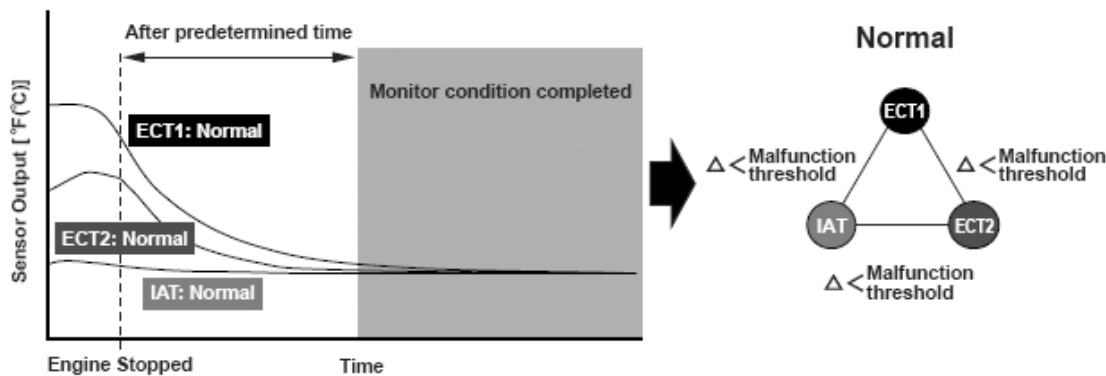
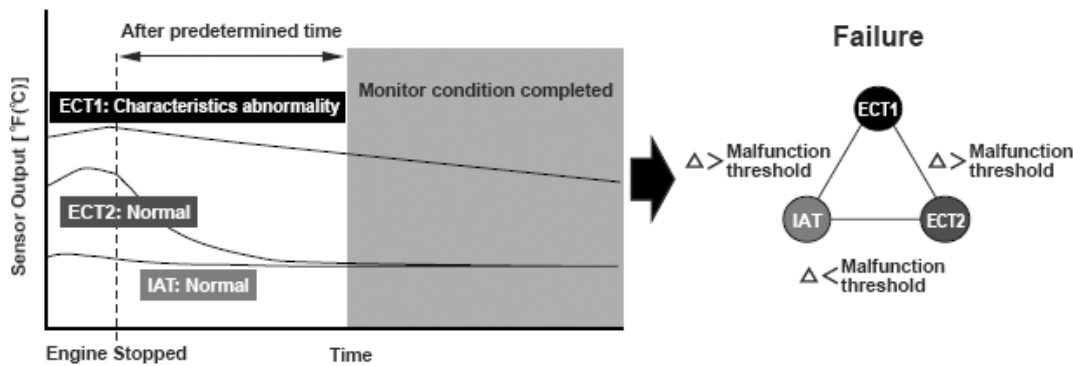


Fig. 15: Intake Air Temperature (IAT) Sensor Performance Graph (1 Of 2)



P0111-0570

Fig. 16: Intake Air Temperature (IAT) Sensor Performance Graph (2 Of 2)

General Description

Two engine coolant temperature sensors and one intake air temperature sensor are used by the powertrain control module (PCM).

When the engine is stopped and enough time has passed, the temperature of the engine will equal the ambient temperature. When an inappropriate temperature is detected after comparing the temperature readings of each sensor, a malfunction in the corresponding sensor is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine off time	6 hours	-
No active DTCs	P0112, P0113, P0116, P0117, P0118, P0125, P1116, P2183, P2184, P2185, P2610	

Malfunction Threshold

A malfunction is detected if these three conditions are present after the engine and the ignition switch have been off for at least 6 hours:

- When the temperature difference between the IAT and ECT1 is 57°F (32°C) or more.
- When the temperature difference between the IAT and ECT2 is 30°F (17°C) or more.
- When the temperature difference between the ECT2 and ECT1 is 73°F (41°C) or more.

Driving Pattern

1. Turn the ignition off, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0112 (10): ADVANCED DIAGNOSTICS

DTC P0112: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT LOW VOLTAGE

feedback control to compensate for the atmospheric density fluctuations that accompany changes in intake air temperature.

The IAT sensor resistance varies depending on temperature. The output voltage and the sensor resistance increase as the intake air temperature decreases. Conversely, the output voltage and the sensor resistance decrease as the intake air temperature increases. If the IAT sensor output voltage is excessively low, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0113

Malfunction Threshold

The IAT sensor output voltage is 0.08 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

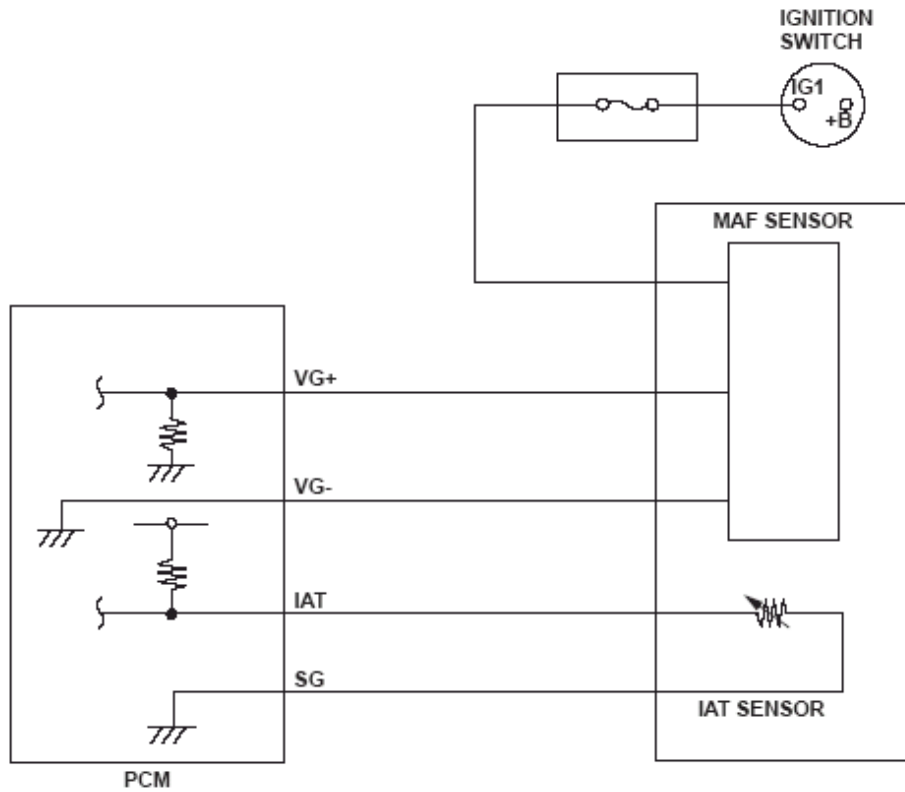
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

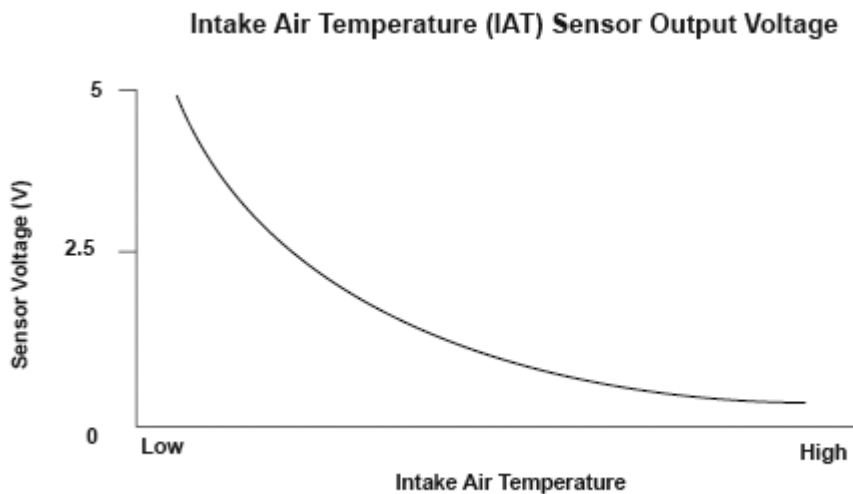
DTC P0113 (10): ADVANCED DIAGNOSTICS

DTC P0113: INTAKE AIR TEMPERATURE (IAT) SENSOR CIRCUIT HIGH VOLTAGE



P0101-0602

Fig. 19: Intake Air Temperature (IAT) Sensor (High Voltage) - Circuit Diagram



P0112-9671

Fig. 20: Intake Air Temperature (IAT) Sensor Voltage Graph

General Description

The intake air temperature (IAT) sensor is a thermistor that detects intake air temperature, and it is used for A/F

feedback control to compensate for the atmospheric density fluctuations that accompany changes in intake air temperature.

The IAT sensor resistance varies depending on temperature. The output voltage and the sensor resistance increase as the intake air temperature decreases. Conversely, the output voltage and the sensor resistance decrease as the intake air temperature increases. If the IAT sensor output voltage is excessively high, the powertrain control module (PCM) detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0112

Malfunction Threshold

The IAT sensor output voltage is 4.92 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

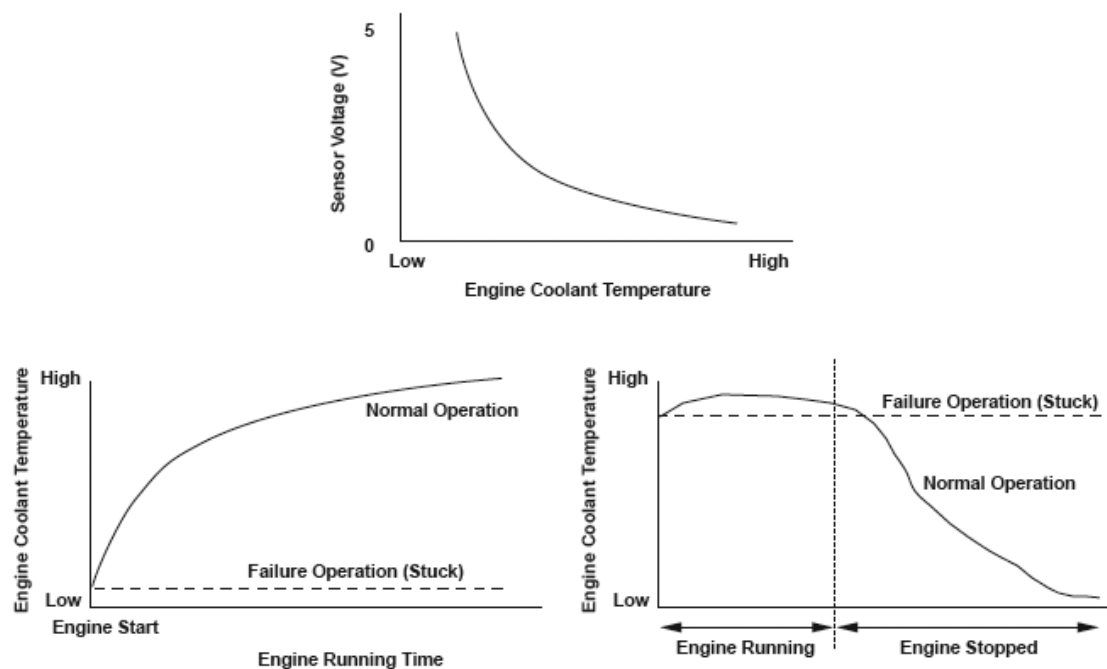
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0116 (86): ADVANCED DIAGNOSTICS

DTC P0116: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT

RANGE/PERFORMANCE PROBLEM**Engine Coolant Temperature Sensor**

P0116-0570

Fig. 21: Engine Coolant Temperature (ECT) Sensor Performance Graph**General Description**

The powertrain control module (PCM) supplies voltage to the engine coolant temperature (ECT) signal circuit (about 5 V) through a pull-up resistor. As the engine coolant cools, ECT sensor 1 resistance increases, and the PCM detects a high signal voltage. As the engine coolant warms, ECT sensor 1 resistance decreases, and the PCM detects a low signal voltage. If the ECT output voltage after driving a set time after starting the engine does not reach a set temperature, or when the difference between the ECT output voltage when driving and the output voltage of the ECT after the engine is stopped a set time does not change a certain amount, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	10 minutes or more
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	10 seconds	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P0627, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2413, P2610, P2646, P2647, P2648, P2649	
Others	With a completely cooled engine (one that has been off for at least 6 hours): Judgment is made after the engine has been run for at least 10 minutes, turned off for at least 10 seconds, then started and run again for at least 10 seconds.	
	With a partially cooled engine (one that has been off for less than 6 hours): Judgment is made after the engine has been run for at least 10 minutes, turned off for at least 150 minutes, then started and run again for at least 10 seconds.	

Malfunction Threshold

Malfunction determination 1:

With a completely cooled engine (one that has been off for at least 6 hours):

When the change in coolant temperature after 10 minutes or more of running time is 50°F (10°C) or less, a malfunction is detected.

Malfunction determination 2:

With a partially cooled engine (one that has been off for less than 6 hours):

When the difference between the coolant temperature after 10 minutes or more of running time minus the coolant temperature after the engine has been off for 150 minutes and then run for 10 seconds is 50°F (10°C) or less, a malfunction is detected.

Driving Pattern

- With a completely cooled engine (one that has been off for at least 6 hours).
 1. Start the engine, and let it idle for at least 10 minutes.
 2. Turn off the ignition for 10 seconds, then restart the engine and let it idle for at least 10 seconds.
- With a partially cooled engine (one that has been off for less than 6 hours).

1. Start the engine, and let it idle for at least 10 minutes.
2. Turn off the ignition for 150 minutes, then restart the engine and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0117 (6): ADVANCED DIAGNOSTICS

DTC P0117: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT LOW VOLTAGE



P0116-0501

Fig. 22: Engine Coolant Temperature (ECT) Sensor 1 (Low Voltage) - Circuit Diagram

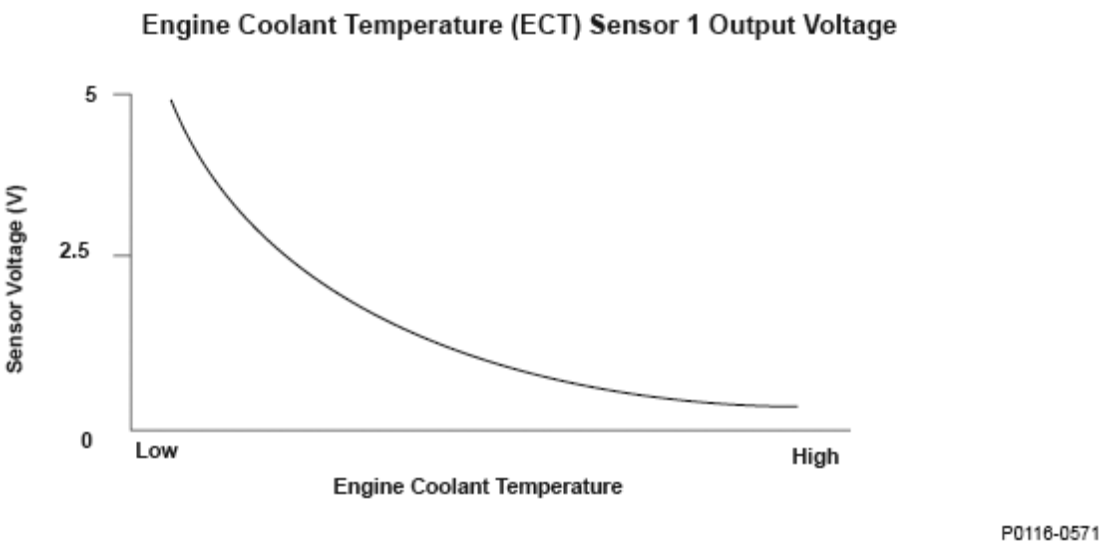


Fig. 23: Engine Coolant Temperature (ECT) Sensor Voltage Graph

General Description

Engine coolant temperature (ECT) sensor 1 is used for air/fuel ratio feedback control, ignition timing control, idle speed control, and other functions. The ECT sensor 1 resistance varies depending on the engine coolant temperature. As the engine coolant cools, the ECT sensor 1 resistance increases, and the powertrain control module (PCM) detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the PCM detects a low signal voltage. If the ECT sensor 1 output voltage is less than a set value when the engine coolant temperature is high, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0118

Malfunction Threshold

The ECT sensor 1 output voltage is 0.08 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

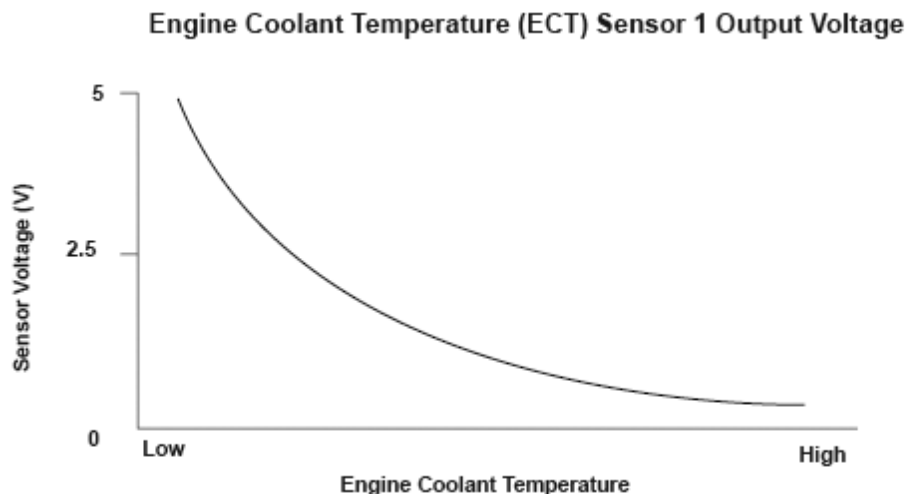
DTC P0118 (6): ADVANCED DIAGNOSTICS

DTC P0118: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT HIGH VOLTAGE



P0118-0501

Fig. 24: Engine Coolant Temperature (ECT) Sensor 1 (High Voltage) - Circuit Diagram



P0118-0571

Fig. 25: Engine Coolant Temperature (ECT) Sensor Voltage Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

Engine coolant temperature (ECT) sensor 1 is used for air/fuel ratio feedback control, ignition timing control, idle speed control, and other functions. The ECT sensor 1 resistance varies depending on the engine coolant temperature. As the engine coolant cools, the ECT sensor 1 resistance increases, and the powertrain control module (PCM) detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the PCM detects a low signal voltage. If the ECT sensor 1 output voltage is more than a set value when the engine coolant temperature is low, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0117

Malfunction Threshold

The ECT sensor 1 output voltage is 4.92 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

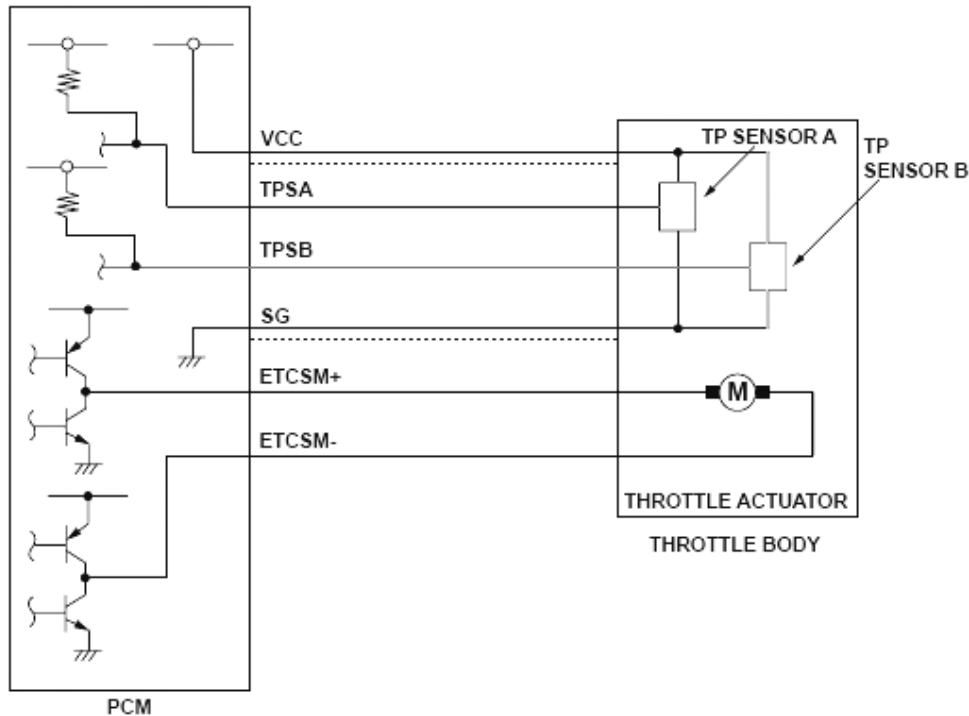
When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0122 (7): ADVANCED DIAGNOSTICS

DTC P0122: THROTTLE POSITION (TP) SENSOR A CIRCUIT LOW VOLTAGE

P0122-0503

Fig. 26: Throttle Position (TP) Sensor A (Low Voltage) - Circuit Diagram**General Description**

Throttle position (TP) sensor A is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position.

The throttle valve position signal from TP sensor A is transmitted to the powertrain control module (PCM) for target position feedback control.

If the signal from TP sensor A is less than a fixed value for a set time, the PCM detects a TP sensor A malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	0.2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0123, P2101, P2118, P2135, P2176

Malfunction Threshold

The TP sensor A output voltage is 0.3 V or less for at least 0.2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0125 (86): ADVANCED DIAGNOSTICS

DTC P0125: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 MALFUNCTION/SLOW RESPONSE

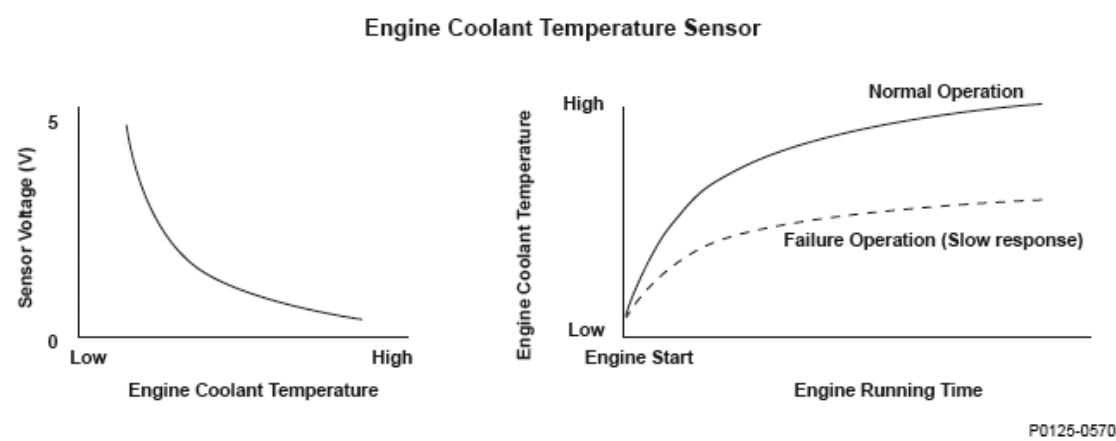


Fig. 27: Engine Coolant Temperature (ECT) Sensor Voltage Graph

General Description

The powertrain control module (PCM) supplies voltage to the engine coolant temperature (ECT) signal circuit

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

(about 5 V) through a pull-up resistor. As the engine coolant cools, the ECT sensor 1 resistance increases, and the PCM detects a high signal voltage. As the engine coolant warms, the ECT sensor 1 resistance decreases, and the PCM detects a low signal voltage.

If the ECT sensor 1 output voltage does not reach a specified temperature at which closed-loop control for stoichiometric air/fuel ratio starts within a set time, depending on the initial coolant temperature after starting the engine, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20 minutes or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Initial engine coolant temperature	-	10°F (-12°C)
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P0627, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

The engine running time before the engine coolant temperature reaches 10°F (-12°C), based on the initial engine coolant temperatures, is as follows.

MALFUNCTION THRESHOLD CHART

Initial engine coolant temperature	-24°F (-31°C)	10°F (-12°C)
Engine running time	300 seconds or more	60 seconds or more

Driving Pattern

1. Start the engine at an initial engine coolant temperature as specified under Enable Conditions.
2. Let the engine idle for at least 20 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle with the ECT and IAT at engine start-up within the specified temperature range, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle with the ECT and IAT at engine start-up within the specified temperature range, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0128 (87): ADVANCED DIAGNOSTICS

DTC P0128: COOLING SYSTEM MALFUNCTION

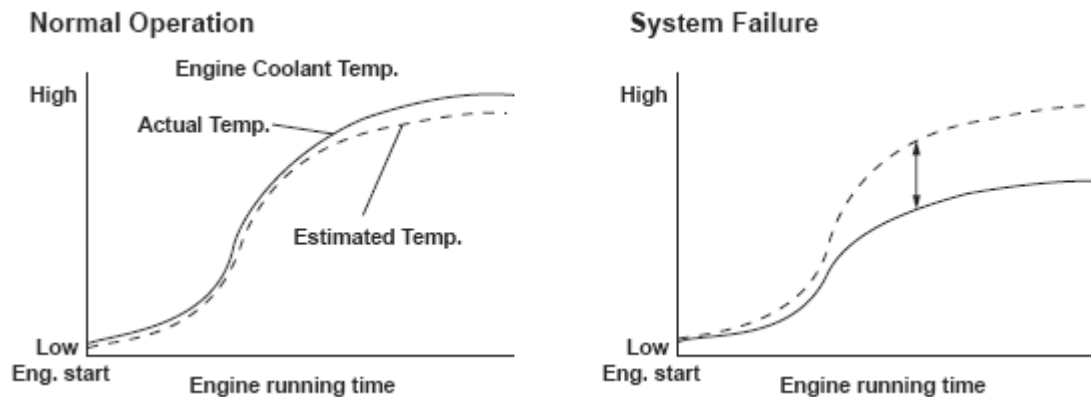
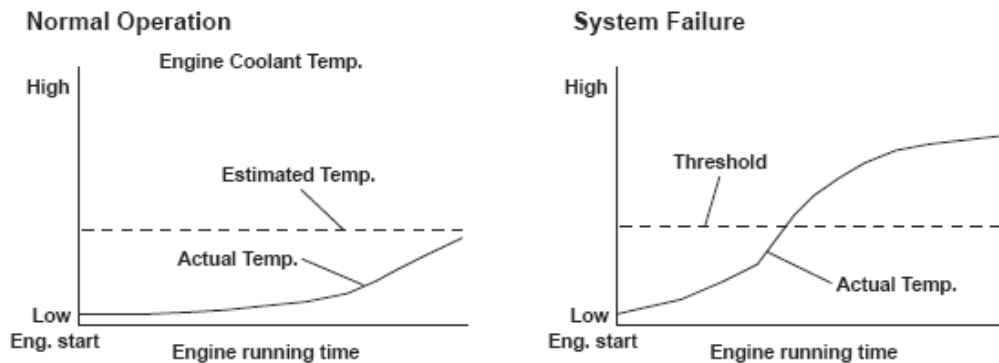


Fig. 28: Cooling System Operation Graph (1 Of 2)

Engine Coolant Temperature of Radiator (ECT 2)



P0128-0570

Fig. 29: Cooling System Operation Graph (2 Of 2)**General Description**

The thermostat is closed when the engine coolant temperature is low, and it stops the circulation of engine coolant to speed engine warm up. When the engine coolant temperature increases, the thermostat opens and circulates engine coolant to control its temperature. When the engine coolant temperature decreases, the opening area of the thermostat is reduced to regulate the engine coolant temperature. If the thermostat sticks open, engine warm up is delayed, and exhaust emissions are adversely affected. The powertrain control module (PCM) measures the rise in the coolant temperature after the engine starts using engine coolant temperature (ECT) sensors 1/2, and it estimates the characteristics of the engine coolant temperature by calculations based on those two temperatures and the driving conditions. When ECT 2 immediately increases from the starting value, it is defined as the thermostat stuck open. When ECT 2 does not increase to the specified value, it is defined as a thermostat malfunction.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	Depending on driving conditions
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Engine off time	6 hours	-
Initial engine coolant temperature (ECT 1)	20°F (-6°C)	123°F (50°C)
Initial engine coolant temperature	20°F (-6°C)	-

(ECT 2)		
Initial intake air temperature	20°F (-6°C)	-
The difference between initial intake air temperature and current intake air temperature	-	3°F (2°C) ⁽¹⁾
		7°F (4°C) ⁽²⁾
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0134, P0135, P0154, P0155, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P0627, P1077, P1078, P1116, P1128, P1129, P1172, P1174, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2183, P2184, P2185, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2413, P2610, P2646, P2647, P2648, P2649	
(1) Intake air temperature decrease judgement when there is no driving record of 25 mph (40 km/h) in this drive cycle.		
(2) Intake air temperature decrease judgement when there is a driving record of 25 mph (40 km/h) in this drive cycle.		

Malfunction Threshold

Malfunction determination 1:

If the difference between the current measured coolant temperature at the radiator (ECT 2) and the initial coolant temperature at the radiator (ECT 2) is at least 21°F (12°C) when the calculated coolant temperature at the engine (ECT 1) reaches 159°F (71°C), a malfunction is detected (thermostat stuck open); or if the coolant temperature at the radiator (ECT 2) only reaches 68°F (20°C), a malfunction is detected (thermostat malfunction).

Malfunction determination 2:

When the calculated engine coolant temperature (ECT 1) reaches 158°F (70°C) before the measured engine coolant temperature (ECT 1) reaches 158°F (70°C), a malfunction is detected.

Driving Pattern

1. Start the engine under the conditions specified under Enable Conditions.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 10 minutes.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle with the ECT and IAT at engine start-up within the specified temperature range, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle with the ECT and IAT at engine start-up within the specified temperature range, the MIL comes on and the DTC and the freeze frame data are stored.

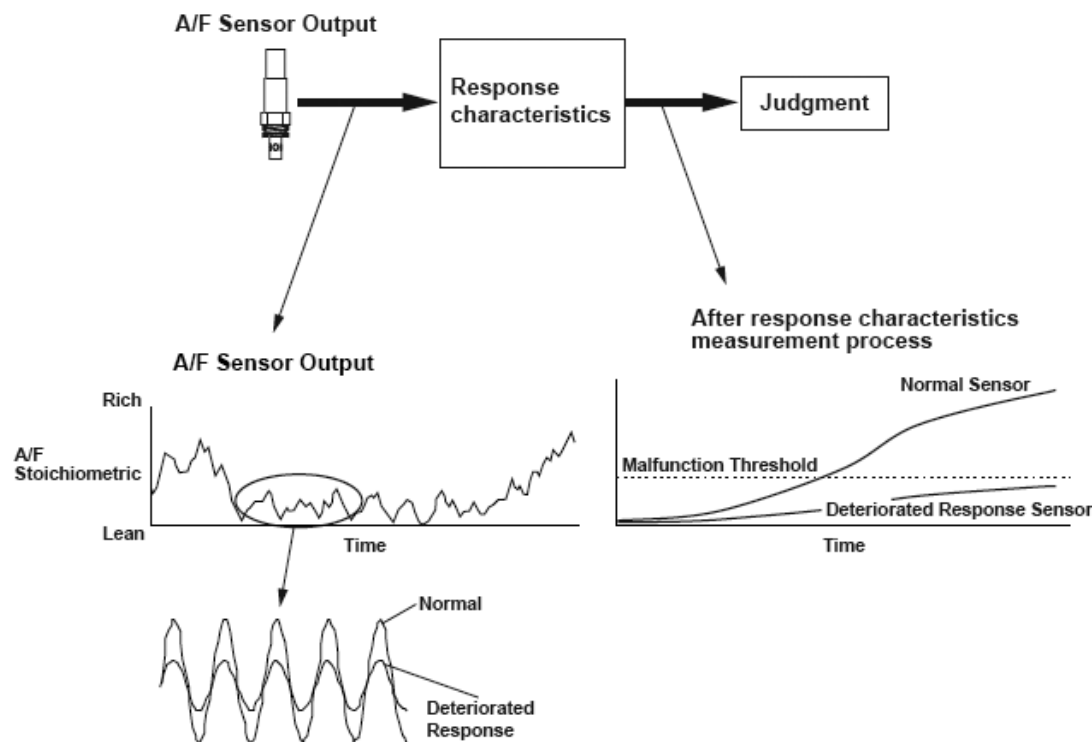
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0133 (157): ADVANCED DIAGNOSTICS

DTC P0133: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT SLOW RESPONSE



P0133-0570

Fig. 30: Rear Air/Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) (Slow Response) - Communication Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

output voltage and uses fuel feedback control to improve exhaust emissions. The PCM measures the response characteristics against the rear A/F sensor output, and if the average inversion cycle time is less than the specified value, it detects a deteriorated response and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition		Minimum	Maximum
Engine coolant temperature		156°F (69°C)	-
Intake air temperature		-13°F (-25°C)	-
Engine speed		1,250 rpm	2,200 rpm
MAP value	1,250 rpm	47 kPa (13.8 in.Hg, 350 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
	2,000 rpm	27 kPa (7.9 in.Hg, 200 mmHg)	
Vehicle speed		33 mph (52 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0456, P0457, P0497	
No active DTCs		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2413, P2646, P2647, P2648, P2649, P2A00	
Others		Without excessive load change	

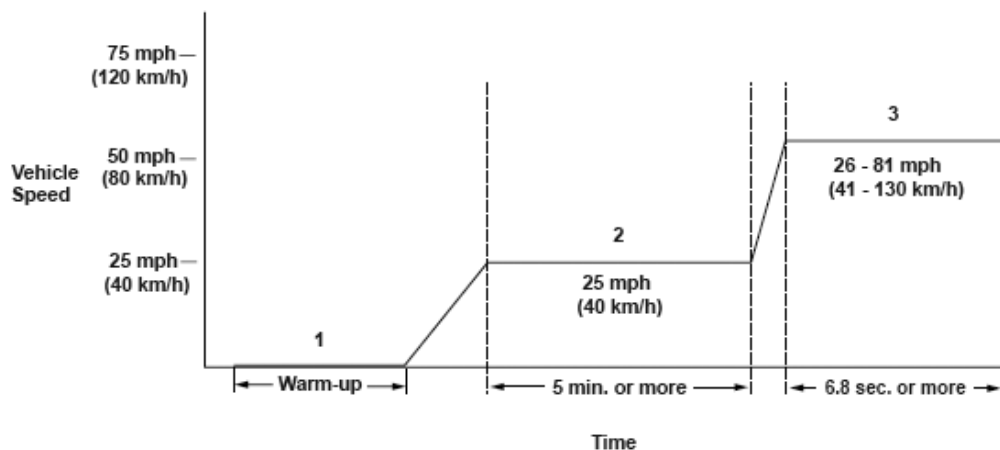
Malfunction Threshold

The average of up to 11 periods of the rear A/F sensor (bank 1, sensor 1) inversion cycle is at least 6.8 seconds.

Driving Pattern

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0133-0651

Fig. 31: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Drive the vehicle at a steady speed up to 25 mph (40 km/h), for at least 5 minutes.
 3. Then, drive immediately at a steady speed between 26 - 81 mph (41 - 130 km/h) for at least 6.8 seconds.
- If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

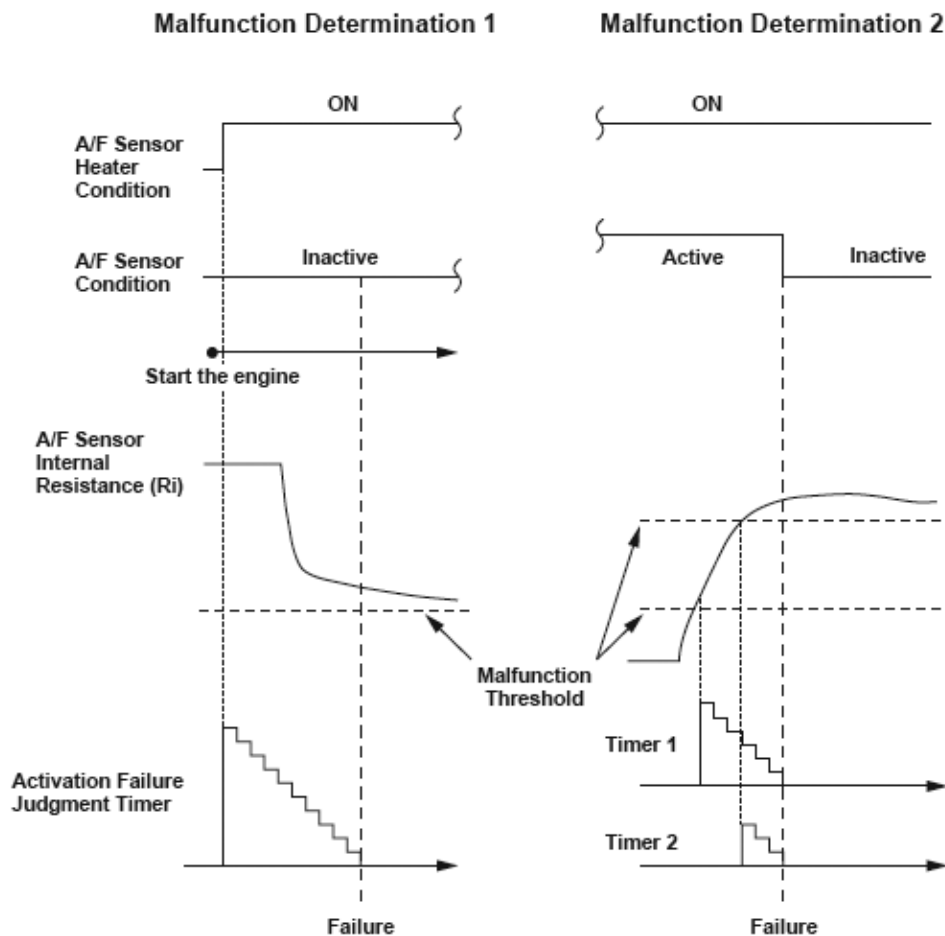
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0134 (151): ADVANCED DIAGNOSTICS

DTC P0134: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION



P0134-0670

Fig. 32: Rear Air/Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is activated by warming the element with the heater and by maintaining it at a steady high temperature to accurately calculate the air/fuel (A/F) ratio. The rear A/F sensor does not become active when the element is not properly heated due to a heater malfunction, and the exhaust emissions deteriorate. The powertrain control module (PCM) monitors the rear A/F sensor internal resistance.

1. When the rear A/F sensor does not activate within a set time after the rear A/F sensor heater starts to warm up (with high rear A/F sensor internal resistance), a malfunction of the rear A/F sensor heater is detected, and a DTC is stored.
2. When the rear A/F sensor heater cycles ON and OFF within a set time, and the resistance remains high when the heater is ON, a malfunction in the rear A/F sensor heater is detected, and a DTC is stored.

Because the effect on engine control differs according to the rear A/F sensor internal resistance, there are two types of malfunction detection threshold levels. When either one is reached, a malfunction is detected.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	40 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs	P0135, P1172, P2195, P2237, P2238, P2243, P2245, P2251, P2252	

Malfunction Threshold

Malfunction determination 1

The rear A/F sensor (bank 1, sensor 1) internal resistance value is 110 ohms or more for at least 40 seconds right after the engine starts.

Malfunction determination 2

- The rear A/F sensor (bank 1, sensor 1) internal resistance value is 110 ohms or more for at least 15 seconds.
- The rear A/F sensor (bank 1, sensor 1) internal resistance value is 200 ohms or more for at least 1 second.

Driving Pattern

Start the engine, then let it idle for at least 1 minute.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0135 (151): ADVANCED DIAGNOSTICS

DTC P0135: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION

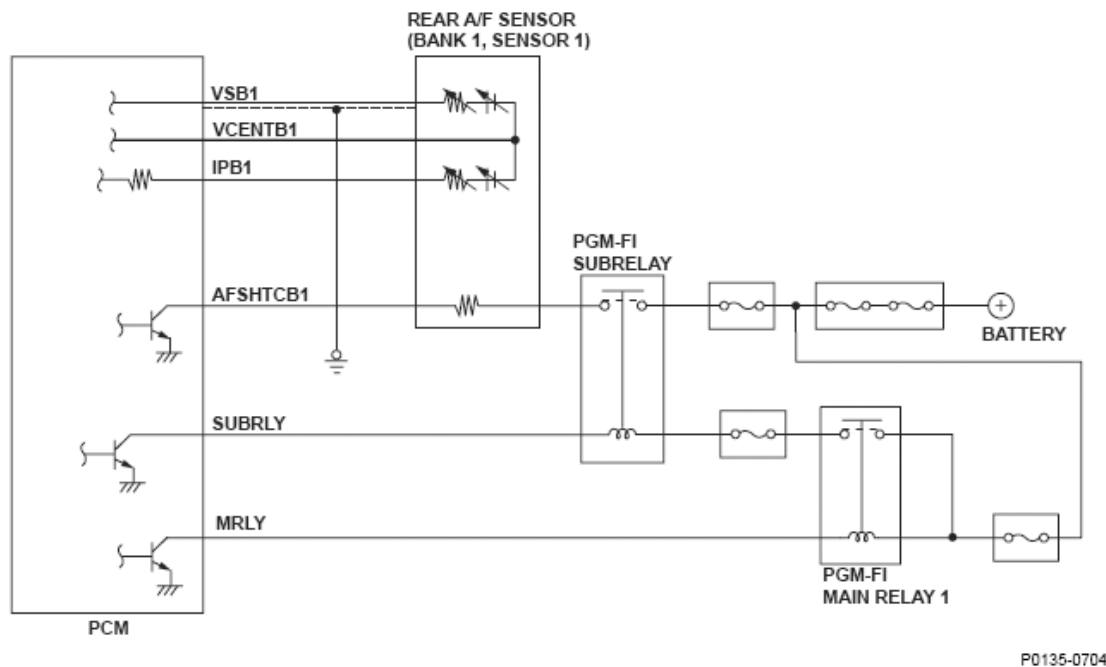


Fig. 33: Rear Air/Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater - Circuit Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold, and it detects oxygen content in the exhaust gas. The rear A/F sensor outputs voltage to the powertrain control module (PCM). The PCM controls fuel injection time by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control. The heater is controlled by the PCM and is energized when the sensor element temperature is low. It heats the sensor to stabilize the detection of oxygen content. The PCM monitors the rear A/F sensor heater output (return check). A malfunction is detected if the return signals do not meet the command value (for heater activation) in the PCM for a set time or more and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
Other	During rear A/F sensor heater operation	

Malfunction Threshold

One of these conditions must be met for at least 2 seconds.

- No return signal "HIGH" is detected when the PCM output duty is less than 20%.
- Return signal does not change when the PCM output duty is more than 20% and less than 80%.
- No return signal "LOW" is detected when the PCM output duty is more than 80%.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

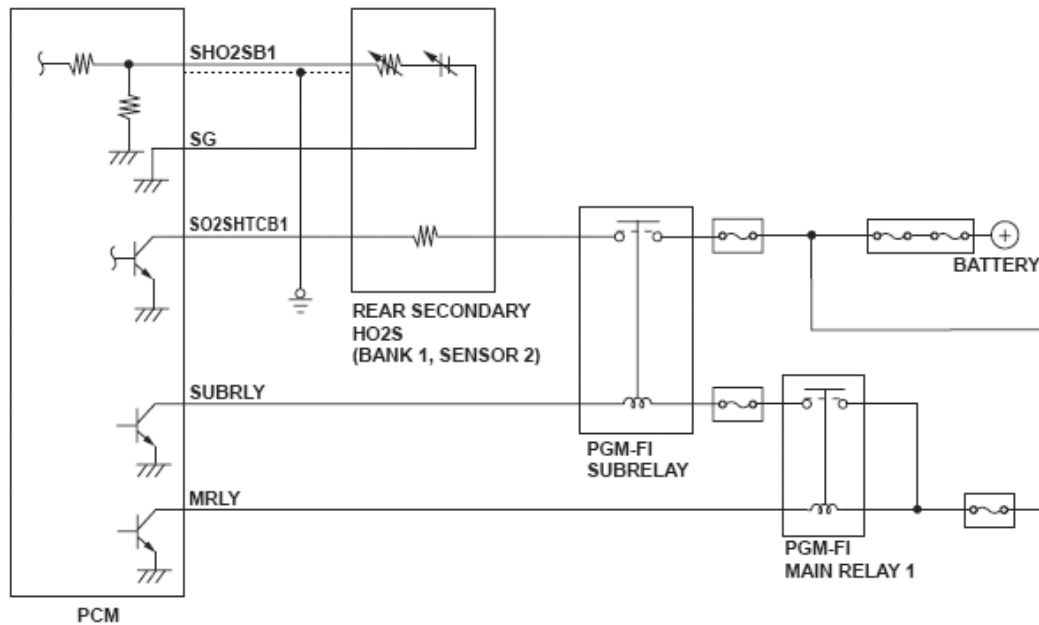
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

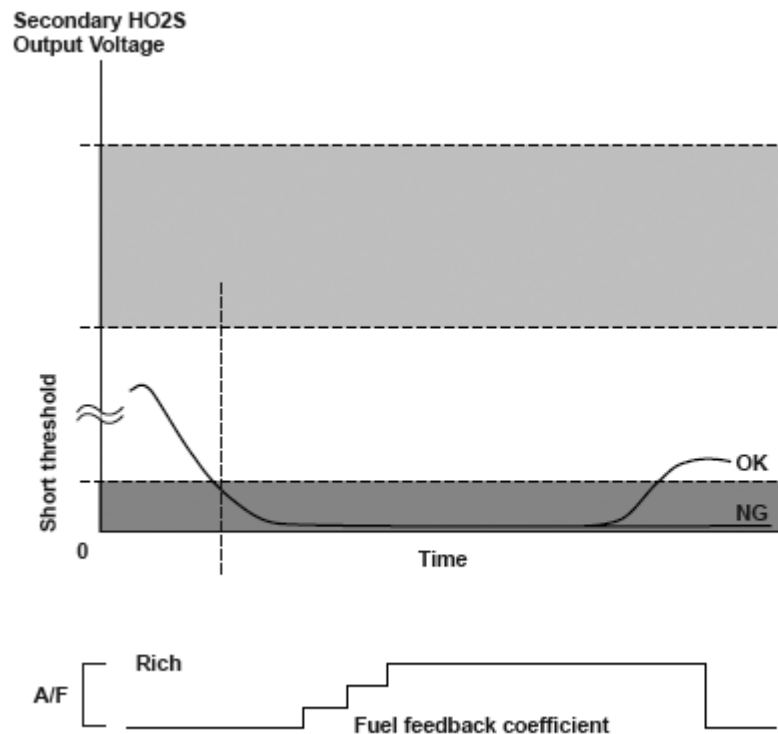
DTC P0137 (161): ADVANCED DIAGNOSTICS

DTC P0137: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT LOW VOLTAGE



P0137-0703

Fig. 34: Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) (Low Voltage) - Circuit Diagram



P0137-0570

Fig. 35: Rear Secondary Heated Oxygen Sensor Voltage Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The rear secondary heated oxygen sensor (HO2S) (bank 1, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The rear secondary HO2S controls the air/fuel ratio from the rear A/F sensor output voltage so that the TWC efficiency is optimized.

After current is applied to the rear secondary HO2S heater, if the rear secondary HO2S output continues low (lean) during feedback control, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	40 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Other than at idle	

Malfunction Threshold

The rear secondary HO2S output voltage is 0.05 V or less for at least 40 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.

2. Then, drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 1 minute.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

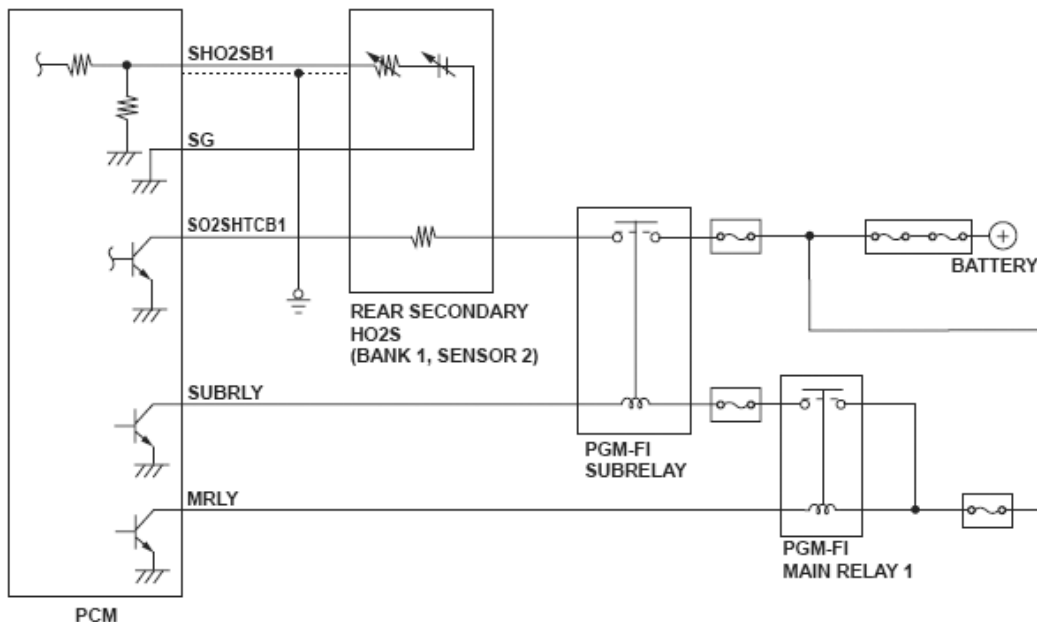
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

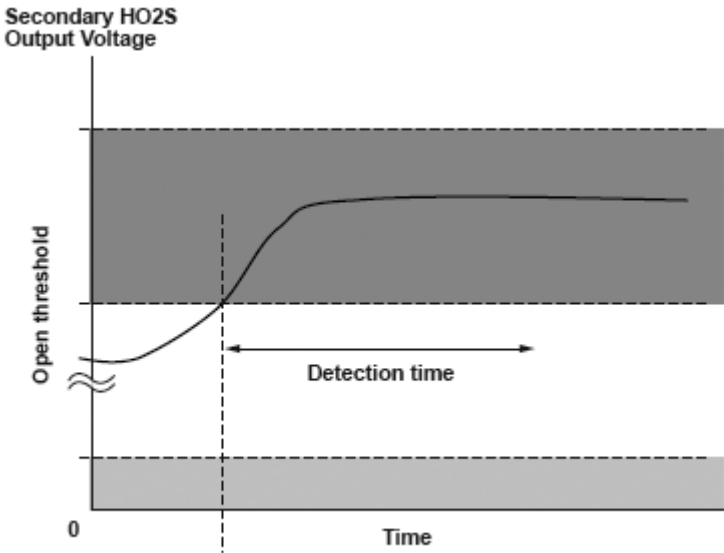
DTC P0138 (161): ADVANCED DIAGNOSTICS

DTC P0138: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT HIGH VOLTAGE



P0137-0703

Fig. 36: Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) High Voltage - Circuit Diagram



P0138-0570

Fig. 37: Rear Secondary Heated Oxygen Sensor Voltage Graph

General Description

The rear secondary heated oxygen sensor (HO2S) (bank 1, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The rear secondary HO2S controls the air/fuel ratio from the rear A/F sensor output voltage to optimize TWC efficiency.

After current is applied to the rear secondary HO2S heater, if the rear secondary HO2S output continues to exceed the upper limit used during feedback control, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-

Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2413, P2646, P2647, P2648, P2649, P2A00	
Other	Other than at idle	

Malfunction Threshold

The rear secondary HO2S output voltage is 1.270 V or more for at least 5 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
 2. Then, drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 1 minute.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

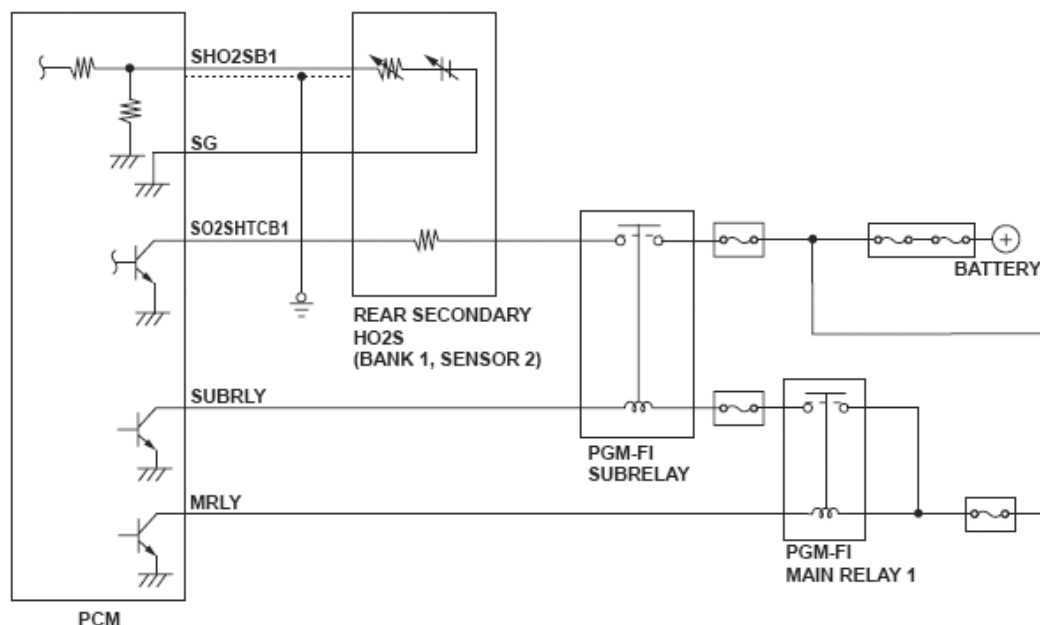
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

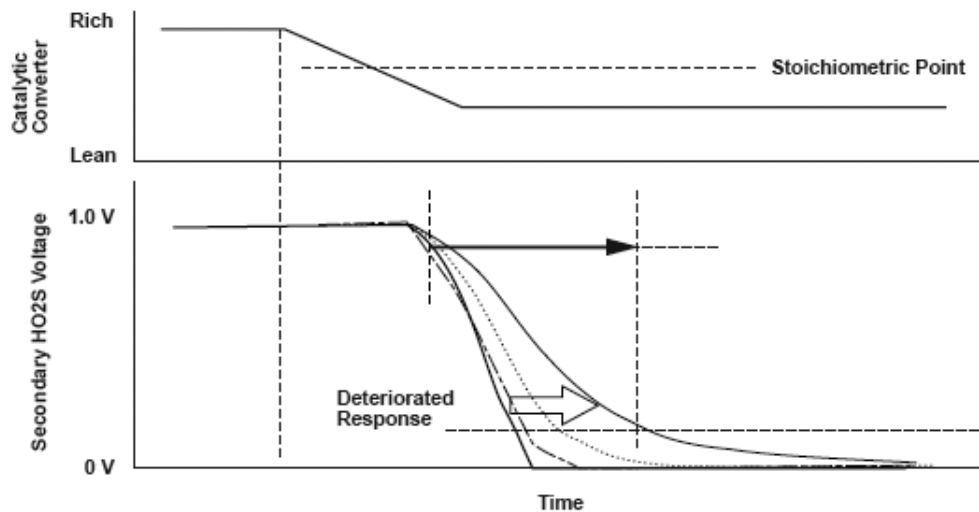
DTC P0139 (161): ADVANCED DIAGNOSTICS

DTC P0139: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT SLOW RESPONSE



P0137-0703

Fig. 38: Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) (Slow Response) - Circuit Diagram



P0139-0570

Fig. 39: Rear Secondary Heated Oxygen Sensor Voltage Graph

General Description

The rear secondary heated oxygen sensor (HO2S) (bank 1, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The rear secondary HO2S controls the air/fuel ratio with the rear A/F sensor output voltage to optimize TWC efficiency.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

If the response time of the rear secondary HO2S becomes longer than the specified time after current to the secondary HO2S heater is applied, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20.7 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0137, P0138, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2271, P2413, P2646, P2647, P2648, P2649, P2A00	

Malfunction Threshold

1. When the rear secondary HO2S output drops to the response deterioration judgment threshold value and the response characteristics measurement is finished.

ENABLE CONDITIONS CHART

MIN	0.77 seconds
MAX	2.00 seconds

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

2. The voltage does not drop to the response deterioration judgment threshold value after a predetermined time (2.00 seconds) has elapsed.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Then, drive immediately at a steady speed of 35 mph (57 km/h) or more for at least 20.7 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

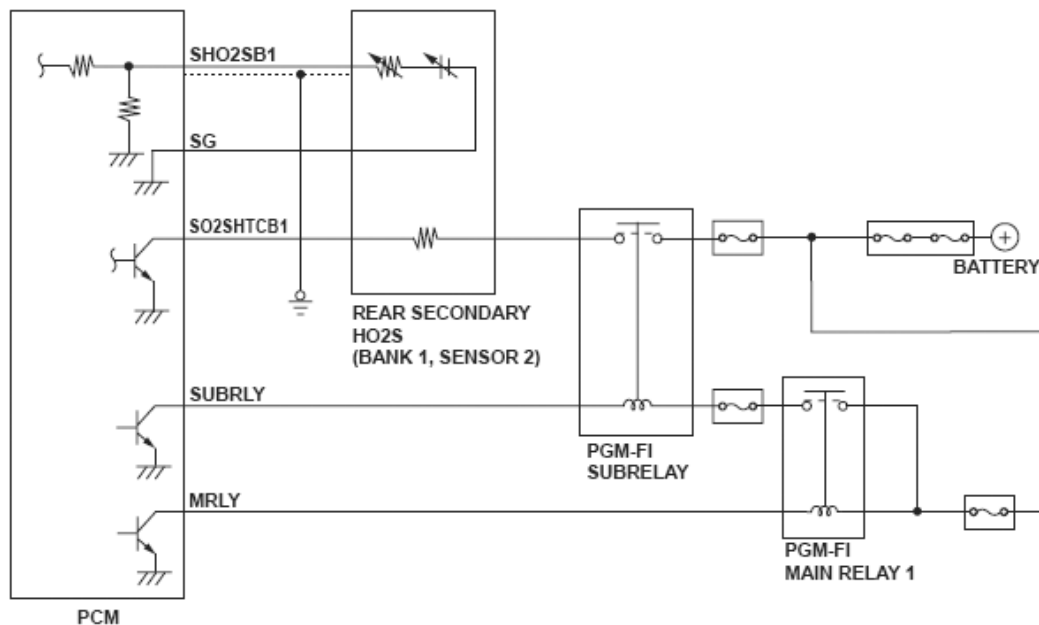
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0141 (163): ADVANCED DIAGNOSTICS

DTC P0141: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) HEATER CIRCUIT MALFUNCTION



P0137-0703

Fig. 40: Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater - Circuit Diagram

General Description

A heater for the zirconia element is embedded in the rear secondary heated oxygen sensor (secondary HO2S (bank 1, sensor 2)), and it is controlled by the powertrain control module (PCM). When activated, it heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold.

If the rear secondary HO2S heater draws more or less than a specified amperage, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage (IGP terminal of PCM)	10.5 V	16 V

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

State of the engine	Running
No active DTCs	P0117, P0118

Malfunction Threshold

The rear secondary HO2S heater output is 0.38 A or less, or 3.33 A or more, for at least 5 seconds when the heater is on.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 5 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

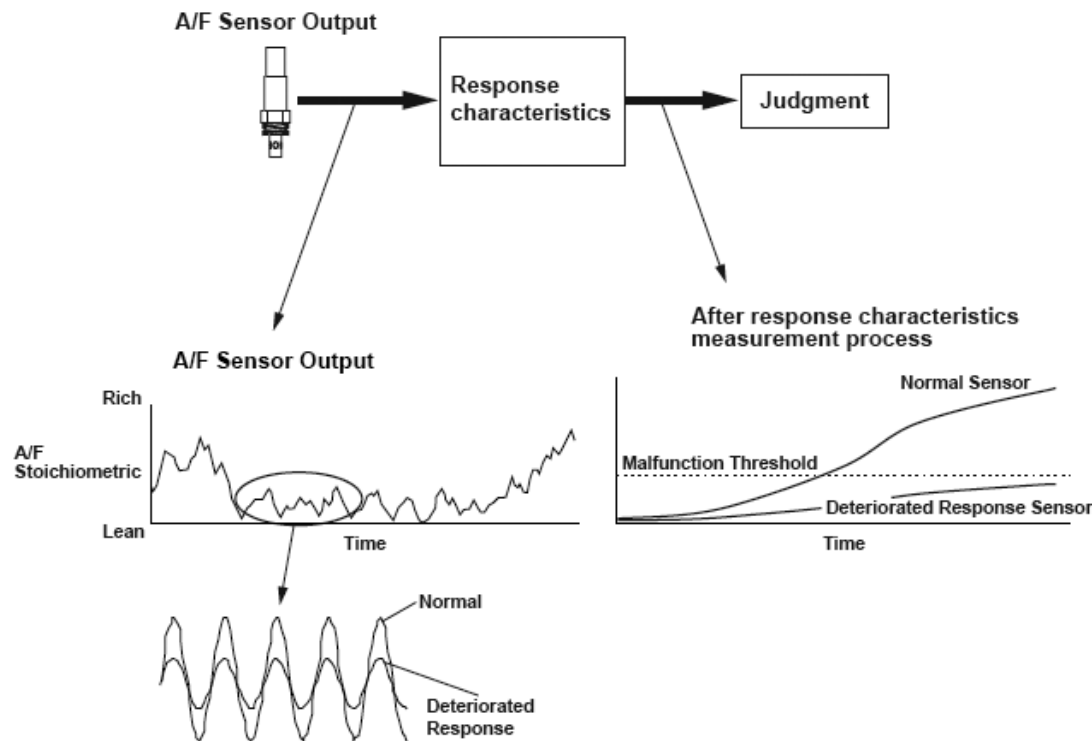
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0153 (158): ADVANCED DIAGNOSTICS

DTC P0153: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT SLOW RESPONSE



P0133-0570

Fig. 41: Front Air/Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) (Slow Response) - Communication Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses fuel feedback control to improve exhaust emissions. The PCM measures the response characteristics against the front A/F sensor output, and if the accumulated value within the specified time is less than the specified value, it detects a deteriorated response and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	6.8 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

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2008 Acura MDX

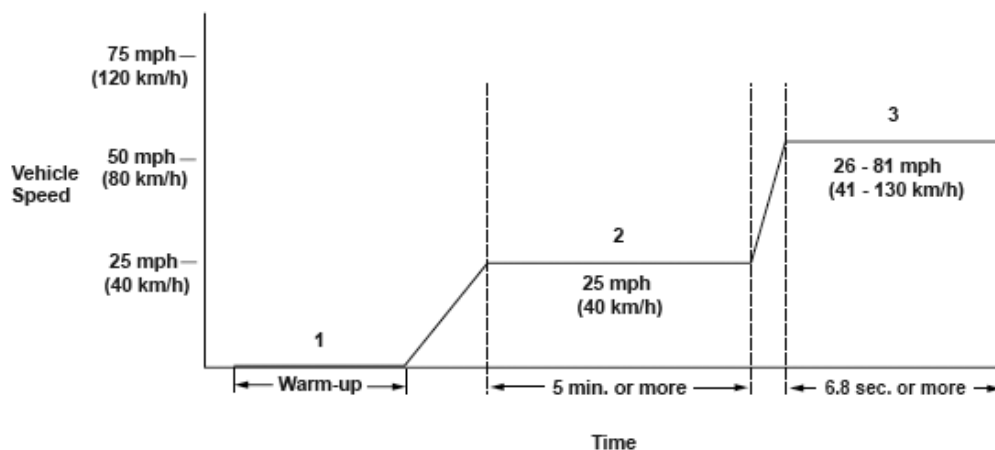
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Condition		Minimum	Maximum
Engine coolant temperature		156°F (69°C)	-
Intake air temperature		-13°F (-25°C)	-
Engine speed		1,250 rpm	2,200 rpm
MAP value	1,250 rpm	47 kPa (13.8 in.Hg, 350 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
	2,000 rpm	27 kPa (7.9 in.Hg, 200 mmHg)	
Vehicle speed		33 mph (52 km/h)	-
Fuel trim		0.73	1.47
Fuel feedback		Closed loop at stoichiometric	
Monitoring priority		P0456, P0457, P0497	
No active DTCs		P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2413, P2646, P2647, P2648M P2649, P2A03	
Others		Without excessive load change	

Malfunction Threshold

The average of up to 11 periods of the front A/F sensor (bank 2, sensor 1) inversion cycle is at least 6.8 seconds.

Driving Pattern



P0133-0851

Fig. 42: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed up to 25 mph (40 km/h), for at least 5 minutes.

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

3. Then, drive immediately at a steady speed between 26 - 81 mph (41 - 130 km/h) for at least 6.8 seconds.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

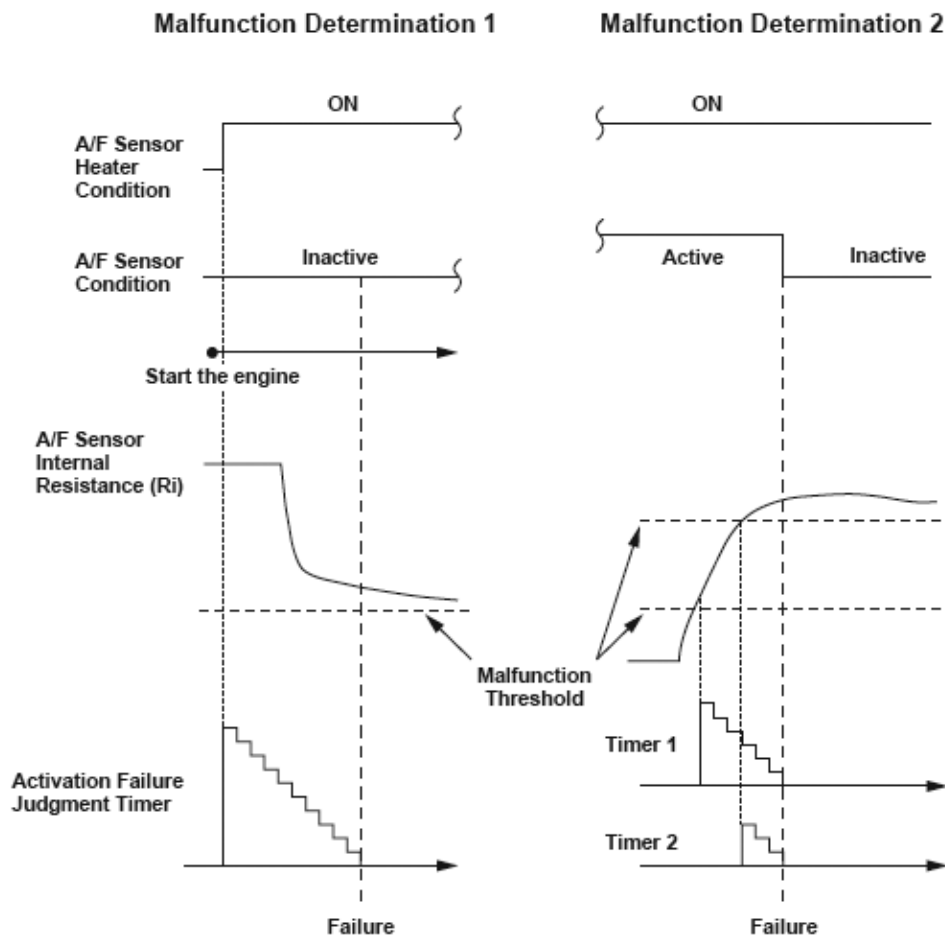
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0154 (152): ADVANCED DIAGNOSTICS

DTC P0154: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION



P0134-0670

Fig. 43: Front Air/Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater System Malfunction

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is activated by warming the element with the heater and by maintaining it at a steady high temperature to accurately calculate the air/fuel (A/F) ratio. The front A/F sensor does not become active when the element is not properly heated due to a heater malfunction, and the exhaust emissions deteriorate. The powertrain control module (PCM) monitors the front A/F sensor internal resistance.

1. When the front A/F sensor does not activate within a set time after the front A/F sensor heater starts to warm up (with high front A/F sensor internal resistance), a malfunction of the front A/F sensor heater is detected, and a DTC is stored.
2. When the front A/F sensor heater cycles ON and OFF within a set time, and the resistance remains high when the heater is ON, a malfunction in the front A/F sensor heater is detected, and a DTC is stored.

Because the effect on engine control differs according to the front A/F sensor internal resistance, there are two types of malfunction detection threshold levels. When either one is reached, a malfunction is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	40 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
Fuel feedback	Other than during fuel cut-off operation	
No active DTCs	P0155, P1174, P2197, P2240, P2241, P2247, P2249, P2254, P2255	

Malfunction Threshold

Malfunction determination 1

The front A/F sensor (bank 2, sensor 1) heater internal resistance value is 110 ohms or more for at least 40 seconds right after the engine starts.

Malfunction determination 2

- The front A/F sensor (bank 2, sensor 1) heater internal resistance value is 110 ohms or more for at least 15 seconds.
- The front A/F sensor (bank 2, sensor 1) heater internal resistance value is 200 ohms or more for at least 1 second.

Driving Pattern

Start the engine, and let it idle for at least 1 minute.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic

runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0155 (152): ADVANCED DIAGNOSTICS

DTC P0155: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION

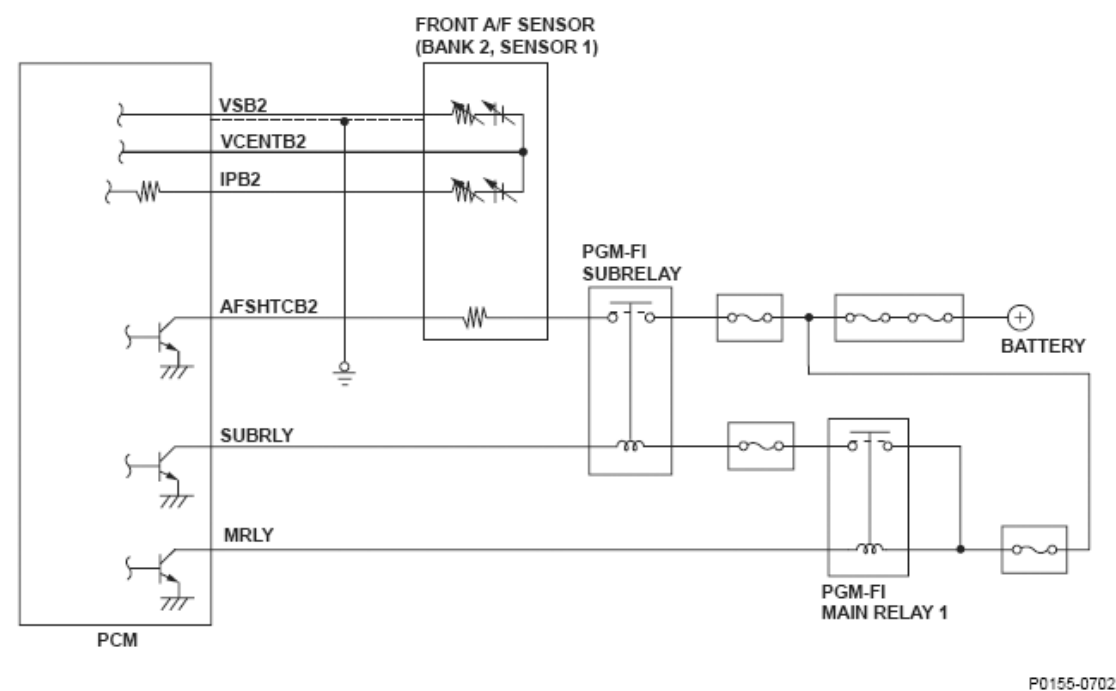


Fig. 44: Front Air/Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold, and it detects oxygen content in the exhaust gas. The front A/F sensor outputs voltage to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control. The heater is controlled by the PCM and is energized when the sensor element temperature is low. It heats the sensor to stabilize the detection of oxygen content. The PCM monitors the front A/F sensor heater output (return check). A malfunction is detected if the return signals do not meet the command value (for heater activation) in the PCM for a set time or more and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
-----------	------------

Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
Other	During front A/F sensor heater operation	

Malfunction Threshold

One of these conditions must be met for at least 2 seconds.

- No return signal "HIGH" is detected when the PCM output duty is less than 20%.
- Return signal does not change when the PCM output duty is more than 20% and less than 80%.
- No return signal "LOW" is detected when the PCM output duty is more than 80%.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

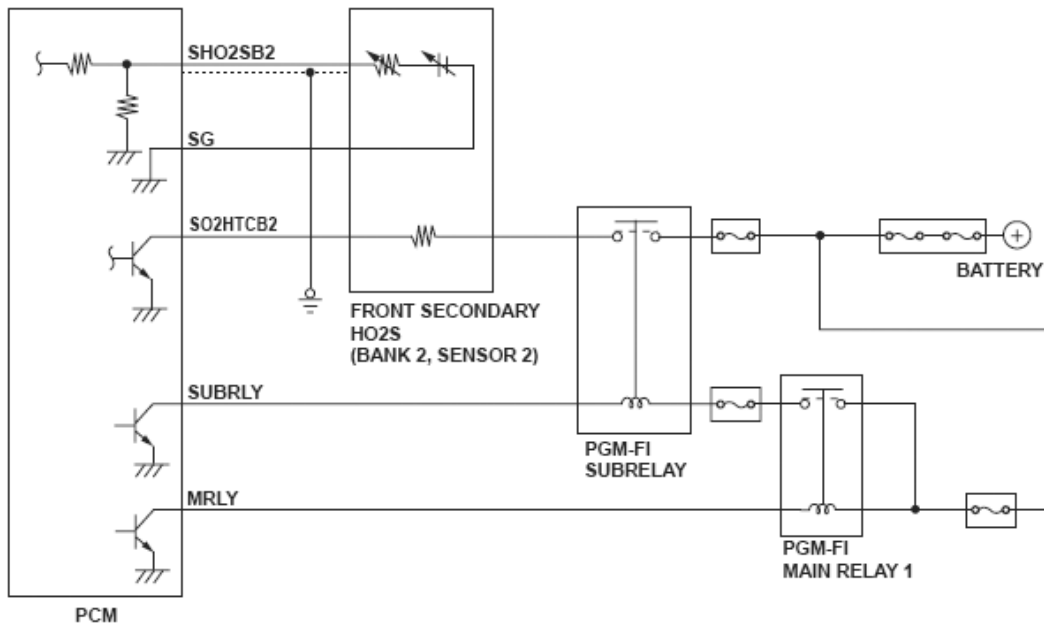
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

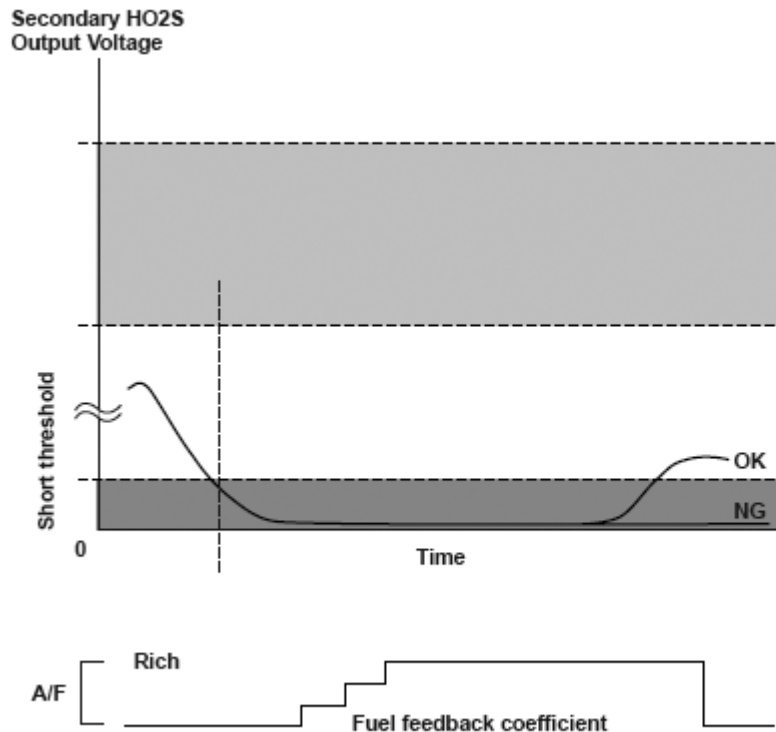
DTC P0157 (162): ADVANCED DIAGNOSTICS

DTC P0157: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT LOW VOLTAGE



P0157-0702

Fig. 45: Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) (Low Voltage) - Circuit Diagram



P0137-0570

Fig. 46: Front Secondary Heated Oxygen Sensor Voltage Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The front secondary heated oxygen sensor (HO2S) (bank 2, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The front secondary HO2S controls the air/fuel ratio from the front A/F sensor output voltage so that the TWC efficiency is optimized.

After current is applied to the front secondary HO2S heater, if the front secondary HO2S sensor output continues low (lean) during feedback control, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	40 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2413, P2646, P2647, P2648, P2649, P2A03	
Other	Other than at idle	

Malfunction Threshold

The front secondary HO2S output voltage is 0.05 V or less for at least 40 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.

2. Then, drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 1 minute.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

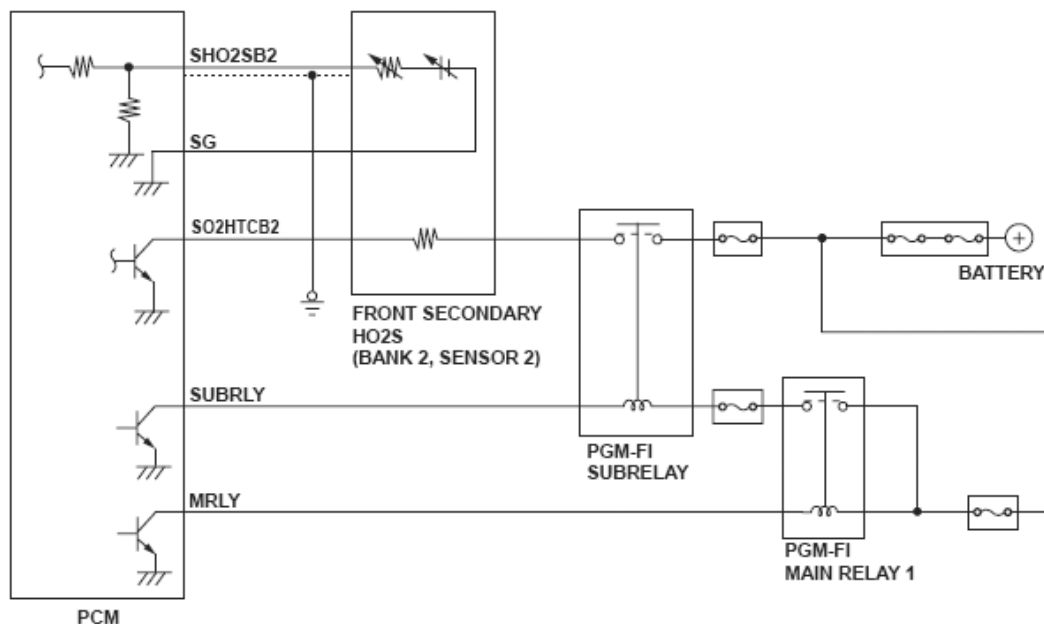
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

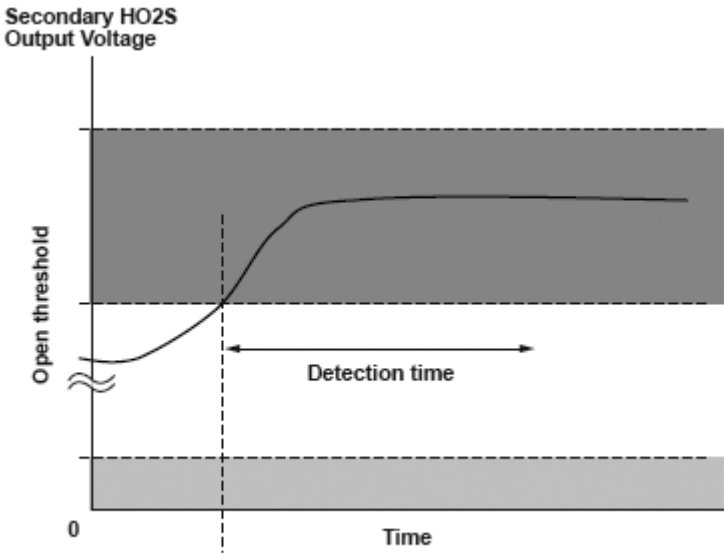
DTC P0158 (162): ADVANCED DIAGNOSTICS

DTC P0158: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT HIGH VOLTAGE



P0157-0702

Fig. 47: Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) (High Voltage) - Circuit Diagram



P0138-0570

Fig. 48: Front Secondary Heated Oxygen Sensor Voltage Graph

General Description

The front secondary heated oxygen sensor (HO2S) (bank 2, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The front secondary HO2S controls the air/fuel ratio from the front A/F sensor output voltage to optimize TWC efficiency.

After current is applied to the front secondary HO2S heater, if the front secondary HO2S sensor output continues to exceed the upper limit used during feedback control, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-

Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2413, P2646, P2647, P2648, P2649, P2A03	
Other	Other than at idle	

Malfunction Threshold

The front secondary HO2S output voltage is 1.270 V or more for at least 5 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
 2. Then, drive immediately at a steady engine speed between 1,500 - 3,000 rpm for at least 1 minute.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

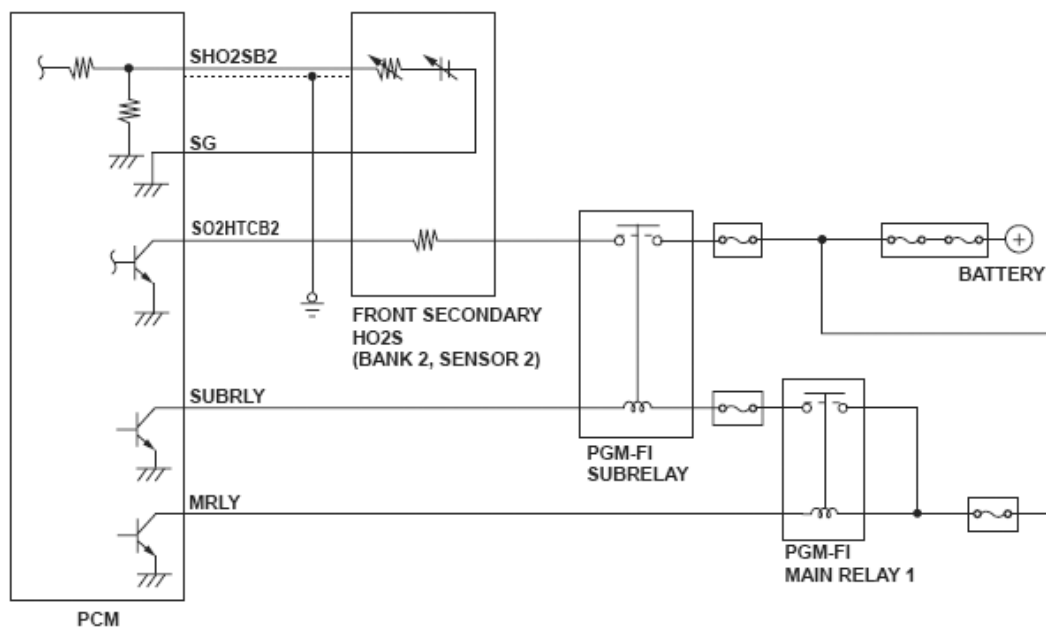
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

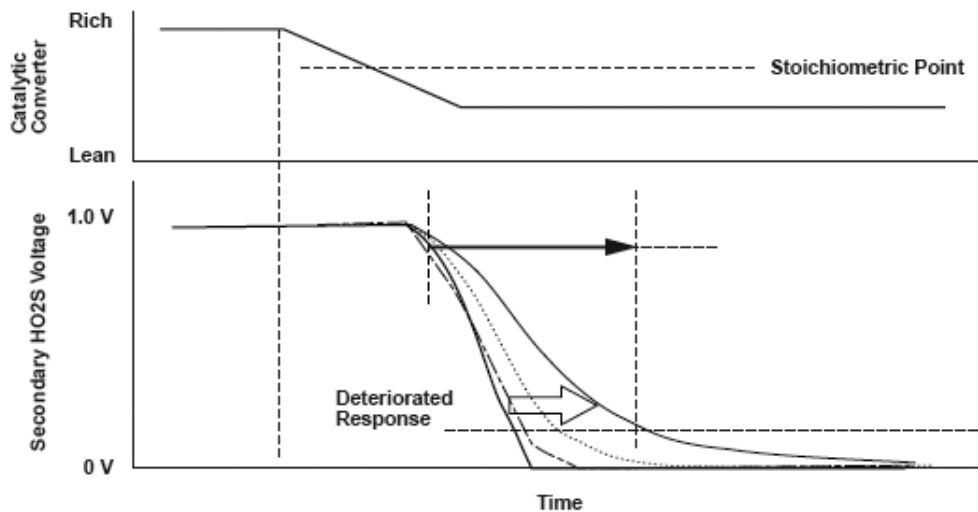
DTC P0159 (162): ADVANCED DIAGNOSTICS

DTC P0159: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT SLOW RESPONSE



P0157-0702

Fig. 49: Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) (Slow Response) - Circuit Diagram



P0139-0570

Fig. 50: Front Secondary Heated Oxygen Sensor Voltage Graph

General Description

The front secondary heated oxygen sensor (HO2S) (bank 2, sensor 2) detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC) during stoichiometric air/fuel ratio feedback control. The front secondary HO2S controls the air/fuel ratio with the front A/F sensor output voltage to optimize TWC efficiency.

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

If the response time of the front secondary HO2S becomes longer than the specified time after current to the secondary HO2S heater is applied, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20.7 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0157, P0158, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2273, P2413, P2646, P2647, P2648, P2649, P2A03	

Malfunction Threshold

- When the front secondary HO2S output drops to the response deterioration judgment threshold value and the response characteristics measurement is finished.

ENABLE CONDITIONS CHART

MIN	.77 seconds
MAX	.58 seconds

- The voltage does not drop to the response deterioration judgment threshold value after a predetermined

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

time (2.00 seconds) has elapsed.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Then, drive immediately at a steady speed of 35 mph (57 km/h) or more for at least 20.7 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

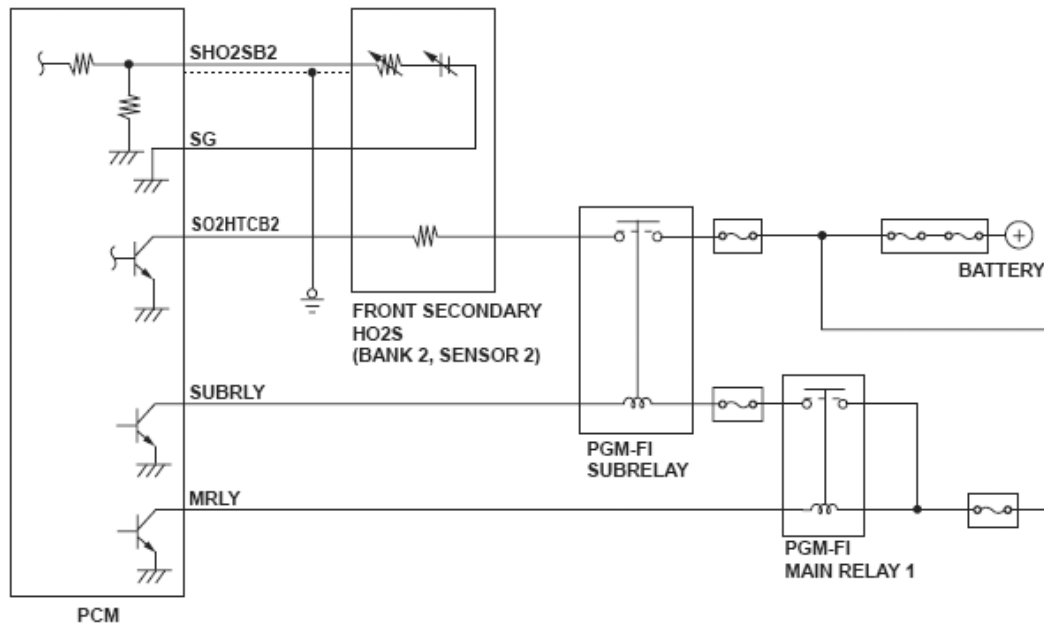
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0161 (164): ADVANCED DIAGNOSTICS

DTC P0161: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) HEATER CIRCUIT MALFUNCTION



P0157-0702

Fig. 51: Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater - Circuit Diagram

General Description

A heater for the zirconia element is embedded in the front secondary heated oxygen sensor (secondary HO2S (bank 2, sensor 2)) and is controlled by the powertrain control module (PCM). When activated, it heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold.

If the front secondary HO2S heater draws more or less than a specified amperage, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage (IGP terminal of PCM)	10.5 V	16 V

State of the engine	Running
No active DTCs P0117,	P0118

Malfunction Threshold

The front secondary HO2S heater output is 0.38 A or less, or 3.33 A or more, for at least 5 seconds when the heater is on.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 5 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0171 (153): ADVANCED DIAGNOSTICS

DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN

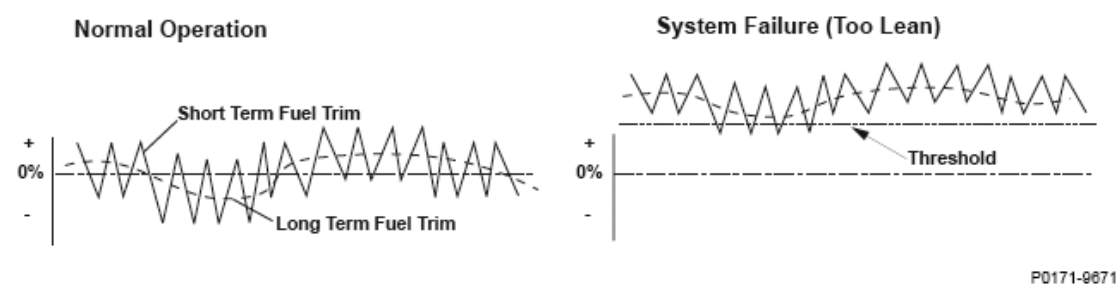


Fig. 52: Rear Bank (Bank 1) Fuel System (Too Lean) - Operation Graph

General Description

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The powertrain control module (PCM) detects the oxygen content in the exhaust gas from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions.

Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0%), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is higher than normal (too lean), a malfunction in the fuel metering components is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle ⁽¹⁾
Sequence	None
Duration	Every 7 seconds
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A
(1) The malfunction judgment is cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Engine speed	550 rpm	4,000 rpm
MAP value	20 kPa (6.0 in.Hg, 150 mmHg)	-
Fuel feedback	Closed loop	
Monitoring priority	P0420, P0430, P0456, P0457	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0137, P0138, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0404, P0443, P0496, P0497, P0627, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2271, P2413, P2646, P2646, P2647, P2647, P2648, P2649	

Malfunction Threshold

Long term fuel trim is higher than 1.188 (+18.8%).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Then, drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Pattern 2.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

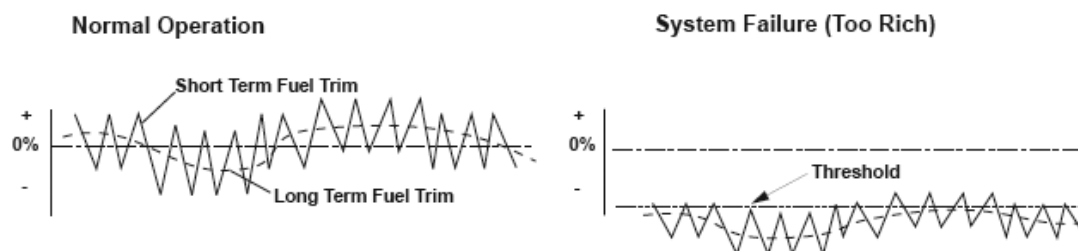
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0172 (153): ADVANCED DIAGNOSTICS

DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH



2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Fig. 53: Rear Bank (Bank 1) Fuel System (Too Rich) - Operation Graph

General Description

The powertrain control module (PCM) detects the oxygen content in the exhaust gas from the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0%), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is lower than normal (too rich), a malfunction in the fuel metering components is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle ⁽¹⁾
Sequence	None
Duration	13 seconds
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A
(1) The malfunction judgment is cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Engine speed	550 rpm	4,000 rpm
MAP value	20 kPa (6.0 in.Hg, 150 mmHg)	-
Fuel feedback	Closed loop	
Monitoring priority	P0420, P0430, P0456, P0457	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0137, P0138, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0404, P0443, P0496, P0497, P0627, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2271, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

Long term fuel trim is lower than 0.820 (-18.0%).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Then, drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Pattern 2.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

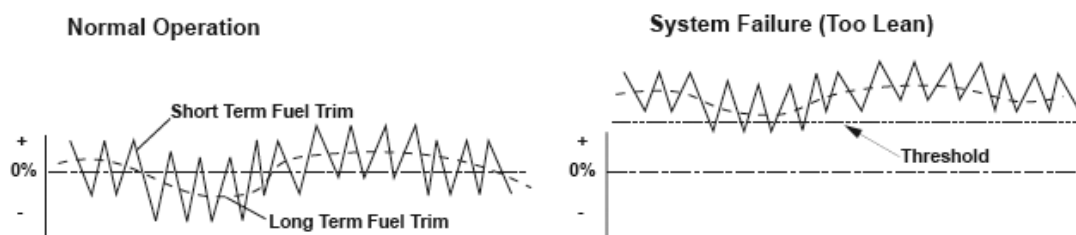
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0174 (154): ADVANCED DIAGNOSTICS

DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN



P0171-9871

Fig. 54: Front Bank (Bank 2) Fuel System (Too Lean) - Operation Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The powertrain control module (PCM) detects the oxygen content in the exhaust gas from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions.

Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0%), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is higher than normal (too lean), a malfunction in the fuel metering components is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle ⁽¹⁾
Sequence	None
Duration	Every 7 seconds
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A
(1) The malfunction judgment is cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Engine speed	550 rpm	4,000 rpm
MAP value	20 kPa (6.0 in.Hg, 150 mmHg)	-
Fuel feedback	Closed loop	
Monitoring priority	P0420, P0430, P0456, P0457	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0154, P0155, P0157, P0158, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2273, P2413, P2646, P2646, P2647, P2647, P2648, P2649	

Malfunction Threshold

Long term fuel trim is higher than 1.188 (+18.8%).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Then, drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Pattern 2.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

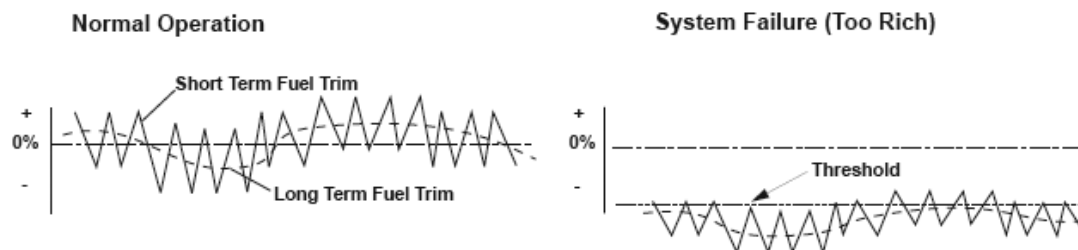
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0175 (154): ADVANCED DIAGNOSTICS

DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH



2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Fig. 55: Front Bank (Bank 2) Fuel System (Too Rich) - Operation Graph

General Description

The powertrain control module (PCM) detects the oxygen content in the exhaust gas from the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) signal voltage, and it uses fuel feedback control to maintain the optimal air/fuel ratio. The air/fuel ratio coefficient for correcting the amount of injected fuel is the short term fuel trim. The PCM varies short term fuel trim continuously to keep the air/fuel ratio close to the stoichiometric ratio for all driving conditions. Long term fuel trim is computed from short term fuel trim and is used to regulate long term deviation from the stoichiometric air/fuel ratio, which occurs when fuel metering components deteriorate with age or system failures occur. In addition, long term fuel trim is stored in the PCM memory and is used to determine when fuel metering components malfunction. When long term fuel trim is higher than normal, which is about 1.0 (0%), the amount of injected fuel must be increased, and when lower than normal, it must be decreased. If long term fuel trim is lower than normal (too rich), a malfunction in the fuel metering components is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle ⁽¹⁾
Sequence	None
Duration	13 seconds
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A
(1) The malfunction judgment is cleared when it is judged as normal under the same driving conditions in which the malfunction was detected.	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Engine speed	550 rpm	4,000 rpm
MAP value	20 kPa (6.0 in.Hg, 150 mmHg)	-
Fuel feedback	Closed loop	
Monitoring priority	P0420, P0430, P0456, P0457	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0154, P0155, P0157, P0158, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2273, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

Long term fuel trim is lower than 0.820 (-18.0%).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Then, drive at a steady speed between 15 - 75 mph (24 - 120 km/h) for at least 15 minutes, and watch the long term fuel trim. If the long term fuel trim stays at about 1.0, the vehicle is OK or it is a very minor problem. If a significant fault is still present, the long term fuel trim will move up or down while driving.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Pattern 2.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - After clearing the DTC by disconnecting the battery or using the scan tool, extend Driving Pattern 2 to 40 minutes or longer to allow time for long term fuel trim to recover.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details**Conditions for illuminating the MIL**

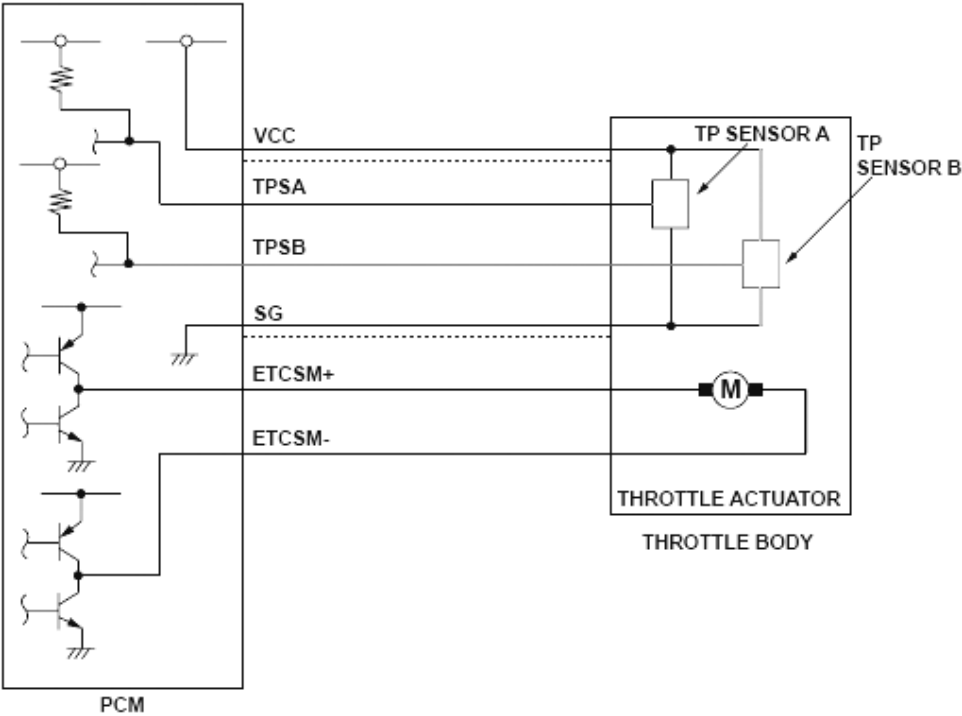
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0222 (7): ADVANCED DIAGNOSTICS**DTC P0222: THROTTLE POSITION (TP) SENSOR B CIRCUIT LOW VOLTAGE**



P0122-0503

Fig. 56: Throttle Position (TP) Sensor B (Low Voltage) - Circuit Diagram

General Description

Throttle position (TP) sensor B is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor B is transmitted to the powertrain control module (PCM) for target position feedback control. If the signal from TP sensor B is less than a fixed value for a set time, the PCM detects a TP sensor B malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0223, P2101, P2118, P2135, P2176

Malfunction Threshold

The TP sensor B output voltage is 0.3 V or less for at least 0.2 seconds.

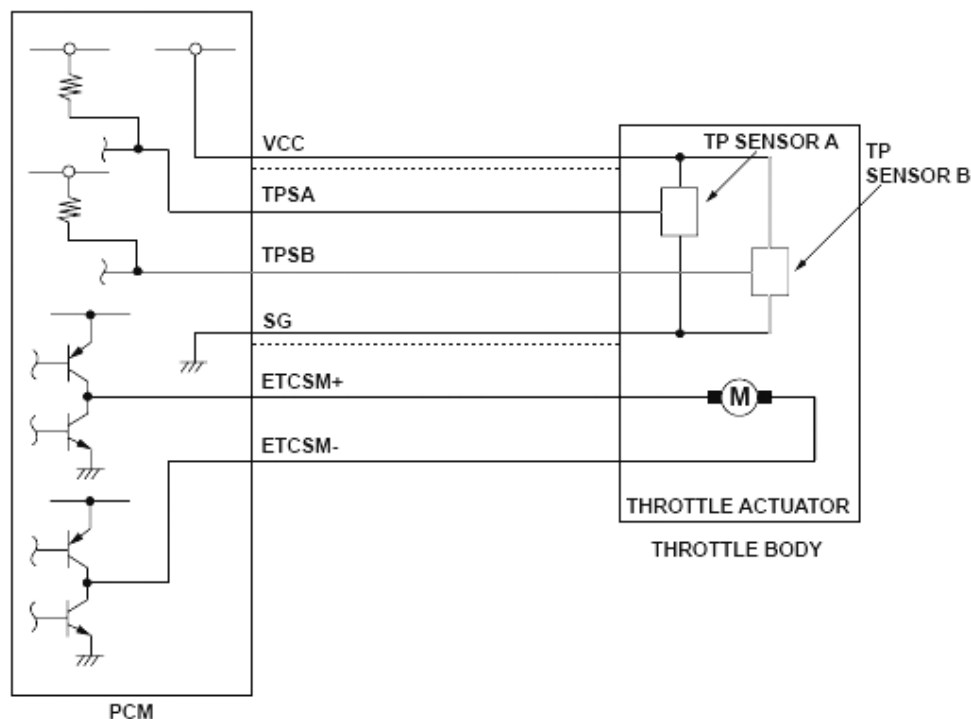
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0223 (7): ADVANCED DIAGNOSTICS**DTC P0223: THROTTLE POSITION (TP) SENSOR B CIRCUIT HIGH VOLTAGE**

P0122-0503

Fig. 57: Throttle Position (TP) Sensor B (High Voltage) - Circuit Diagram

General Description

Throttle position (TP) sensor B is a semiconductor type, and it is attached to the throttle body and shaft to determine throttle valve position. The throttle valve position signal from TP sensor B is transmitted to the powertrain control module (PCM) for target position feedback control. If the signal from TP sensor B is more than a fixed value for a set time, the PCM detects a TP sensor B malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P0222, P2101, P2118, P2135, P2176

Malfunction Threshold

The TP sensor B output voltage is 4.8 V or more for at least 0.2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0300 (77): ADVANCED DIAGNOSTICS

DTC P0300: RANDOM MISFIRE DETECTED

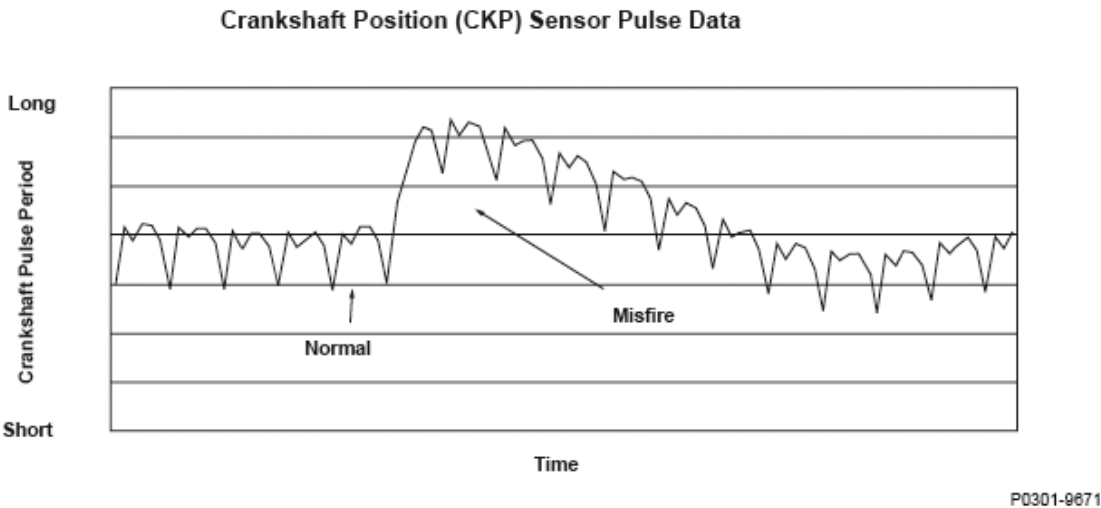


Fig. 58: Crankshaft Position Sensor Pulse Data Chart

General Description

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The powertrain control module (PCM) monitors the crankshaft rotation speed based on the output pulses from the crankshaft position (CKP) sensor. By monitoring changes in the crankshaft rotation speed, the PCM counts the number of misfires and determines which cylinder is misfiring. If more than one DTC from P0301 through P0306 has been stored while misfires in multiple cylinders are detected, a malfunction is detected and a DTC is stored.

There are two types of misfire detection.

Type 1 (1 drive cycle): When the number of misfires per 200 engine revolutions reaches the level that damages the three way catalyst (TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL remains on steady instead of blinking.

Type 2 (2 drive cycles): When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution		Continuous
Sequence		None
Duration	Type 1	Every 200 rpm
	Type 2	Every 1,000 rpm
DTC Type		Two drive cycles, MIL ON
OBD Status		PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition		Minimum	Maximum
Engine coolant temperature		14°F (-10°C) ⁽¹⁾	-
		68°F (20°C) ⁽²⁾	
Engine speed		500 rpm	6,500 rpm
MAP value ⁽³⁾	500 rpm	23 kPa (6.7 in.Hg, 169 mmHg)	-
	2,000 rpm	22 kPa (6.4 in.Hg, 163 mmHg)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs		P0107, P0108, P0117, P0118, P0122, P0122, P0123, P0123, P0222, P0223, P0335, P0339, P0385, P0389, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	
(1) When starting the engine at an engine coolant temperature of more than 14°F (-10°C).			
(2) When starting the engine at an engine coolant temperature of 14°F (-10°C) or less.			
(3) Varies with driving conditions.			

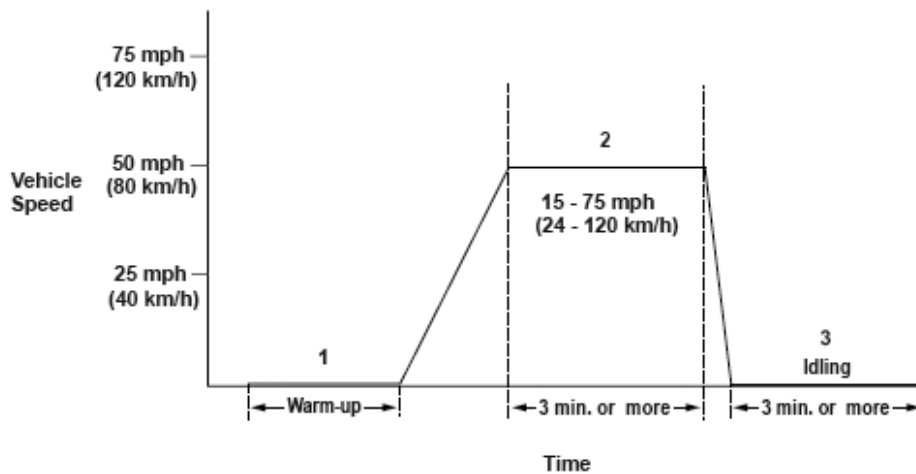
Malfunction Threshold

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

MALFUNCTION THRESHOLD CHART

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	27 - 90 times ⁽¹⁾
Misfire Type 2 (Light)	Per 1,000 revolutions	55 times
(1) Depending on engine speed and load.		

Driving Pattern



P0301-0350

Fig. 59: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
 3. Stop the vehicle, and let the engine idle for at least 3 minutes.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Patterns 2 or 3.
 - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

Misfire Type 1: Under high rpm or high load conditions: The MIL blinks once per second if a type 1 misfire (catalyst damaging) occurs, and a Temporary DTC is stored. If the type 1 misfire ceases, the MIL goes off. If a type 1 misfire occurs during the next (second) drive cycle, the MIL blinks at the first misfire occurrence, and the DTC and the freeze frame data are stored. The MIL remains on steady if the type 1 misfire ceases.

Under normal driving conditions: The MIL blinks once per second if a type 1 misfire occurs a third time, and a Temporary DTC is stored. If a type 1 misfire occurs during the next (second) drive cycle, the MIL blinks during the third type 1 misfire occurrence, and the DTC and the freeze frame data are stored. If the type 1 misfire ceases, the MIL remains on steady.

Misfire Type 2: When a type 2 misfire (emission-related but not severe enough to immediately damage the TWC) occurs within the first 1,000 engine revolutions after engine start-up, a Temporary DTC is stored.

If a type 2 misfire occurs after the first 1,000 engine revolutions after engine start-up, a Temporary DTC is

stored during the fourth type 2 misfire occurrence.

If a type 2 misfire occurs during the next (second) drive cycle, the MIL comes on, and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0301 (71), P0302 (72), P0303 (73), P0304 (74), P0305 (75), P0306 (76): ADVANCED DIAGNOSTICS

DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED

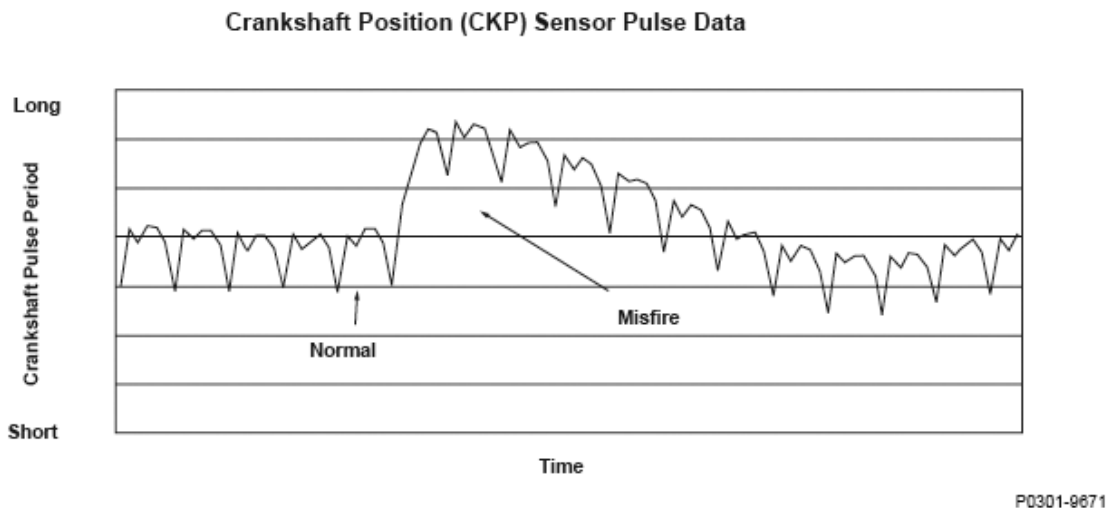


Fig. 60: Crankshaft Position Sensor Pulse Data Chart

General Description

The crankshaft vibrates slightly when each cylinder fires. If a misfire occurs, the crankshaft rotation speed changes rapidly. The powertrain control module (PCM) monitors engine misfiring based on the output pulses from the crankshaft position (CKP) sensor, counts the number of misfires, and determines which cylinder is misfiring. If a misfire is detected, a DTC is stored.

There are two types of misfire detection.

Type 1 (1 drive cycle): When the number of misfires per 200 engine revolutions reaches the level that damages the three way catalyst (TWC), a DTC is stored and the MIL blinks. When the misfire ceases, the MIL remains on steady instead of blinking.

Type 2 (2 drive cycles): When the number of misfires per 1,000 engine revolutions reaches the level that affects FTP mode exhaust emissions, a DTC is stored and the MIL comes on.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution		Continuous
Sequence		None
Duration	Type 1	Every 200 rpm
	Type 2	Every 1,000 rpm
DTC Type		Two drive cycles, MIL ON
OBD Status		PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition		Minimum	Maximum
Engine coolant temperature		14°F (-10°C) ⁽¹⁾	-
		68°F (20°C) ⁽²⁾	
Engine speed		500 rpm	6,500 rpm
MAP value ⁽³⁾	500 rpm	23 kPa (6.7 in.Hg, 169 mmHg)	-
	2,000 rpm	22 kPa (6.4 in.Hg, 163 mmHg)	-
Fuel feedback		Other than during fuel cut-off operation	
No active DTCs		P0107, P0108, P0117, P0118, P0122, P0122, P0123, P0123, P0222, P0223, P0335, P0339, P0385, P0389, P1128, P1129, P2227, P2228, P2229	
Other		Test-drive on a flat road to avoid misdetection	
(1) When starting the engine at an engine coolant temperature of more than 14°F (-10°C).			
(2) When starting the engine at an engine coolant temperature of 14°F (-10°C) or less.			
(3) Varies with driving conditions.			

Malfunction Threshold

The number of misfires versus engine revolutions is equal to or greater than the values in the table.

MALFUNCTION THRESHOLD CHART

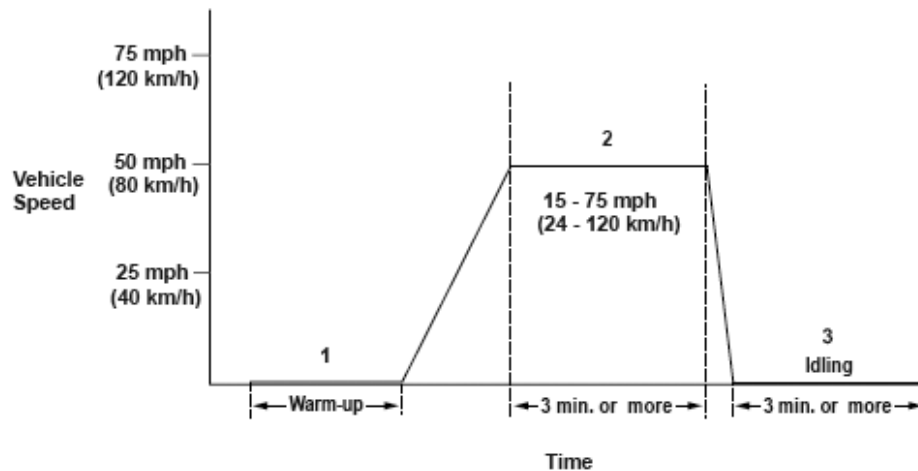
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2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Misfire Type	The number of engine revolutions	The number of misfires
Misfire Type 1 (Severe)	Per 200 revolutions	27 - 90 times ⁽¹⁾
Misfire Type 2 (Light)	Per 1,000 revolutions	55 times
(1) Depending on engine speed and load.		

Driving Pattern



P0301-0350

Fig. 61: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 3 minutes.
 3. Stop the vehicle, and let the engine idle for at least 3 minutes.
- When freeze frame data is stored, drive the vehicle under those conditions instead of Driving Patterns 2 or 3.
 - When you have difficulty duplicating the DTC because of road conditions and traffic situations, repeat the driving pattern several times.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

Misfire Type 1: Under high rpm or high load conditions: The MIL blinks once per second if a type 1 misfire (catalyst damaging) occurs, and a Temporary DTC is stored. If the type 1 misfire ceases, the MIL goes off. If a type 1 misfire occurs during the next (second) drive cycle, the MIL blinks at the first misfire occurrence, and the DTC and the freeze frame data are stored. The MIL remains on steady if the type 1 misfire ceases.

Under normal driving conditions: The MIL blinks once per second if a type 1 misfire occurs a third time, and a Temporary DTC is stored. If a type 1 misfire occurs during the next (second) drive cycle, the MIL blinks during the third type 1 misfire occurrence, and the DTC and the freeze frame data are stored. If the type 1 misfire ceases, the MIL remains on steady.

Misfire Type 2: When a type 2 misfire (emission-related but not severe enough to immediately damage the TWC) occurs within the first 1,000 engine revolutions after engine start-up, a Temporary DTC is stored.

If a type 2 misfire occurs after the first 1,000 engine revolutions after engine start-up, a Temporary DTC is stored during the fourth type 2 misfire occurrence.

If a type 2 misfire occurs during the next (second) drive cycle, the MIL comes on, and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0325 (23): ADVANCED DIAGNOSTICS

DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION

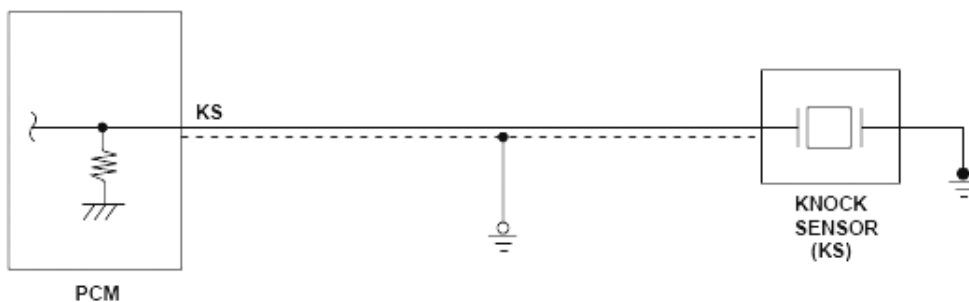


Fig. 62: Knock Sensor - Circuit Diagram

General Description

The knock sensor is mounted on the engine block and detects engine knocking. The vibrations caused by the knocking are converted into electrical signals through the piezo ceramic element. The powertrain control module (PCM) controls the ignition timing based on the electrical signals. If the signals from the knock sensor do not vary for a set time, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	2,000 rpm	-
Engine coolant temperature	140°F (60°C)	-
No active DTCs	P0117, P0118	

Malfunction Threshold

No signals from the knock sensor are detected for at least 5 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Hold the engine speed at 3,000 - 4,000 rpm for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

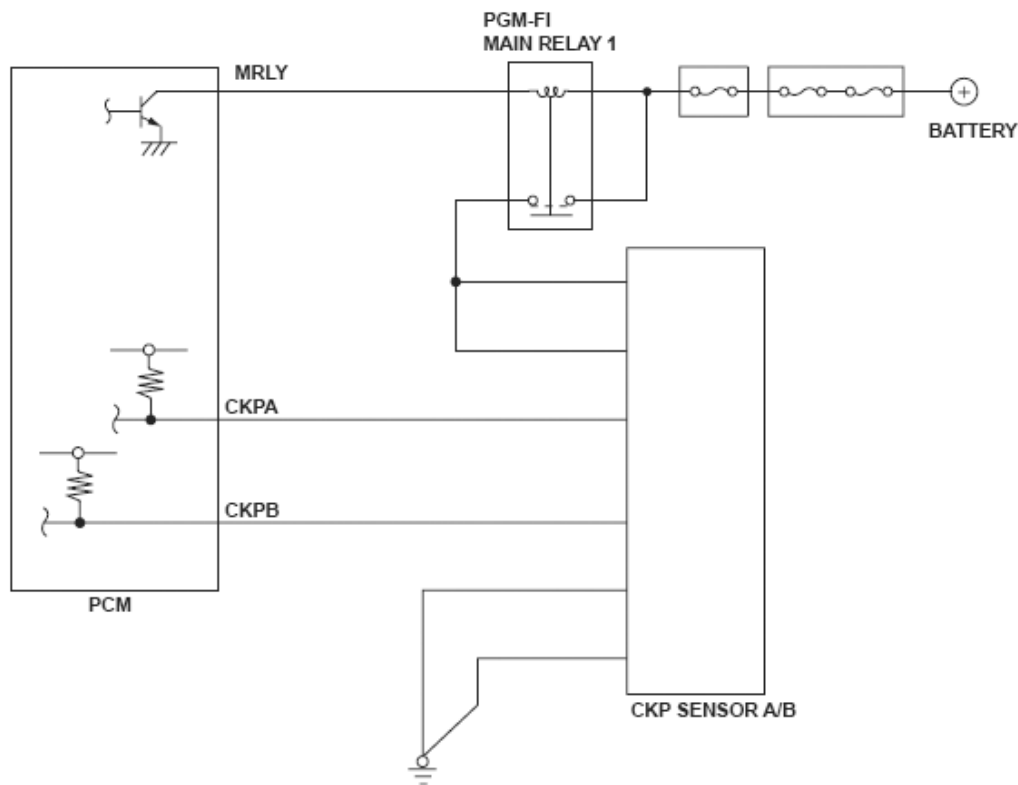
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0335 (4) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0335: CRANKSHAFT POSITION (CKP) SENSOR A NO SIGNAL (PGM-FI SYSTEM)



P0335-0702

Fig. 63: Crankshaft Position (CKP) Sensor A (No Signal) - Circuit Diagram

General Description (PGM-FI System)

Crankshaft position (CKP) sensor A consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). CKP sensor A detects injection/ignition timing for each cylinder and engine speed.

If no pulsing signals are detected from CKP sensor A, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0385, P0389

Malfunction Threshold (PGM-FI System)

No signals from CKP sensor A are detected while signals from CKP sensor B are detected 127 times in succession.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

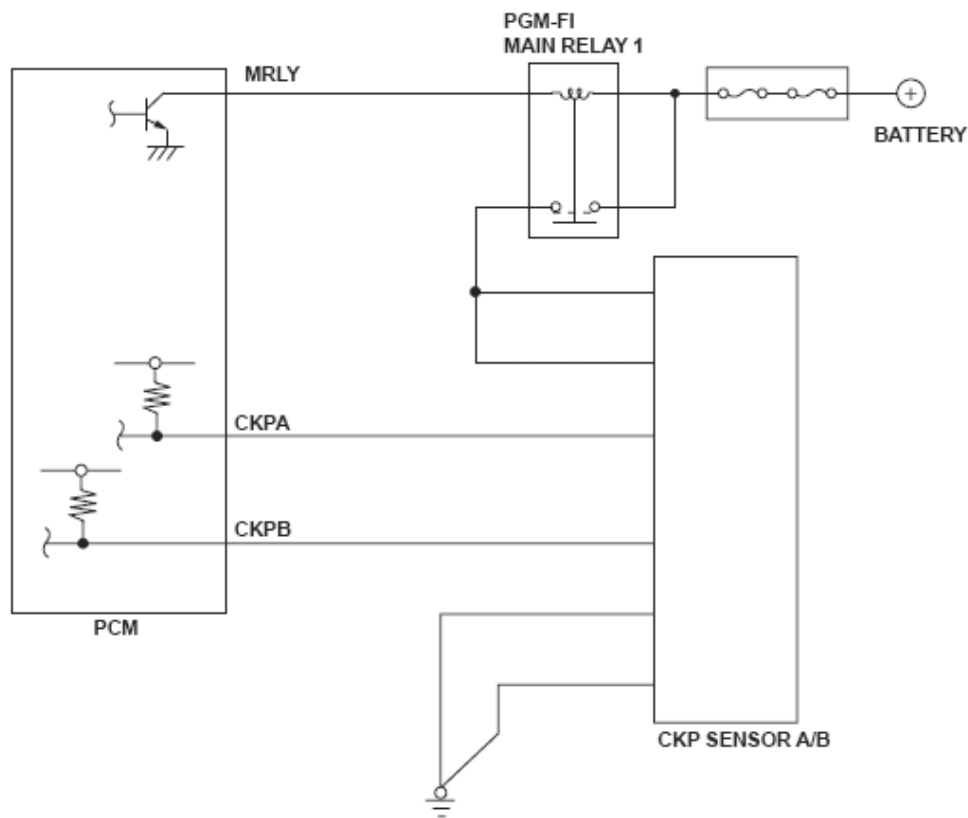
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0335 (88): ADVANCED DIAGNOSTICS

DTC P0335: CRANKSHAFT POSITION (CKP) SENSOR A NO SIGNAL (EXCEPT PGM-FI SYSTEM)



P0335-0701

Fig. 64: Crankshaft Position (CKP) Sensor A (No Signal) - Circuit Diagram

General Description (Except PGM-FI System)

The crankshaft position (CKP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). The CKP sensor detects injection/ignition timing for each cylinder and engine speed.

If no pulsing signals from the CKP sensor are detected, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more (when the engine speed is 750 rpm)
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0385

Malfunction Threshold (Except PGM-FI System)

No signals from the CKP sensor are input at least 63 times.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

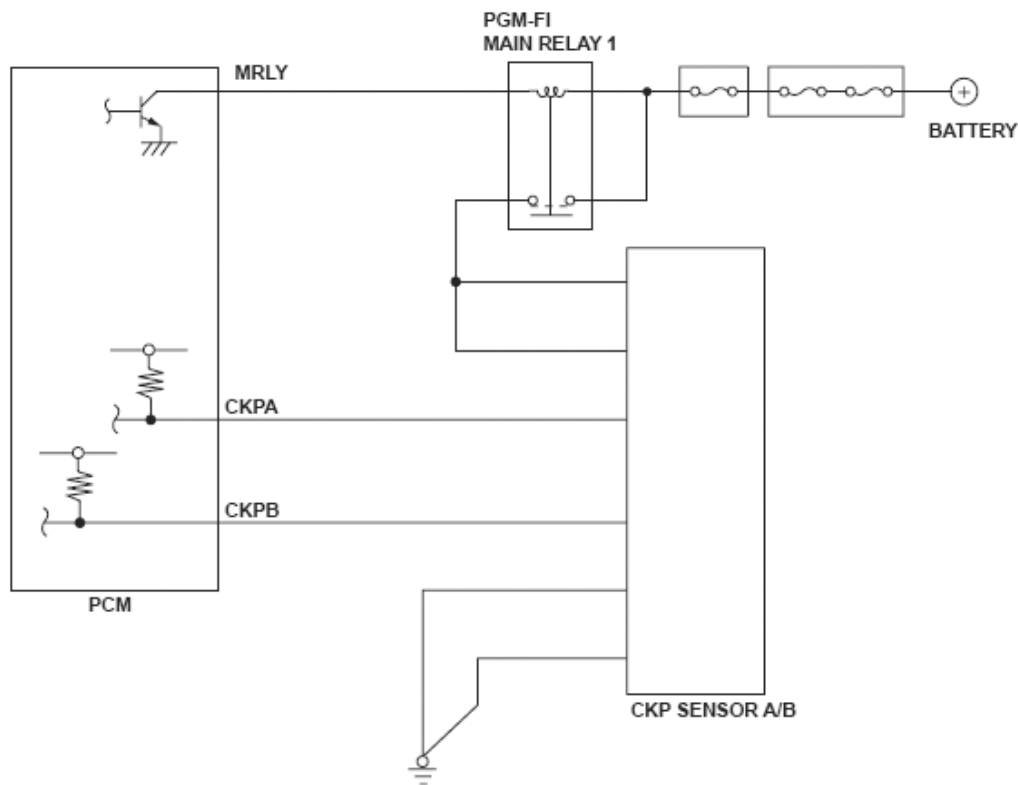
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0339 (4) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0339: CRANKSHAFT POSITION (CKP) SENSOR A CIRCUIT INTERMITTENT INTERRUPTION (PGM-FI SYSTEM)



P0335-0702

Fig. 65: Crankshaft Position (CKP) Sensor A - Circuit Diagram**General Description (PGM-FI System)**

Crankshaft position (CKP) sensor A consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). CKP sensor A detects injection/ignition timing for each cylinder and engine speed.

If an abnormal amount of pulsing signals are detected from CKP sensor A, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running

Malfunction Threshold (PGM-FI System)

Other than 22 pulses are detected during intervals between reference pulses for each crankshaft revolution. This condition has been detected at least 30 times.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

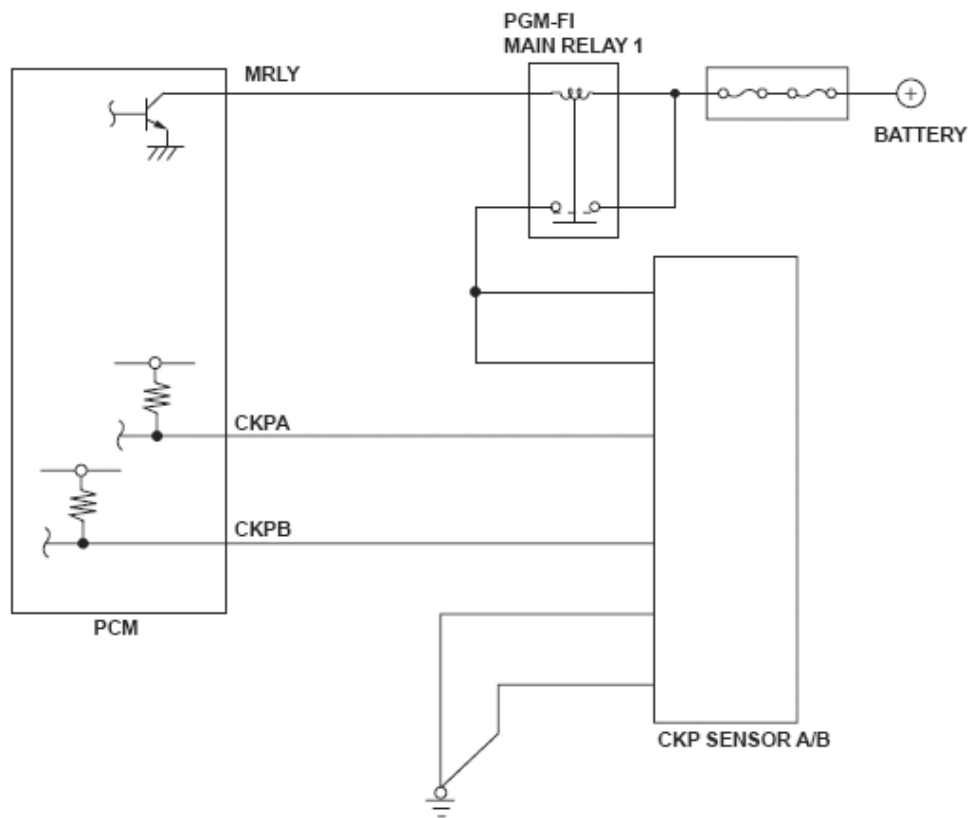
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0339 (88): ADVANCED DIAGNOSTICS

DTC P0339: CRANKSHAFT POSITION (CKP) SENSOR A INTERMITTENT INTERRUPTION (EXCEPT PGM-FI SYSTEM)



P0335-0701

Fig. 66: Crankshaft Position (CKP) Sensor A - Circuit Diagram

General Description (Except PGM-FI System)

The crankshaft position (CKP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). The CKP sensor detects injection/ignition timing for each cylinder and engine speed.

If an abnormal amount of pulsing signals from the CKP sensor are detected, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more (when the engine speed is 750 rpm)
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	400 rpm	-
No active DTCs	P0385	

Malfunction Threshold (Except PGM-FI System)

Abnormal signals from the CKP sensor are input at least 30 times.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

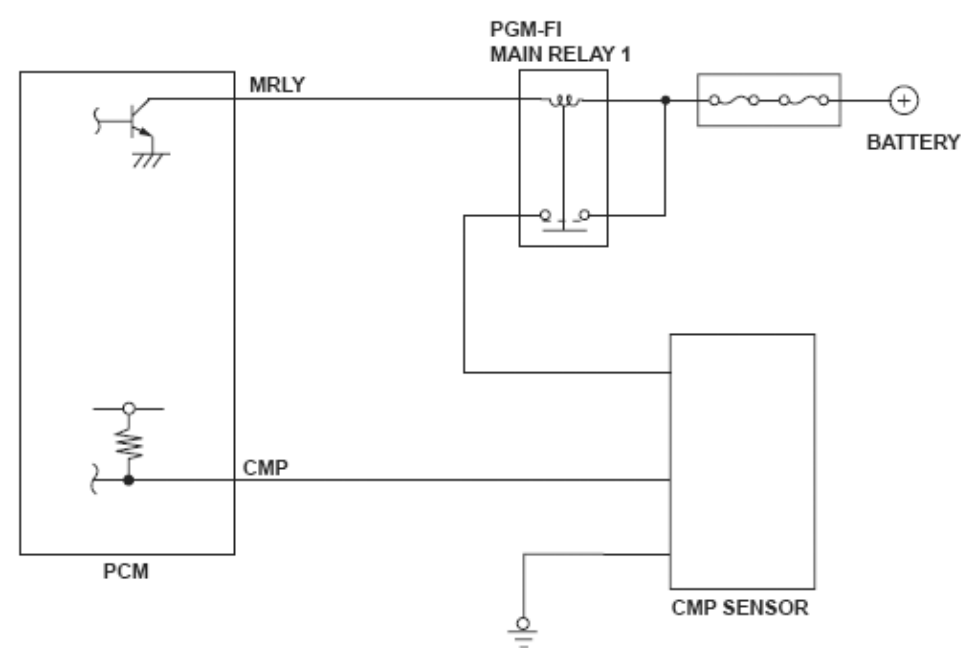
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0340 (126): ADVANCED DIAGNOSTICS

DTC P0340: CAMSHAFT POSITION (CMP) SENSOR NO SIGNAL (EXCEPT PGM-FI SYSTEM)



P0340-0703

Fig. 67: Camshaft Position (CMP) Sensor (No Signal) - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description (Except PGM-FI System)

Camshaft position (CMP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). The PCM determines the camshaft position according to the signals from the crankshaft position (CKP) sensor and the CMP sensor. If no pulsing signals are detected from the CMP sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0344

Malfunction Threshold (Except PGM-FI System)

No signals from CMP sensor are detected while signals from the CKP sensor are detected 352 times in succession.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

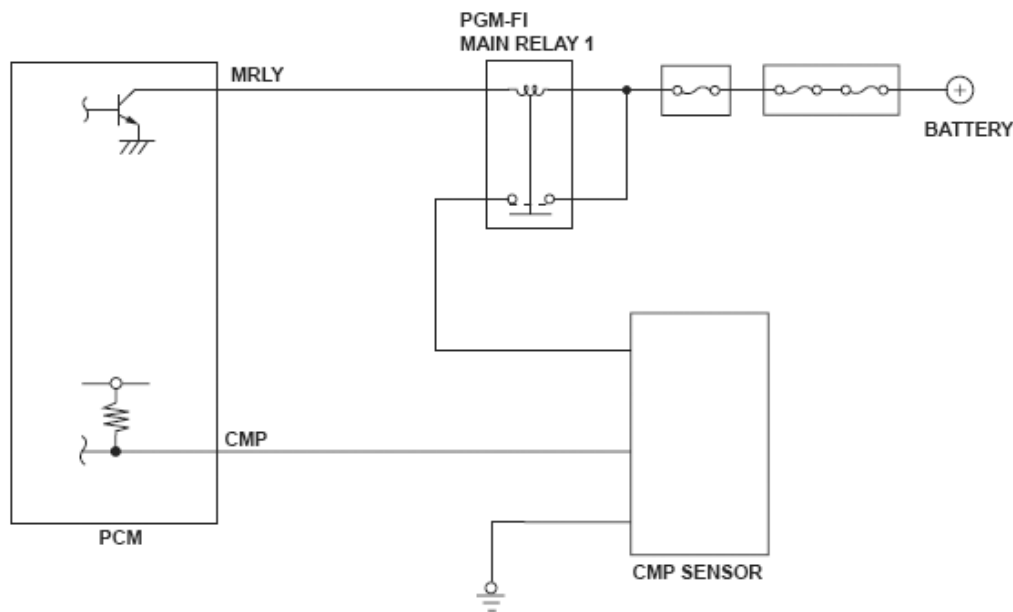
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0340 (9) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0340: CAMSHAFT POSITION (CMP) SENSOR NO SIGNAL (PGM-FI SYSTEM)



P0340-0704

Fig. 68: Camshaft Position (CMP) Sensor (No Signal) - Circuit Diagram**General Description (PGM-FI System)**

The camshaft position (CMP) sensor detects the intake camshaft timing and sends pulsing signals to the powertrain control module (PCM). The PCM determines the camshaft position according to the signals from the crankshaft position (CKP) sensor and the CMP sensor. If no pulsing signals are detected from the CMP sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)**ENABLE CONDITIONS CHART**

Condition	
State of the engine	Running

Malfunction Threshold (PGM-FI System)

No signals from CMP sensor A are detected while signals from the CKP sensor are detected 352 times in

succession.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

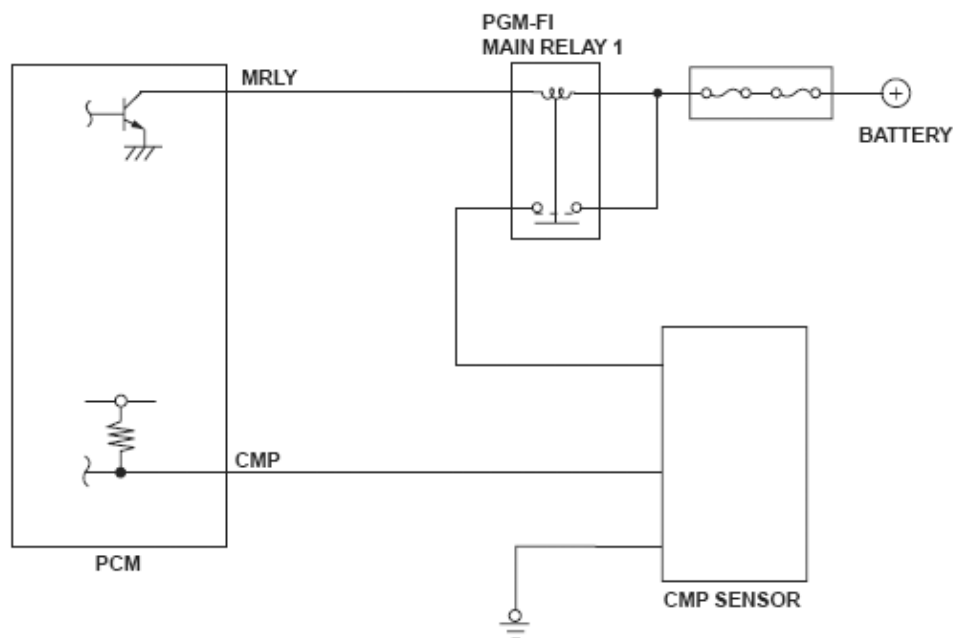
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0344 (126): ADVANCED DIAGNOSTICS

DTC P0344: CAMSHAFT POSITION (CMP) SENSOR INTERMITTENT INTERRUPTION (EXCEPT PGM-FI SYSTEM)



P0340-0703

Fig. 69: Camshaft Position (CMP) Sensor Intermittent Interruption - Circuit Diagram

General Description (Except PGM-FI System)

Camshaft position (CMP) sensor consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor device changes. The changes of

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

magnetic flux are converted into pulsing signals to the powertrain control module (PCM). The PCM determines the camshaft position according to the signals from the crankshaft position (CKP) sensor and the CMP sensor. If no pulsing signals are detected from the CMP sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0340

Malfunction Threshold (Except PGM-FI System)

More or less than two CMP sensor pulses are detected during intervals between the CKP standard pulses. This condition occurs at least 30 times.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

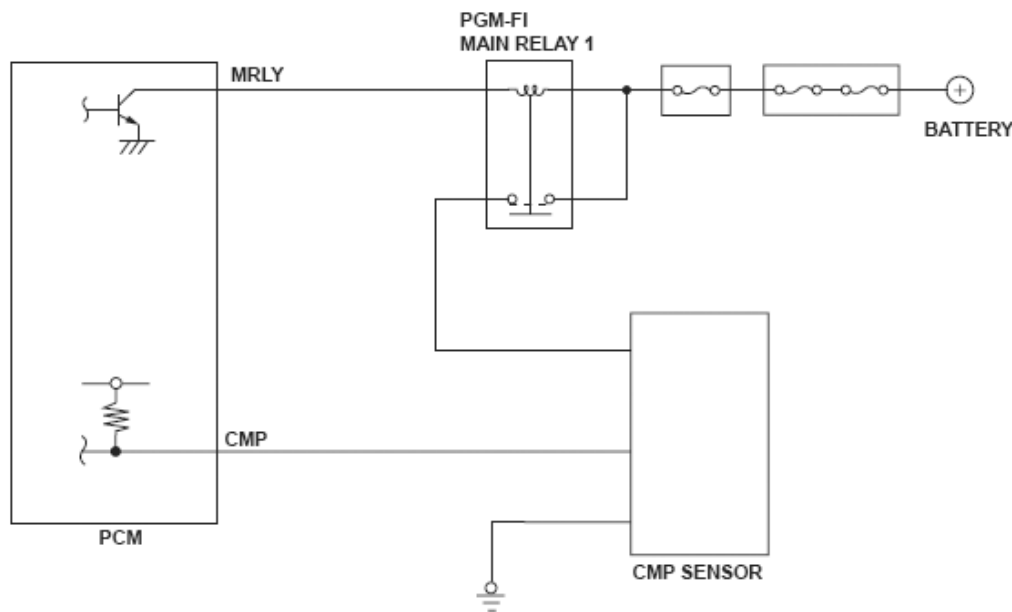
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0344 (9) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0344: CAMSHAFT POSITION (CMP) SENSOR CIRCUIT INTERMITTENT INTERRUPTION (PGM-FI SYSTEM)



P0340-0704

Fig. 70: Camshaft Position (CMP) Sensor Intermittent Interruption - Circuit Diagram**General Description (PGM-FI System)**

The camshaft position (CMP) sensor detects the intake camshaft timing and sends pulsing signals to the powertrain control module (PCM). The PCM determines the camshaft position according to the signals from the crankshaft position (CKP) sensor and the CMP sensor. If the number of pulsing signals from the CMP sensor during intervals between the CKP standard pulses is more or less than the proper number, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)**ENABLE CONDITIONS CHART**

Condition	
State of the engine	Running

Malfunction Threshold (PGM-FI System)

More or less than two CMP sensor pulses are detected during intervals between the CKP standard pulses. This condition occurs at least 30 times.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0385 (125): ADVANCED DIAGNOSTICS

DTC P0385: CRANKSHAFT POSITION (CKP) SENSOR B NO SIGNAL (EXCEPT PGM-FI SYSTEM)

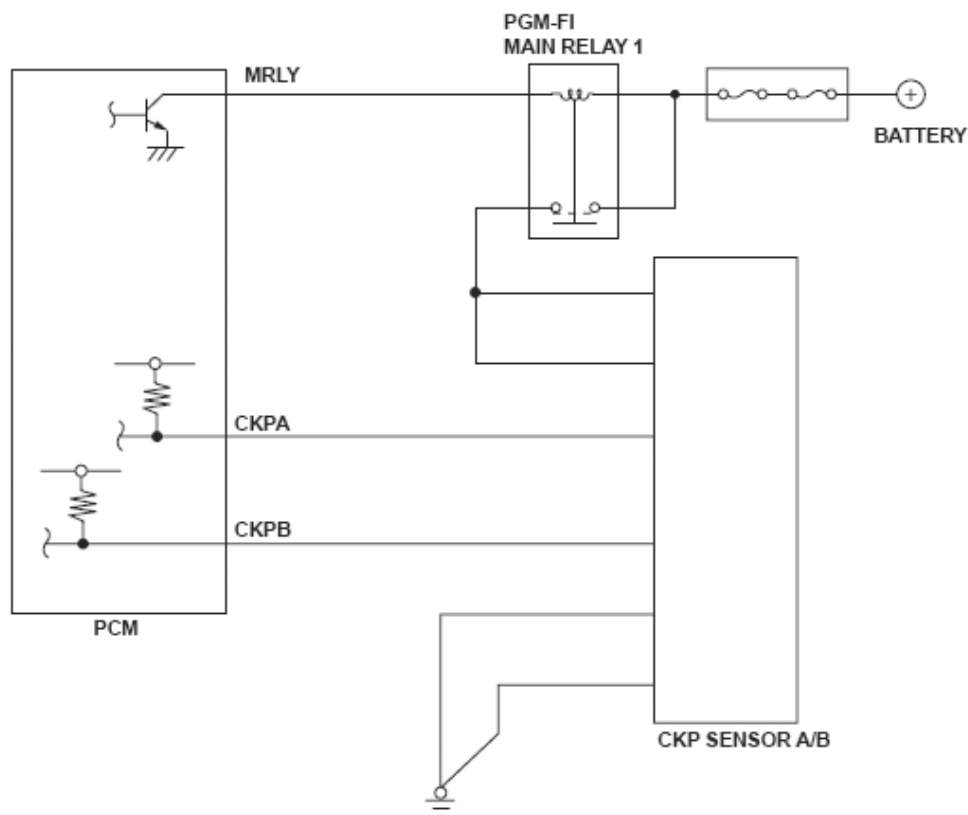


Fig. 71: Crankshaft Position (CKP) Sensor B (No Signal) - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description (Except PGM-FI System)

Crankshaft position (CKP) sensor B consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). CKP sensor B detects injection/ignition timing for each cylinder and engine speed.

If no pulsing signals are detected from CKP sensor B, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0335

Malfunction Threshold (Except PGM-FI System)

No signals from CKP sensor B are detected while signals from CKP sensor A are detected 352 times in succession.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

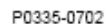
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0385 (54) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0385: CRANKSHAFT POSITION (CKP) SENSOR B NO SIGNAL (PGM-FI SYSTEM)



Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0335, P0339

Malfunction Threshold (PGM-FI System)

No signals from CKP sensor B are detected while signals from CKP sensor A are detected 352 times in succession.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0389 (125): ADVANCED DIAGNOSTICS

DTC P0389: CRANKSHAFT POSITION (CKP) SENSOR B INTERMITTENT INTERRUPTION (EXCEPT PGM-FI SYSTEM)



Fig. 73: Crankshaft Position (CKP) Sensor B Intermittent Interruption - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0335

Malfunction Threshold (Except PGM-FI System)

Other than 22 pulses are detected during intervals between reference pulses for each crankshaft revolution. This condition has been detected at least 30 times.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

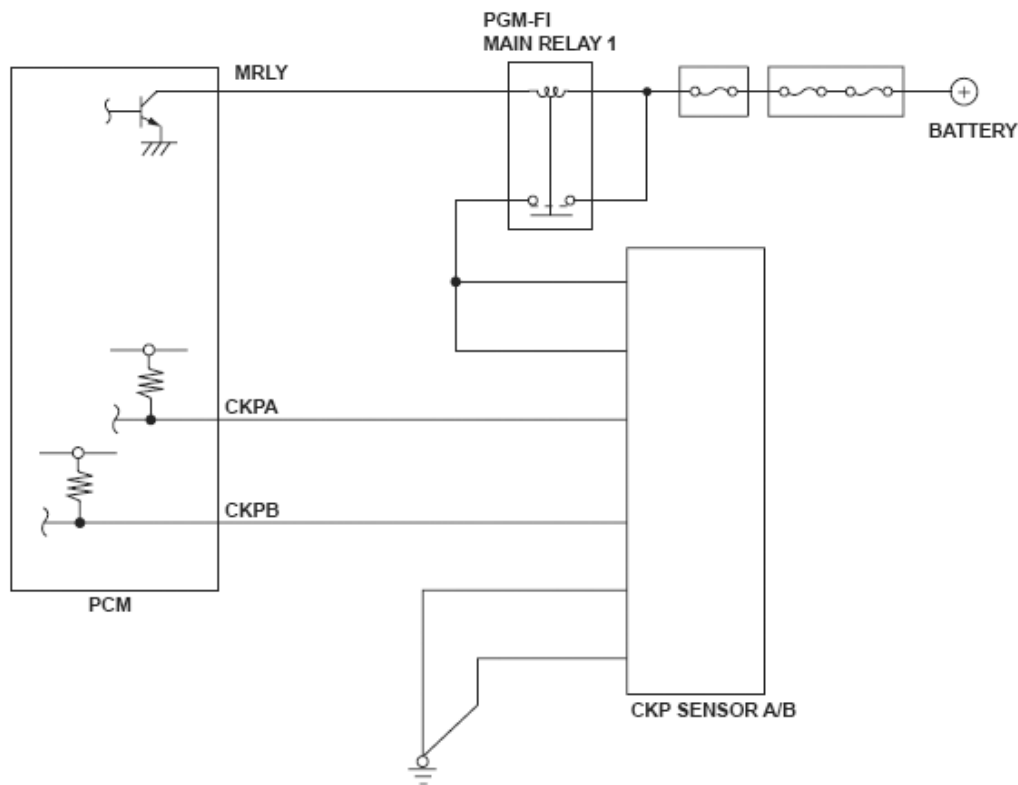
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0389 (54) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P0389: CRANKSHAFT POSITION (CKP) SENSOR B CIRCUIT INTERMITTENT INTERRUPTION (PGM-FI SYSTEM)



P0335-0702

Fig. 74: Crankshaft Position (CKP) Sensor B Intermittent Interruption - Circuit Diagram

General Description (PGM-FI System)

Crankshaft position (CKP) sensor B consists of a rotor and a semiconductor that detects rotor position. When the engine starts, the rotor turns and the magnetic flux in the semiconductor changes. The changes of magnetic flux are converted into pulsing signals to the powertrain control module (PCM). CKP sensor B detects injection/ignition timing for each cylinder and engine speed.

If an abnormal amount of pulsing signals are detected from CKP sensor B, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running

Malfunction Threshold (PGM-FI System)

Other than 22 pulses are detected during intervals between reference pulses for each crankshaft revolution. This condition has been detected at least 30 times.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

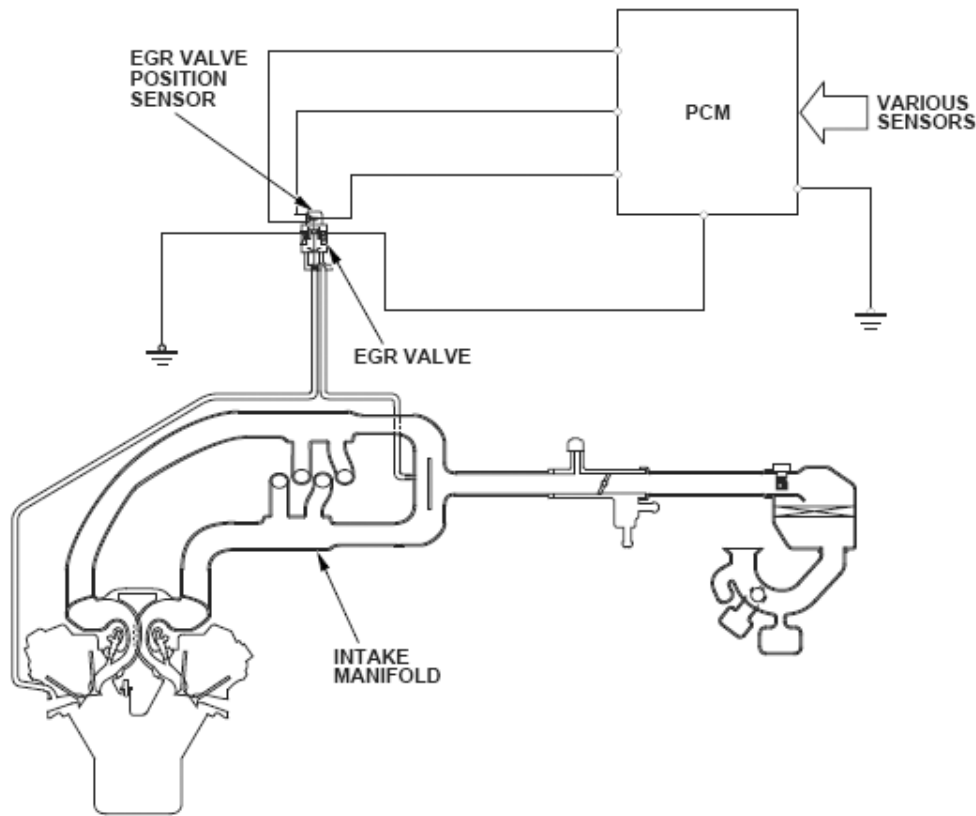
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

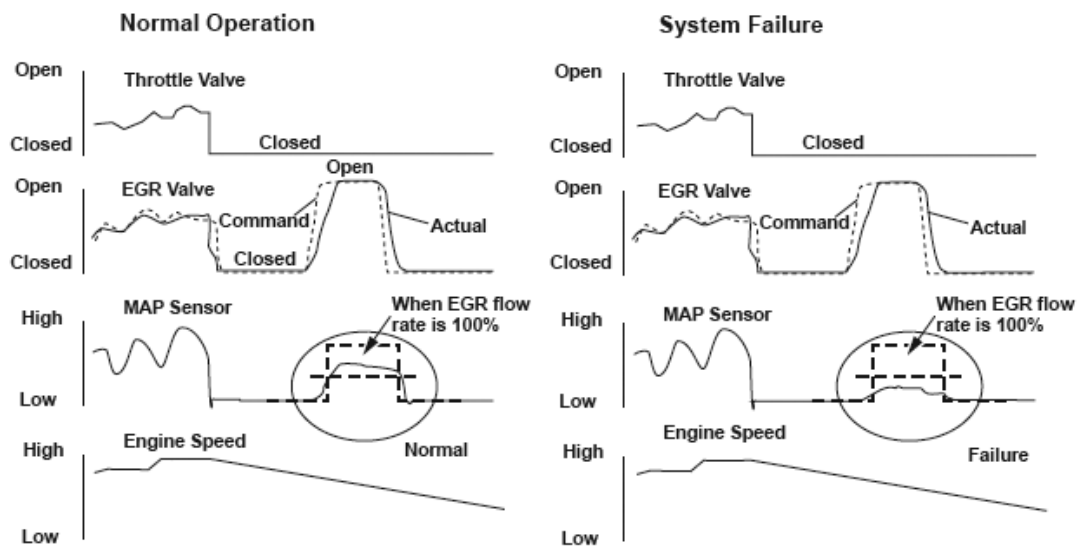
DTC P0401 (80): ADVANCED DIAGNOSTICS

DTC P0401: EXHAUST GAS RECIRCULATION (EGR) INSUFFICIENT FLOW



P0401-0772

Fig. 75: Exhaust Gas Recirculation (EGR) - System Diagram



P0401-0371

Fig. 76: Exhaust Gas Recirculation Operation Graph

General Description

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The exhaust gas recirculation (EGR) valve, which is controlled by the powertrain control module (PCM), is opened and the exhaust gas flows from the exhaust manifold through the EGR valve and the intake manifold and the EGR passage. the exhaust gas is circulated into the air/fuel mixture and the mixture is drawn into the combustion chamber to lower combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions.

The EGR flow is inspected as follows. The EGR valve is closed during deceleration with the throttle valve fully closed. Then the PCM fully opens the EGR valve. After a set time, the PCM computes the ratio of the present EGR flow to the normal EGR flow by monitoring the fluctuation of the intake manifold pressure between when the EGR valve is fully opened and when it is fully closed. If the EGR flow rate is lower than normal, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	"EGR valve insufficient lift" P0404, P2413 is OK
Duration	3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Engine speed	1,100 rpm	2,400 rpm
MAP value	14 kPa (4.0 in.Hg, 100 mmHg)	-
Vehicle speed	30 mph (48 km/h)	-
Battery voltage	10.5 V	-
Throttle position	Fully closed	
Fuel feedback	During deceleration	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0134, P0135, P0154, P0155, P0222, P0223, P0335, P0339, P0404, P0406, P0443, P0496, P0497, P0506, P0507, P1077, P1078, P1128, P1129, P1172, P1174, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2279, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

The ratio of the current EGR flow to the normal EGR flow is 15% or less.

The difference between the MAP value before and after the Enable Conditions are met is no more than the

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

values in the table. The change in pressure should occur for at least 3 seconds.

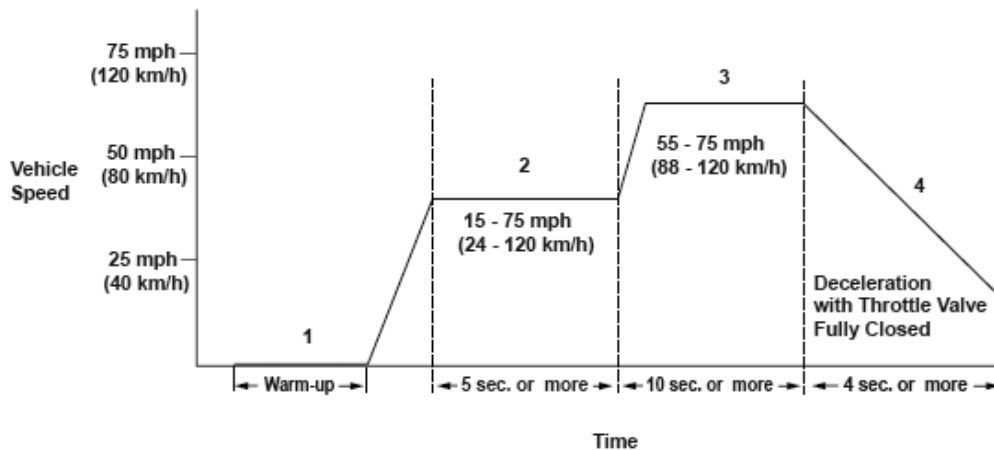
MALFUNCTION THRESHOLD CHART

Engine speed	Barometric pressure	
	52 kPa (15.4 in.Hg, 392 mmHg)	102 kPa (30.0 in.Hg, 760 mmHg)
1,100 rpm	7 kPa (2.2 in.Hg, 56 mmHg)	12 kPa (3.6 in.Hg, 93 mmHg)
2,000 rpm	3 kPa (1.1 in.Hg, 29 mmHg)	7 kPa (2.2 in.Hg, 57 mmHg)

Confirmation Procedure with the HDS

Do the EGR TEST in the INSPECTION MENU with the HDS.

Driving Pattern



P0401-0350

Fig. 77: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
 2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
 3. Then, drive at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
 4. Decelerate with the throttle valve fully closed for at least 4 seconds.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

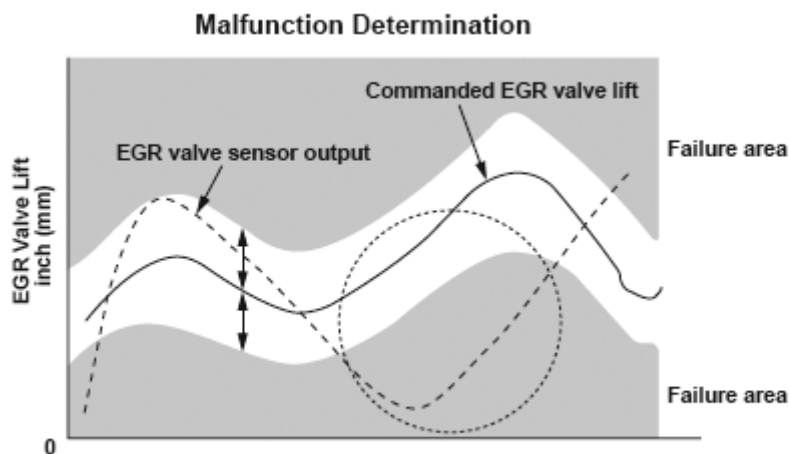
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0404 (12): ADVANCED DIAGNOSTICS

DTC P0404: EXHAUST GAS RECIRCULATION (EGR) CONTROL CIRCUIT RANGE/PERFORMANCE PROBLEM



P0404-0370

Fig. 78: Exhaust Gas Recirculation (EGR) Control Performance Graph

General Description

The exhaust gas recirculation (EGR) valve, which is controlled by the powertrain control module (PCM), is opened and the exhaust gas flows from the exhaust manifold through the EGR valve and the intake manifold and the EGR passage. The exhaust gas is circulated into the air/fuel mixture and the mixture is drawn into the combustion chamber to lower combustion temperatures, thus reducing oxides of nitrogen (NO_x) emissions.

A sensor (lift sensor) is built into the EGR valve and detects the amount of valve lift. The command value for the target valve lift is stored in the PCM so that exhaust gas recirculation can be optimized according to driving conditions.

Comparing this command value with the lift sensor output signal value, the PCM controls the EGR valve to make the amount of actual valve lift equal to the command value.

If the lift sensor output (actual valve lift) is greater than the commanded valve lift, an abnormality in the EGR valve or the lift sensor output is determined.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	-	4,400 rpm
Battery voltage	10.5 V	-
Commanded EGR valve lift	0.012 in. (0.3 mm)	-
No active DTCs	P0101, P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0406, P1128, P1129, P1172, P1174, P2195, P2197, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255	

Malfunction Threshold

The difference between the command value of the amount of EGR valve lift in the PCM and the actual amount of valve lift is 0.041 in. (1.020 mm) or more for at least 5 seconds.

Confirmation Procedure with the HDS

Do the EGR TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

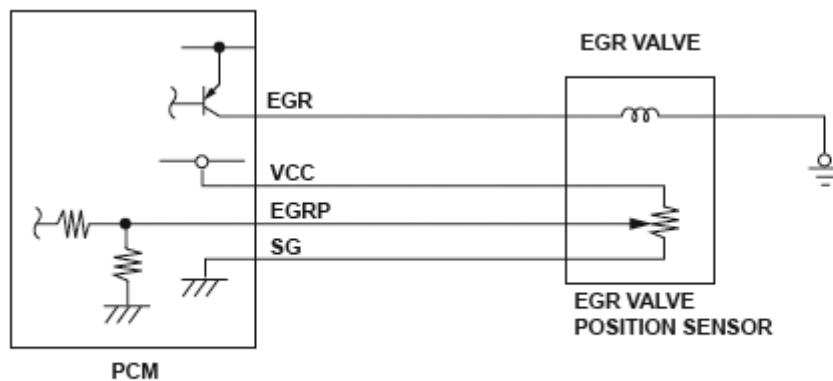
Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0406 (12): ADVANCED DIAGNOSTICS**DTC P0406: EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR CIRCUIT HIGH VOLTAGE**

P0401-0301

Fig. 79: Exhaust Gas Recirculation (EGR) Valve Position Sensor (High Voltage) - Circuit Diagram

General Description

The exhaust gas recirculation (EGR) system reduces oxides of nitrogen (NOx). NOx is generated by high combustion temperatures. The EGR system lowers peak combustion temperature by recirculating exhaust gas into the air/fuel mixture, thus reducing NOx emissions. To determine the optional amount of recirculating exhaust gas depending on driving conditions, a command value (the amount of valve lift) is stored in the powertrain control module (PCM). The EGR valve position sensor indicates the amount of valve lift, and the PCM controls the EGR valve so that the amount of actual valve lift equals the command value.

If the EGR valve position sensor output signal voltage is not within a specified value, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	2 seconds or more

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running

Malfunction Threshold

The EGR valve position sensor output voltage is 4.88 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0420 (165): ADVANCED DIAGNOSTICS

DTC P0420: REAR BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

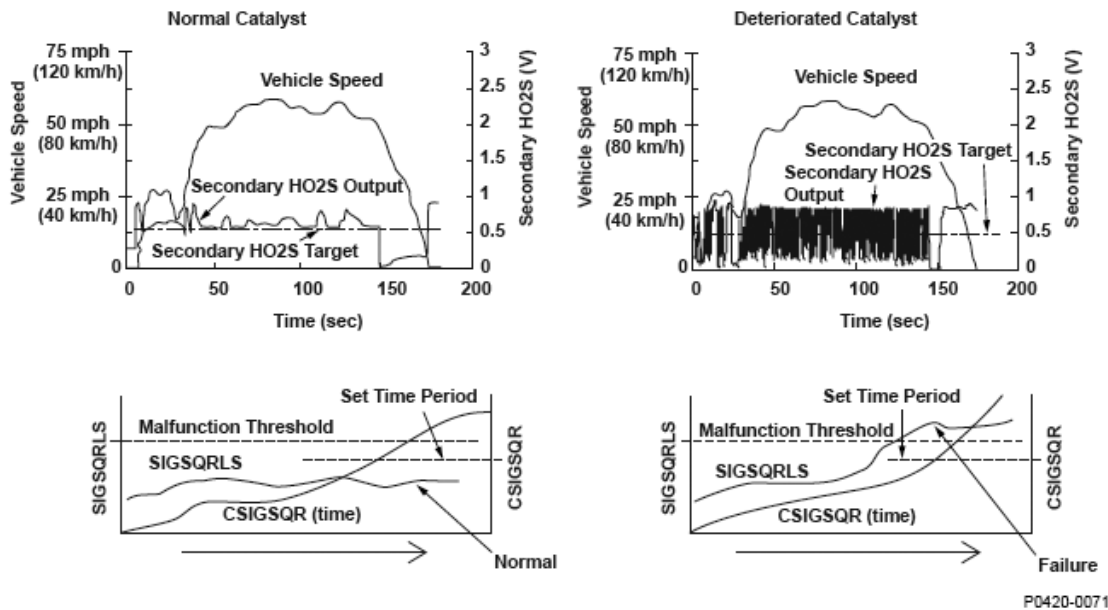


Fig. 80: Rear Bank Catalyst System Efficiency Graph

General Description

The three way catalytic converter (TWC) converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NO_x) in the exhaust gas to water vapor, carbon dioxide (CO₂), and dinitrogen (N₂).

The TWC efficiency does not depend entirely on engine conditions or the deterioration level of the TWC. It can be optimized by stabilizing the secondary HO₂S output.

If the TWC deteriorates, the air/fuel ratio downstream of the TWC (the secondary HO₂S output) often differs from the target secondary HO₂S output, and the status is represented by the parameter (SIGSQRLS).

Therefore, if the SIGSQRLS exceeds a specified value for a set time, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	102 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

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2008 Acura MDX

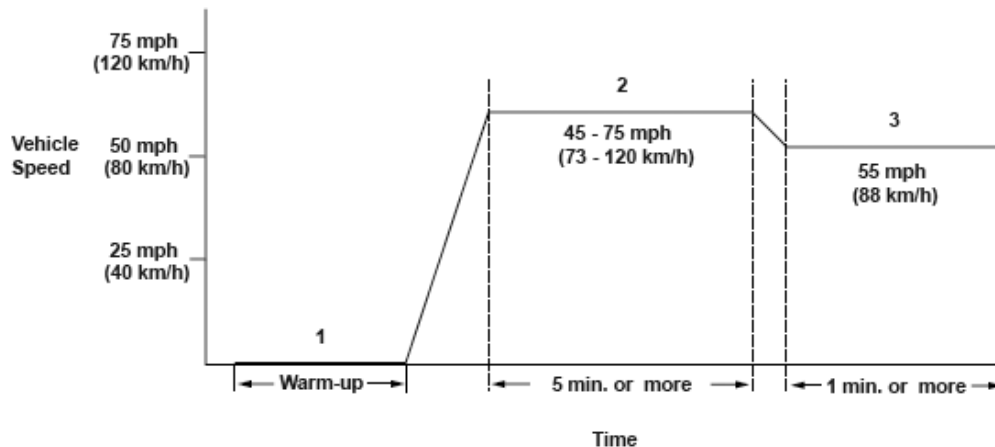
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Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Estimated TWC temperature	932°F (500°C)	-
Engine speed	1,180 rpm	2,200 rpm
MAP value	22 kPa (6.3 in.Hg, 160 mmHg)	74 kPa (22.0 in.Hg, 560 mmHg)
Vehicle speed	4 mph (5 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Monitoring priority	P0456, P0457, P0497	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0137, P0138, P0139, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2271, P2413, P2646, P2647, P2648, P2649, P2A00	

Malfunction Threshold

The number of detections is 752 (CTAGLT67) or more.

Driving Pattern



P0420-0350

Fig. 81: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 45 - 75 mph (73 - 120 km/h) for at least 5 minutes, to warm up the TWC.

3. Set a vehicle speed of 55 mph (88 km/h) on the cruise control, and drive for at least 1 minute.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0430 (166): ADVANCED DIAGNOSTICS

DTC P0430: FRONT BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2)

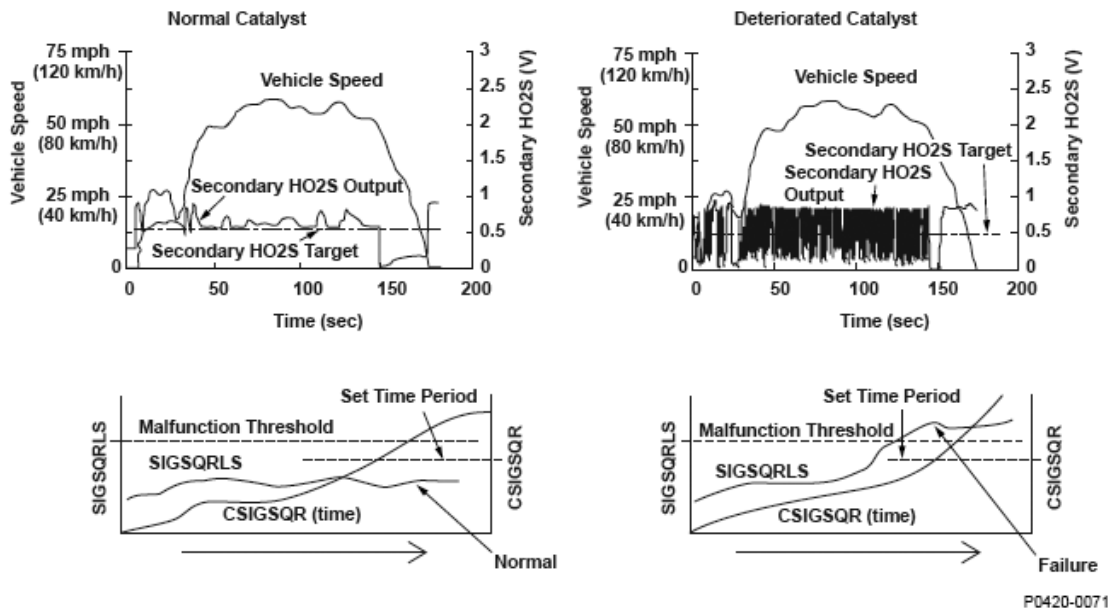


Fig. 82: Front Bank Catalyst System Efficiency Graph

General Description

The three way catalytic converter (TWC) converts hydrocarbons (HC), carbon monoxide (CO), and oxides of

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

nitrogen (NO_x) in the exhaust gas to water vapor, carbon dioxide (CO₂), and dinitrogen (N₂).

The TWC efficiency does not depend entirely on engine conditions or the deterioration level of the TWC. It can be optimized by stabilizing the secondary HO₂S output.

If the TWC deteriorates, the air/fuel ratio downstream of the TWC (the secondary HO₂S output) often differs from the target secondary HO₂S output, and the status is represented by the parameter (SIGSQRLS).

Therefore, if the SIGSQRLS exceeds a specified value for a set time, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	102 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Estimated TWC temperature	932°F (500°C)	-
Engine speed	1,180 rpm	2,200 rpm
MAP value	22 kPa (6.3 in.Hg, 160 mmHg)	74 kPa (22.0 in.Hg, 560 mmHg)
Vehicle speed	4 mph (5 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Monitoring priority	P0456, P0457, P0497	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0157, P0158, P0159, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2273, P2413, P2646, P2647, P2648, P2649, P2A03	

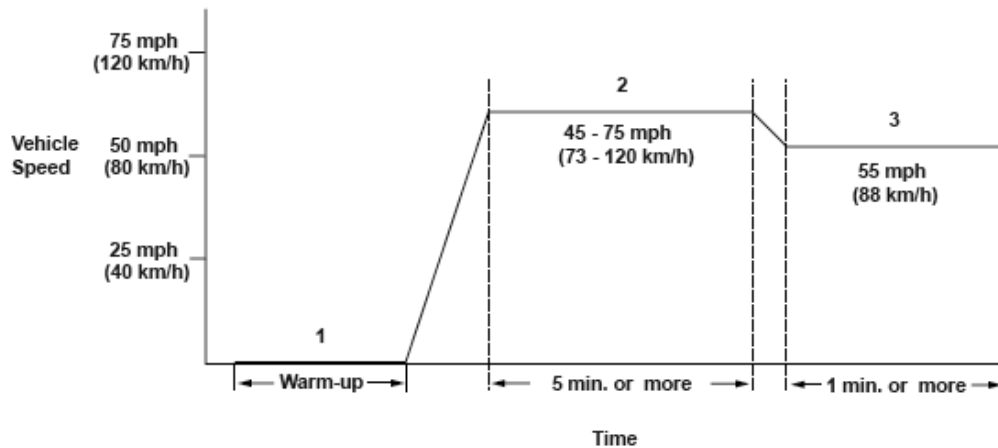
Malfunction Threshold

The number of detections is 720 (CTAGLT68) or more.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Driving Pattern



P0420-0350

Fig. 83: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 45 - 75 mph (73 - 120 km/h) for at least 5 minutes, to warm up the TWC.
3. Set a vehicle speed of 55 mph (88 km/h) on the cruise control, and drive for at least 1 minute.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

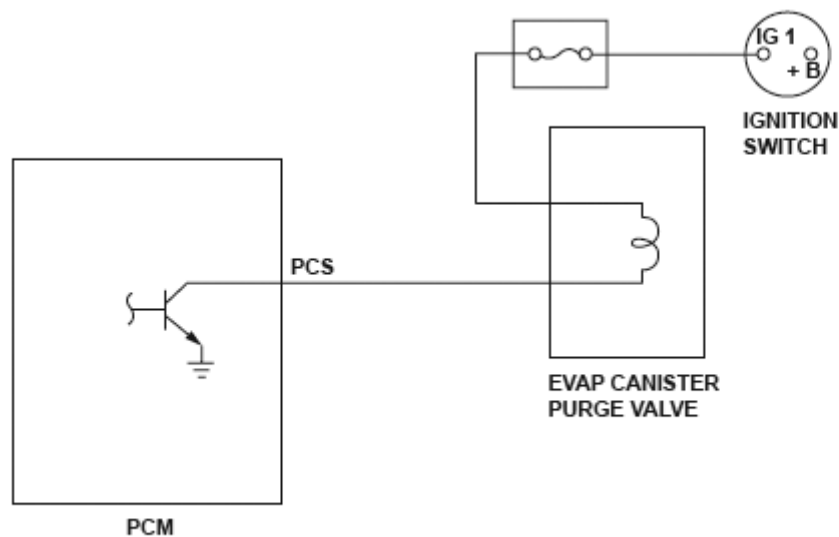
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0443 (92): ADVANCED DIAGNOSTICS

DTC P0443: EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE CIRCUIT MALFUNCTION



P0443-0301

Fig. 84: Evaporative Emission (EVAP) Canister Purge Valve - Circuit Diagram

General Description

The evaporative emission (EVAP) canister purge valve is attached to the vacuum port between the EVAP canister and the intake manifold. The powertrain control module (PCM) does not turn on the EVAP canister purge valve when the engine coolant temperature is 140°F (60°C) or less. The PCM adjusts the amount of fuel vapor sent to the engine by controlling the EVAP canister purge valve duty cycle.

When the return signal does not change according to the EVAP canister purge valve duty cycle for a set time, the PCM detects a malfunction, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
EVAP canister purge valve output duty	2 %	98 %
State of the engine	Running	

Malfunction Threshold

The return signal does not change according to the EVAP canister purge valve output for at least 5 seconds.

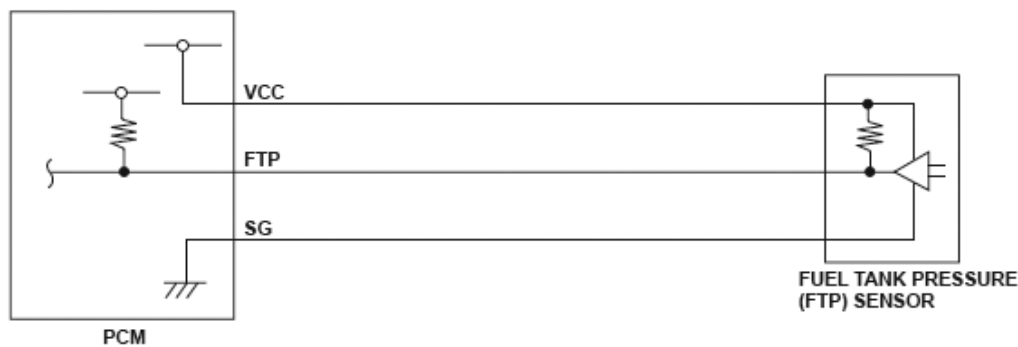
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

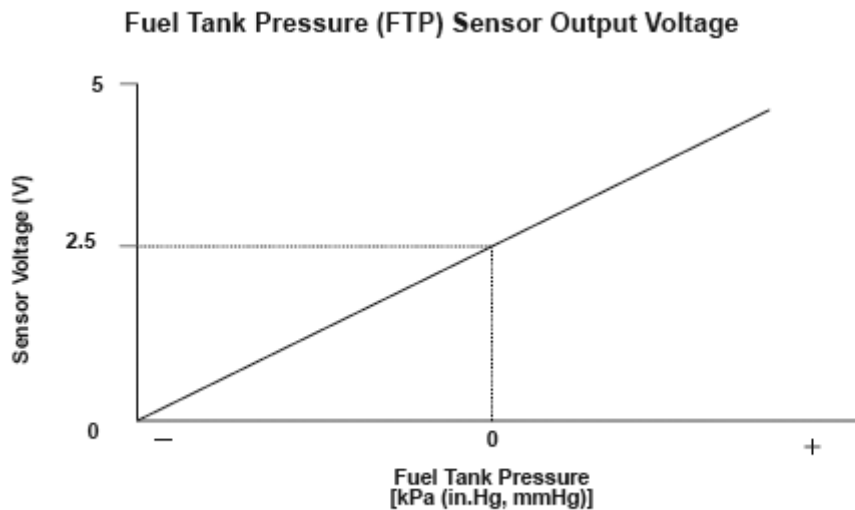
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

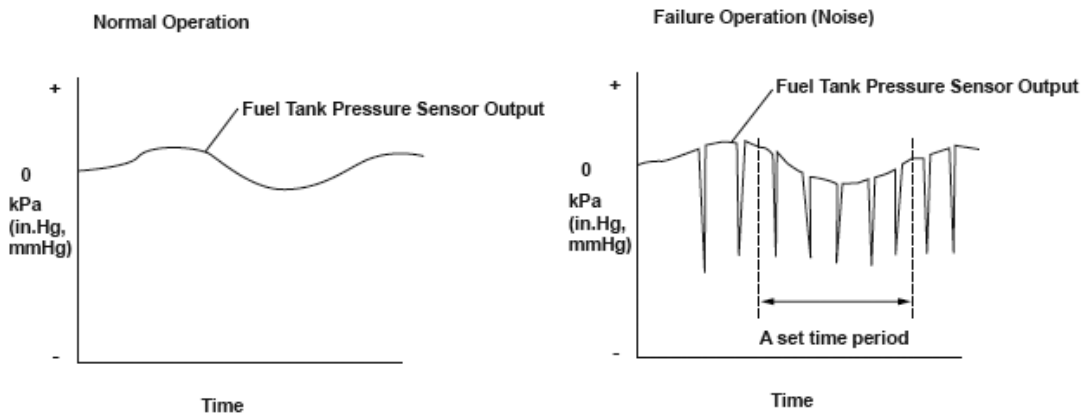
DTC P0451 (91): ADVANCED DIAGNOSTICS**DTC P0451: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM**

P0452-0302

Fig. 85: Fuel Tank Pressure (FTP) Sensor - Circuit Diagram



P0451-0670

Fig. 86: Fuel Tank Pressure (FTP) Sensor Voltage Graph

P0451-0071

Fig. 87: Fuel Tank Pressure (FTP) Sensor Operation Graph**General Description**

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister. The FTP sensor is used to detect leaks in the EVAP system. The powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. Rapid changes in the FTP sensor output voltage due to electrical noise or an intermittent open during the EVAP leak detection may cause incorrect leak detection, so abnormal output is monitored.

If the FTP sensor output voltage changes a specified number of times within a set time, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	2 seconds	-
Throttle position	Fully closed	
No active DTCs	P0122, P0123, P0222, P0223, P0452, P0453, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176	

Malfunction Threshold

The FTP sensor output fluctuates by 0.3 kPa (0.1 in.Hg, 2 mmHg) or more at least five times within 3 seconds.

Driving Pattern

Start the engine in a cold condition, and let it idle for at least 20 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

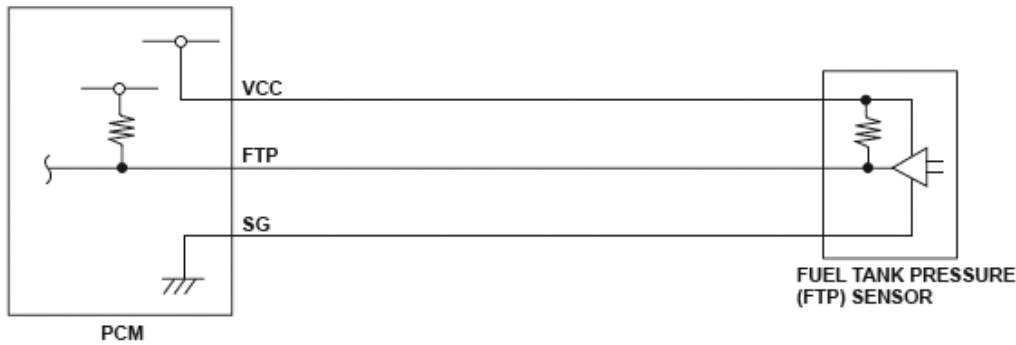
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

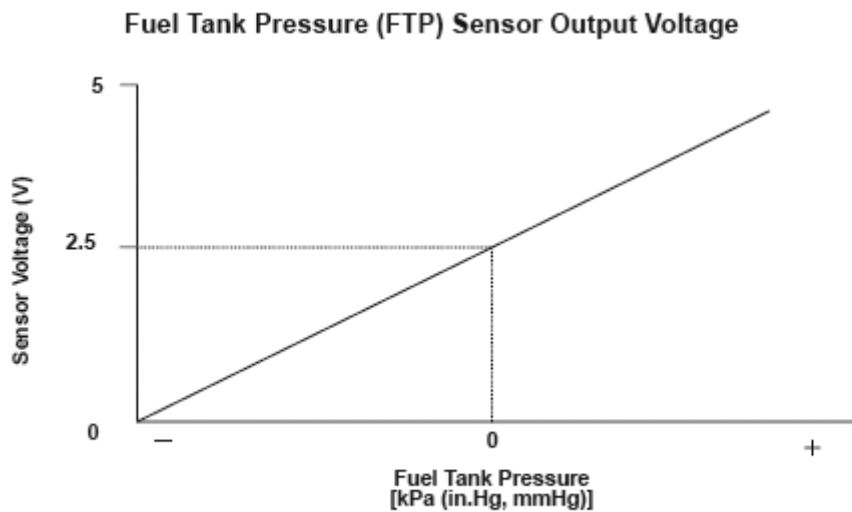
DTC P0452 (91): ADVANCED DIAGNOSTICS

DTC P0452: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT LOW VOLTAGE



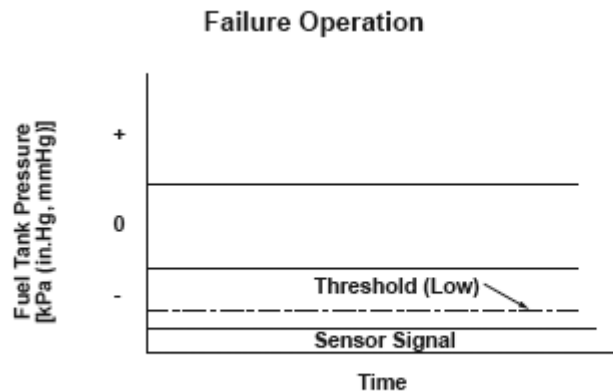
P0452-0302

Fig. 88: Fuel Tank Pressure (FTP) Sensor (Low Voltage) - Circuit Diagram



P0451-0870

Fig. 89: Fuel Tank Pressure (FTP) Sensor Voltage Graph



P0452-0870

Fig. 90: Fuel Tank Pressure (FTP) Sensor Operation Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister and detects the fuel tank pressure. The FTP sensor is used to detect leaks in the EVAP system.

The powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. If the FTP sensor output voltage does not reach a target value within a set time after starting the engine in a cold condition, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	2 seconds	-
Other	At idle	

Malfunction Threshold

The output from the fuel tank pressure sensor is less than -7 kPa (-2.1 in.Hg, -55 mmHg) for at least 3 seconds.

Driving Pattern

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

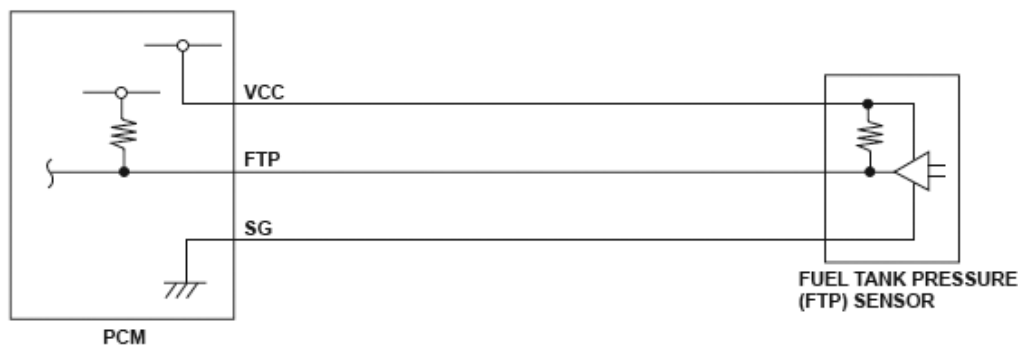
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

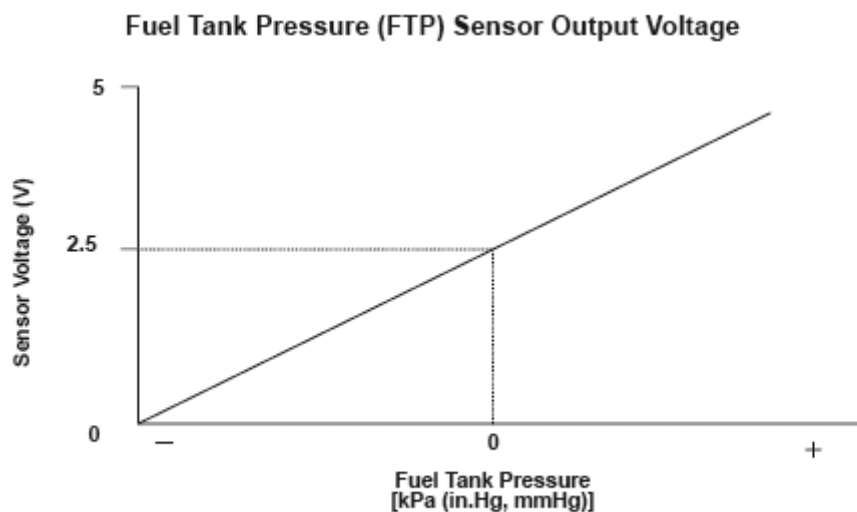
DTC P0453 (91): ADVANCED DIAGNOSTICS

DTC P0453: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT HIGH VOLTAGE



P0452-0302

Fig. 91: Fuel Tank Pressure (FTP) Sensor (High Voltage) - Circuit Diagram



P0451-0670

Fig. 92: Fuel Tank Pressure (FTP) Sensor Voltage Graph

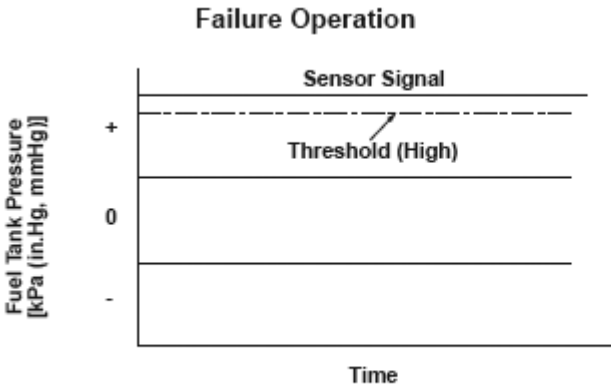


Fig. 93: Fuel Tank Pressure (FTP) Sensor Operation Graph

General Description

The fuel tank pressure (FTP) sensor is installed on the evaporative emission (EVAP) canister and detects the fuel tank pressure. The FTP sensor is used to detect leaks in the EVAP system.

The powertrain control module (PCM) monitors the FTP sensor output voltage. The FTP sensor output voltage rises as the fuel tank pressure increases. Conversely, the FTP sensor output voltage drops as the fuel tank pressure decreases. If the FTP sensor output voltage is higher than a target value within a set time after starting the engine in a cold condition, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	2 seconds	-
Other	At idle	

Malfunction Threshold

The output from the fuel tank pressure sensor is more than 8 kPa (2.2 in.Hg, 55 mmHg) for at least 3 seconds.

Driving Pattern

Start the engine in a cold condition, and let it idle until the radiator fan comes on.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

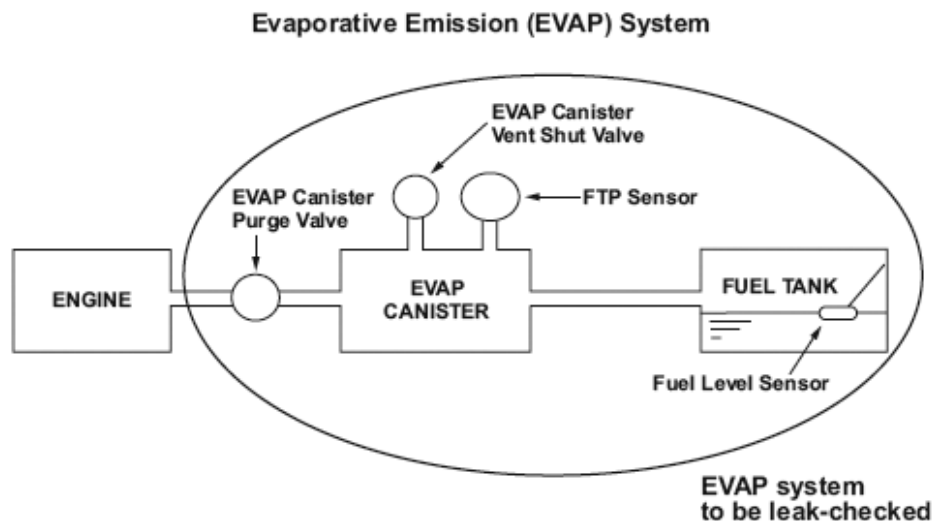
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0455 (90): ADVANCED DIAGNOSTICS

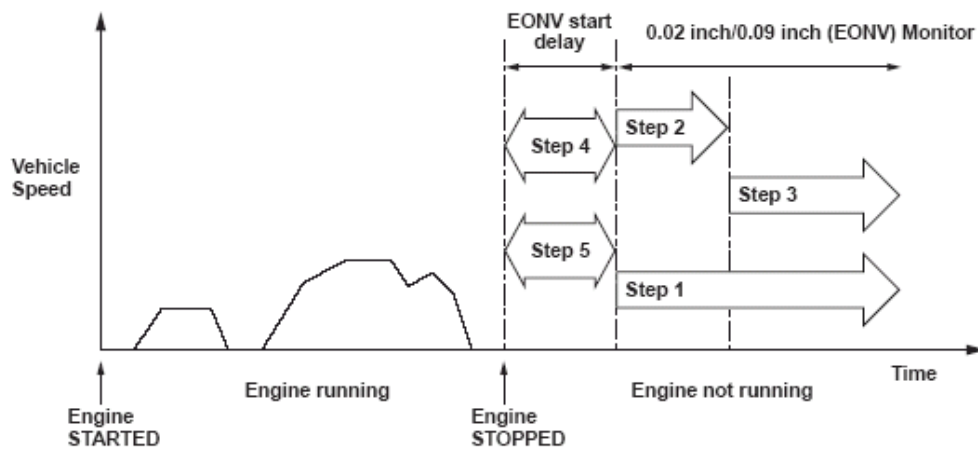
DTC P0455: EVAPORATIVE EMISSION (EVAP) SYSTEM VERY LARGE LEAK DETECTED



P0442-0570

Fig. 94: Evaporative Emission (EVAP) System Diagram

Diagnosis Execution



P0455-0770

Fig. 95: Evaporative Emission (EVAP) System Diagnosis Execution

General Description

The evaporative emission (EVAP) leak detection system uses an engine off natural vacuum (EONV) method. The EONV method detects leakage from the change in fuel tank pressure via the fuel tank pressure (FTP) sensor with the engine off.

Here is an overview of the malfunction detection for the EONV method:

Step 1: Judgement of detection of 0.09 inch leak as normal operation

Step 2: Judgement of detection of 0.02 inch leak as normal operation

Step 3: Detection of 0.02 inch leak

Step 4: Detection of atmospheric pressure failure

Step 5: Flickering of the FTP sensor

< Step 1, 2 and 3 proceed simultaneously. Step 4 and 5 proceed simultaneously. >

Step 1:

After the engine has stopped, the powertrain control module (PCM) monitors the variation of the FTP sensor output to detect "no 0.09 inch leak" depending on the variation of the pressure inside the fuel tank.

- If the variation of the pressure is less than a specified value and continues for a specified duration, it is identified as a "0.09 inch leak" and the diagnosis completes.
- If the variation of the pressure is more than a specified value before a specified duration has passed, it is

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

defined as "no 0.09 inch leak", the judgement of detection of a 0.09 inch leak is completed, and it goes to 0.02 inch leak monitor.

Step 2:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the increasing pressure inside the fuel tank.

- If "no 0.02 inch leak" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure inside the fuel tank does not increase a specified value or more within a specified duration, it goes to step 3.

Step 3:

The PCM continues to monitor the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the decreasing pressure inside the fuel tank. until the detection completes.

- If a "0.02 inch leak" is detected, it is identified as a malfunction; the diagnosis is complete.
- If "no leakage" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure is not atmospheric pressure or less when the detection is completed, that data is stored and the diagnosis is complete.

Step 4:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect atmospheric pressure, after keeping the canister vent opened for a specified duration to stabilize the pressure inside the fuel tank.

- If the pressure inside the fuel tank after a specified duration has not reached a specified value from the sensor zero point, a canister vent blockage is detected.

Step 5:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect FTP sensor electrical noise failure, after keeping the canister vent opened for a specified time to stabilize the pressure inside the fuel tank.

- If the deviation of pressure inside the fuel tank and an average value after a specified duration has exceeded a specified value for more than a specified duration, an FTP sensor electrical noise failure is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Duration	36 minutes, 37 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time before starting the engine	6 hours	-
Initial condition A ⁽¹⁾	-	18°F (10°C)
Initial condition B ⁽²⁾	-	18°F (10°C)
Initial engine coolant temperature	40°F (5°C)	95°F (35°C)
Initial intake air temperature	40°F (5°C)	95°F (35°C)
Barometric pressure	76 kPa (22.5 in.Hg, 569 mmHg)	-
Battery voltage	10.5 V	-
No active DTCs	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0685, P1116, P1454, P145C, P2227, P2228, P2229, P2422, P2610	
Others	Other than when there is excessive vapor generation (fuel level is not full)	
	Avoid abrupt acceleration, deceleration, and turns	
	Test-drive on a flat road to avoid misdetection	
	No refueling is required	
(1) The initial intake air temperature minus the current intake air temperature		
(2) The initial engine coolant temperature minus the initial intake air temperature		

Malfunction Threshold

The variation of pressure inside the fuel tank is 0.03 kPa (0.009 in.Hg, 0.24 mmHg) or more.

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. After the vehicle has been left for an appropriate amount of time as specified, with the engine coolant temperature and intake air temperature within the specified range, start the engine.
2. Warm up the engine at idle until the radiator fan comes on.
3. Drive the vehicle immediately at a speed between 45 - 75 mph (72 - 120 km/h) for at least 20 minutes.
4. After stopping the engine, turn the ignition switch off, and leave the vehicle for 37 minutes or more

(EONV executes).

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle with the ECT and IAT at engine start-up within the specified temperature range, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle with the ECT and IAT at engine start-up within the specified temperature range, the MIL comes on and the DTC and the freeze frame data are stored.

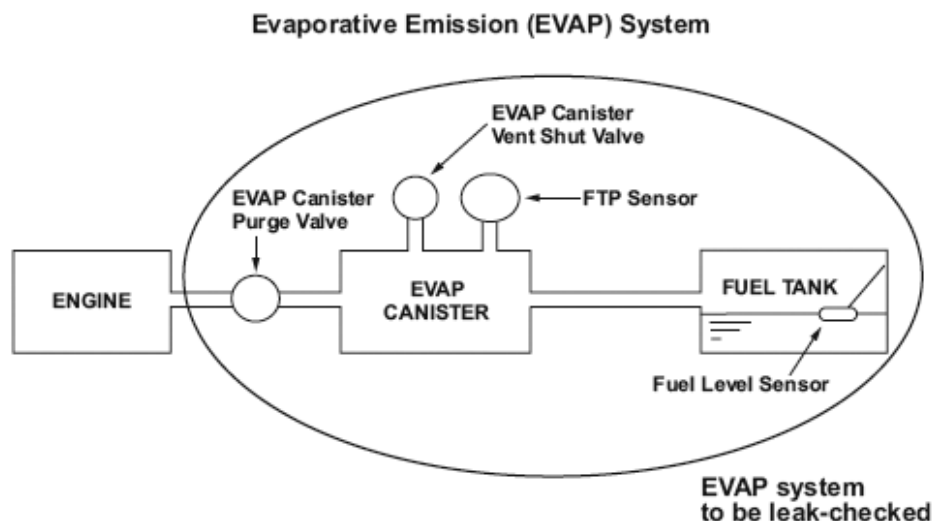
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0456 (90): ADVANCED DIAGNOSTICS

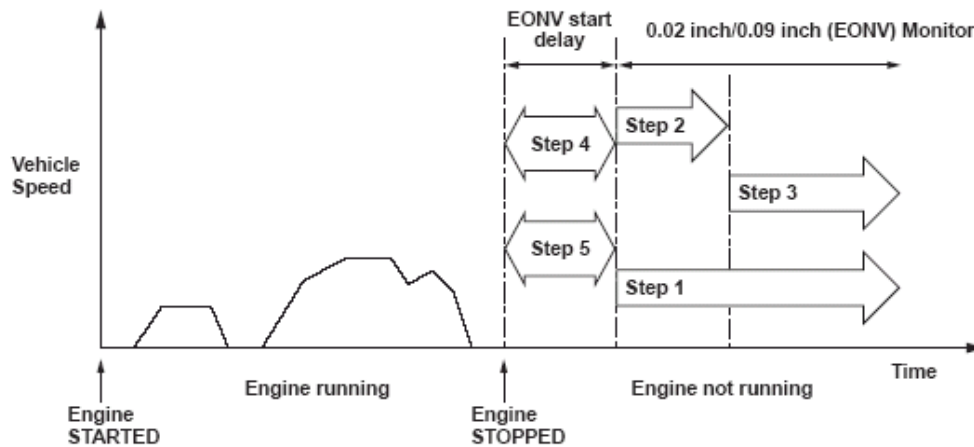
DTC P0456: EVAPORATIVE EMISSION (EVAP) SYSTEM VERY SMALL LEAK DETECTED



P0442-0570

Fig. 96: Evaporative Emission (EVAP) System Diagram

Diagnosis Execution



P0455-0770

Fig. 97: Evaporative Emission (EVAP) System Diagnosis Execution

General Description

The evaporative emission (EVAP) leak detection system uses an engine off natural vacuum (EONV) method. The EONV method detects leakage from the change in fuel tank pressure via the fuel tank pressure (FTP) sensor with the engine off.

Here is an overview of the malfunction detection for the EONV method:

Step 1: Judgement of detection of 0.09 inch leak as normal operation

Step 2: Judgement of detection of 0.02 inch leak as normal operation

Step 3: Detection of 0.02 inch leak

Step 4: Detection of atmospheric pressure failure

Step 5: Flickering of the FTP sensor

< Step 1, 2 and 3 proceed simultaneously. Step 4 and 5 proceed simultaneously. >

Step 1:

After the engine has stopped, the powertrain control module (PCM) monitors the variation of the FTP sensor output to detect "no 0.09 inch leak" depending on the variation of the pressure inside the fuel tank.

- If the variation of the pressure is less than a specified value and continues for a specified duration, it is identified as a "0.09 inch leak" and the diagnosis completes.
- If the variation of the pressure is more than a specified value before a specified duration has passed, it is

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2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

defined as "no 0.09 inch leak", the judgement of detection of a 0.09 inch leak is completed, and it goes to 0.02 inch leak monitor.

Step 2:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the increasing pressure inside the fuel tank.

- If "no 0.02 inch leak" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure inside the fuel tank does not increase a specified value or more within a specified duration, it goes to step 3.

Step 3:

The PCM continues to monitor the FTP sensor output to detect "no 0.02 inch leak" depending on the variation corresponding to the decreasing pressure inside the fuel tank. until the detection completes.

- If a "0.02 inch leak" is detected, it is identified as a malfunction; the diagnosis is complete.
- If "no leakage" is detected, it is identified as normal; the diagnosis is complete.
- If the pressure is not atmospheric pressure or less when the detection is completed, that data is stored and the diagnosis is complete.

Step 4:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect atmospheric pressure, after keeping the canister vent opened for a specified duration to stabilize the pressure inside the fuel tank.

- If the pressure inside the fuel tank after a specified duration has not reached a specified value from the sensor zero point, a canister vent blockage is detected.

Step 5:

After the engine has stopped, the PCM monitors the variation of the FTP sensor output to detect FTP sensor electrical noise failure, after keeping the canister vent opened for a specified time to stabilize the pressure inside the fuel tank.

- If the deviation of pressure inside the fuel tank and an average value after a specified duration has exceeded a specified value for more than a specified duration, an FTP sensor electrical noise failure is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	P0455, P0457, P0497 are judged as OK

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Duration	At least 16 minutes, 37 seconds but not more than 36 minutes, 37 seconds
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time before starting the engine	6 hours	-
Initial condition A ⁽¹⁾	-	18°F (10°C)
Initial condition B ⁽²⁾	-	18°F (10°C)
Initial engine coolant temperature	40°F (5°C)	95°F (35°C)
Initial intake air temperature	40°F (5°C)	95°F (35°C)
Barometric pressure	76 kPa (22.5 in.Hg, 569 mmHg)	-
Battery voltage	10.5 V	-
No active DTCs	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P0685, P1116, P1454, P145C, P2227, P2228, P2229, P2422, P2610	
Others	Other than when there is excessive vapor generation (fuel level is not full)	
	Avoid abrupt acceleration, deceleration, and turns	
	Test-drive on a flat road to avoid misdetection	
	No refueling is required	
(1) The initial intake air temperature minus the current intake air temperature		
(2) The initial engine coolant temperature minus the initial intake air temperature		

Malfunction Threshold

- The misalignment of zero point pressure inside the fuel tank is 0.6 kPa (0.1 in.Hg, 5 mmHg) or more.
- The output from the FTP sensor flickering is 3.04 seconds or more.
- The variation of pressure inside the fuel tank after phase 1 is 0.3 kPa (0.1 in.Hg, 2.8 mmHg) or more (depending on fuel level and barometric pressure).
- The sum of the variations of pressure inside the fuel tank after phase 1 and phase 2 is 10 kPa (3.1 in.Hg, 80 mmHg) or less (depending on fuel level and barometric pressure).
- The barometric pressure is stable for at least 24 minutes, 55 seconds.

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

1. After the vehicle has been left for an appropriate amount of time as specified, with the engine coolant temperature and intake air temperature within the specified range, start the engine.
 2. Warm up the engine at idle until the radiator fan comes on.
 3. Drive the vehicle immediately at a speed between 45 - 75 mph (72 - 120 km/h) for at least 20 minutes.
 4. After stopping the engine, turn the ignition switch off, and leave the vehicle for 37 minutes or more (EONV executes).
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle with the ECT and IAT at engine start-up within the specified temperature range, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle with the ECT and IAT at engine start-up within the specified temperature range, the MIL comes on and the DTC and the freeze frame data are stored.

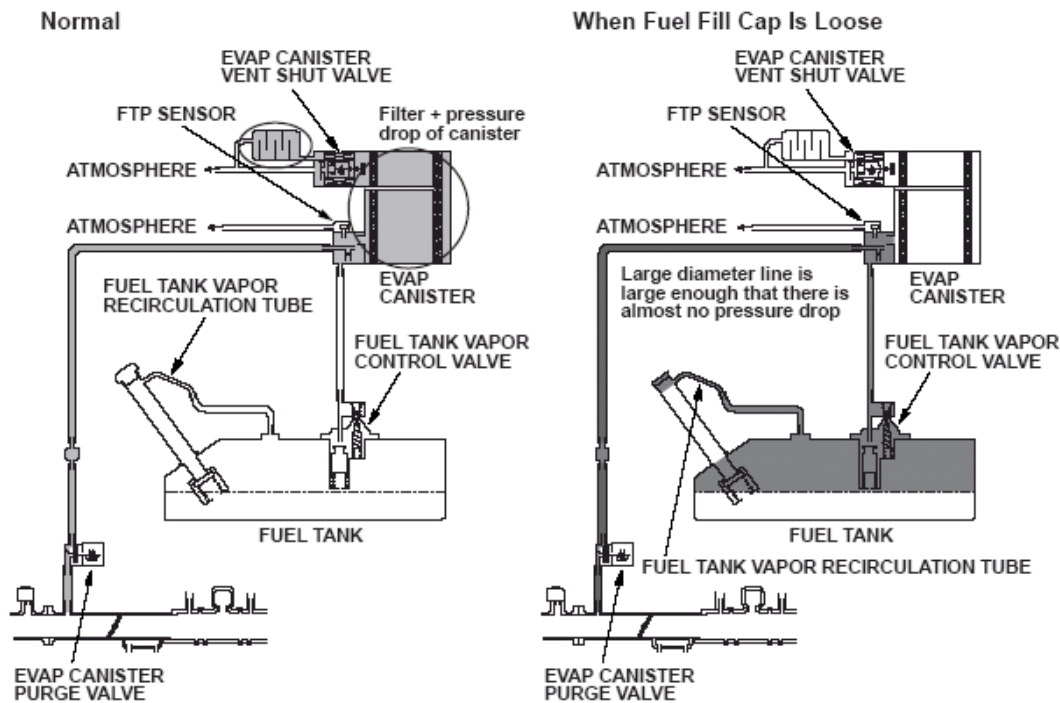
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

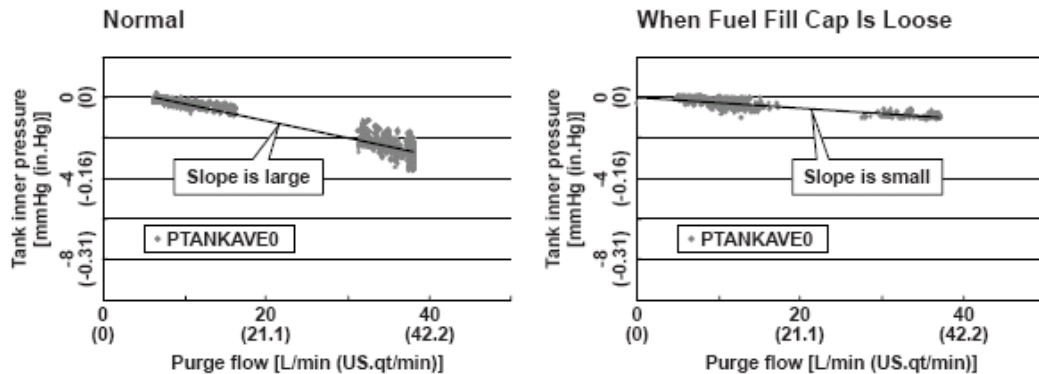
DTC P0457 (90): ADVANCED DIAGNOSTICS

DTC P0457: EVAPORATIVE EMISSION (EVAP) SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING



P0457-0770

Fig. 98: Evaporative Emission (EVAP) System Diagram



P0457-0771

Fig. 99: Evaporative Emission (EVAP) System Pressure Graph

General Description

When the fuel fill cap is installed properly, the purge flow occurs due to the airflow resistance of the canister, and tank pressure will be reduced.

When the fuel fill cap is loosened, the fuel tank pressure will not decrease even when the airflow resistance decreases and the purge flow occurs, because air is being exhausted from the tank to the atmosphere.

By examining the fuel tank pressure with less purge flow area and the fuel tank pressure with more purge flow area, and using the above characteristics, a loose fuel fill cap is detected.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The powertrain control module (PCM) calculates the relationship of the purge flow and fuel tank pressure (FTP) sensor, and when the slope of the decreasing fuel tank pressure to the purge flow increase is small, a loose fuel fill cap is detected.

< Above failure detection is normally operated during purge >

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	P0455 or P0456 are judged as NG
Duration	12 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature before EVAP purge control starts	140°F (60°C)	-
Vehicle speed	2 mph (2 km/h)	-
Barometric pressure	76 kPa (22.5 in.Hg, 569 mmHg)	-
Battery voltage	10.5 V	-
Low purge flow side detection	5 l/min (5.3 US qt/min, 4.4 lmp qt/min)	10 l/min (10.5 US qt/min, 8.7 lmp qt/min)
High purge flow side detection	55 l/min (58.2 US qt/min, 48.4 lmp qt/min)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
Duration of redetection implementation permission	Every 54.6 minutes	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P1128, P1129, P1172, P1174, P1454, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2422, P2647, U0028, U0155	
Others	Other than when there is excessive vapor generation (fuel level is not full)	
	Avoid abrupt acceleration, deceleration, and turns	
	Test-drive on a flat road to avoid misdetection	
	No refueling is required	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Malfunction Threshold

The output from the fuel cap monitor is 0.053 or more for at least 12 seconds (when there is no NG judgment history in this drive cycle).

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 12 seconds.
3. Drive the vehicle immediately at a speed between 45 - 75 mph (72 - 120 km/h) for at least 12 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the fuel fill cap caution

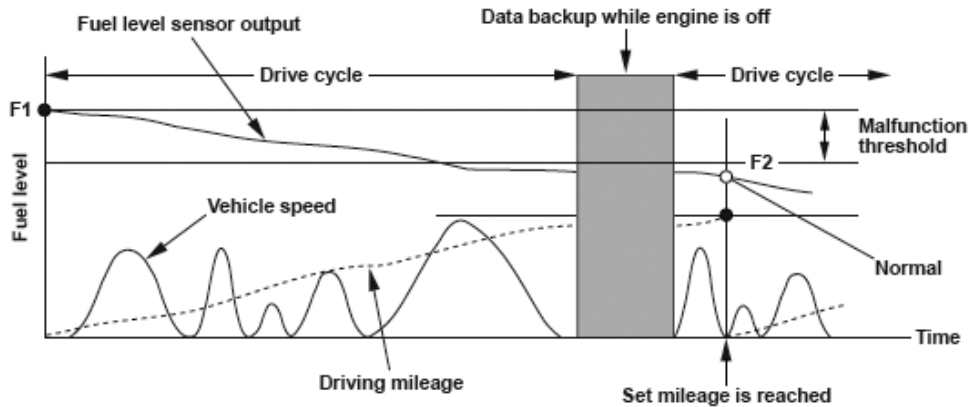
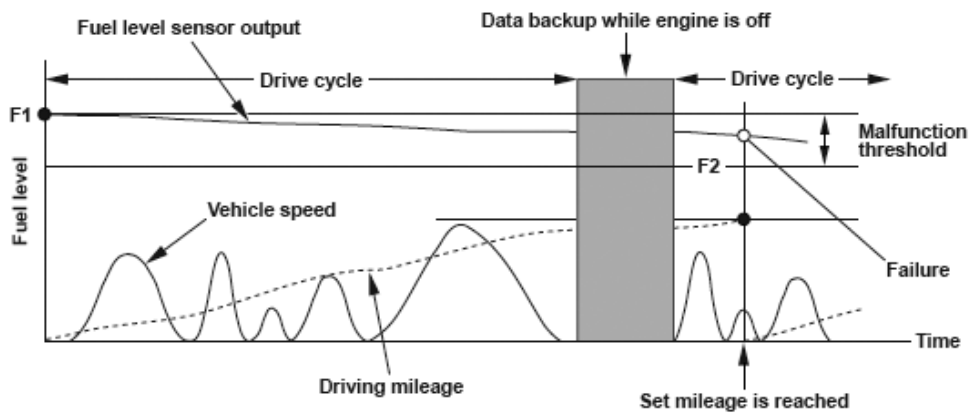
1. When a loose fuel fill cap is judged by this detection, the fuel fill cap caution is displayed. At this time, a DTC is not stored.
2. When the first drive cycle leak judgement (temporary DTC stored) is detected at a 0.02 inch leak or a 0.09 inch leak, the fuel fill cap caution is displayed when the ignition is turned on the next time.

Conditions for clearing the fuel fill cap caution

1. When the fuel fill cap caution is displayed by the first drive cycle leak judgement (temporary DTC stored) at a 0.02 inch leak or a 0.09 inch leak, the fuel fill cap caution goes out when the next failure occurs (second drive cycle) and P0457 is stored. (MIL illuminates)
2. When no leak is judged by a 0.02 inch leak or a 0.09 inch leak after the fuel fill cap caution is displayed, the fuel fill cap caution goes out when the ignition is turned on the next time. (P0457 is not stored at this time)
3. When driven three times without this failure detected and a 0.02 inch leak or a 0.09 inch leak detection is not done after the fuel fill cap caution is displayed, the fuel fill cap caution goes out. (P0457 is not stored at this time)
4. Use the Clear command of scan tool to erase the caution. The caution is erased when the MIL is illuminated.

DTC P0461 (121): ADVANCED DIAGNOSTICS

DTC P0461: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT RANGE/PERFORMANCE PROBLEM

Normal**Malfunction**

P0461-0370

Fig. 100: Fuel Level Sensor (Fuel Gauge Sending Unit) Performance Graph**General Description**

The fuel level sensor is incorporated with the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float into electrical signals that correspond to the fuel level, and it indicates the amount of fuel in the fuel tank. If the powertrain control module (PCM) receives no change in the fuel level sensor output after driving for a specified number of miles, it detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None

Duration	-
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Mileage	125 miles (200 km)	-
No active DTCs	P0462, P0463, U0028, U0155	
Others	Avoid driving and stopping on a steep road	

Malfunction Threshold

The change in the fuel level sensor output is 3.5% or less.

Driving Pattern

Drive for the specified mileage under Enable Conditions without refueling. (turning the ignition switch off is acceptable.)

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the indicator

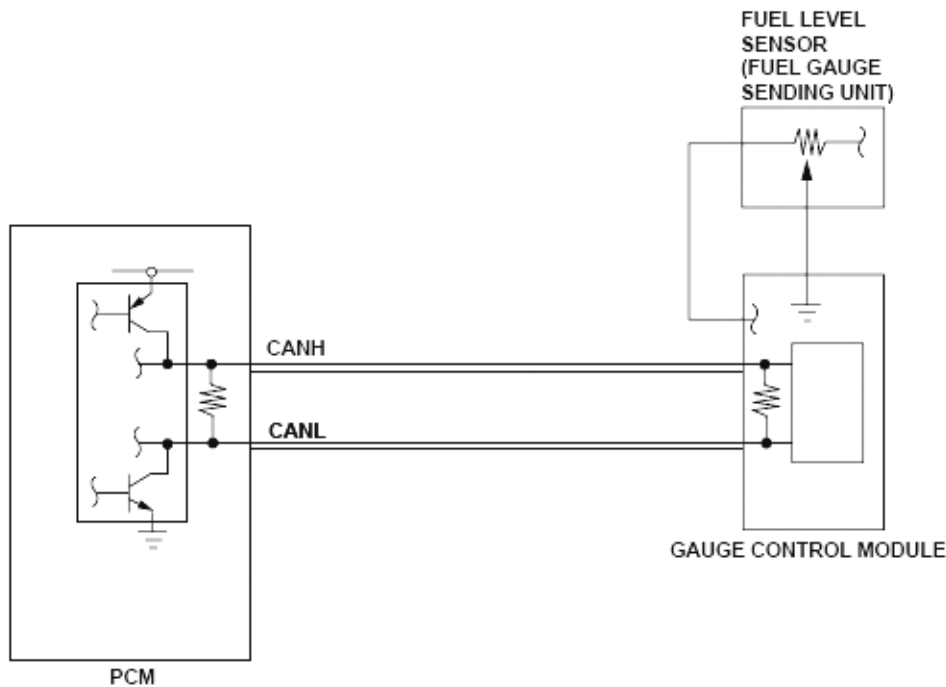
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0462 (121): ADVANCED DIAGNOSTICS

DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE



P0462-0504

Fig. 101: Fuel Level Sensor (Fuel Gauge Sending Unit) (Low Voltage) - Circuit Diagram

General Description

The fuel level sensor (fuel gauge sending unit) is incorporated with the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float into electrical signals as an output that corresponds to fuel level variations in the fuel tank. The fuel level, which is indicated by the gauge control module, is sent to the powertrain control module (PCM) via the controller area network (CAN). If the PCM detects a signal from the fuel level sensor (fuel gauge sending unit) below a predetermined value for a set time or more, it detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Ignition switch	ON
No active DTCs	P0463, U0028, U0155

Malfunction Threshold

The fuel level sensor (fuel gauge sending unit) output voltage is 0.10 V or less for at least 5 seconds.

Diagnosis Details

Conditions for illuminating the indicator

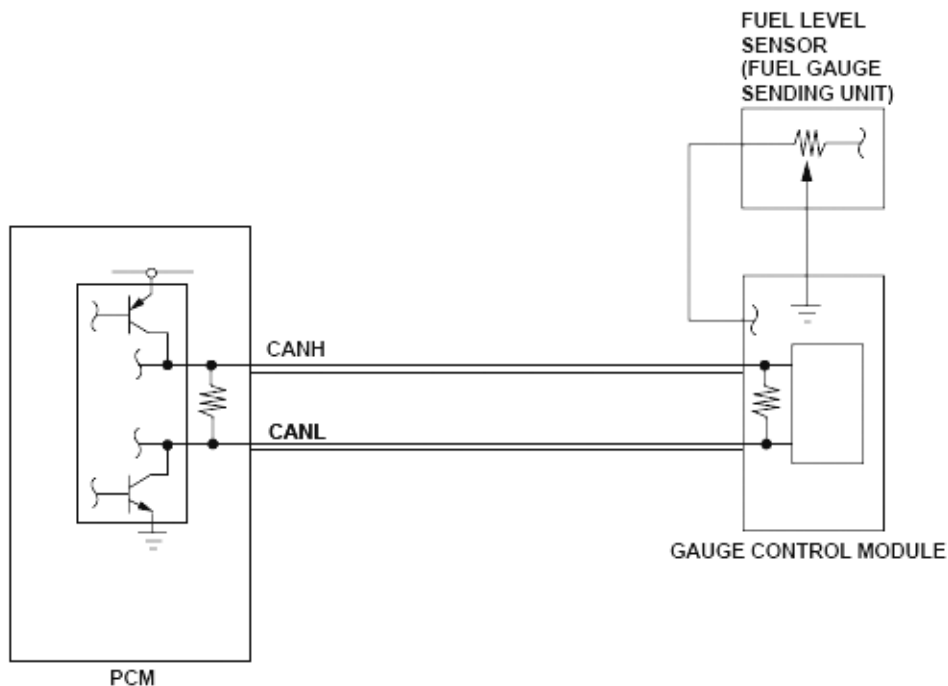
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0463 (121): ADVANCED DIAGNOSTICS

DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE



P0462-0504

Fig. 102: Fuel Level Sensor (Fuel Gauge Sending Unit) (High Voltage) - Circuit Diagram

General Description

The fuel level sensor (fuel gauge sending unit) is incorporated into the fuel pump and installed in the fuel tank. Using a built-in potentiometer and float, it converts the movement of the float to electrical signals that correspond to fuel level variations, and it measures the remaining fuel in the fuel tank. The fuel level, which is read by the gauge control module, is sent to the powertrain control module (PCM) via the controller area network (CAN). If the PCM detects a signal voltage from the fuel level sensor (fuel gauge sending unit) above a predetermined value for a set time or more, it detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch	ON	
No active DTCs	P0462, U0028, U0155	

Malfunction Threshold

The fuel level sensor (fuel gauge sending unit) output voltage is 4.92 V or more for at least 5 seconds.

Diagnosis Details

Conditions for illuminating the indicator

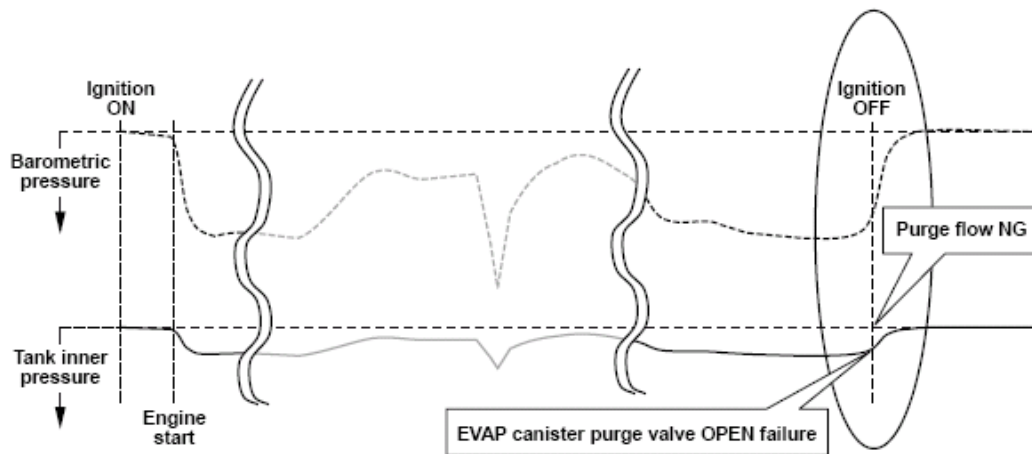
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0496 (92): ADVANCED DIAGNOSTICS

DTC P0496: EVAPORATIVE EMISSION (EVAP) SYSTEM HIGH PURGE FLOW



P0496-0770

Fig. 103: Evaporative Emission (EVAP) System High Purge Flow Diagram

General Description

The fuel (vapor) vaporized in the fuel tank is stored in the canister temporarily and introduced in the engine through the evaporative emission (EVAP) canister purge valve. The powertrain control module (PCM) controls the amount of vapor introduced into the engine by repeatedly switching power to the EVAP canister purge valve at a constant frequency according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve drive cycle is transmitted to the fuel tank pressure (FTP) sensor by the purge flow (pulse method).

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck Open OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failure part according to < STEP 2 >.

< STEP 2 >

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN:

When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition is turned off:
P0496 EVAP canister purge valve stuck OPEN

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

When there is no fluctuation of the FTP sensor: P0497 purge flow NG

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	P145C is judged as OK
Duration	-
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Low load duration time	10 seconds	-
Wait for stability after the ignition is turned off	10 seconds	-
Engine coolant temperature before EVAP purge control starts	140°F (60°C)	-
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0453, P0498, P0499, P0685, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2422	

Malfunction Threshold

The output from the EVAP canister purge valve is 0.2 kPa (0.07 in.Hg, 2 mmHg) or more for at least 10 seconds.

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 77 seconds.
3. Turn off the ignition for at least 10 seconds.

Diagnosis Details

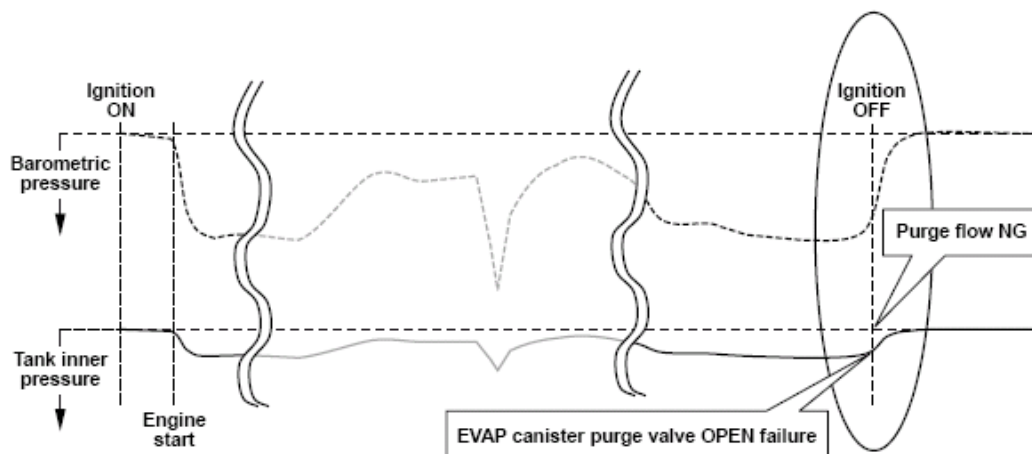
Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0497 (90): ADVANCED DIAGNOSTICS**DTC P0497: EVAPORATIVE EMISSION (EVAP) SYSTEM LOW PURGE FLOW**

P0496-0770

Fig. 104: Evaporative Emission (EVAP) System Low Purge Flow Diagram**General Description**

The fuel (vapor) vaporized in the fuel tank is stored in the canister temporarily and introduced in the engine through the evaporative emission (EVAP) canister purge valve. The powertrain control module (PCM) controls the amount of vapor introduced into the engine by repeatedly switching power to the EVAP canister purge valve at a constant frequency according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve drive cycle is transmitted to the fuel tank pressure (FTP) sensor by the purge flow (pulse method).

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck Open OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failure part according to < STEP 2 >.

< STEP 2 >

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN:

When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition is turned off:
P0496 EVAP canister purge valve stuck OPEN

When there is no fluctuation of the FTP sensor: P0497 purge flow NG

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	P145C is judged as OK
Duration	-
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Low load duration time	10 seconds	-
Wait for stability after the ignition is turned off	10 seconds	-
Engine coolant temperature before EVAP purge control starts	140°F (60°C)	-
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0453, P0496, P0498, P0499, P0685, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2422	

Malfunction Threshold

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The output from the fuel tank pressure sensor is 0.2 kPa (0.07 in.Hg, 2 mmHg) or less for at least 10 seconds.

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 77 seconds.
3. Turn off the ignition for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

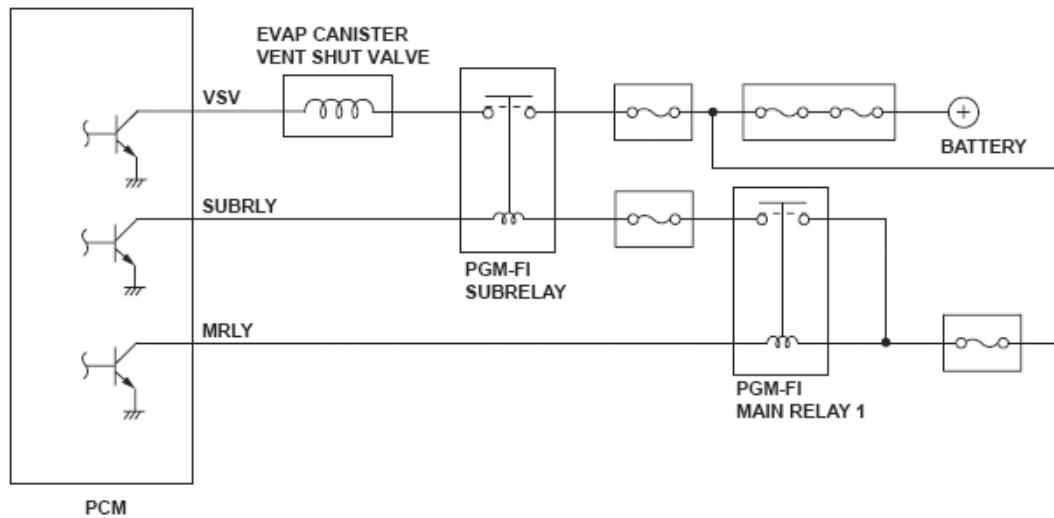
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0498 (117): ADVANCED DIAGNOSTICS

DTC P0498: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE CONTROL CIRCUIT LOW VOLTAGE



P0498-0705

Fig. 105: Evaporative Emission (EVAP) Canister Vent Shut Valve Control (Low Voltage) - Circuit Diagram

General Description

The evaporative emission (EVAP) canister vent shut valve is attached to the EVAP canister to control the venting of the EVAP canister to atmosphere.

The EVAP canister vent shut valve is open (open to atmosphere) when the VSV signal is OFF.

If the return signal is "OFF" when the powertrain control module (PCM) outputs the "ON" signal to the EVAP canister vent shut valve, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs	P0499	

Malfunction Threshold

The return signal is "Low" for at least 5 seconds when the PCM outputs the "ON" signal to the EVAP canister vent shut valve.

Confirmation Procedure with the HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

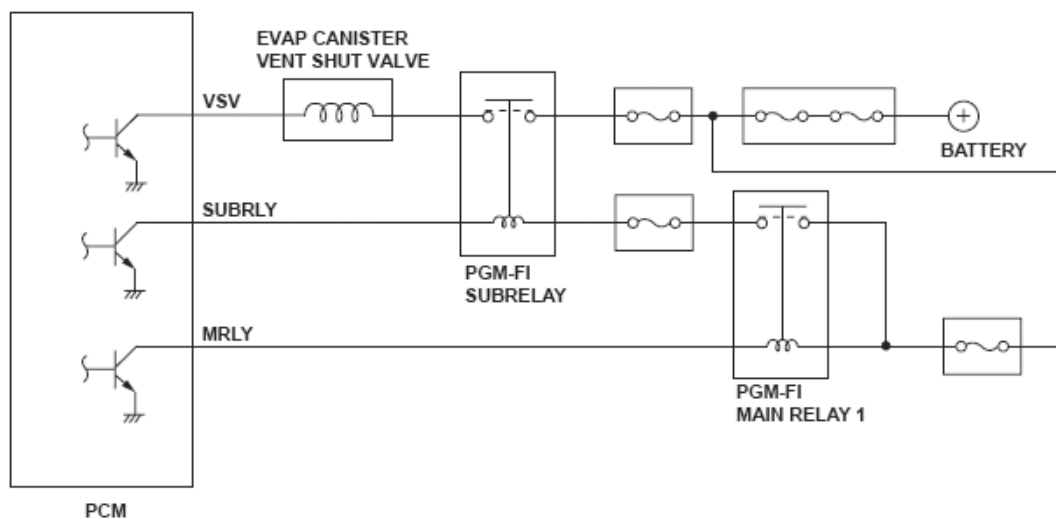
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0499 (117): ADVANCED DIAGNOSTICS

DTC P0499: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE CONTROL CIRCUIT HIGH VOLTAGE



P0498-0705

Fig. 106: Evaporative Emission (EVAP) Canister Vent Shut Valve Control (High Voltage) - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The evaporative emission (EVAP) canister vent shut valve is attached to the EVAP canister to control the venting of the EVAP canister to atmosphere.

The EVAP canister vent shut valve is open (open to atmosphere) when the VSV signal is OFF.

If the return signal is "ON" when the powertrain control module (PCM) outputs the "OFF" signal to the EVAP canister vent shut valve, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs	P0498	

Malfunction Threshold

The return signal is "ON" for at least 5 seconds when the PCM outputs the "Low" signal to the EVAP canister vent shut valve.

Diagnosis Details

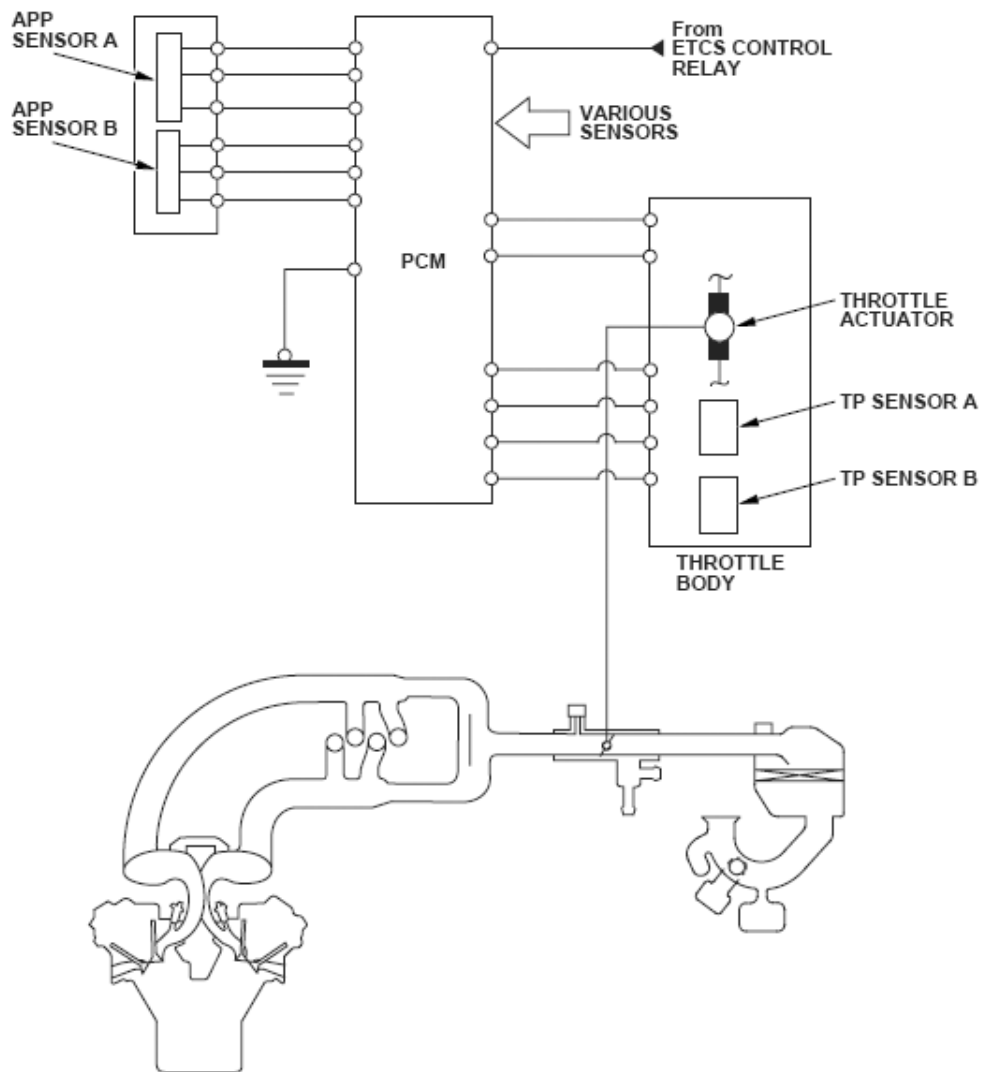
Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0506 (14): ADVANCED DIAGNOSTICS**DTC P0506: IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED**

P0506-0774

Fig. 107: Idle Control System - Communication Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

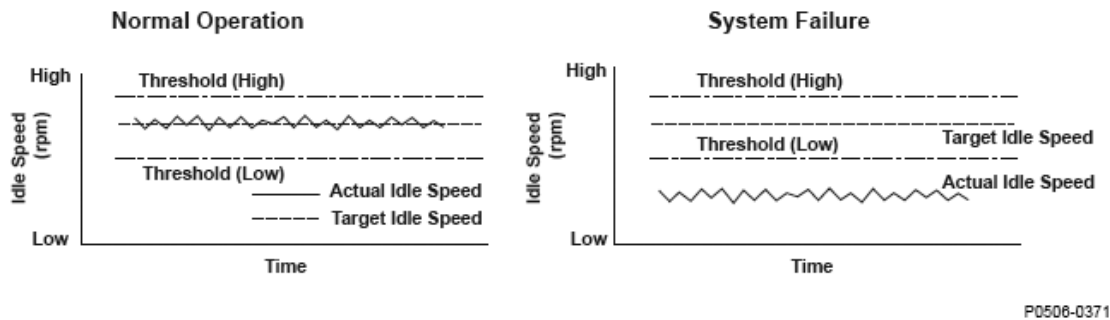


Fig. 108: Idle Control System Operation Graph

General Description

A target idle speed that meets the engine operating conditions (coolant temperature, A/C ON or OFF, etc.) is stored in the powertrain control module (PCM). The PCM monitors and controls the idle speed so that the actual idle speed is equal to the target idle speed. If the actual idle speed varies beyond a specified value from the target speed over a certain period of time, the PCM detects a malfunction in the idle speed control system and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Throttle position	Fully closed	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P0404, P0443, P0496, P0497, P1128, P1129, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2413, P2646, P2647, P2648, P2649	
Other	The engine is under no load	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Malfunction Threshold

The actual idle speed is at least 100 rpm less than the target idle speed for at least 20 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 20 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

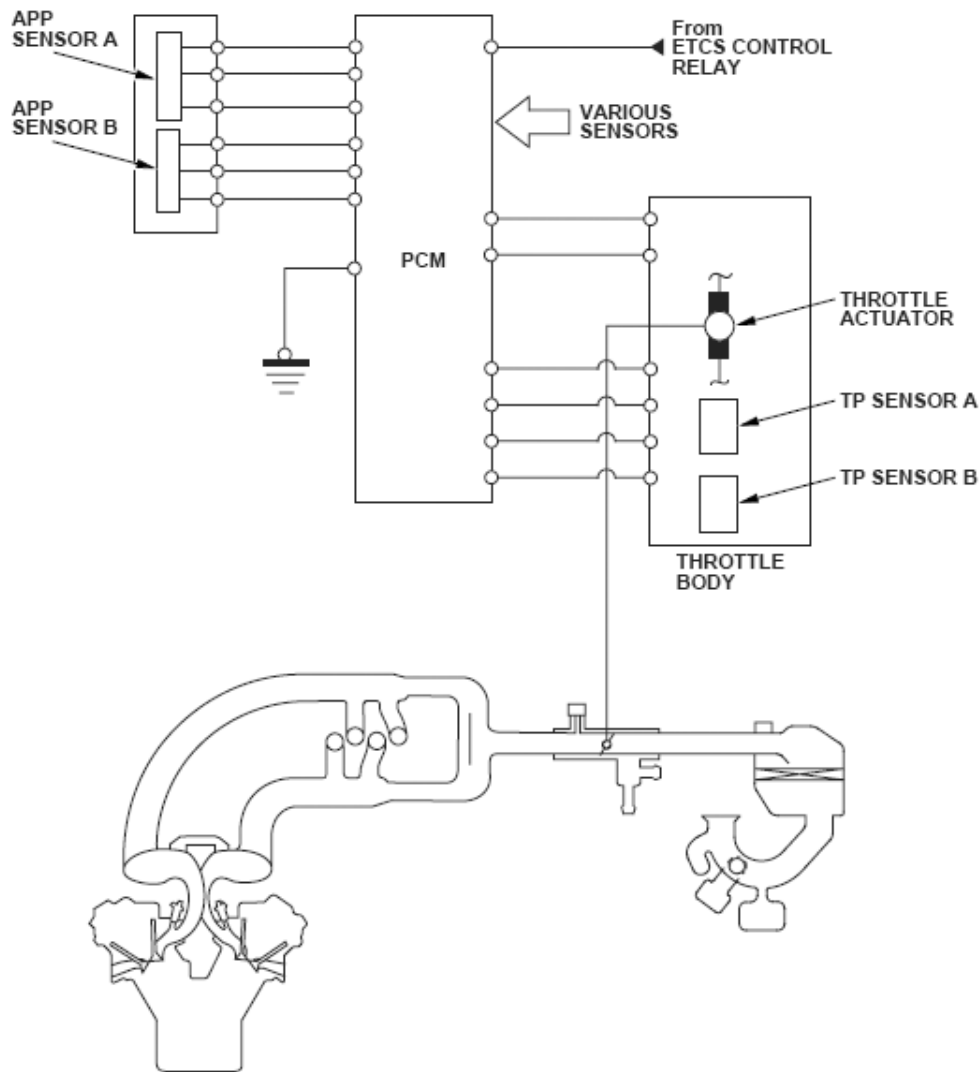
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

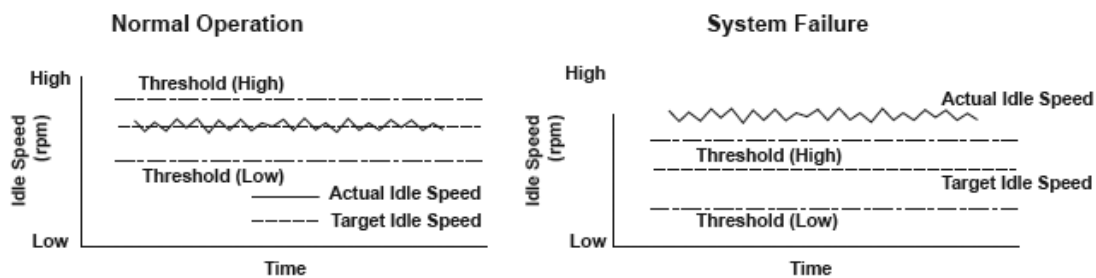
DTC P0507 (14): ADVANCED DIAGNOSTICS

DTC P0507: IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED



P0506-0774

Fig. 109: Idle Control System (RPM Higher) - Communication Diagram



P0507-0370

Fig. 110: Idle Control System Operation Graph

General Description

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

A target idle speed that meets the engine operating conditions (coolant temperature, A/C ON or OFF, etc.) is stored in the powertrain control module (PCM). The PCM monitors and controls the idle speed so that the actual idle speed is equal to the target idle speed. If the actual idle speed varies beyond a specified value from the target speed over a certain period of time, the PCM detects a malfunction in the idle speed control system and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	20 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
Throttle position	Fully closed	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P0404, P0443, P0496, P0497, P1128, P1129, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2413, P2646, P2647, P2648, P2649	
Other	The engine is under no load	

Malfunction Threshold

The actual idle speed is at least 200 rpm greater than the target idle speed for at least 20 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 20 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

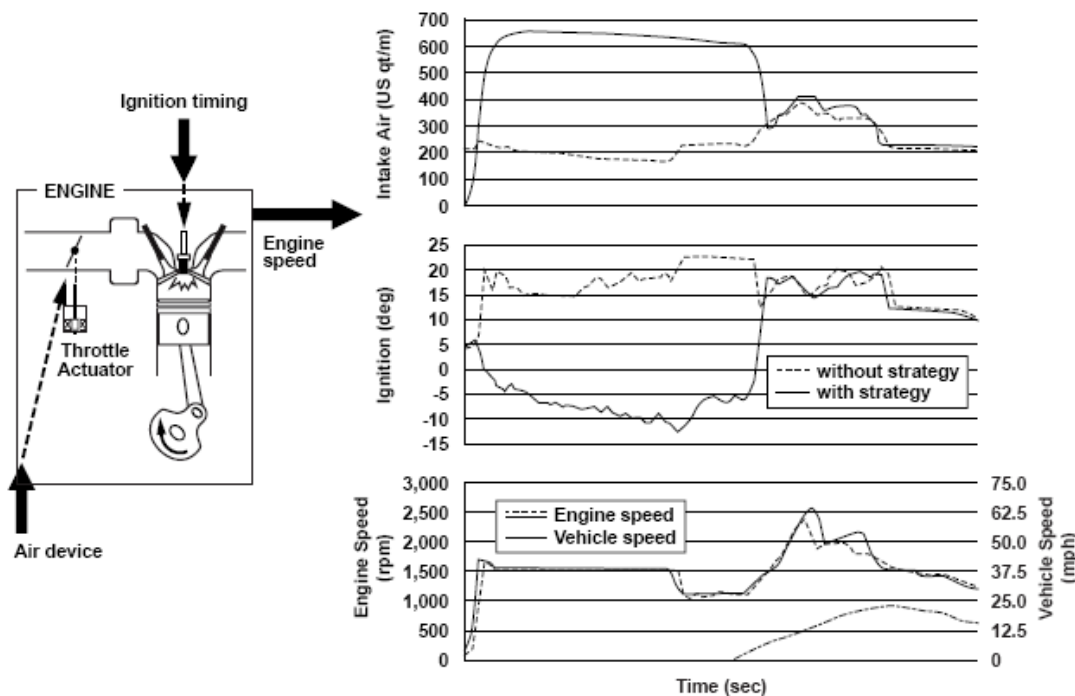
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

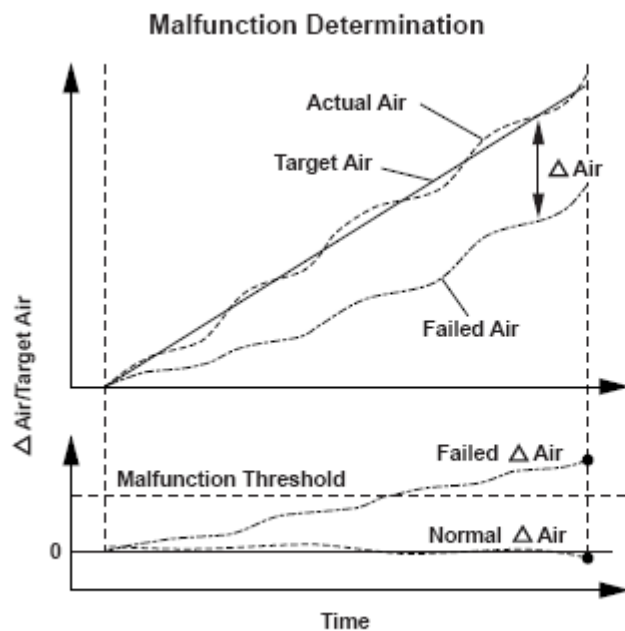
DTC P050A (167): ADVANCED DIAGNOSTICS

DTC P050A: COLD START IDLE AIR CONTROL SYSTEM PERFORMANCE PROBLEM



P050A-0670

Fig. 111: Cold Start Idle Air Control System - Performance Graph



P050A-0671

Fig. 112: Cold Start Idle Air Control System - Malfunction Graph**General Description**

The quick warm-up system supplies additional air and retards the ignition timing when the engine is cold to activate the catalytic converter as quickly as possible.

When the actual amount of air is less than the target amount, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Duration of quick warm-up system operation after engine start-up	-	35 seconds
Engine coolant temperature	41°F (5°C)	131°F (55°C)
Throttle position	Fully closed	

No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0404, P0406, P0506, P0507, P1116, P1128, P1129, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649
Other	Vehicle stopped

Malfunction Threshold

The total airflow is decreased by a factor of 0.693 for at least 10 seconds.

Confirmation Procedure with the HDS

Do the ETCS TEST in the INSPECTION MENU with the HDS.

Driving Pattern

- 1. Allow the engine to cool to an ambient engine coolant temperature of 131 °F (55 °C) or less.
- 2. Start the engine, and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

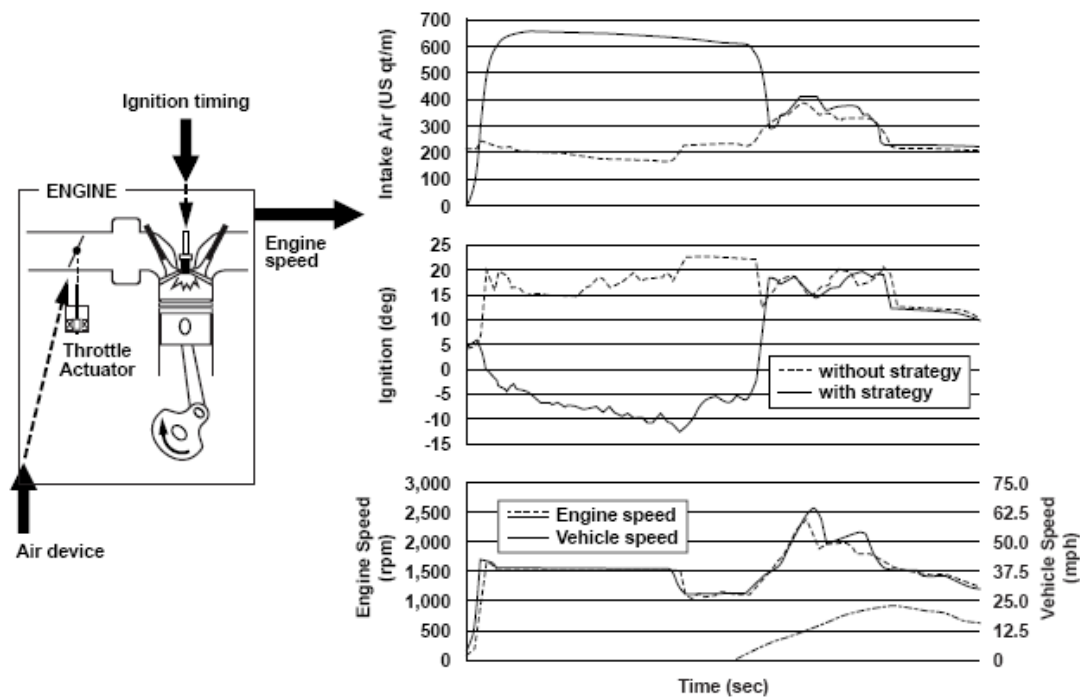
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

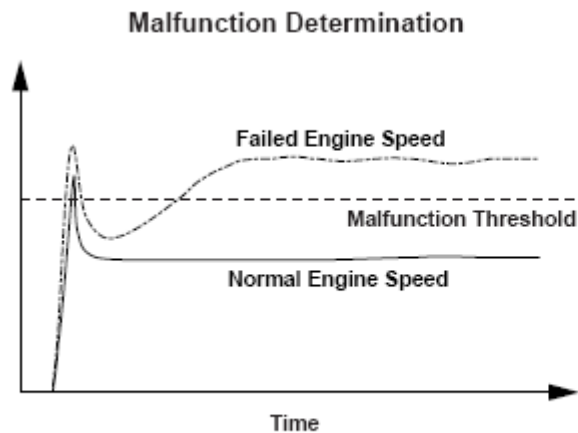
DTC P050B (167): ADVANCED DIAGNOSTICS

DTC P050B: COLD START IGNITION TIMING PERFORMANCE PROBLEM



P050A-0670

Fig. 113: Cold Start Ignition Timing - Performance Graph



P050B-0670

Fig. 114: Cold Start Ignition Timing - Malfunction Graph

General Description

The quick warm-up system supplies additional air and retards the ignition timing when the engine is cold to activate the catalytic converter as quickly as possible.

When the actual engine speed is a specified value or more, and it continues for a specified time, a malfunction is detected and a DTC is stored.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	3.5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	2.5 seconds	-
Duration of quick warm-up system operation after engine start-up	-	35 seconds
Engine coolant temperature	41°F (5°C)	131°F (55°C)
Throttle position	Fully closed	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0116, P0117, P0118, P0122, P0123, P0125, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0404, P0406, P0506, P0507, P1116, P1128, P1129, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	Vehicle stopped	

Malfunction Threshold

The engine speed is 2,100 rpm or more for at least 3.5 seconds.

Confirmation Procedure with the HDS

Do the ETCS TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Allow the engine to cool to an ambient engine coolant temperature of 131°F (55°C) or less.
2. Start the engine, and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0562 (34): ADVANCED DIAGNOSTICS

DTC P0562: CHARGING SYSTEM LOW VOLTAGE

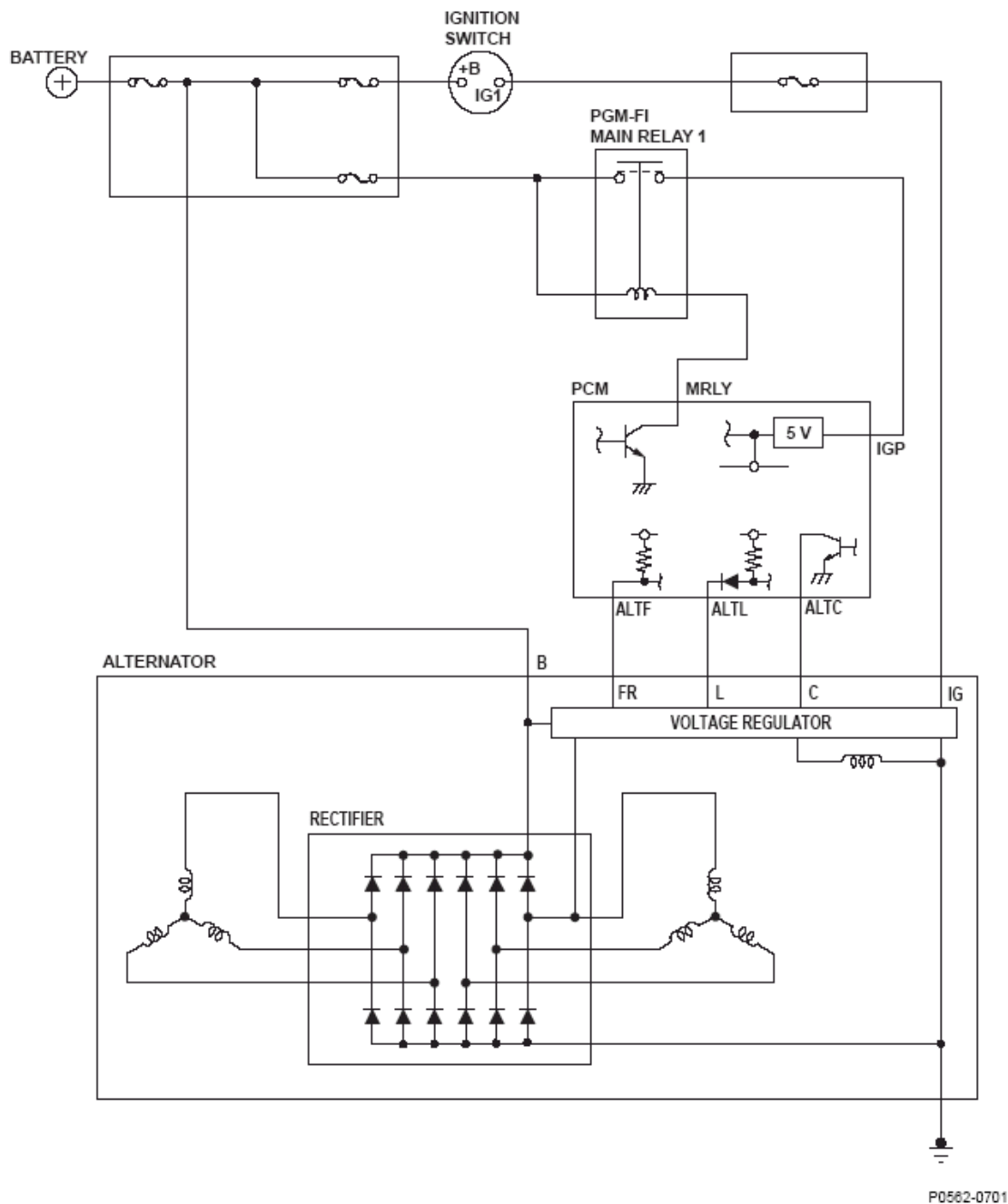


Fig. 115: Charging System (Low Voltage) - Circuit Diagram

General Description

The alternator is driven by the engine, and it generates electricity to supply the necessary power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the powertrain control module (PCM)). The alternator output signal is sent to the PCM, and it varies according to the battery's state of charge, the electrical load, and engine speed.

When the IGP (power source) terminal voltage is a set value or less for a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	500 rpm	-

Malfunction Threshold

The IGP terminal voltage is 11.0 V or less for at least 60 seconds.

Diagnosis Details

Conditions for illuminating the indicator

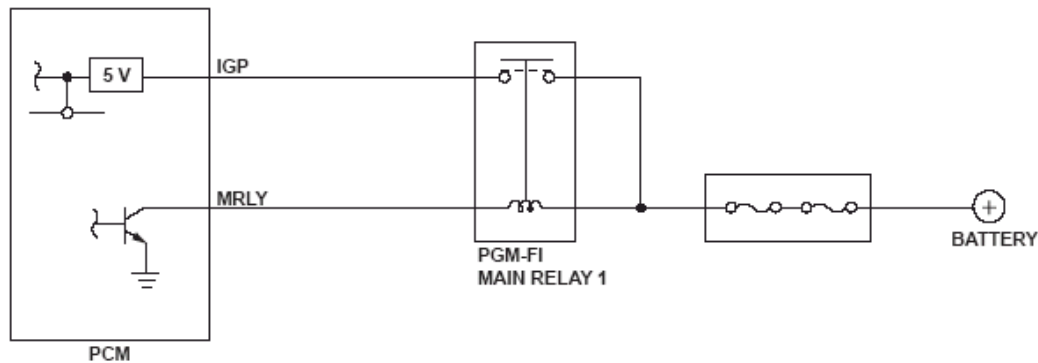
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0563 (34): ADVANCED DIAGNOSTICS

DTC P0563: POWERTRAIN CONTROL MODULE (PCM) POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE



P0563-0700

Fig. 116: Powertrain Control Module (PCM) Power Source (Unexpected Voltage) - Circuit Diagram

General Description

If there is a short to ground in the harness between the powertrain control module (PCM) and PGM-FI main relay 1 (FI MAIN), PGM-FI main relay 1 (FI MAIN) stays ON even though the ignition switch is OFF, and the PCM remains active. However, the engine is not running because the power for the gauges, the ignition, and the fuel pump is turned OFF by the ignition switch.

When the PCM operates for a set time after the ignition switch is turned OFF, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage (IGP terminal of PCM)	10.1 V	-

Malfunction Threshold

The PCM operates for at least 5 seconds after the ignition switch is turned OFF.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0602 (196): ADVANCED DIAGNOSTICS

DTC P0602: POWERTRAIN CONTROL MODULE (PCM) PROGRAMMING ERROR

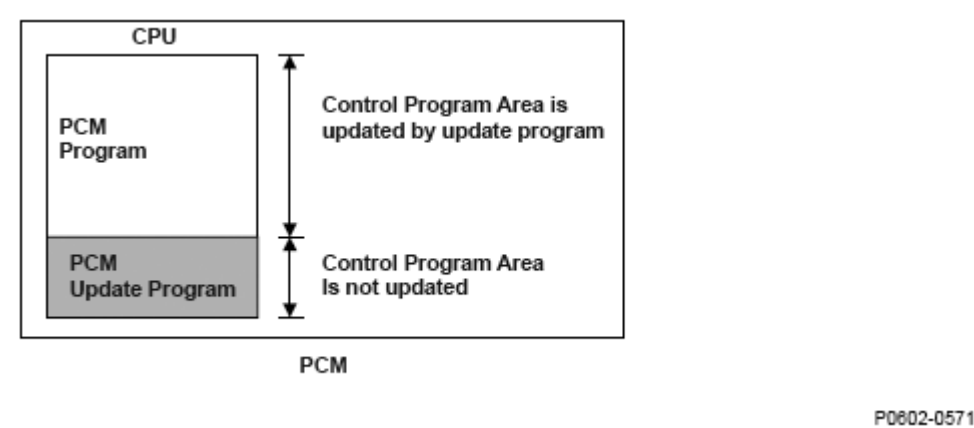


Fig. 117: Powertrain Control Module (PCM) Program Diagram

General Description

The powertrain control module (PCM) is equipped with an update program to update its control program. The programs in the CPU of the PCM are classified as a PCM program (update-capable program) and a program for the update function (non-updateable program). The program update only updates the PCM program.

When the PCM power is turned off during an update, the power for the update function is lost, and the update process stops. When the program update is stopped before it is completed, the PCM stores a DTC that indicates the update is not finished.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold

The PCM program update is stopped before it is finished for at most 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When the PCM program is not written in the PCM, the MIL comes on and the DTC is stored in the PCM memory.

Conditions for clearing the MIL

The MIL and the DTC will be cleared when the PCM program update is complete.

DTC P060A (131): ADVANCED DIAGNOSTICS

DTC P060A: POWERTRAIN CONTROL MODULE (PCM) INTERNAL CONTROL MODULE MALFUNCTION

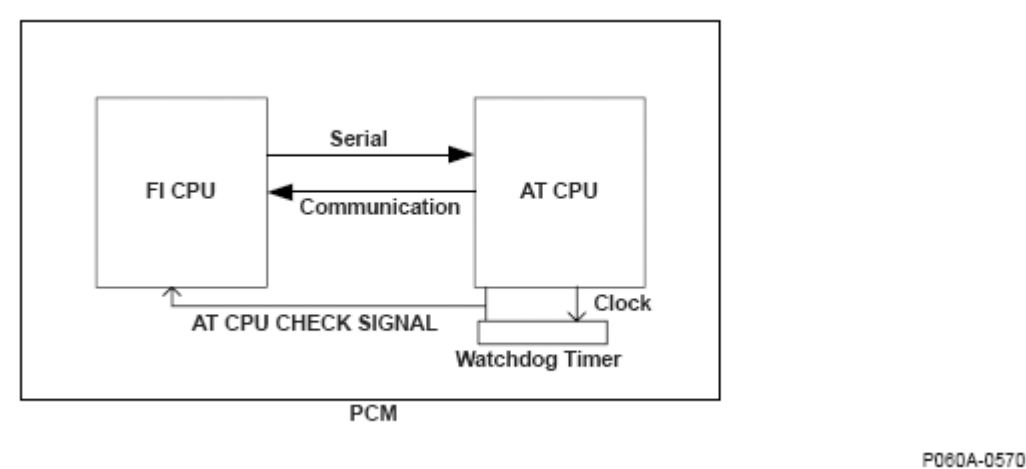


Fig. 118: Powertrain Control Module (PCM) Internal Control Module - Communication Diagram

General Description

When a malfunction occurs in the serial communication between the FI CPU and the A/T CPU in the powertrain control module (PCM) and the serial communication is interrupted for a set time or more, or when the watchdog timer that monitors the A/T CPU detects an abnormality in the A/T CPU and notifies the FI CPU via the A/T CPU check signal line, the PCM detects a malfunction and a DTC is stored.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration 0.2	second or more ⁽¹⁾ , 1.1 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	N/A
(1) Symptom 1	
(2) Symptom 2	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch	ON	

Malfunction Threshold

One of these symptom occurs.

- Symptom 1

The serial communication between the FI CPU and A/T CPU is abnormal or the serial communication is interrupted for at least 0.2 second.

- Symptom 2

The watchdog timer that monitors the A/T CPU detects an abnormality, and the FI CPU receives the A/T CPU check signal for at least 1.1 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

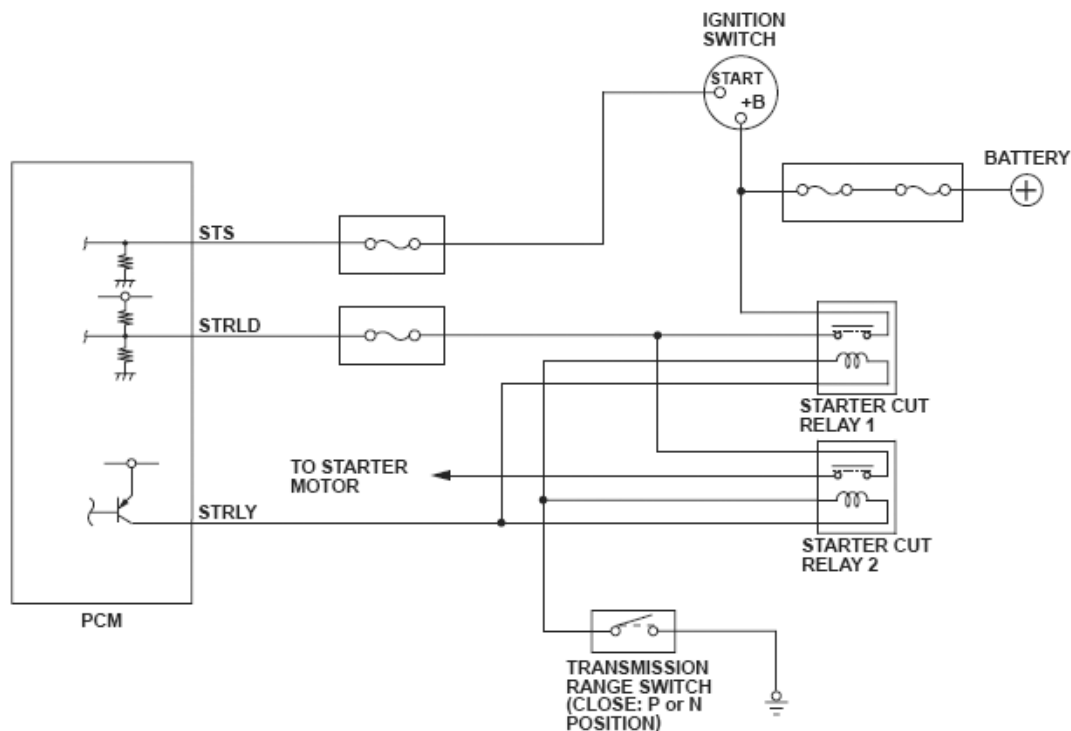
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by

disconnecting the battery.

DTC P0615 (198): ADVANCED DIAGNOSTICS

DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION



P0615-0701

Fig. 119: Starter Cut Relay STRLD - Circuit Diagram

General Description

A starter switch inhibit system prevents the starter from working during engine rotation to prevent damage to the starter pinion gear.

If the ignition switch is switched to START (III) position mistakenly while the engine is running, the powertrain control module (PCM) prevents the starter from working according to the engine rotation information and the output (STRLY) signal of the starter cut relay is switched to LOW.

In this system, two starter cut relays are connected in series (starter cut relay 1, starter cut relay 2) to prevent the starter cut relay to continue rotation by the ON malfunction of the starter.

Also a diagnosis line (STRLD) is used to monitor voltage in the middle of starter cut relay 1 and starter cut relay 2. The PCM detects an OPEN malfunction an ON malfunction of starter cut relay 1, and an ON malfunction of starter cut relay 2, according to the information.

If the voltage of the diagnosis line (STRLD) input does not exceed upper and lower limit for a specified

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

duration when the ignition switch is at the START (III) position and the output of the starter cut relay (STRLY) is HIGH (starter ON), an OPEN malfunction of the diagnosis line is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.8 second or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold

The diagnosis line (STRLD) input voltage is between 2.4 V to 2.6 V for at least 0.8 second.

Diagnosis Details

Conditions for illuminating the indicator

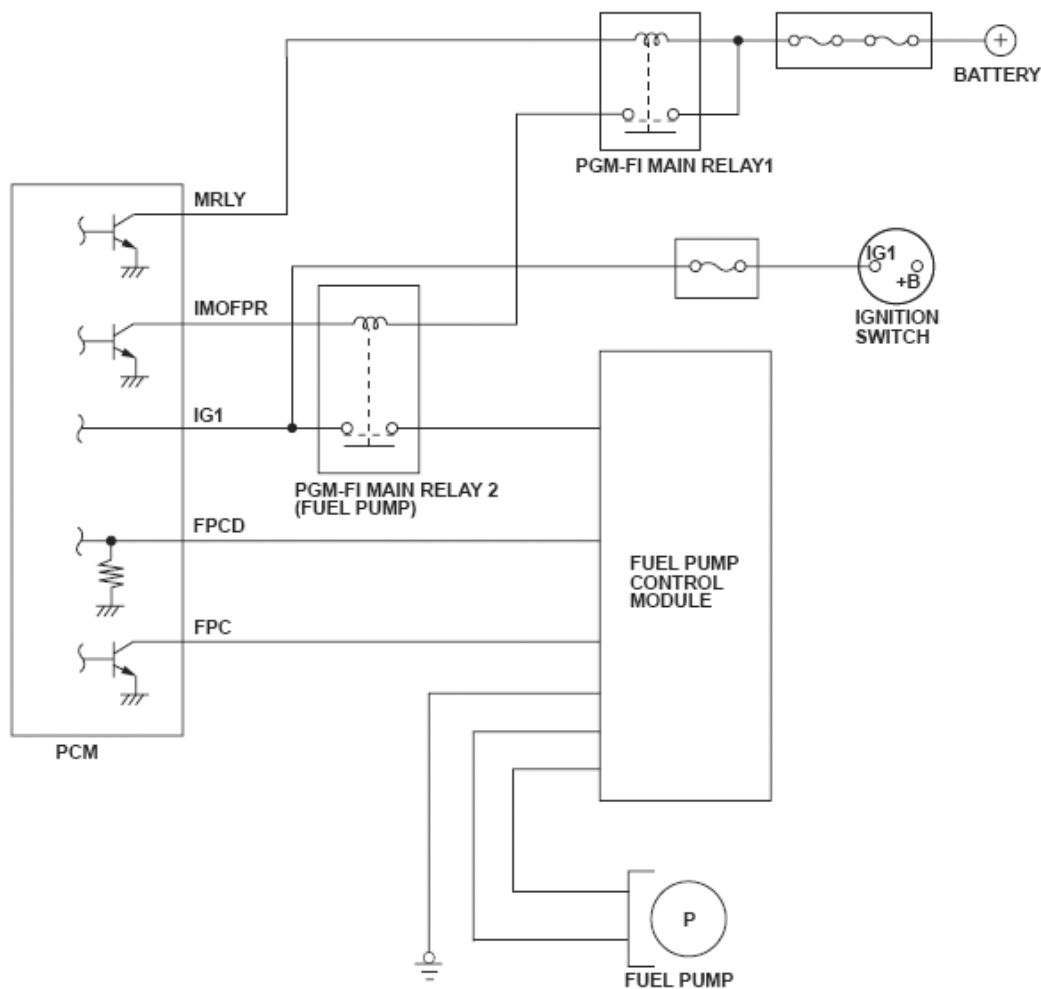
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0627 (169): ADVANCED DIAGNOSTICS

DTC P0627: FUEL PUMP CONTROL MODULE SYSTEM MALFUNCTION



P0627-0702

Fig. 120: Fuel Pump Control Module System - Circuit Diagram**General Description**

The fuel pump control module system monitors the voltage applied to the fuel pump in response to the duty signal from the powertrain control module (PCM). When the voltage applied to the fuel pump is normal, the fuel pump control module system outputs a high diagnosis signal, and when the voltage applied is abnormal, it outputs a low signal. The PCM monitors this diagnosis signal whenever the engine is running.

When the diagnosis signal from the fuel pump control module system is low for a set time or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None

Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running

Malfunction Threshold

The diagnosis signal is low for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P062F (0): ADVANCED DIAGNOSTICS

DTC P062F: POWERTRAIN CONTROL MODULE (PCM) INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR (EXCEPT PGM-FI SYSTEM)

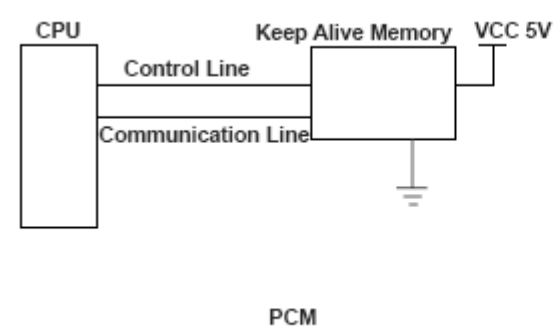


Fig. 121: Powertrain Control Module (PCM) Internal Control Module - Communication Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description (Except PGM-FI System)

The powertrain control module (PCM) is equipped with a keep-alive memory. The data (control learn data, etc.) for powertrain control and information (vehicle identification number (VIN), etc.) related to vehicle control is stored in the keep alive memory, so that it can be maintained even when power is not supplied to the PCM, such as when the battery is disconnected. When power is restored to the PCM, the CPU retrieves the stored information from the keep-alive memory, but when the data retrieval process is not finished normally, a malfunction is detected and a DTC is stored.

The CPU writes data to the keep-alive memory from the CPU: Control related data is written when the ignition is turned on, and vehicle information when commanded from the HDS.

If the data writing process is not completed normally, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Ignition switch	ON	
No active DTCs	P0705, P0706	

Malfunction Threshold (Except PGM-FI System)

A malfunction is detected whenever the keep alive data retrieval and writing process is not completed normally.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

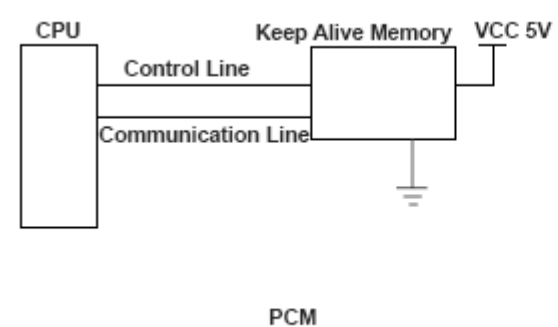
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P062F (131) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC P062F: POWERTRAIN CONTROL MODULE (PCM) INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR (PGM-FI SYSTEM)



P0603-0571

Fig. 122: Powertrain Control Module (PCM) Internal Control Module - Communication Diagram

General Description (PGM-FI System)

The powertrain control module (PCM) is equipped with a keep-alive memory. The data (control learn data, etc.) for powertrain control and information (vehicle identification number (VIN), etc.) related to vehicle control is stored in the keep alive memory, so that it can be maintained even when power is not supplied to the PCM, such as when the battery is disconnected. When power is restored to the PCM, the CPU retrieves the stored information from the keep-alive memory, but when the data retrieval process is not finished normally, a malfunction is detected and a DTC is stored.

The CPU writes data to the keep-alive memory from the CPU: Control related data is written when the ignition is turned on, and vehicle information when commanded from the HDS.

If the data writing process is not completed normally, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold (PGM-FI System)

A malfunction is detected whenever the keep alive data retrieval and writing process is not completed normally.

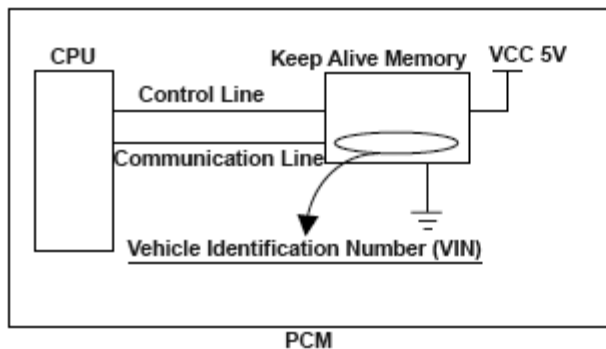
Diagnosis Details (PGM-FI System)**Conditions for illuminating the MIL (PGM-FI System)**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0630 (139): ADVANCED DIAGNOSTICS**DTC P0630: VIN NOT PROGRAMMED OR MISMATCH**

P0630-0571

Fig. 123: VIN Not Programmed Or Mismatch - Communication Diagram

General Description

The powertrain control module (PCM) stores a vehicle identification number (VIN) in the keep-alive memory and outputs the VIN according to the command from the HDS.

The VIN for each vehicle is registered to the PCM using the HDS. The registered VIN is read by the CPU from the keep-alive memory after the ignition is turned on or after the Clear command is executed.

If the VIN is not registered in the keep-alive memory when the ignition is turned on or when the Clear command is executed, it is detected as a VIN unregistered condition and a DTC is stored.

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P062F

Malfunction Threshold

The VIN is not registered in the keep-alive memory in the PCM.

Diagnosis Details

Conditions for illuminating the MIL

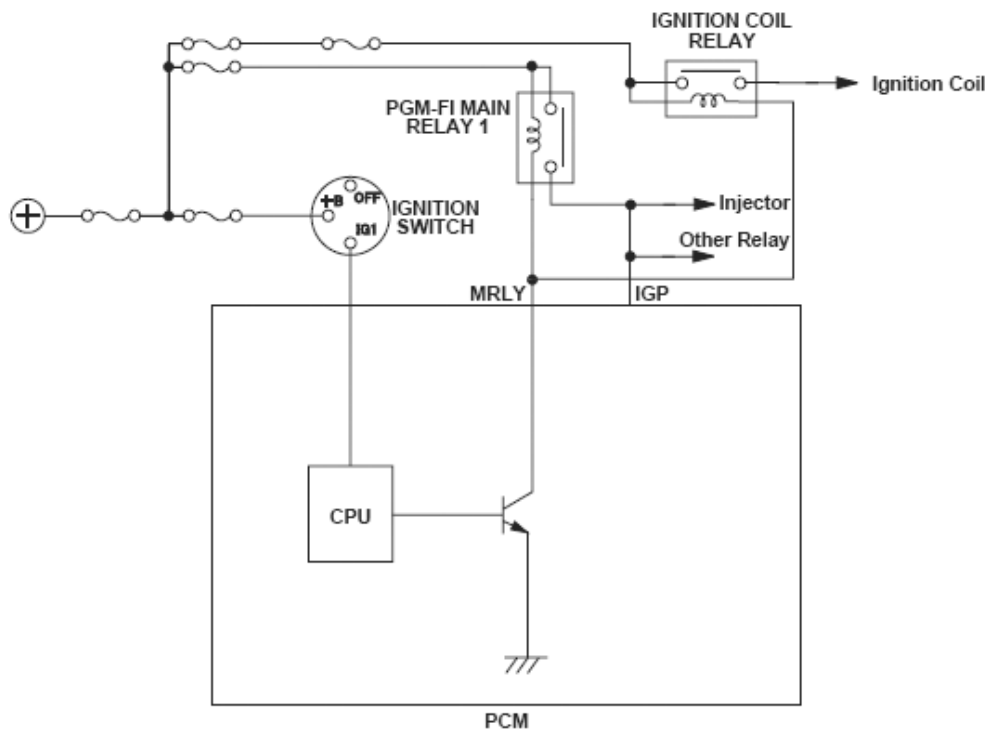
When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

When the VIN registration is completed, the MIL is cleared.

DTC P0685 (135): ADVANCED DIAGNOSTICS

DTC P0685: POWERTRAIN CONTROL MODULE (PCM) POWER CONTROL
CIRCUIT/INTERNAL CIRCUIT MALFUNCTION



P0685-0702

Fig. 124: Powertrain Control Module (PCM) Power Control - Circuit Diagram

General Description

After the ignition switch is turned off, the powertrain control module (PCM) does not shut down immediately. After finishing a predetermined process according to the request of each device and system, the power supply is automatically disconnected (self shut-down function). The PCM power is disconnected by controlling PGM-FI main relay 1.

During a normal PCM shut down, the shut down process is executed by the CPU, PGM-FI main relay 1 is turned off, and the voltage to the PCM is turned off to shut down the PCM. When the voltage to the PCM is turned off and the PCM shuts down without the normal shut down procedure, a malfunction in the PGM-FI main relay 1 control circuit is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or less
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	400 rpm	-

Malfunction Threshold

The PCM is shut down without the normal shut down procedure.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

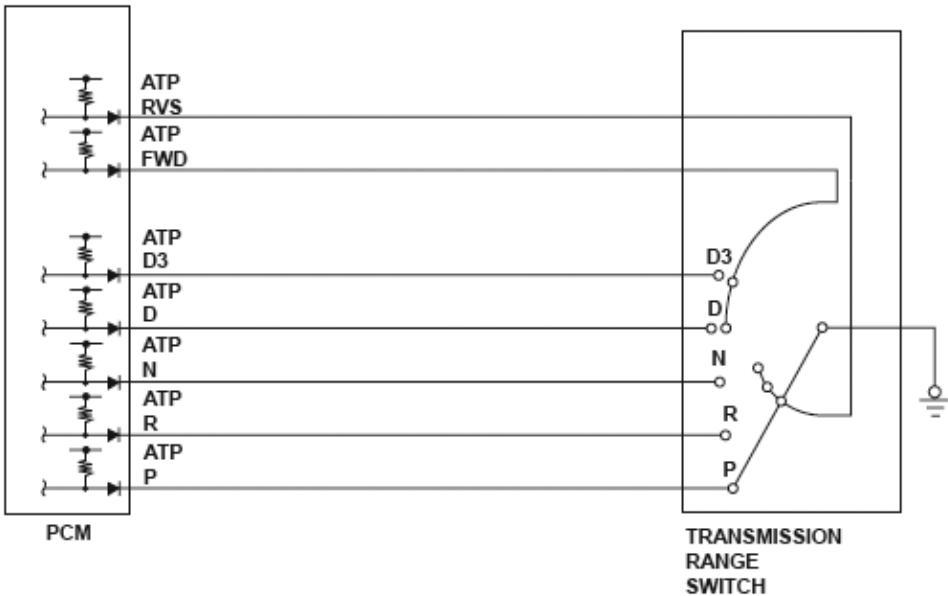
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive drive cycles in which the engine conditions are similar to the first time the malfunction was detected.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0705 (5): ADVANCED DIAGNOSTICS

DTC P0705: SHORT IN TRANSMISSION RANGE SWITCH CIRCUIT (MULTIPLE SHIFT-POSITION INPUT)



P0705-0503

Fig. 125: Short In Transmission Range Switch (Multiple Shift-Position Input) - Circuit Diagram

TRANSMISSION RANGE SWITCH SPECIFICATION

Shift lever position	Input per switch						
	P	R	N	D	D3	FWD	RVS
P	o	X	X	X	X	X	o
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	o
D	X	X	X	o	X	o	X
D3	X	X	X	X	o	o	X

o: Closed X: Open

General Description

The transmission range switch is attached to the control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator indicates which position is selected according to the Low/High signal combinations which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is 12 V (High) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is 0 V (Low) when each switch is closed. If the PCM detects multiple switch inputs instead of the correct switch input for the selected range at that time, it detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-

Malfunction Threshold

One of these conditions occurs.

- The PCM detects the selected range switch input and another range switch input simultaneously for at least 1 second.
- The PCM detects the P, R, or N range switch input and the FWD switch input simultaneously for at least 1 second.
- The PCM detects the D or D3 range switch input and the RVS switch input simultaneously for at least 1 second.

Driving Pattern

Start the engine, and then place the shift lever in each position for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

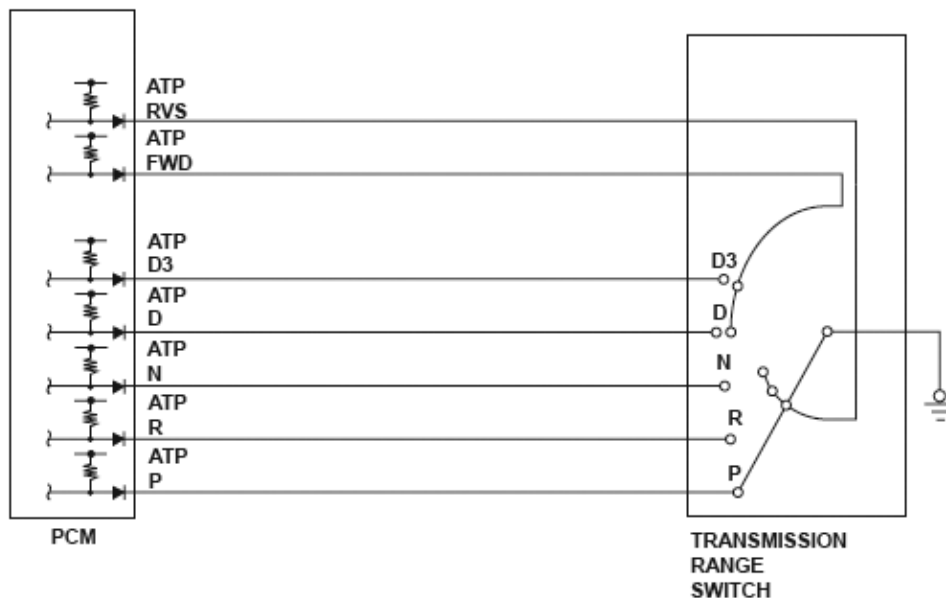
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0706 (6): ADVANCED DIAGNOSTICS

DTC P0706: OPEN IN TRANSMISSION RANGE SWITCH CIRCUIT



P0705-0503

Fig. 126: Open In Transmission Range Switch - Circuit Diagram**TRANSMISSION RANGE SWITCH SPECIFICATION**

Shift lever position	Input per switch						
	P	R	N	D	D3	FWD	RVS
P	o	X	X	X	X	X	o
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	o
D	X	X	X	o	X	o	X
D3	X	X	X	X	o	o	X

o: Closed X: Open

General Description

The transmission range switch is attached to the control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator indicates which position is selected according to the Low/High signal combinations which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is 12 V (High) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is 0 V (Low) when each switch is closed. If the FWD switch stays open while the vehicle repeatedly accelerates to a specified vehicle speed and then stops despite being in the D position, the PCM detects a malfunction in the transmission range switch (open) and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator OFF
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0721, P0722	

Malfunction Threshold

No FWD position signal is detected when the vehicle speed changes from 6 mph (10 km/h) --> 25 mph (40 km/h) --> 6 mph (10 km/h) in the D or D3 position.

Driving Pattern

1. Start the engine, and accelerate to 25 mph (40 km/h) or more in the D position, then slow down to 6 mph (10 km/h).
2. Stop the vehicle, turn the ignition switch OFF, and repeat step 1.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

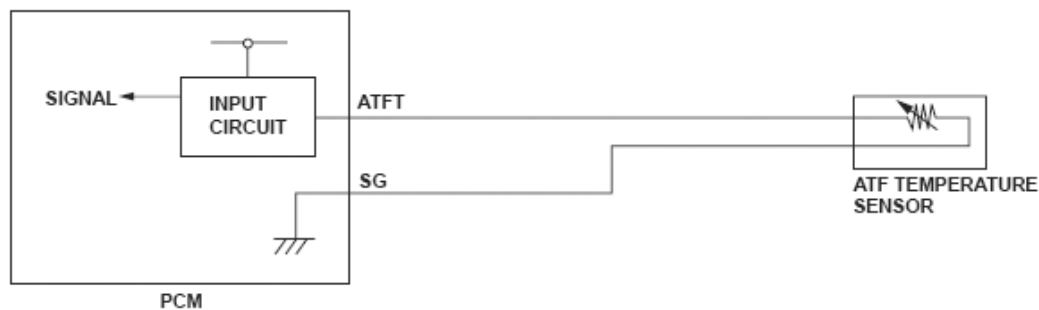
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0711 (28): ADVANCED DIAGNOSTICS

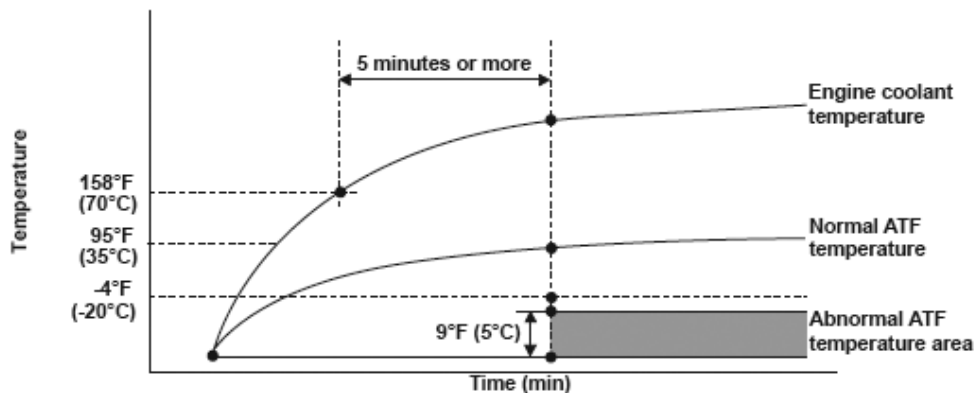
DTC P0711: PROBLEM IN ATF TEMPERATURE SENSOR CIRCUIT



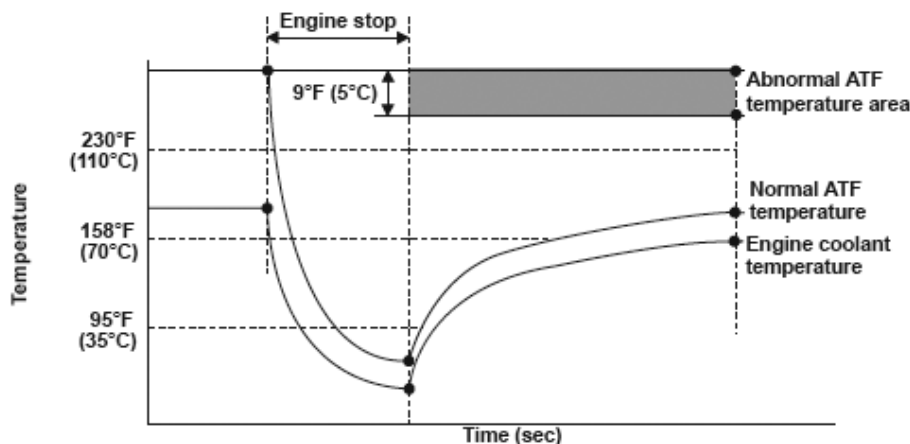
P0711-0301

Fig. 127: ATF Temperature Sensor - Circuit Diagram

1. Stuck at the low temperature



2. Stuck at the high temperature



P0711-0370

Fig. 128: ATF Temperature Sensor - Temperature Graph

General Description

The ATF temperature sensor is a thermistor type sensor whose resistance changes according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the grounded sensor

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

through a pull-up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage.

If the ATF temperature sensor signal does not change, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	5 minutes or more ⁽¹⁾
	20 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Stuck at Low temperature	
(2) Stuck at High temperature	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine coolant temperature	158°F (70°C)	-
ATF temperature	-	-4°F (-20°C) ⁽¹⁾
	230°F (110°C) ⁽²⁾	-
Vehicle speed	19 mph (30 km/h) ⁽¹⁾	-
Throttle position	4.0 °(1)	-
Initial engine coolant temperature	-	95°F (35°C) ⁽¹⁾
Previous engine coolant temperature when the ignition switch was turned OFF	158°F (70°C) ⁽²⁾	-
Present engine coolant temperature when the ignition switch is turned ON	-	95°F (35°C) ⁽²⁾
No active DTCs	P0116, P0117, P0118, P0712, P0713, P0721, P0722	
Other	After the engine coolant temperature reaches the fixed value, both the vehicle speed and the throttle position meet the conditions for at least 5 minutes ⁽¹⁾	

(1) Stuck at Low temperature

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

(2) Stuck at High temperature

Malfunction Threshold

1. Stuck at Low temperature

The ATF temperature rise is 9°F (5°C) or less after the ignition switch is turned ON, and the current ATF temperature is -4°F (-20°C) or less for at least 5 minutes.

2. Stuck at High temperature

The ATF temperature drop is -9°F (-5°C) or less after the ignition switch is turned OFF, and the current ATF temperature is 230°F (110°C) or more for at least 20 seconds.

Driving Pattern

1. Stuck at Low temperature

Start the engine with engine coolant temperature at 95°F (35°C) or less, and warm up the engine until the engine coolant temperature reaches 158°F (70°C) or more. Then drive the vehicle at a speed of 19 mph (30 km/h) or more with the throttle position at 4.0° or more for at least 5 minutes.

2. Stuck at High temperature

Turn off the engine with the engine coolant temperature at 158°F (70°C) or more. Restart the engine after the engine coolant temperature drops to 95°F (35°C) or less, and warm up the engine until the engine coolant temperature reaches 158°F (70°C), and wait for at least 20 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

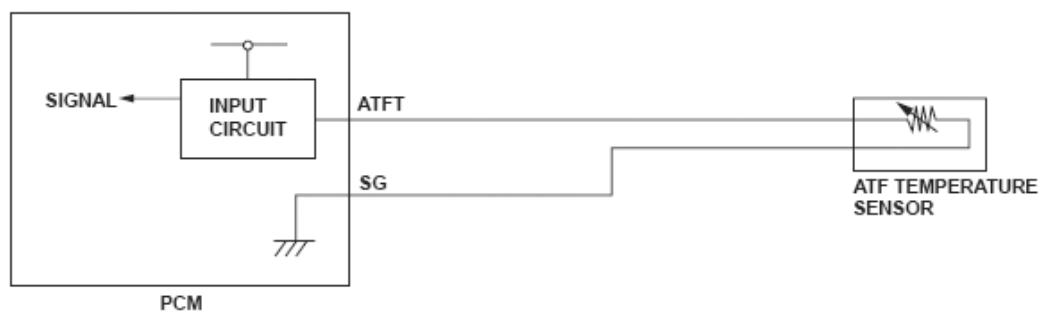
The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0712 (28): ADVANCED DIAGNOSTICS

DTC P0712: SHORT IN ATF TEMPERATURE SENSOR CIRCUIT

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0711-0301

Fig. 129: Short In ATF Temperature Sensor - Circuit Diagram

General Description

The ATF temperature sensor is a thermistor type sensor whose resistance changes according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the grounded sensor through a pull-up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage.

When the ATF temperature sensor signal voltage to the PCM is under the specification, indicating that the temperature is above the specification (a short to ground), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0711, P0713	

Malfunction Threshold

The ATF temperature sensor output voltage is less than 0.07 V for at least 10 seconds.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0713 (28): ADVANCED DIAGNOSTICS

DTC P0713: OPEN IN ATF TEMPERATURE SENSOR CIRCUIT

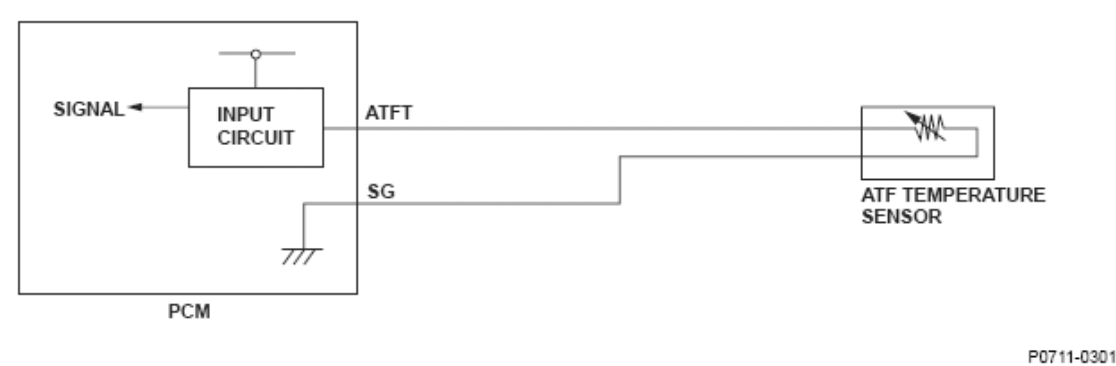


Fig. 130: Open In ATF Temperature Sensor - Circuit Diagram

General Description

The ATF temperature sensor is a thermistor type sensor whose resistance changes according to the change in ATF temperature. The powertrain control module (PCM) sends a 5 V reference voltage to the grounded sensor through a pull-up resistor. When the ATF temperature is low, the sensor resistance increases and the PCM detects a high signal voltage. As the ATF temperature rises, the sensor resistance decreases and the PCM detects a low signal voltage.

When the ATF temperature sensor signal voltage to the PCM is above the specification, indicating that the temperature is under the specification (open), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None

Duration	10 seconds or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0711, P0712	

Malfunction Threshold

The ATF temperature sensor output voltage is 4.93 V or more for at least 10 seconds.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0716 (15): ADVANCED DIAGNOSTICS

DTC P0716: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT

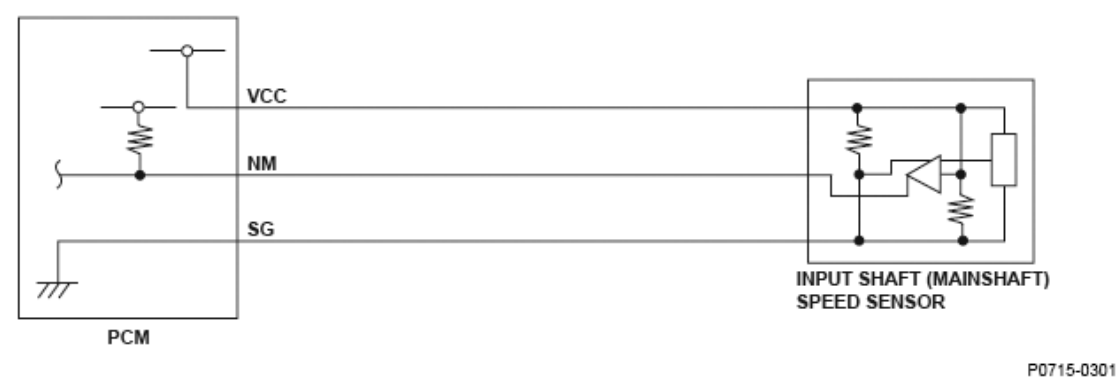
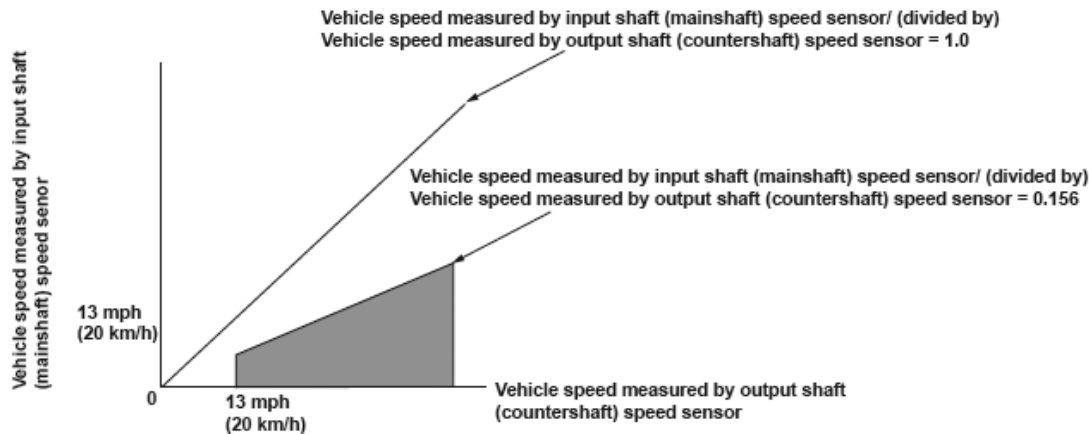


Fig. 131: Problem In Input Shaft (Mainshaft) Speed Sensor - Circuit Diagram**Failure Area**

P0716-0470

Fig. 132: Input Shaft (Mainshaft) Speed Graph**General Description**

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the input shaft (mainshaft) idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the velocity ratio measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-

Shift lever position	D, D3
No active DTCs	P0705, P0706, P0717, P0721, P0722, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983
Others	Not during shifting
	Not when the shift lever is being shifted
	No electrical noise in the output shaft (countershaft) speed sensor output circuit
	Except 1st gear

Malfunction Threshold

The vehicle speed measured by the input shaft (mainshaft) speed sensor/(divided by) the vehicle speed measured by the output shaft (countershaft) speed sensor is less than 0.156 for at least 10 seconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

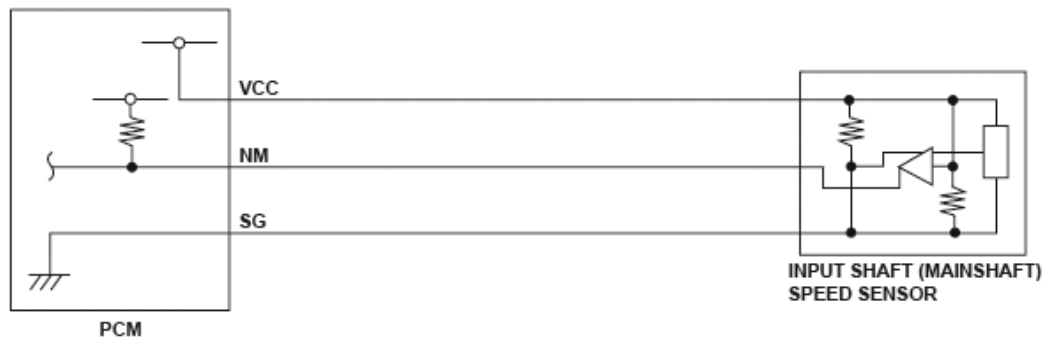
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0717 (15): ADVANCED DIAGNOSTICS

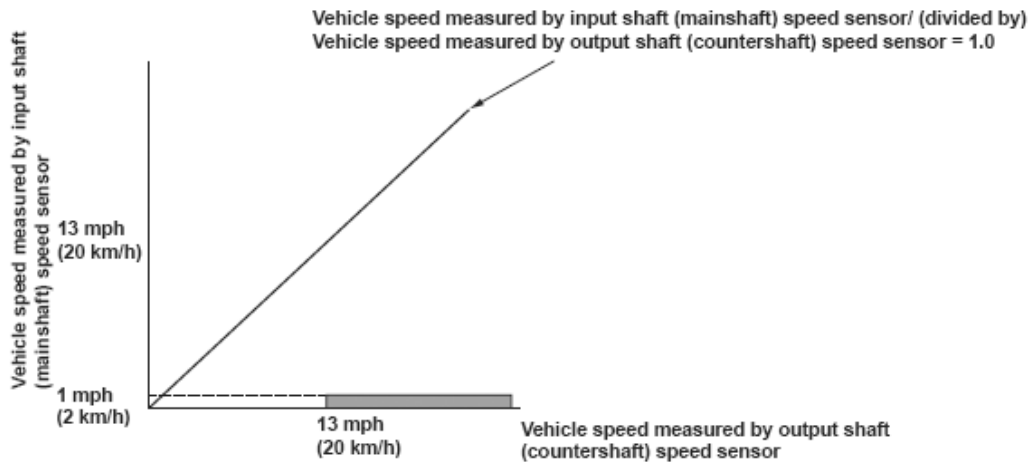
DTC P0717: PROBLEM IN INPUT SHAFT (MAINSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)



P0715-0301

Fig. 133: Problem In Input Shaft (Mainshaft) Speed Sensor (No Signal Input) - Circuit Diagram

Failure Area



P0717-0470

Fig. 134: Input Shaft (Mainshaft) Speed Graph

General Description

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the input shaft (mainshaft) idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the correlation between the vehicle speed measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more

DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Shift lever position	D, D3	
No active DTCs	P0705, P0706, P0716, P0721, P0722, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983	
Others	Not during shifting	
	Not when the shift lever is being shifted	
	No electrical noise in the output shaft (countershaft) speed sensor output circuit	
	Except 1st gear	

Malfunction Threshold

When the vehicle speed measured by the output shaft (countershaft) speed sensor is 13 mph (20 km/h) or more, the vehicle speed measured by the input shaft (mainshaft) speed sensor is 1 mph (2 km/h) or less for at least 10 seconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

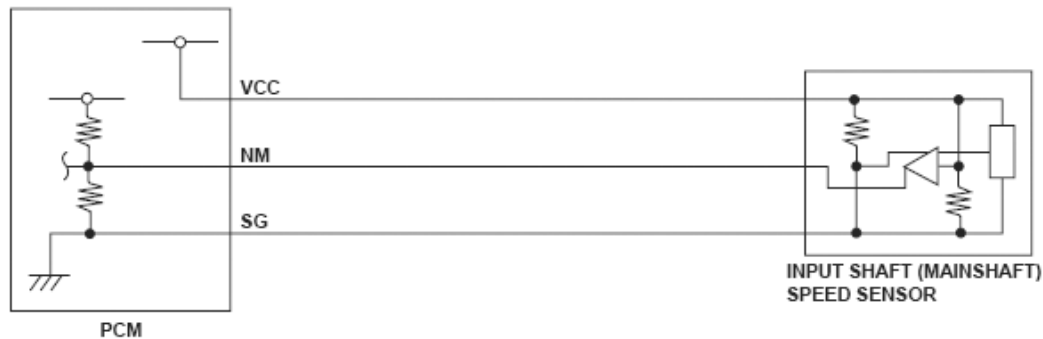
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

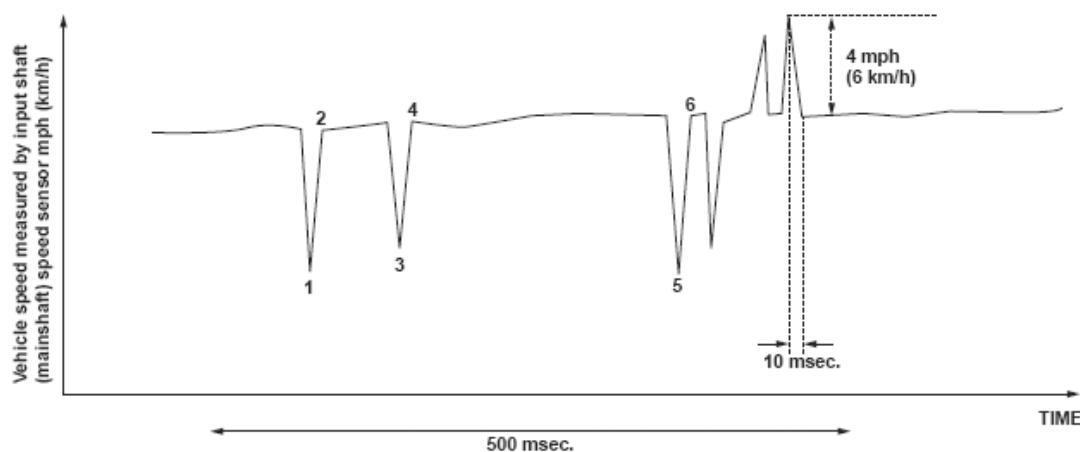
DTC P0718 (15): ADVANCED DIAGNOSTICS

DTC P0718: INPUT SHAFT (MAINSHAFT) SPEED SENSOR INTERMITTENT FAILURE



P0715-0503

Fig. 135: Input Shaft (Mainshaft) Speed Sensor Intermittent Failure - Circuit Diagram



P0718-0470

Fig. 136: Vehicle Speed Waveform

General Description

The input shaft (mainshaft) speed sensor is attached to the outside of the transmission housing. The input shaft (mainshaft) speed sensor generates a pulsing signal according to the speed of the input shaft (mainshaft) idler gear on the input shaft (mainshaft). Using that signal, the powertrain control module (PCM) determines the speed of the input shaft (mainshaft). If no pulses occur with the input shaft (mainshaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the fluctuation of the vehicle speed measured by the input shaft (mainshaft) speed sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

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Execution	Continuous
Sequence	None
Duration	500 milliseconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11.0 V	-
No active DTCs	P0716, P0717, P0721, P0722	
Others	Not during shifting	
	Not when an output shaft (countershaft) speed sensor intermittent failure is detected	

Malfunction Threshold

The fluctuation of the vehicle speed measured by the input shaft (mainshaft) speed sensor in 10 milliseconds is 4 mph (6km/h) or more, and it fluctuates at least six times within 500 milliseconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more so it shifts from 1st to 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

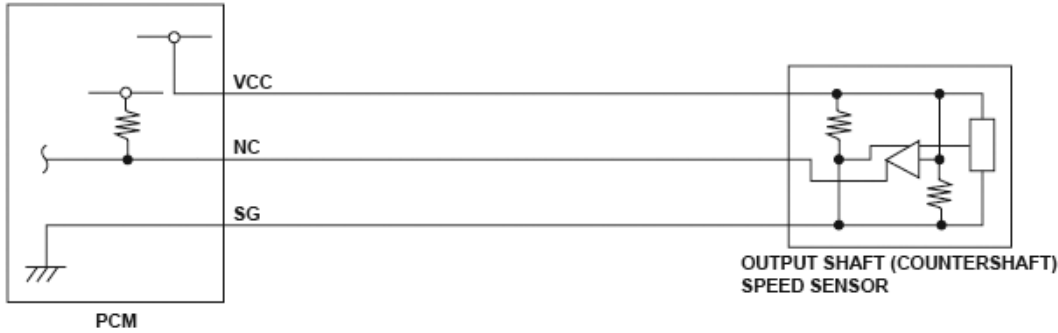
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0721 (9): ADVANCED DIAGNOSTICS

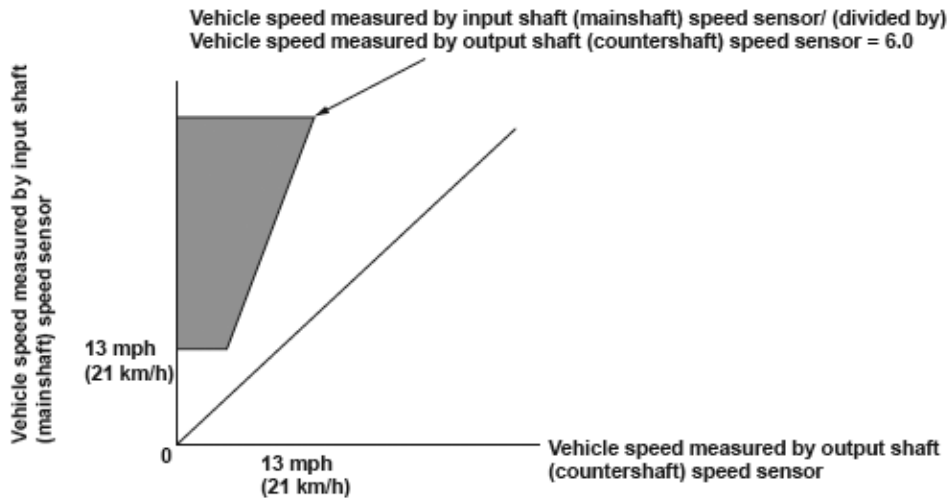
DTC P0721: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT



P0720-0503

Fig. 137: Problem In Output Shaft (Countershaft) Speed Sensor - Circuit Diagram

Failure Area



P0720-0470

Fig. 138: Output Shaft (Countershaft) Speed Graph

General Description

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If pulse dropouts occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the velocity ratio measured by the input shaft (mainshaft) speed sensor and the output shaft (countershaft) speed sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

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2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Shift lever position	D, D3	
No active DTCs	P0705, P0706, P0716, P0717, P0722, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983	
Others	Not during shifting	
	Not when the shift lever is being shifted	
	No electrical noise in the input shaft (mainshaft) speed sensor output circuit	
	Except 1st gear	

Malfunction Threshold

The vehicle speed measured by the input shaft (mainshaft) speed sensor/(divided by) the vehicle speed measured by the output shaft (countershaft) speed sensor is greater than 6.0 for at least 10 seconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

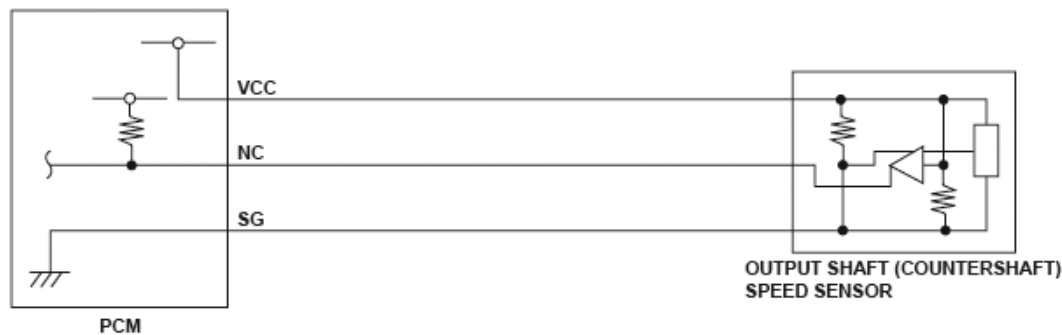
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

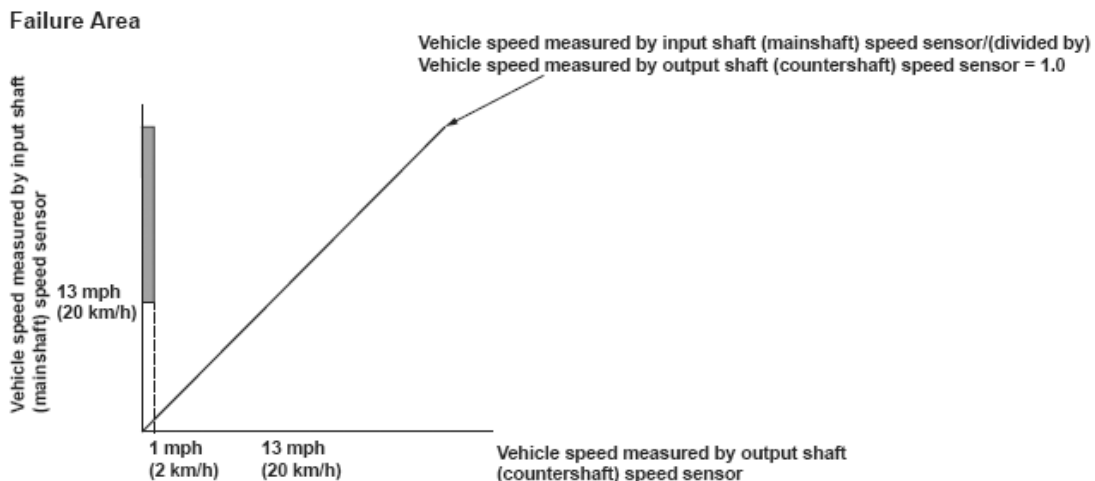
DTC P0722 (9): ADVANCED DIAGNOSTICS

DTC P0722: PROBLEM IN OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR CIRCUIT (NO SIGNAL INPUT)



P0720-0503

Fig. 139: Problem In Output Shaft (Countershaft) Speed Sensor (No Signal Input) - Circuit Diagram



P0722-0470

Fig. 140: Output Shaft (Countershaft) Speed Graph

General Description

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If pulse dropouts occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the correlation between the vehicle speed measured by the output shaft (countershaft) speed sensor and the input shaft (mainshaft) speed sensor, a malfunction is detected and a DTC is stored.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine speed	500 rpm	-
Vehicle speed	13 mph (20 km/h)	-
Shift lever position	D, D3	
No active DTCs	P0705, P0706, P0716, P0717, P0721, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983	
Others	Not during shifting	
	Not when the shift lever is being shifted	
	No electrical noise in the input shaft (mainshaft) speed sensor output circuit	
	Except 1st gear	

Malfunction Threshold

When the vehicle speed measured by the input shaft (mainshaft) speed sensor is 13 mph (20 km/h) or more, the vehicle speed measured by the output shaft (countershaft) speed sensor is 1 mph (2 km/h) or less for at least 10 seconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more for at least 10 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

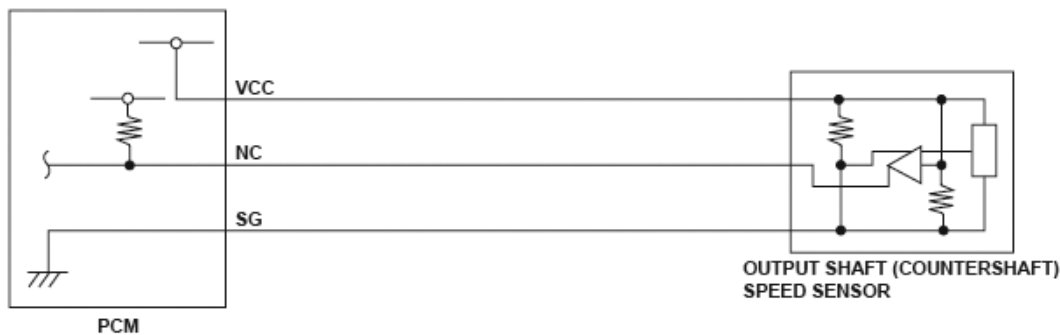
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

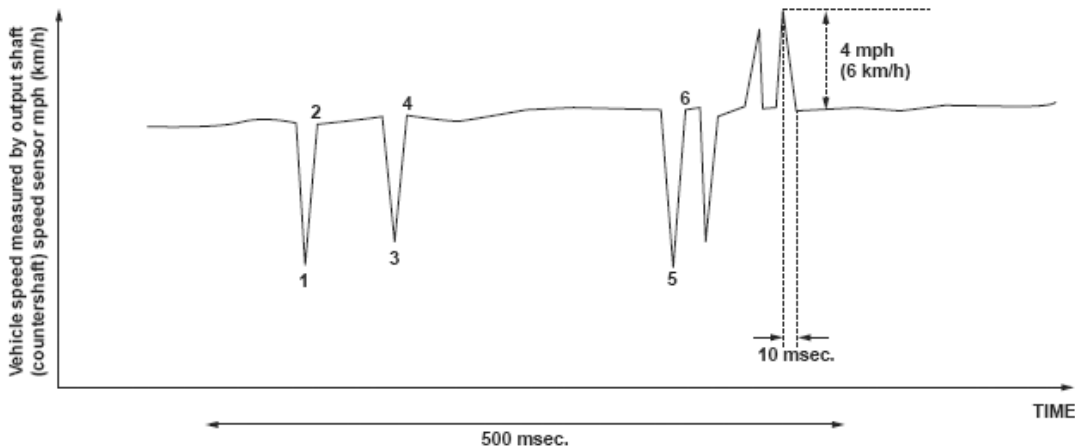
DTC P0723 (9): ADVANCED DIAGNOSTICS

DTC P0723: OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR INTERMITTENT FAILURE



P0720-0503

Fig. 141: Output Shaft (Countershaft) Speed Sensor Intermittent Failure - Circuit Diagram



P0723-0470

Fig. 142: Vehicle Speed Waveform

General Description

The output shaft (countershaft) speed sensor is attached to the outside of the transmission housing. The output shaft (countershaft) speed sensor generates a pulsing signal according to the speed of the park gear on the output shaft (countershaft). Using that signal, the powertrain control module (PCM) determines the speed of the output shaft (countershaft). If pulse dropouts occur with the output shaft (countershaft) rotating, the PCM detects a malfunction that may be caused by an open, a temporary open, or a short to ground. Based on the fluctuation of

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

the vehicle speed measured by the output shaft (countershaft) speed sensor, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	500 milliseconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	13 mph (20 km/h)	-
Battery voltage	11.0 V	-
No active DTCs	P0721, P0722	
Other	Not during shifting	
	Not when an input shaft (mainshaft) speed sensor intermittent failure is detected	

Malfunction Threshold

The fluctuation of the vehicle speed measured by the output shaft (countershaft) speed sensor in 10 milliseconds is 4 mph (6km/h) or more, and it fluctuates at least six times within 500 milliseconds.

Driving Pattern

Start the engine, and drive the vehicle at a speed of 13 mph (20 km/h) or more so it shifts from 1st to 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

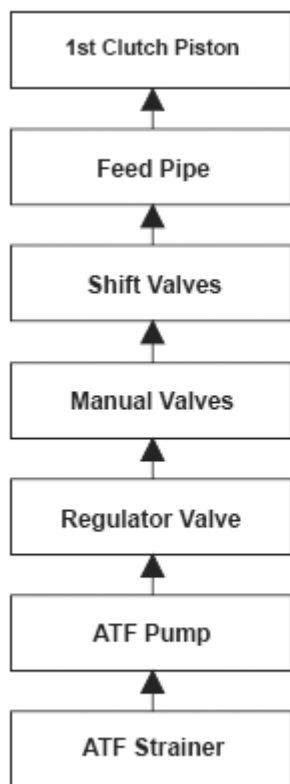
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0731 (64): ADVANCED DIAGNOSTICS

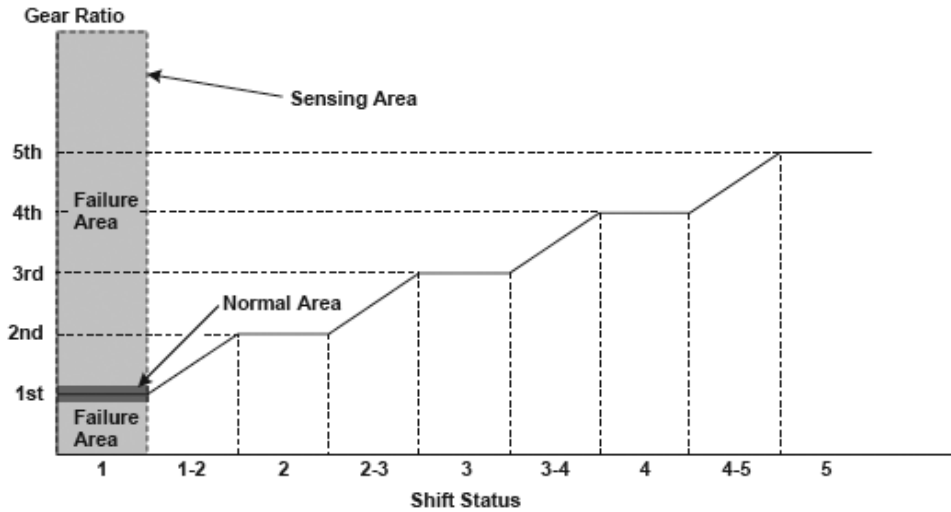
DTC P0731: PROBLEM IN 1ST CLUTCH AND 1ST CLUTCH HYDRAULIC CIRCUIT (1ST GEAR INCORRECT RATIO)



P0731-0370

Fig. 143: 1st Clutch And 1st Clutch Hydraulic Diagnostic Flow

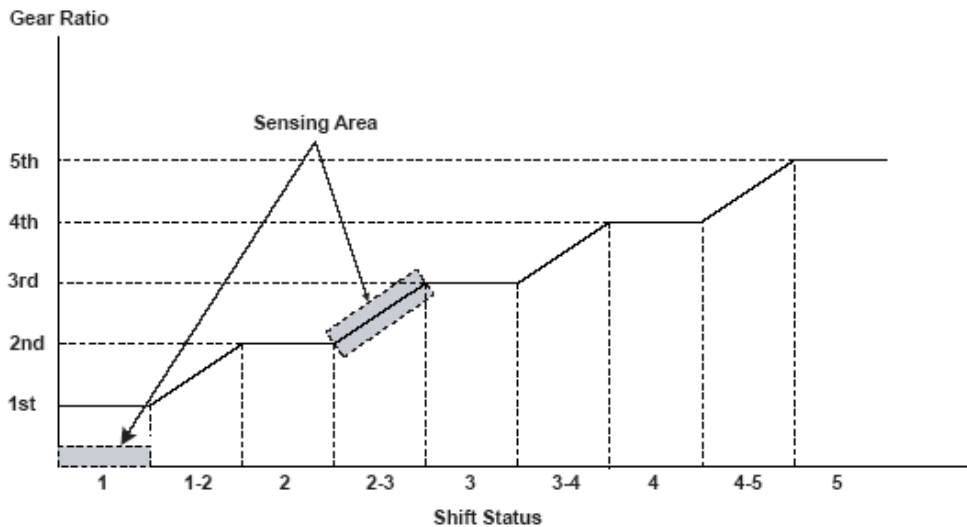
SYMPTOM 1



P0731-0570

Fig. 144: Gear Ratio To Shift Status Graph (1 Of 2)

SYMPTOM 2



P0731-0571

Fig. 145: Gear Ratio To Shift Status Graph (2 Of 2)

General Description

To engage 1st gear, line pressure is supplied to the 1st clutch piston, engaging the 1st clutch, and the secondary shaft and the secondary shaft 1st gear are connected and revolve together. Hydraulic pressure is supplied to the 1st clutch through the ATF strainer --> the ATF pump --> the regulator valve --> the manual valve --> the shift valves --> the feed pipe --> 1st clutch piston. (A shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 1st gear

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ratio, it is detected as a malfunction of the hydraulic circuit or the 1st clutch, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	12 seconds or more (Symptom 1)
	Depending on the driving pattern (Symptom 2)
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle speed	8 mph (12 km/h)	-
Throttle position	10 %	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0732, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

SYMPTOM CHART

Condition	Minimum	Maximum
State of the engine	Running	
Battery voltage	11.0 V	-
Shift lever position	D, D3	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0732, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Malfunction Threshold

Symptom 1

The actual gear ratio must match one of these conditions for at least 12 seconds with the 1st gear command:

- Actual gear ratio is greater than the 1st gear ratio by a factor of 1.2
- Actual gear ratio is less than the 1st gear ratio by a factor of 0.75

Symptom 2

The actual gear position is neutral for at least 3 seconds and then the gear up-shifted from 2nd to 3rd, even though 1st gear shift is commanded.

Driving Pattern

Symptom 1

Start the engine, shift to D position, and drive the vehicle at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 1st gear.

Symptom 2 (When the vehicle does not start at 1st gear)

1. Start the engine.
 2. Shift to D position, and open the accelerator pedal about 3% for at least 5 seconds.
 3. Release the accelerator pedal until the engine speed drops 1,000 rpm or less.
 4. Press the accelerator pedal again, and drive the vehicle so that the transmission shifts from 2nd to 3rd gear.
- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

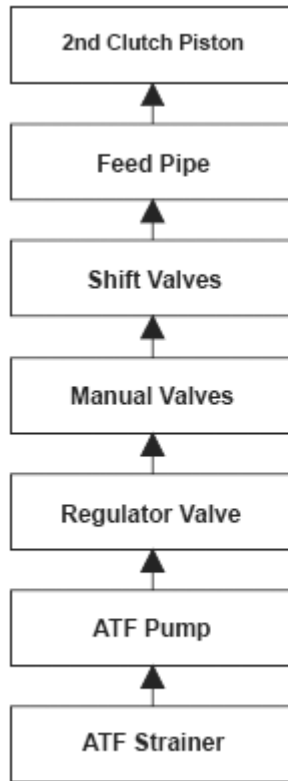
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

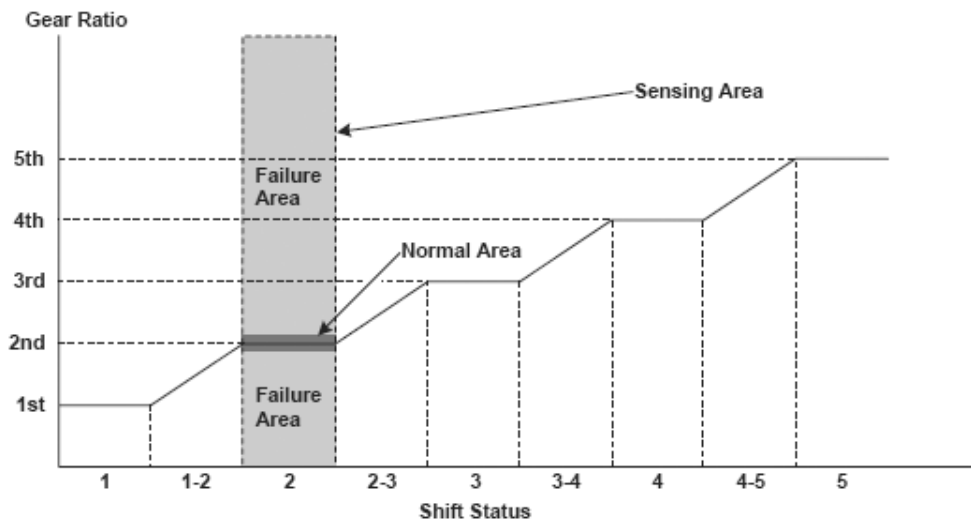
DTC P0732 (64): ADVANCED DIAGNOSTICS

DTC P0732: PROBLEM IN 2ND CLUTCH AND 2ND CLUTCH HYDRAULIC CIRCUIT (2ND GEAR INCORRECT RATIO)



P0732-0370

Fig. 146: 2nd Clutch And 2nd Clutch Hydraulic Diagnostic Flow



P0732-0371

Fig. 147: Gear Ratio To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

To engage 2nd gear, line pressure is supplied to the 2nd clutch piston, engaging the 2nd clutch, and the secondary shaft and the secondary shaft 2nd gear are connected and revolve together. Hydraulic pressure is supplied to the 2nd clutch through the ATF strainer --> the ATF pump --> the regulator valve --> the manual valve --> the shift valves --> the feed pipe --> 2nd clutch piston. (A shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 2nd gear ratio, it is detected as a malfunction of the hydraulic circuit or the 2nd clutch, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle speed	8 mph (12 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0731, P0733, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The actual gear ratio must match one of these conditions for at least 12 seconds with the 2nd gear command.

- Actual gear ratio is greater than the 2nd gear ratio by a factor of 1.2.
- Actual gear ratio is less than the 2nd gear ratio by a factor of 0.75.

Driving Pattern

Start the engine, shift to the D position, and drive the vehicle at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 2nd gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0733 (64): ADVANCED DIAGNOSTICS

DTC P0733: PROBLEM IN 3RD CLUTCH AND 3RD CLUTCH HYDRAULIC CIRCUIT (3RD GEAR INCORRECT RATIO)

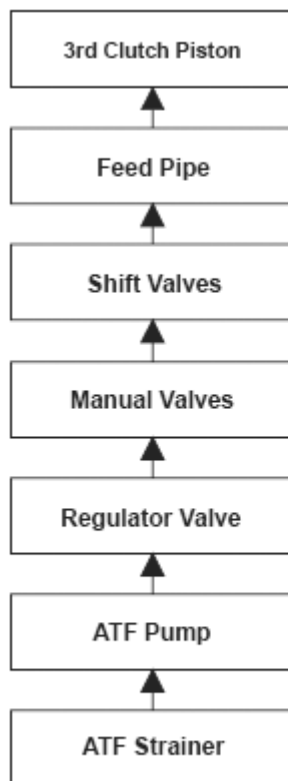
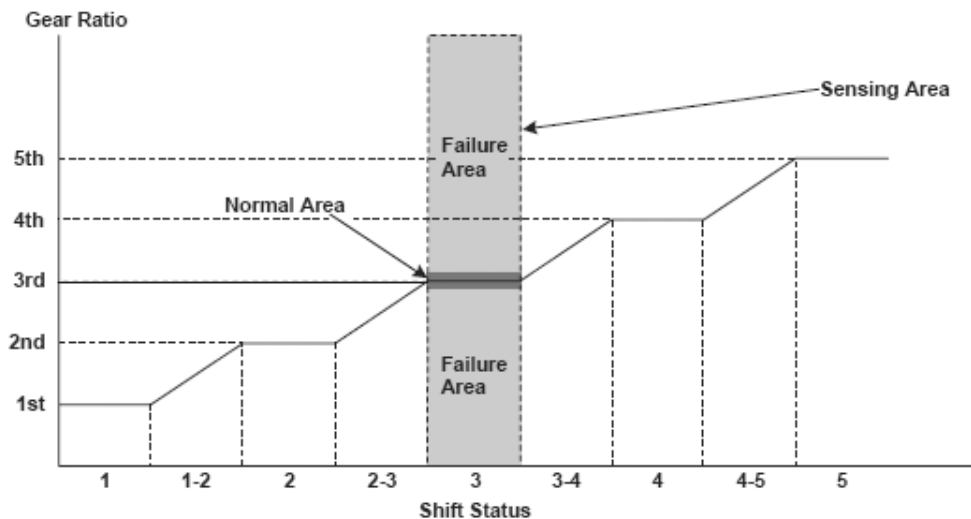


Fig. 148: 3rd Clutch And 3rd Clutch Hydraulic Diagnostic Flow

P0733-0371

Fig. 149: Gear Ratio To Shift Status Graph**General Description**

To engage 3rd gear, line pressure is supplied to the 3rd clutch piston, the 3rd clutch is engaged, and the output shaft (countershaft) and the output shaft (countershaft) 3rd gear are connected and revolve together. Hydraulic pressure is supplied to the 3rd clutch through the ATF strainer --> the ATF pump --> the regulator valve --> the manual valve --> the shift valves --> the feed pipe --> 3rd clutch piston. (The shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 3rd gear ratio, it is detected as a malfunction of the hydraulic circuit or the 3rd clutch, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Engine	1,000 rpm	-

speed		
Vehicle speed	8 mph (12 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0731, P0732, P0734, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The actual gear ratio must match one of these conditions for at least 12 seconds with the 3rd gear command.

- Actual gear ratio is greater than the 3rd gear ratio by a factor of 1.2.
- Actual gear ratio is less than the 3rd gear ratio by a factor of 0.75.

Driving Pattern

Start the engine, shift to the D position, and drive the vehicle at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 3rd gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

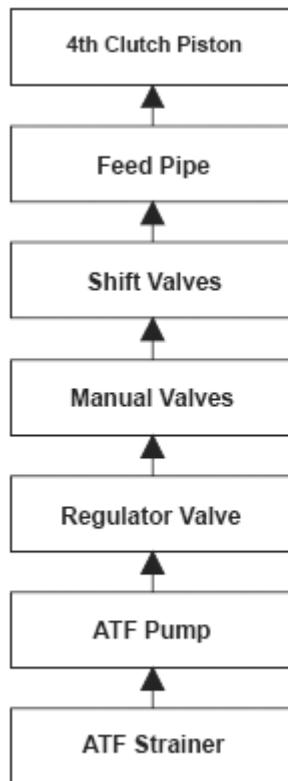
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

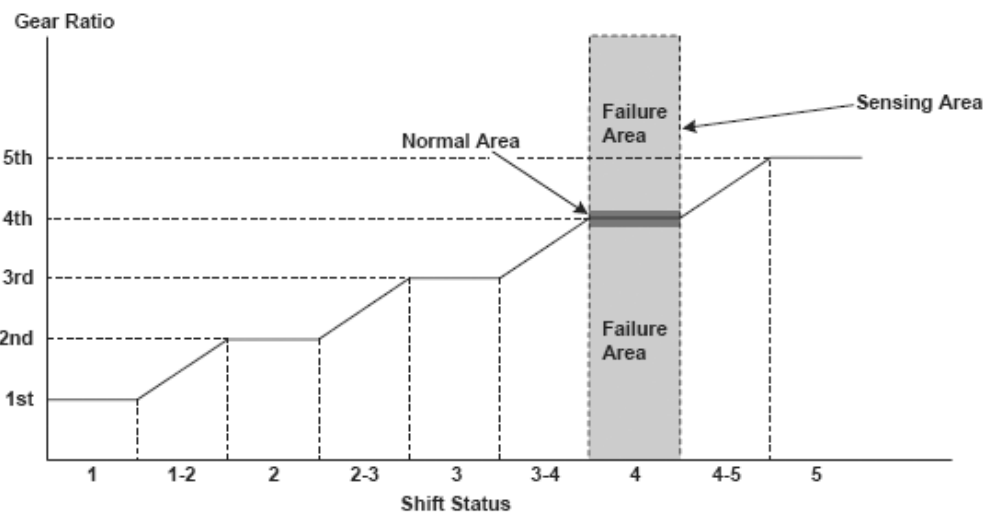
DTC P0734 (64): ADVANCED DIAGNOSTICS

DTC P0734: PROBLEM IN 4TH CLUTCH AND 4TH CLUTCH HYDRAULIC CIRCUIT (4TH GEAR INCORRECT RATIO)



P0734-0370

Fig. 150: 4th Clutch And 4th Clutch Hydraulic Diagnostic Flow



P0734-0371

Fig. 151: Gear Ratio To Shift Status Graph

General Description

To engage 4th gear, line pressure is supplied to the 4th clutch piston, engaging the 4th clutch, and the input

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

shaft (mainshaft) and the input shaft (mainshaft) 4th gear are connected and revolve together. Hydraulic pressure is supplied to the 4th clutch through the ATF strainer --> the ATF pump --> the regulator valve --> the manual valve --> the shift valves --> the feed pipe --> 4th clutch piston. (A shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 4th gear ratio, it is detected as a malfunction of the hydraulic circuit or the 4th clutch, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle speed	8 mph (12 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0731, P0732, P0733, P0735, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The actual gear ratio must match one of these conditions for at least 12 seconds with the 4th gear command.

- Actual gear ratio is greater than the 4th gear ratio by a factor of 1.2.
- Actual gear ratio is less than the 4th gear ratio by a factor of 0.75.

Driving Pattern

Start the engine, shift to the D position, and drive the vehicle at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 4th gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

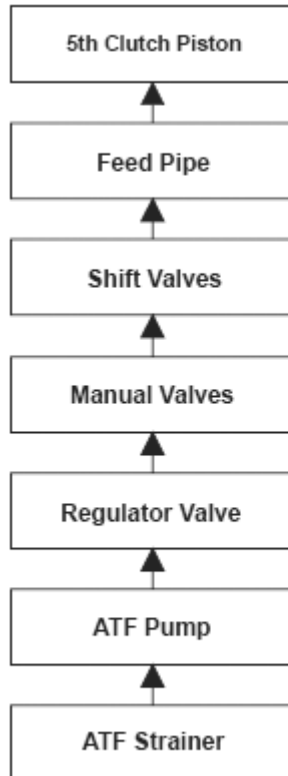
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0735 (64): ADVANCED DIAGNOSTICS

DTC P0735: PROBLEM IN 5TH CLUTCH AND 5TH CLUTCH HYDRAULIC CIRCUIT (5TH GEAR INCORRECT RATIO)

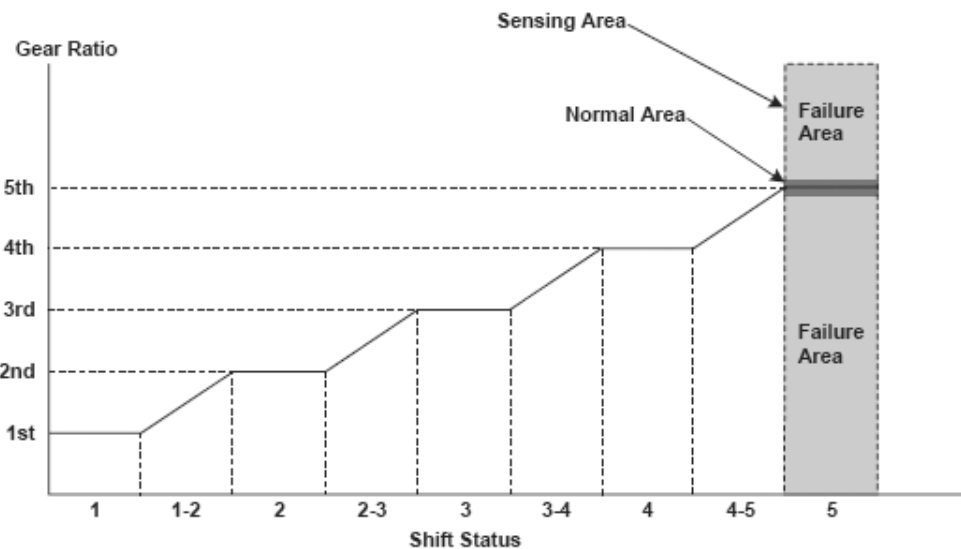


P0735-0370

Fig. 152: 5th Clutch And 5th Clutch Hydraulic Diagnostic Flow

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0735-0371

Fig. 153: Gear Ratio To Shift Status Graph

General Description

To engage 5th gear, line pressure is supplied to the 5th clutch piston, engaging the 5th clutch, and the input shaft (mainshaft) and the input shaft (mainshaft) 5th gear are connected and revolve together. Hydraulic pressure is supplied to the 5th clutch through the ATF strainer --> the ATF pump --> the regulator valve --> the manual valve --> the shift valves --> the feed pipe --> 5th clutch piston. (A shift valve failure in the supply route above is detected by the malfunction detection of each shift solenoid valve.) The powertrain control module (PCM) computes the ratio of the input shaft (mainshaft) speed to the output shaft (countershaft) speed. When the ratio is not the 5th gear ratio, it is detected as a malfunction of the hydraulic circuit or the 5th clutch, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	12 seconds or more
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	1,000 rpm	-
Vehicle		

speed	8 mph (12 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0731, P0732, P0733, P0734, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0776, P0777, P0796, P0797, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The actual gear ratio must match one of these conditions for at least 12 seconds with the 5th gear command.

- Actual gear ratio is greater than the 5th gear ratio by a factor of 1.2.
- Actual gear ratio is less than the 5th gear ratio by a factor of 0.75.

Driving Pattern

Start the engine, shift to the D position, and drive the vehicle at a speed of 8 mph (12 km/h) or more for at least 12 seconds in 5th gear.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0741 (40): ADVANCED DIAGNOSTICS

DTC P0741: TORQUE CONVERTER CLUTCH HYDRAULIC CIRCUIT STUCK OFF

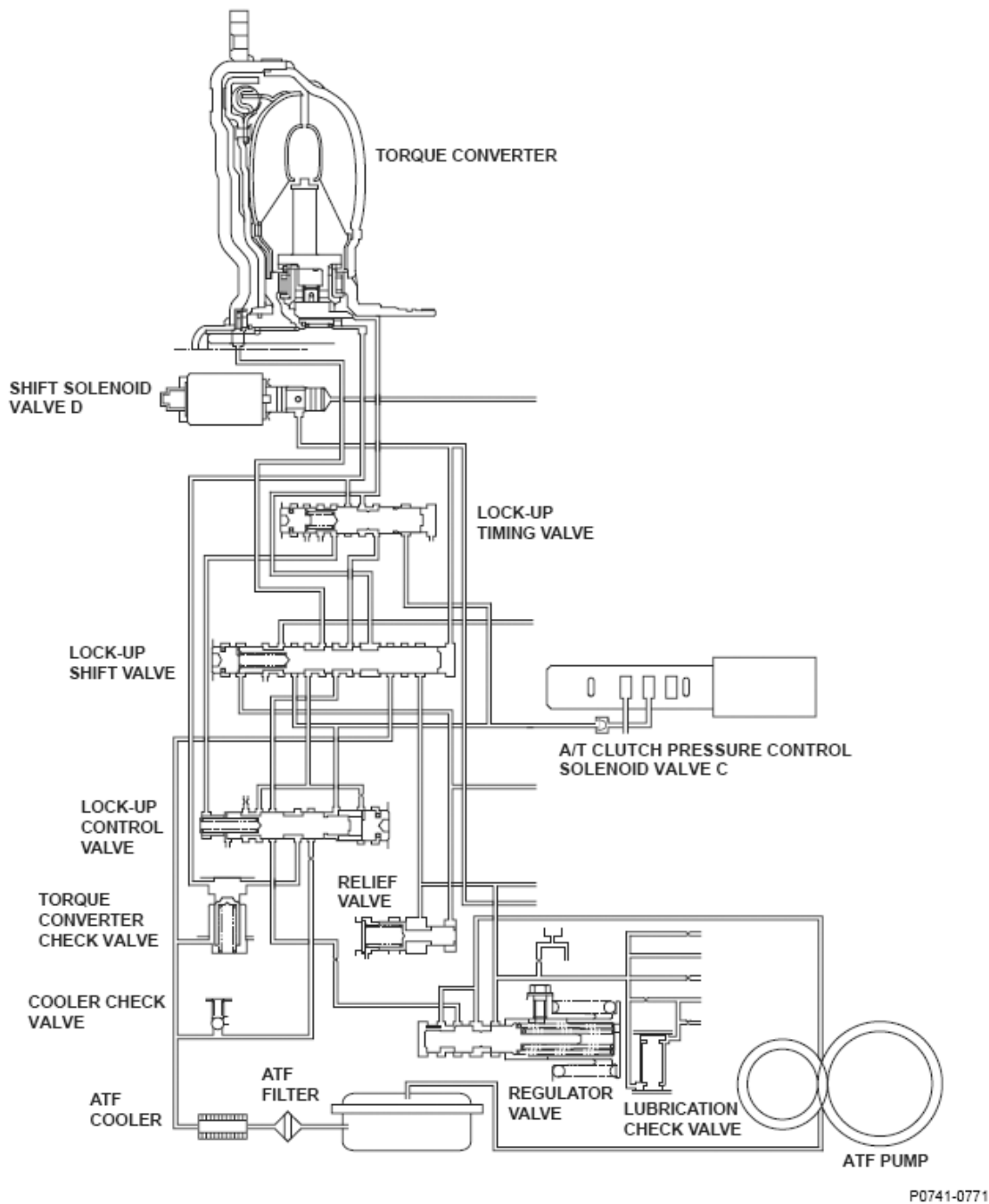


Fig. 154: Torque Converter Clutch Hydraulic (Stuck OFF) - System Diagram

TORQUE CONVERTER CLUTCH OPERATION CHART

Torque converter clutch operation		A/T clutch pressure control solenoid valve C	
		ON (100 %)	OFF (0 %)
Shift solenoid valve D	ON (12 V)	Torque converter clutch: maximum duty	Torque converter clutch OFF
	OFF (0 V)	Torque converter clutch OFF	Torque converter clutch

		OFF
--	--	-----

General Description

The power transfer capacity of the torque converter clutch is controlled by the balance of automatic transmission fluid (ATF) supply to and discharge from the torque converter. When hydraulic pressure is applied internally, the torque converter clutch turns ON, and when hydraulic pressure is applied from the back pressure side, the torque converter clutch turns OFF. As the hydraulic pressure from the internal pressure side increases, the power transfer capacity of the torque converter clutch increases. The direction of hydraulic pressure supply is switched by the torque converter clutch and the lock-up shift valve. ATF is supplied from the internal pressure side to shift solenoid valve D when the signal from the powertrain control module (PCM) is ON (12 V), and ATF is supplied from the back pressure side when it is OFF (0 V). The balance of internal pressure and back pressure is controlled by A/T clutch pressure control solenoid valve B, the lock-up control valve, and the lock-up timing valve. A/T clutch pressure control solenoid valve C maximizes the power transfer capacity of the torque converter clutch when the signal from the PCM is ON (1 A), and it minimizes the power transfer capacity of the torque converter clutch when the signal from the PCM is OFF (0 A). If the ratio of engine speed and input shaft (mainshaft) speed is not about 1:1 while the PCM is issuing the command to turn shift solenoid valve D and A/T clutch pressure control solenoid valve C ON, the PCM detects a faulty lock-up control system and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	22 seconds or more
DTC Type	Two drive cycles, MIL ON, D indicator Not blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

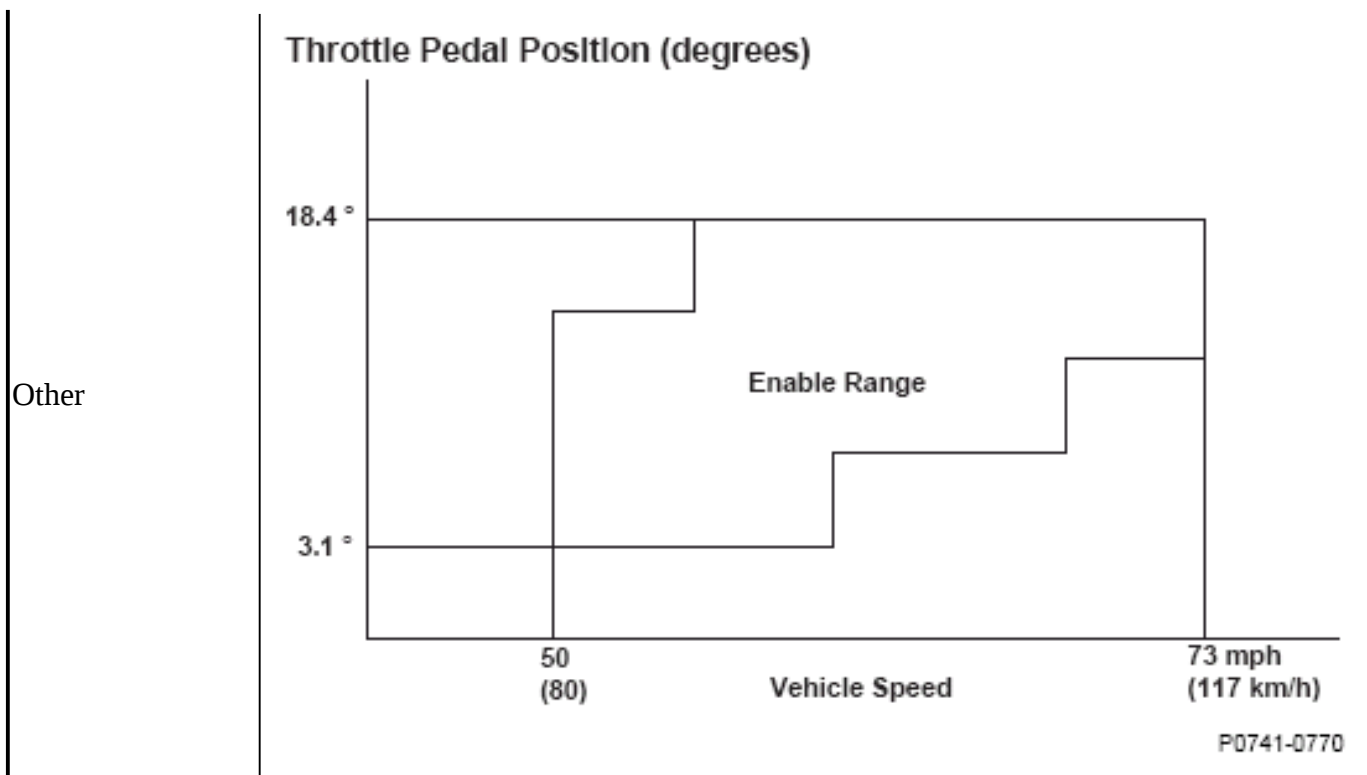
Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	158°F (70°C)	212°F (100°C)
Battery voltage	11.0 V	-
Shift status	5th gear in the D position	
Torque converter clutch	During controlling operation	
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0706, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1780	
	When both the vehicle speed and the throttle position are in Enable Range	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



Malfunction Threshold

The ratio of the engine revolutions to the transmission input pulses does not reach about 100% for at least 22 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a constant speed of 60 mph (96 km/h) for at least 22 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

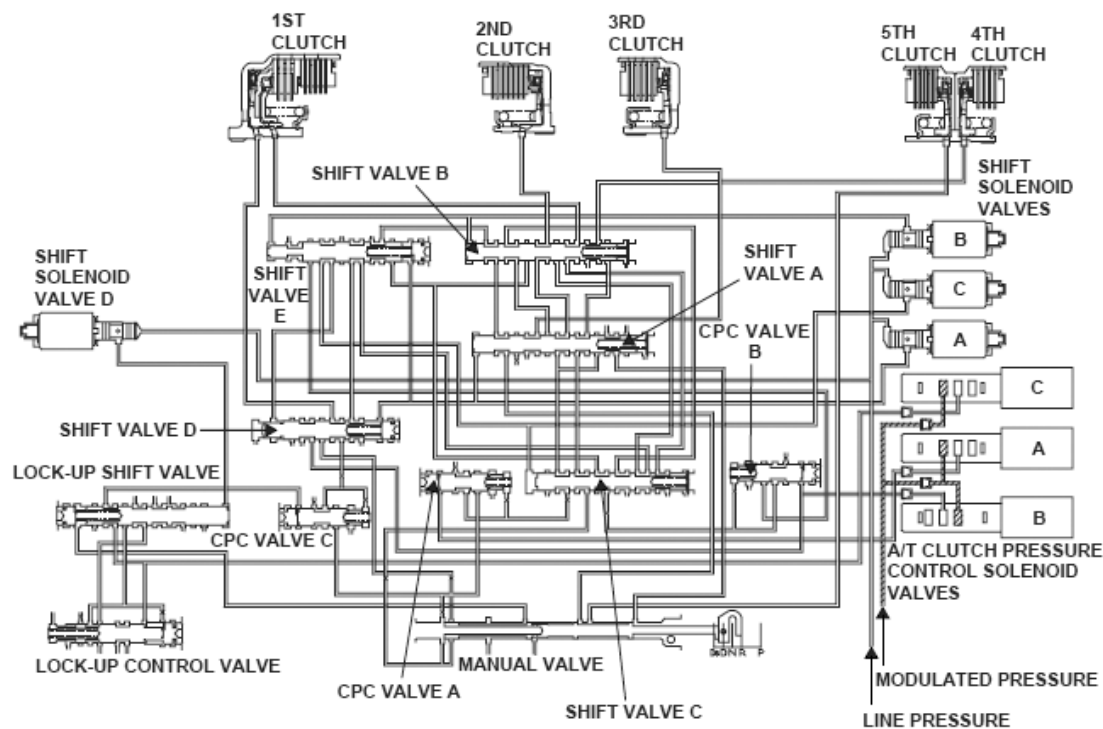
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0746 (76): ADVANCED DIAGNOSTICS

DTC P0746: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK OFF

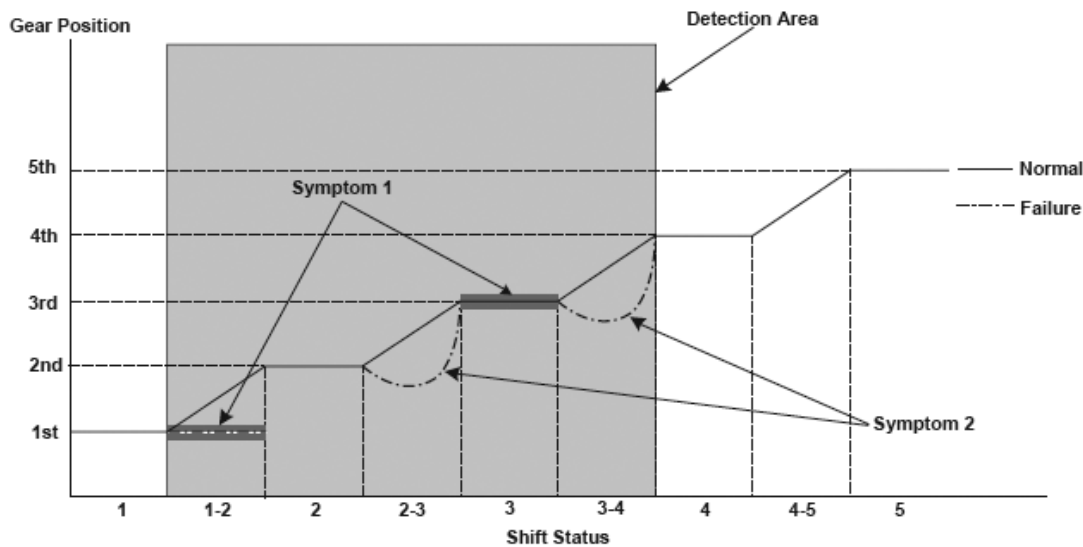


P0747-0772

Fig. 155: A/T Clutch Pressure Control Solenoid Valve A (Stuck OFF) - System Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0746-0571

Fig. 156: Gear Position To Shift Status Graph

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
	1st Clutch	CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
	2nd Clutch	CPC A		CPC A	LINE	CPC A		CPC C			
	3rd Clutch			CPC B		CPC B	LINE	CPC B			
	4th Clutch							CPC A	LINE	CPC A	
	5th Clutch									CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 157: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve A is installed in the transmission housing. A/T clutch pressure control solenoid valve A is operated by the powertrain control module (PCM) and converts the modulated pressure to A/T clutch pressure control solenoid A pressure, which operates CPC valve A. Line pressure is modulated to clutch pressure control A pressure (CPC A pressure) by CPC valve A and the CPC valve A spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC pressure according to the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve A operates and the CPC valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve A turns off and CPC valve A pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

predetermined gear ratio, an A/T clutch pressure control solenoid valve A OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2.0 seconds (symptom 1)
	0.5 second (symptom 2-A, 2-B)
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Accelerator pedal position variation	-	6.0 %/ 20 milliseconds (Not fully closed) ⁽¹⁾
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	
(1) Symptom 2		

Malfunction Threshold

One of these symptom occurs:

- Driven in 3rd gear with a history that symptom 1 occurred.
- Symptom 2 occurs.

SYMPTOM CHART

Symptom	Gear position commanded by the PCM	Actual gear position
1	1st --> 2nd gear upshift	Driving in 1st gear

SYMPTOM CHART

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Symptom	Gear position commanded by the PCM	Actual gear position
2-A	2nd --> 3rd gear upshift	The engine speed flares when upshifting to 2nd - 3rd
2-B	3rd --> 4th gear upshift	The engine speed flares when upshifting to 3rd - 4th

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

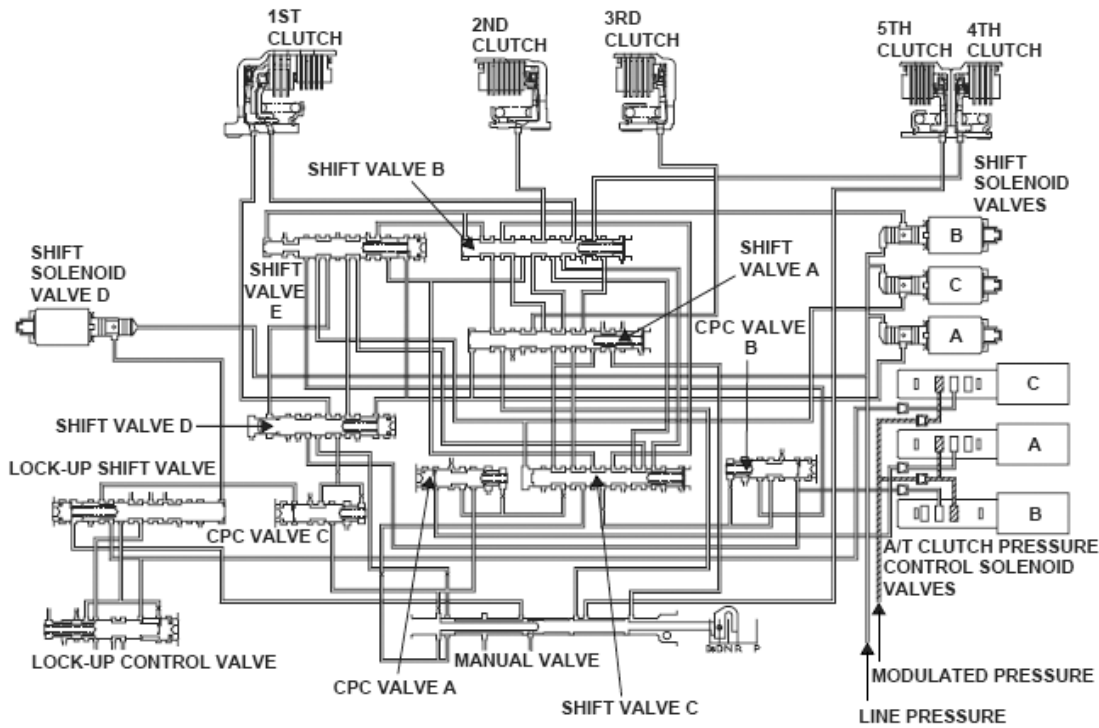
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

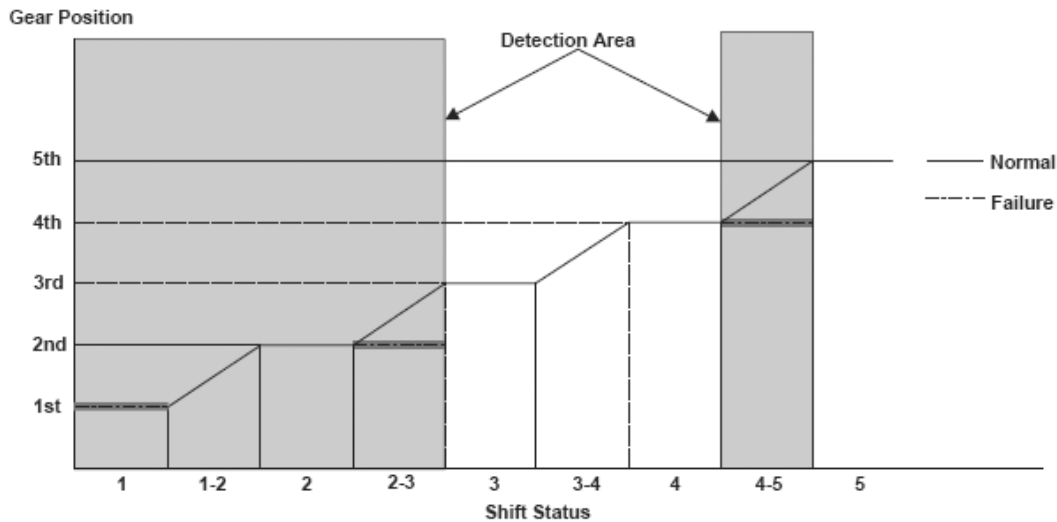
DTC P0747 (76): ADVANCED DIAGNOSTICS

DTC P0747: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A STUCK ON



P0747-0772

Fig. 158: A/T Clutch Pressure Control Solenoid Valve A (Stuck ON) - System Diagram



P0747-0771

Fig. 159: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 160: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve A is installed in the transmission housing. A/T clutch pressure control solenoid valve A is operated by the powertrain control module (PCM) and converts the modulated pressure to A/T clutch pressure control solenoid A pressure, which operates CPC valve A. Line pressure is modulated to clutch pressure control A pressure (CPC A pressure) by CPC valve A and the CPC valve A spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC pressure according to the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve A operates and the CPC valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve A turns off and CPC valve A pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear ratio, an A/T clutch pressure control solenoid valve A ON failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	20 seconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-

Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these conditions occurs.

- The transmission is held in 2nd gear against the 2nd --> 3rd gear upshift command as long as 20 seconds though there is no record of being neutral when the 1st gear shift is commanded.
- The transmission is held in 4th gear against the 4th --> 5th gear upshift command as long as 20 seconds though there is no record of being neutral when the 1st gear shift is commanded.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

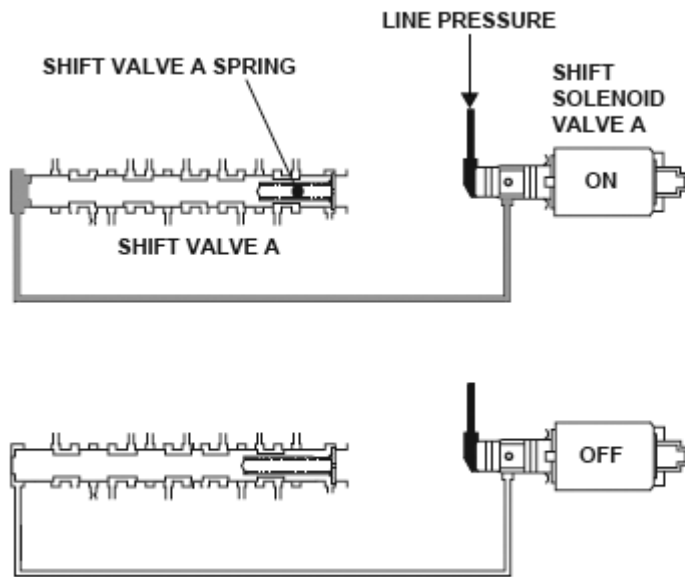
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0751 (70): ADVANCED DIAGNOSTICS

DTC P0751: SHIFT SOLENOID VALVE A STUCK OFF

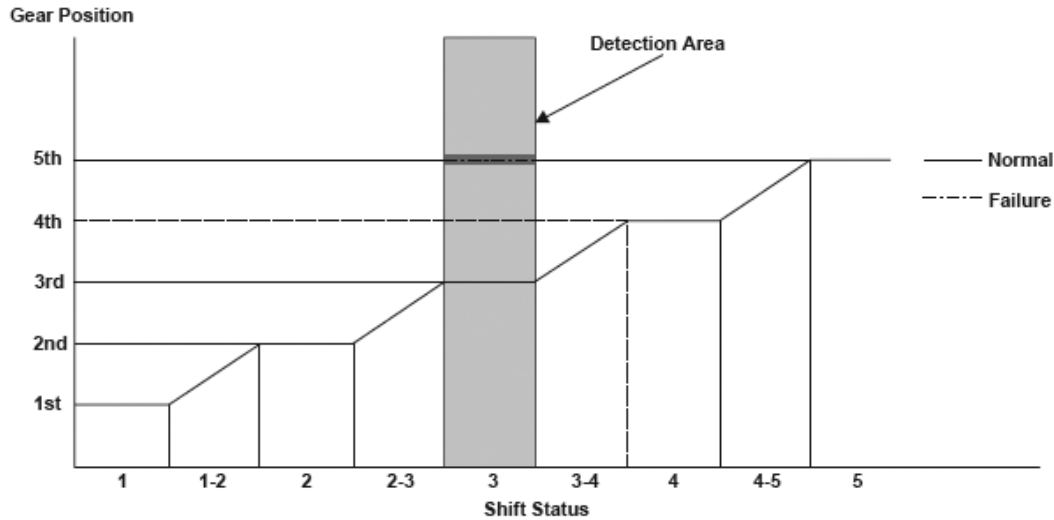
2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0751-0571

Fig. 161: Shift Solenoid Valve A (Stuck OFF) - System Diagram



P0751-0570

Fig. 162: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 163: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve A is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM), to apply modulated pressure to shift valve A. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve A from the PCM is ON, and modulated pressure is discharged, shift valve A is inactive. When the signal to shift solenoid valve A from the PCM is OFF, and modulated pressure is applied to shift valve A, it operates against the shift valve A spring. The PCM monitors the mainshaft speed and the countershaft speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve A OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1.5 seconds or more
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	5 mph (9 km/h)	-

Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The transmission is held in 5th gear against the 3rd gear command for at least 1.5 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

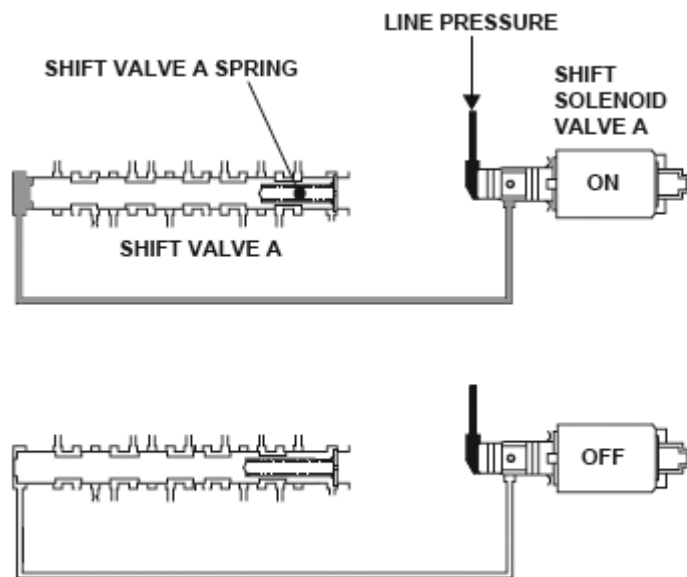
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0752 (70): ADVANCED DIAGNOSTICS

DTC P0752: SHIFT SOLENOID VALVE A STUCK ON

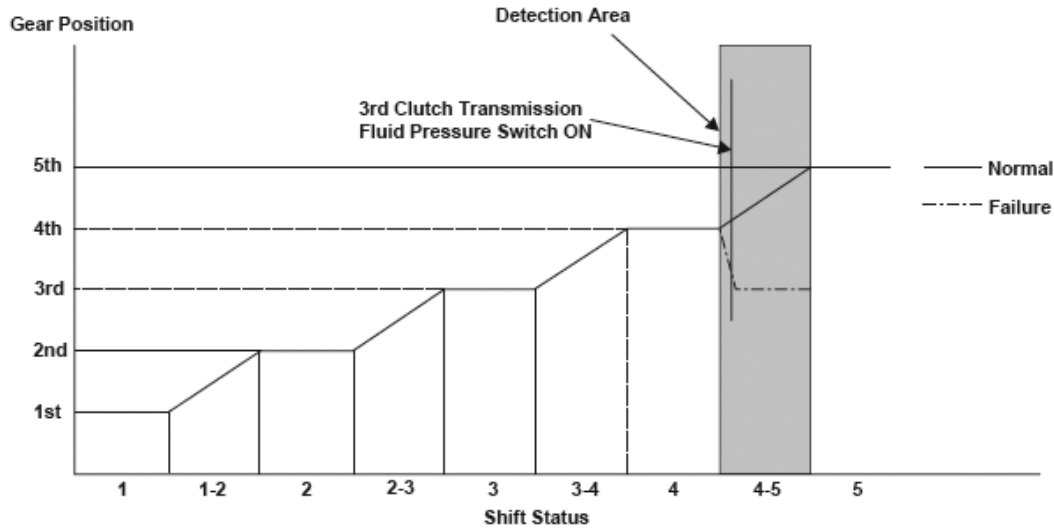
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P0751-0571

Fig. 164: Shift Solenoid Valve A (Stuck ON) - System Diagram



P0752-0570

Fig. 165: Gear Position To Shift Status Graph

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Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 166: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve A is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply modulated pressure to shift valve A. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve A from the PCM is OFF, and modulated pressure is discharged, shift valve A is inactive. When the signal to shift solenoid valve A from the PCM is ON, and modulated pressure is applied to shift valve A, it operates against the shift valve A spring. The PCM monitors the transmission fluid switch at the speed change stage determined by the shift schedule. When the wrong transmission fluid switch is turned on for a given speed change mode, a shift solenoid valve turn-on malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-

Shift lever position	D
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780

Malfunction Threshold

The 3rd clutch transmission fluid switch is ON against the 4th --> 5th gear upshift command for at least 11 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

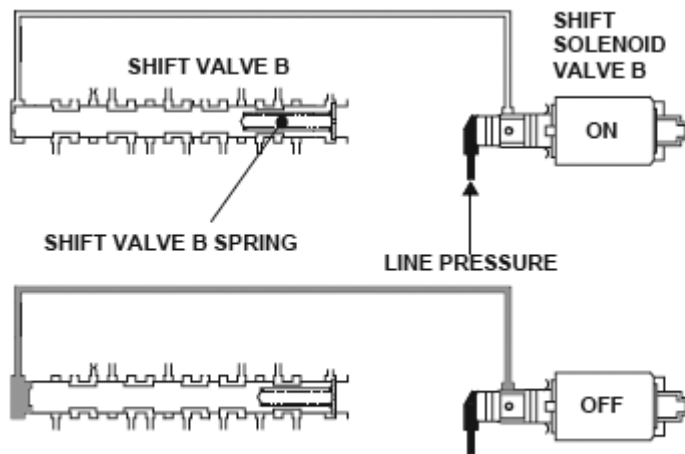
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0756 (71): ADVANCED DIAGNOSTICS

DTC P0756: SHIFT SOLENOID VALVE B STUCK OFF

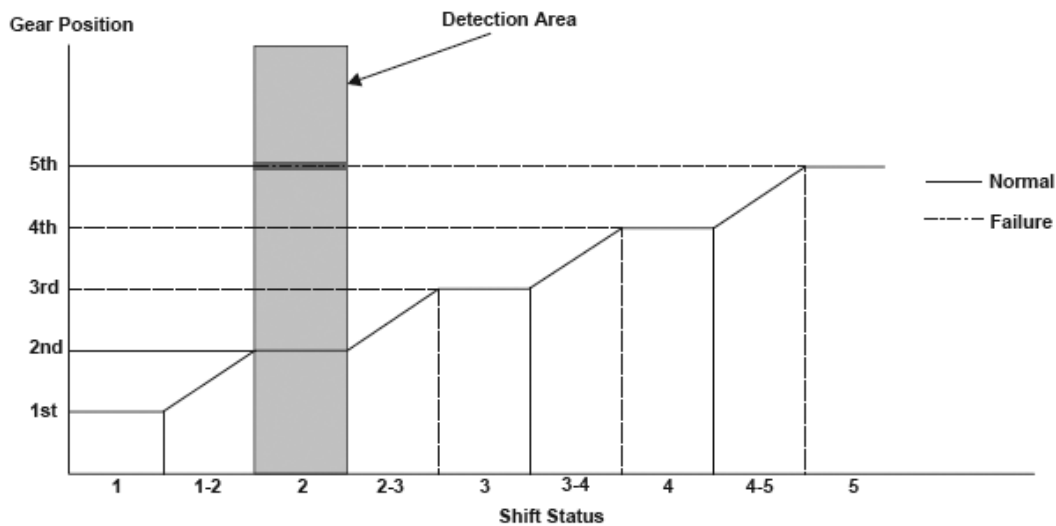
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P0756-0571

Fig. 167: Shift Solenoid Valve B (Stuck OFF) - System Diagram



P0756-0570

Fig. 168: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 169: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve B is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM), to apply modulated pressure to shift valve B. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve B from the PCM is ON, and modulated pressure is discharged, shift valve B is inactive. When the signal to shift solenoid valve B from the PCM is OFF, and modulated pressure is applied to shift valve B, it operates against the shift valve B spring. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve B OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1.5 seconds or more
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	5 mph (9 km/h)	-

Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The transmission is held in 4th gear against the 2nd gear command for at least 1.5 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

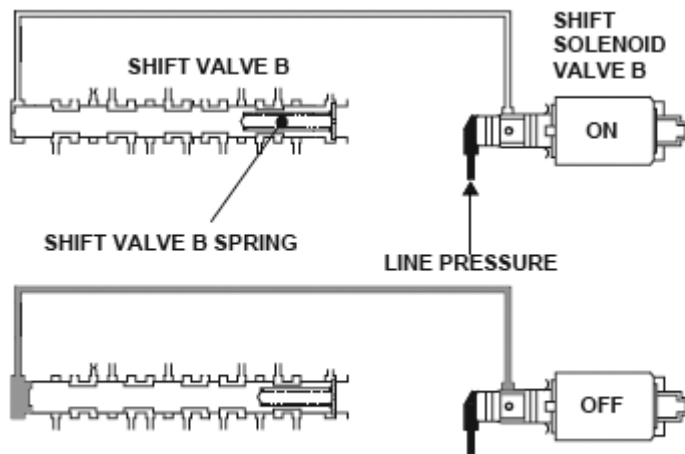
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0757 (71): ADVANCED DIAGNOSTICS

DTC P0757: SHIFT SOLENOID VALVE B STUCK ON

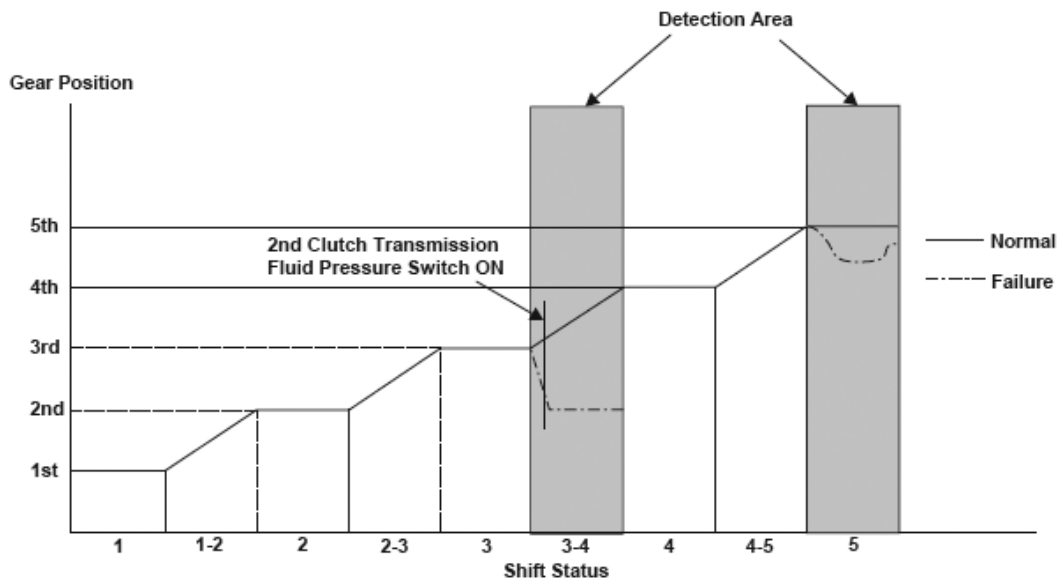
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P0756-0571

Fig. 170: Shift Solenoid Valve B (Stuck ON) - System Diagram



P0757-0570

Fig. 171: Gear Position To Shift Status Graph

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 172: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve B is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply modulated pressure to shift valve B. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve B from the PCM is ON, and modulated pressure is discharged, shift valve B is inactive. When the signal to shift solenoid valve B from the PCM is OFF, and modulated pressure is applied to shift valve B, it operates against the shift valve B spring. When the wrong gear ratio is output for a given speed change mode, or when the wrong transmission fluid pressure switch is turned-on, a shift solenoid valve turn-on malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-

Torque converter slip ratio	96 %	110 %
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these conditions occurs:

- The 2nd clutch transmission fluid switch is ON against the 3rd --> 4th gear upshift command for at least 11 seconds.
- After the 3rd --> 4th gear upshift command is output, it is neutral for at least 2 seconds when the 5th gear shift command is output, though there is no history of being neutral.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

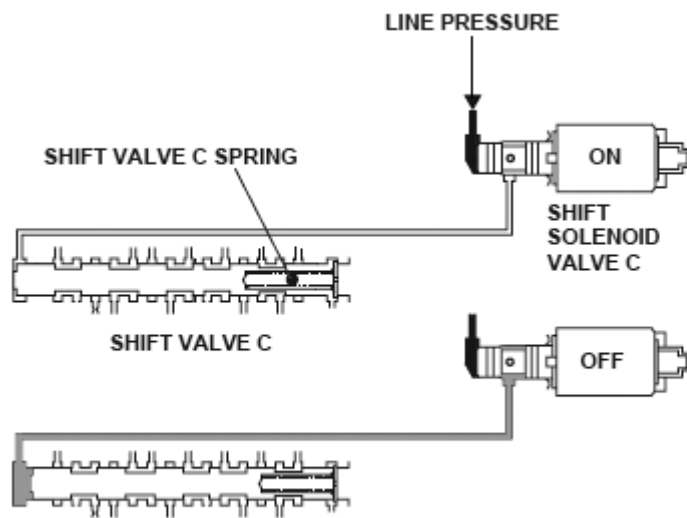
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

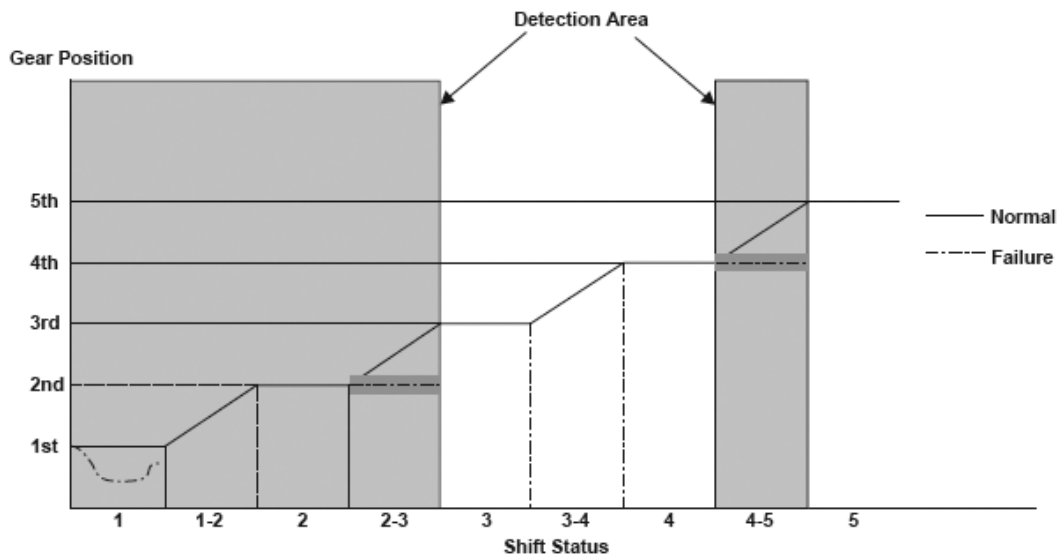
DTC P0761 (72): ADVANCED DIAGNOSTICS

DTC P0761: SHIFT SOLENOID VALVE C STUCK OFF



P0761-0571

Fig. 173: Shift Solenoid Valve C (Stuck OFF) - System Diagram



P0761-0570

Fig. 174: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 175: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve C is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM), to apply modulated pressure to shift valve C. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve C from the PCM is ON, and modulated pressure is discharged, shift valve C is inactive. When the signal to shift solenoid valve C from the PCM is OFF, and modulated pressure is applied to shift valve C, it operates against the shift valve C spring. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve C OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	20 seconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-

Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these symptoms occurred with the history that the actual gear position was neutral when the 1st gear shift is commanded:

- The transmission is held in 2nd gear against the 2nd --> 3rd gear upshift command for at least 17 seconds.
- The transmission is held in 4th gear against the 4th --> 5th gear upshift command for at least 17 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

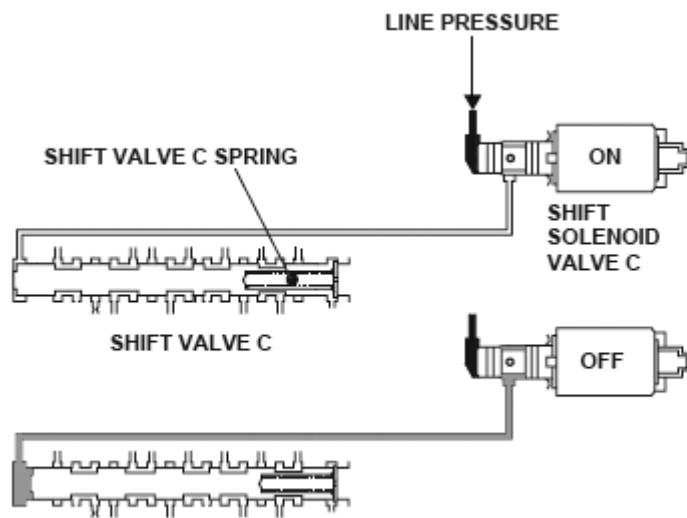
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0762 (72): ADVANCED DIAGNOSTICS

DTC P0762: SHIFT SOLENOID VALVE C STUCK ON

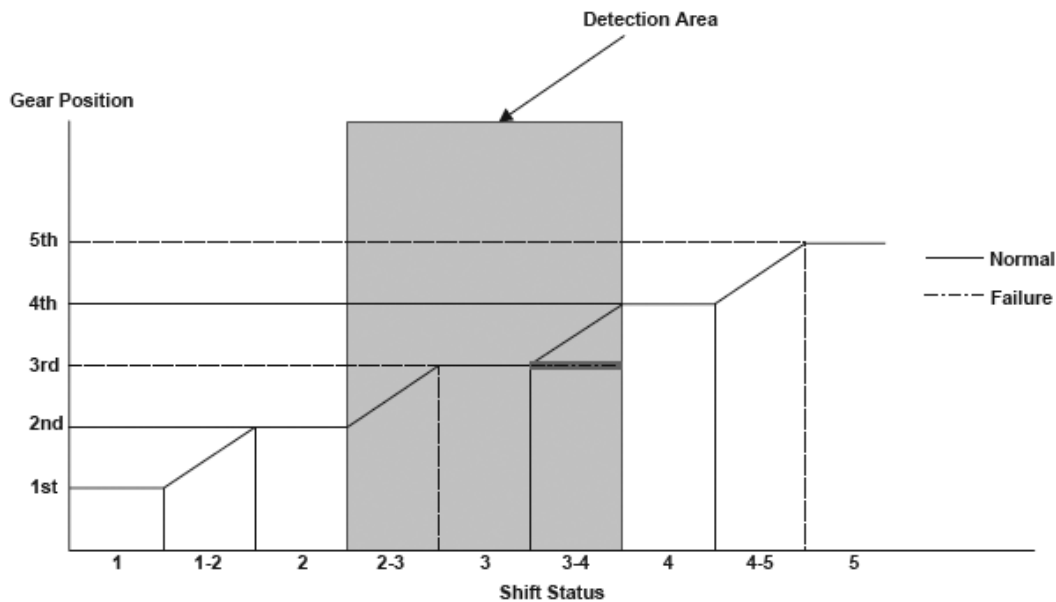
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P0761-0571

Fig. 176: Shift Solenoid Valve C (Stuck ON) - System Diagram



P0762-0570

Fig. 177: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 178: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve C is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM), to apply modulated pressure to shift valve C. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve C from the PCM is ON, and modulated pressure is discharged, shift valve C is inactive. When the signal to shift solenoid valve C from the PCM is OFF, and modulated pressure is applied to shift valve C, it operates against the shift valve C spring. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve C ON failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	20 seconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-

Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The transmission is held in 3rd gear against the 3rd --> 4th gear upshift command for as long as 20 seconds, without records that the gear change time was short when the 2nd --> 3rd gear upshift were commanded.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

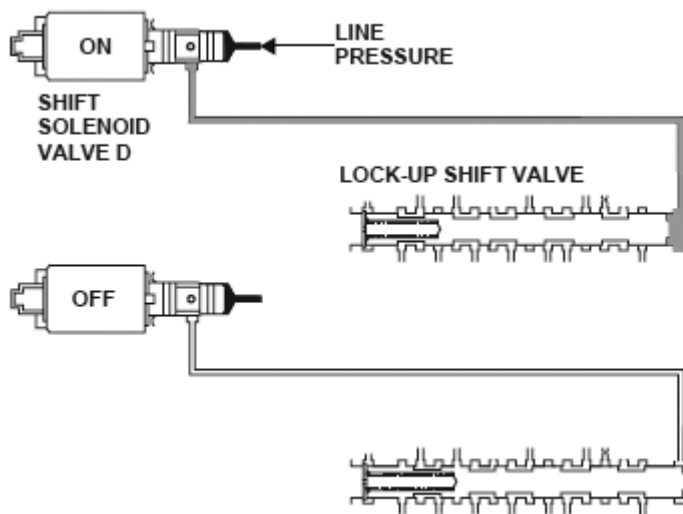
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0766 (73): ADVANCED DIAGNOSTICS

DTC P0766: SHIFT SOLENOID VALVE D STUCK OFF

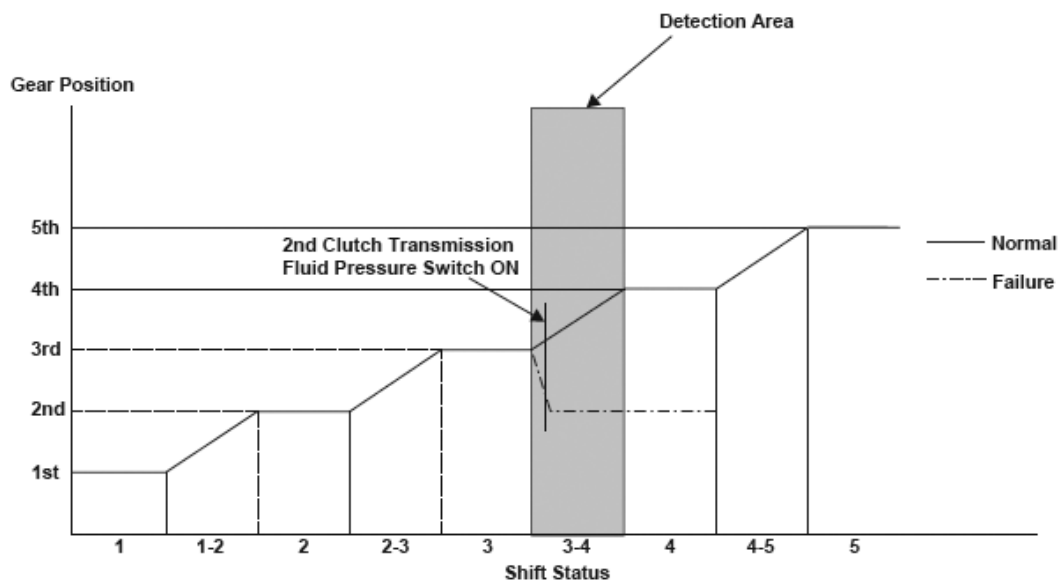
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P0766-0571

Fig. 179: Shift Solenoid Valve D (Stuck OFF) - System Diagram



P0766-0570

Fig. 180: Gear Position To Shift Status Graph

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 181: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve D is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply modulated pressure to lock-up shift valve. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve D from the PCM is ON, and modulated pressure is applied to the lock-up shift valve, it operates against the lock-up shift valve spring. When the signal to shift solenoid valve D from the PCM is OFF, and modulated pressure is discharged, the lock-up shift valve is inactive. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve D OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	11 seconds (symptom 1)
	3 seconds (symptom 2-A, 2-B)
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery		

voltage	11.0 V	-
Torque converter clutch	During controlling operation	
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

SYMPTOM CHART

Condition	Minimum	Maximum
Vehicle speed	-	6 mph (9 km/h)
Battery voltage	11.0 V	-
Shift lever position	R	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these symptoms occurs:

SYMPTOM CHART (1 OF 2)

Symptom	Gear position commanded by the PCM	Actual gear position
1	3rd --> 4th gear upshift	Turn on the 2nd clutch transmission fluid switch

SYMPTOM CHART (2 OF 2)

Symptom	Gear position commanded by the PCM	Actual gear position
2-A	Reverse gear in-gear	Neutral
2-B	Driving in Reverse gear	Neutral

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

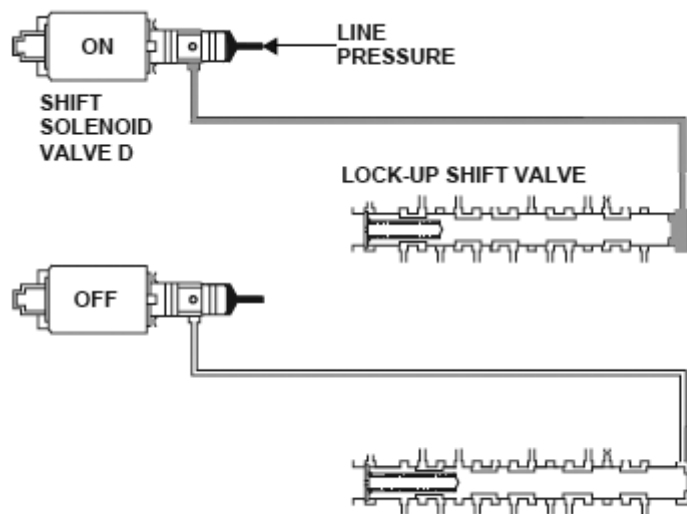
Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0767 (73): ADVANCED DIAGNOSTICS**DTC P0767: SHIFT SOLENOID VALVE D STUCK ON**

P0766-0571

Fig. 182: Shift Solenoid Valve D (Stuck ON) - System Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 183: Shift Solenoid Valve And Gear Position Specification Chart

General Description

Shift solenoid valve D is installed in the transmission housing. It is controlled by the ON/OFF signal from the powertrain control module (PCM) to apply modulated pressure to the lock-up shift valve. The signal from the PCM is output to apply clutch pressure control pressure to the proper gear change clutch according to the gear change schedule. When the signal to shift solenoid valve D from the PCM is OFF, and modulated pressure is discharged, the lock-up shift valve is inactive. When the signal to shift solenoid valve D from the PCM is ON, and modulated pressure is applied to lock-up shift valve, it operates against the lock-up shift valve spring. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift solenoid valve D ON failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	3 seconds or more
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	-	6 mph (9 km/h)

Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these occurs:

- The actual gear position is neutral for at least 3 seconds when 1st gear in-gear is commanded, though there is no history of being neutral when reverse gear in-gear is commanded.
- The actual gear position is neutral for at least 3 seconds though 1st gear in-gear is commanded and reverse drive occurred during this driving cycle.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0776 (77): ADVANCED DIAGNOSTICS

DTC P0776: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK OFF

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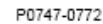


Fig. 184: A/T Clutch Pressure Control Solenoid Valve B (Stuck OFF) - System Diagram

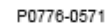


Fig. 185: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 186: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve B is installed in the transmission housing. A/T clutch pressure control solenoid valve B is operated by the powertrain control module (PCM) and converts modulated pressure to A/T clutch pressure control solenoid B pressure, which operates CPC valve B. Line pressure is modulated to clutch pressure control B pressure (CPC B pressure) by CPC valve B and the CPC valve B spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC pressure according to the driving conditions. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve B operates and the CPC valve B pressure increases. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve B turns off and the CPC valve B pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, an A/T clutch pressure control solenoid valve B OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	20 seconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-
Vehicle speed	5 mph (8 km/h)	-

Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The transmission is held in 3rd gear against the 3rd --> 4th gear upshift command for as long as 20 seconds, with records that the gear change time was short when the 2nd --> 3rd gear upshift was commanded.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

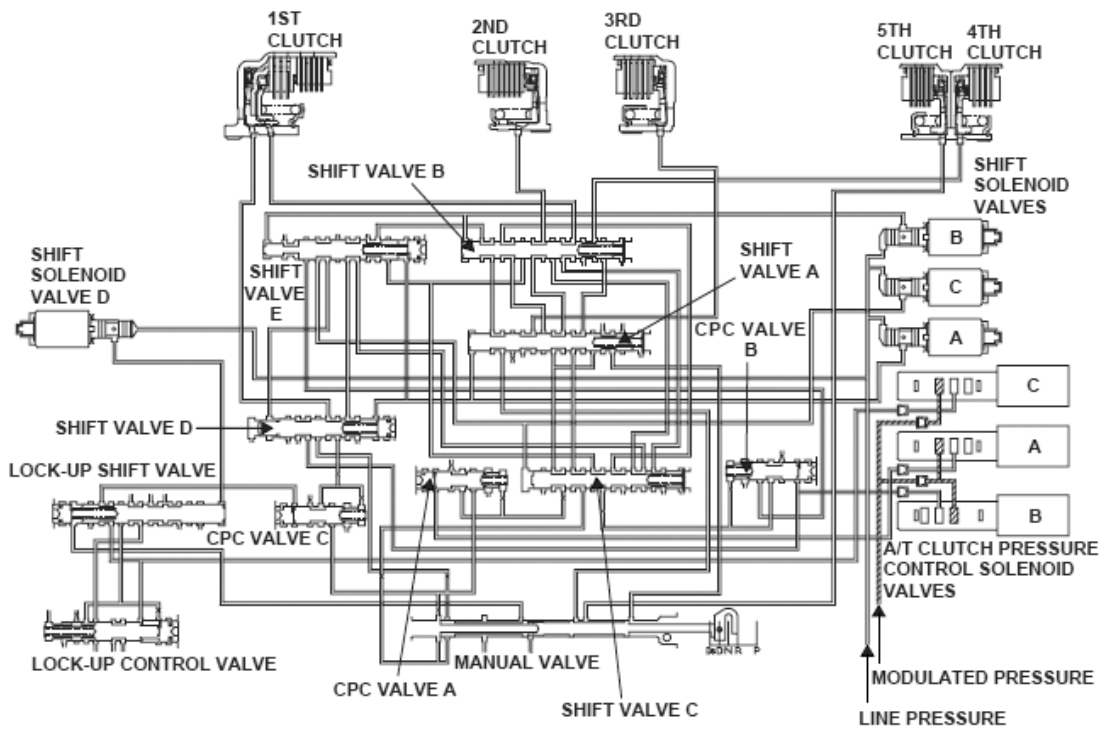
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0777 (77): ADVANCED DIAGNOSTICS

DTC P0777: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B STUCK ON

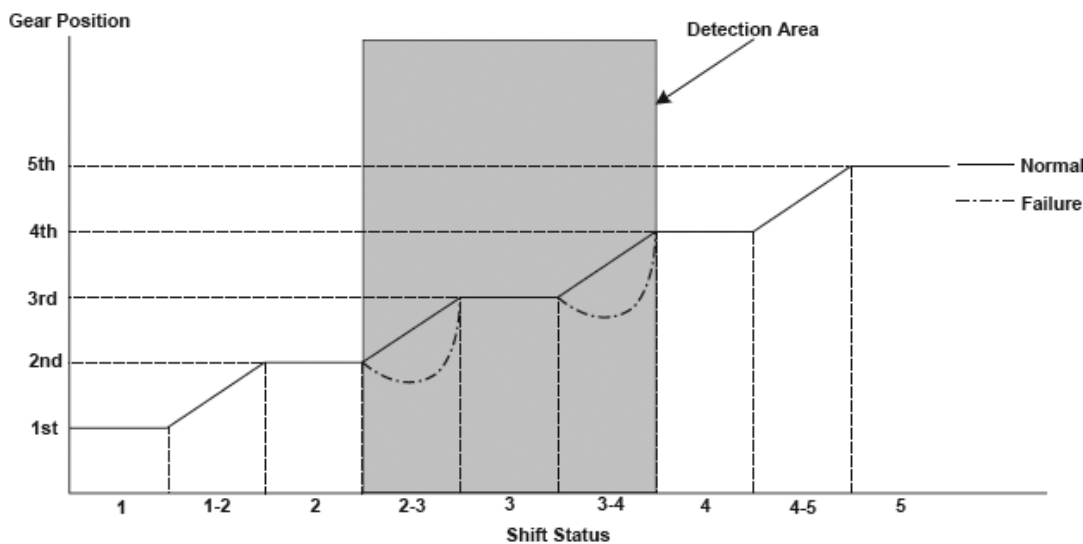
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P0747-0772

Fig. 187: A/T Clutch Pressure Control Solenoid Valve B (Stuck ON) - System Diagram



P0777-0571

Fig. 188: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 189: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve B is installed in the transmission housing. A/T clutch pressure control solenoid B is operated by the powertrain control module (PCM) and converts modulated pressure to A/T clutch pressure control solenoid B pressure, which operates CPC valve B. Line pressure is modulated to clutch pressure control B pressure (CPC B pressure) by CPC valve B and the CPC valve B spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC pressure according to the driving conditions. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve B operates and the CPC valve B pressure increases. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve B turns off and the CPC valve B pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, an A/T clutch pressure control solenoid valve B ON failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
ATF temperature	-4°F (-20°C)	-
Vehicle speed	5 mph (8 km/h)	-

Battery voltage	11.0 V	-
Accelerator pedal position variation	-	6 %/ 20 milliseconds
Accelerator pedal position	Except fully closed	
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The engine speed flares during 2nd - 3rd and 3rd - 4th upshifts for at least 0.5 second.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0796 (78): ADVANCED DIAGNOSTICS

DTC P0796: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK OFF

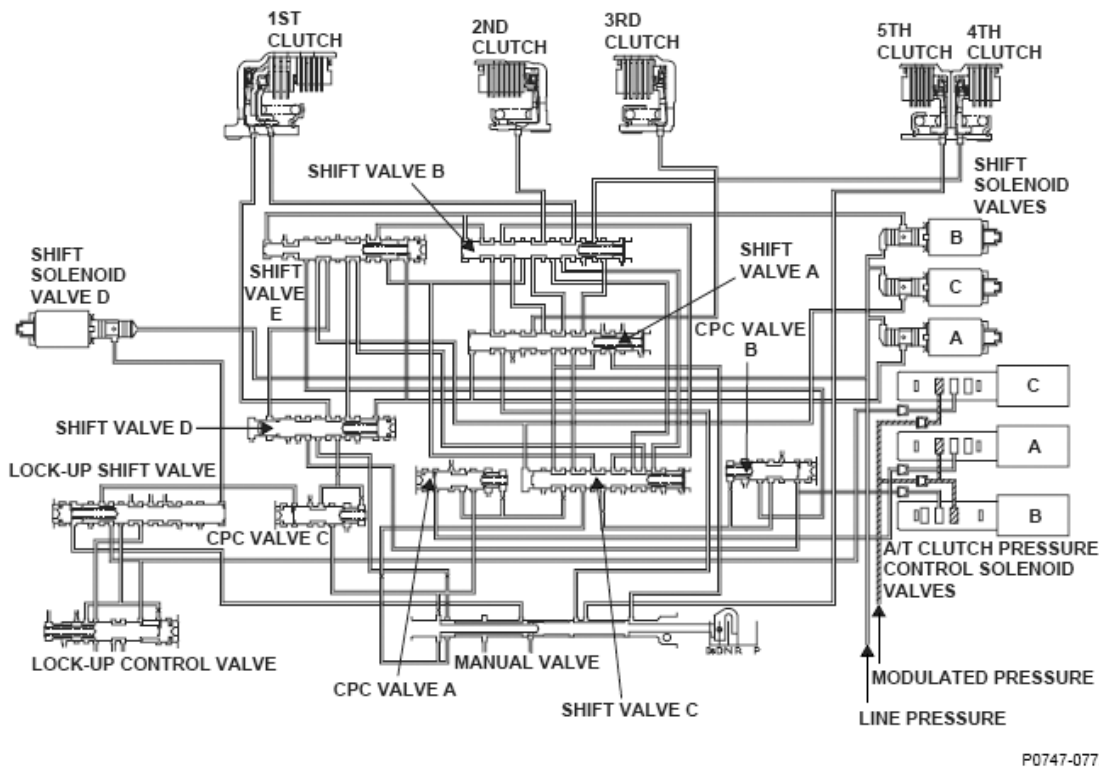


Fig. 190: A/T Clutch Pressure Control Solenoid Valve C (Stuck OFF) - System Diagram

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch	CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch	CPC A			CPC A	LINE	CPC A		CPC B			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 191: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve C is installed in the transmission housing. A/T clutch pressure control solenoid A is operated by the powertrain control module (PCM) and converts the modulated pressure to A/T clutch pressure control solenoid A pressure, which operates CPC valve A. Line pressure is modulated to clutch pressure control A pressure (CPC A pressure) by CPC valve A and the CPC valve A spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC

pressure according to the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve C operates and the CPC valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve C turns off and CPC valve A pressure decreases. The PCM monitors the input shaft (mainshaft) speed and the output shaft (countershaft) speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear ratio, an A/T clutch pressure control solenoid valve C OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	-	6 mph (9 km/h)
Battery voltage	11.0 V	-
Shift lever position	D, D3 or R	
No active DTCs	P0122, P0123, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

One of these symptom combinations occurs:

- Symptom 1 occurs.
- Symptom 2 occurs after symptom 1 occurs during the same drive cycle.
- Drive in R position after symptom 2 occurred. (Symptom 3)

SYMPTOM CHART

Symptom	Gear position commanded by the PCM	Actual gear position
1	1st gear in-gear	Neutral

SYMPTOM CHART

--	--	--

Symptom	Gear position commanded by the PCM	Actual gear position
2	Reverse gear in-gear	Neutral

Driving Pattern

Start the engine and put the vehicle in 1st gear. Then drive in R position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

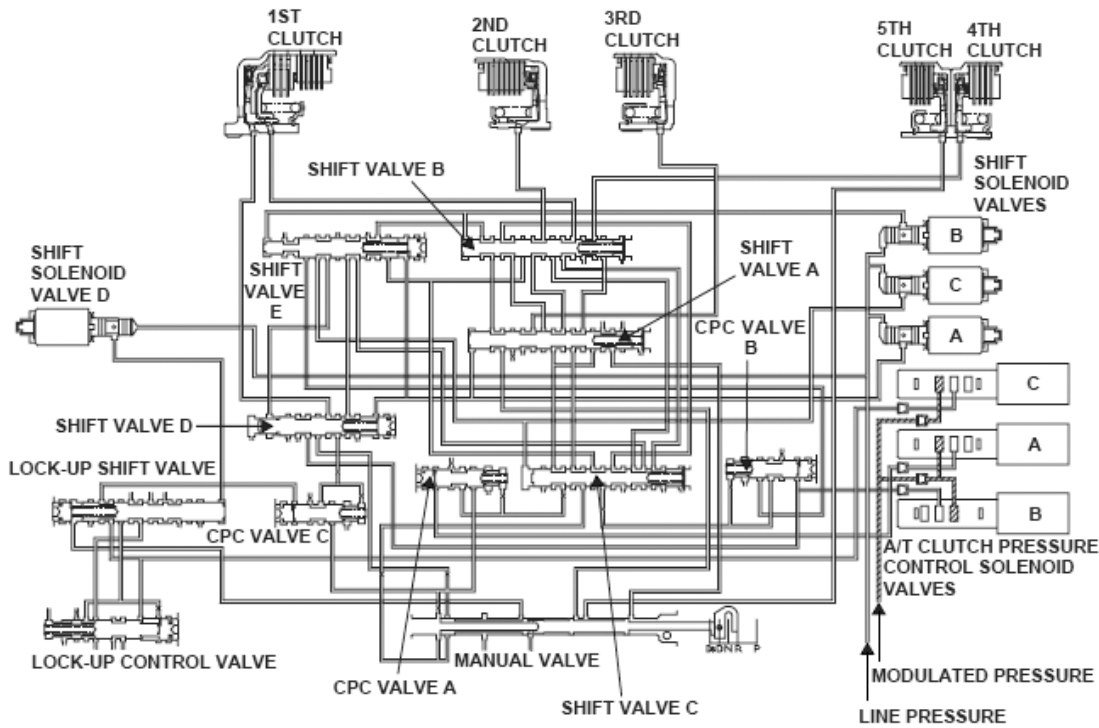
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

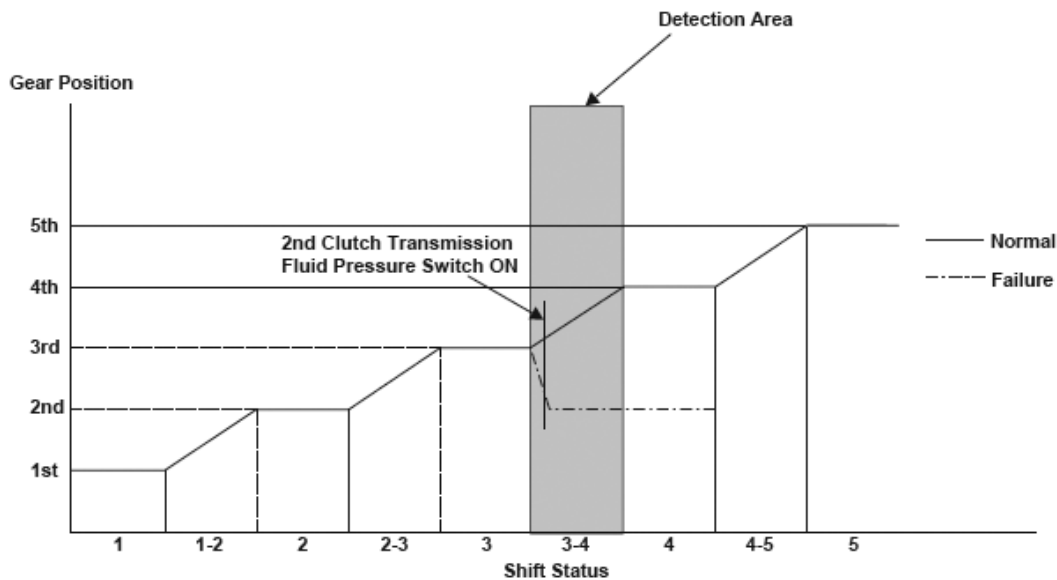
DTC P0797 (78): ADVANCED DIAGNOSTICS

DTC P0797: A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C STUCK ON



P0747-0772

Fig. 192: A/T Clutch Pressure Control Solenoid Valve C (Stuck ON) - System Diagram



P0766-0570

Fig. 193: Gear Position To Shift Status Graph

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2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 194: Shift Solenoid Valve And Clutch Specification Chart

General Description

A/T clutch pressure control solenoid valve C is installed in the transmission housing. A/T clutch pressure control solenoid A is operated by the powertrain control module (PCM) and converts the modulated pressure to A/T clutch pressure control solenoid A pressure, which operates CPC valve A. Line pressure is modulated to clutch pressure control A pressure (CPC A pressure) by CPC valve A and the CPC valve A spring. A signal from the PCM is output to the proper gear clutch, determined by the gear schedule, to supply the proper CPC pressure according to the driving conditions. When the current from the PCM is high (ON), A/T clutch pressure control solenoid valve C operates and the CPC valve A pressure increases. When the current from the PCM is low (OFF), A/T clutch pressure control solenoid valve C turns off and CPC valve A pressure decreases. The PCM monitors the transmission fluid pressure switch at the gear change determined by the shift schedule. When the wrong transmission fluid pressure switch is turned on, an A/T clutch pressure control solenoid valve C turn-on malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	20 seconds
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Shift lever		

position	D
Torque converter clutch	Lock-up OFF
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780

Malfunction Threshold

The 2nd clutch transmission fluid switch is ON against the 3rd --> 4th gear upshift command for at least 11 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

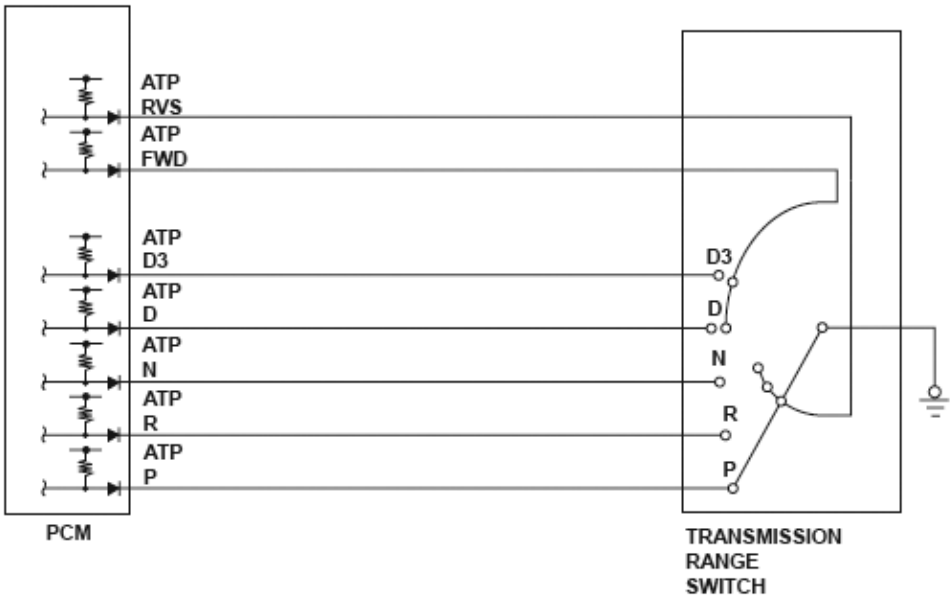
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0812 (65): ADVANCED DIAGNOSTICS

DTC P0812: OPEN IN TRANSMISSION RANGE SWITCH ATP R SWITCH CIRCUIT



P0705-0503

Fig. 195: Open In Transmission Range Switch ATP R Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH SPECIFICATION

Shift lever position	Input per switch						
	P	R	N	D	D3	FWD	RVS
P	o	X	X	X	X	X	o
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	o
D	X	X	X	o	X	o	X
D3	X	X	X	X	o	o	X

o: Closed X: Open

General Description

The transmission range switch is attached to the control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator indicates which position is selected according to the Low/High signal combinations which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is 12 V (High) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is 0 V (Low) when each switch is closed. If the R switch is OPEN with the shift lever in the R position, the PCM detects a switch OPEN failure and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
Engine speed	1,000 rpm	-
Shift lever position	R	
No active DTCs	P0705, P0716, P0717, P0721, P0722, P1717	

Malfunction Threshold

The RVS signal is detected but the R signal is not detected for at least 2 seconds.

Driving Pattern

- 1. Start the engine, shift to the R position, and drive the vehicle at a speed of 3 mph (5 km/h) or less for at least 2 seconds.
- 2. Drive the vehicle at a speed of 3 mph (5 km/h) or more for at least 2 seconds in the R position.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

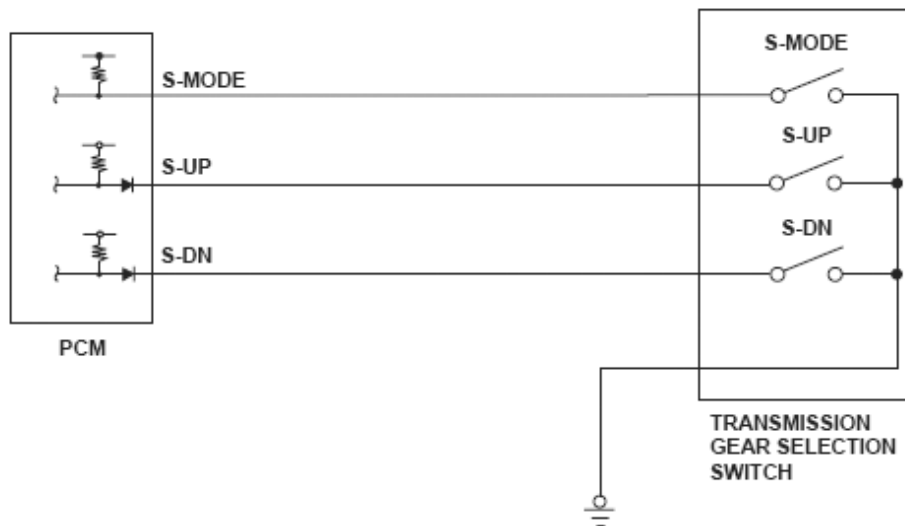
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0815 (24): ADVANCED DIAGNOSTICS

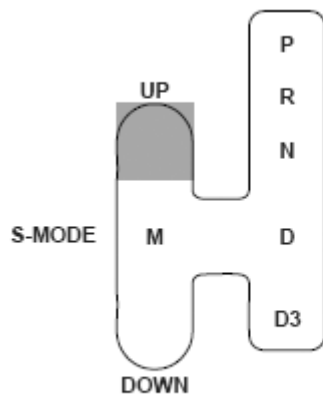
DTC P0815: SHORT IN TRANSMISSION GEAR SELECTION SWITCH UPSHIFT SWITCH

CIRCUIT, OR TRANSMISSION GEAR SELECTION SWITCH UPSHIFT SWITCH STUCK ON



P0815-0701

Fig. 196: Short In Transmission Gear Selection Switch Upshift Switch - Circuit Diagram



P0815-0770

Fig. 197: Identifying Transmission Gear Shifting UP Position

General Description

When the shift lever is moved to the M position (the sequential sportshift mode (S-MODE) is selected), the upshift (S-UP) switch and the downshift (S-DN) switch can be used. When the shift lever is moved toward the S-UP switch, an upshift is executed, and when the shift lever is moved toward the S-DN switch, a downshift is executed. The S-MODE switch signal, the S-UP switch signal, and the S-DN switch signal are grounded when turned on and opened when turned off.

When the S-UP switch is turned on in the P, R, N, and D3 positions, a malfunction of the S-UP switch is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0706, P0816, P0957, P0958	

Malfunction Threshold

The S-UP switch signal is turned on in the P, R, N, and D3 positions for at least 10 seconds.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

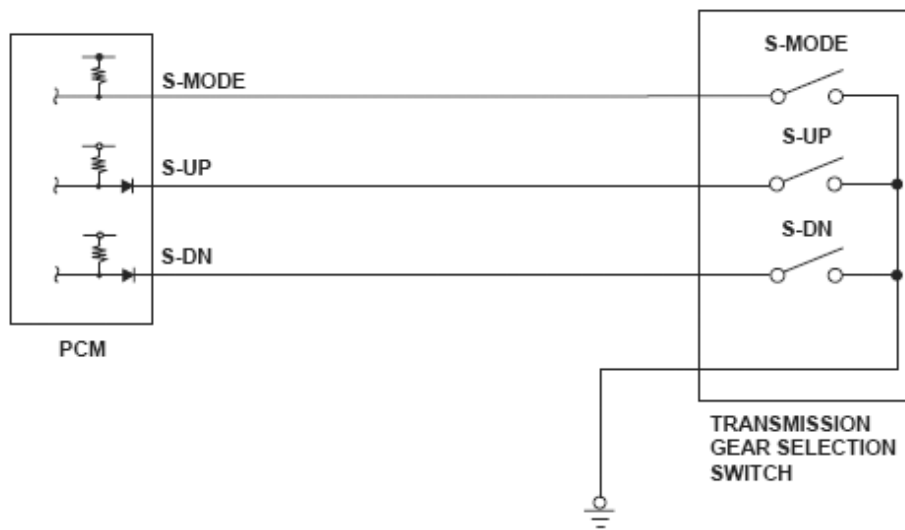
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

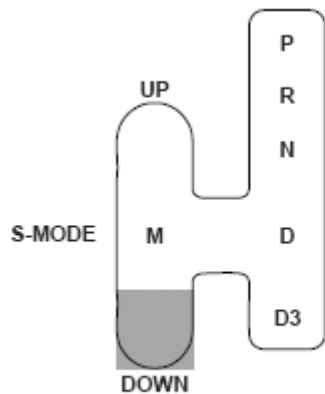
DTC P0816 (24): ADVANCED DIAGNOSTICS

DTC P0816: SHORT IN TRANSMISSION GEAR SELECTION SWITCH DOWNSHIFT SWITCH CIRCUIT, OR TRANSMISSION GEAR SELECTION SWITCH DOWNSHIFT SWITCH STUCK ON



P0815-0701

Fig. 198: Short In Transmission Gear Selection Switch Downshift Switch - Circuit Diagram



P0816-0770

Fig. 199: Identifying Transmission Gear Shifting Down Position

General Description

When the shift lever is moved to the M position (the sequential sportshift mode (S-MODE) is selected), the upshift (S-UP) switch and the downshift (S-DN) switch can be used. When the shift lever is moved toward the S-UP switch, an upshift is executed, and when the shift lever is moved toward the S-DN switch, a downshift is executed. The S-MODE switch signal, the S-UP switch signal, and the S-DN switch signal are grounded when turned on and opened when turned off.

When the S-DN switch is turned on in the P, R, N, and D3 positions, a malfunction of the S-DN switch is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0706, P0815, P0957, P0958	

Malfunction Threshold

The S-DN switch signal is turned on in the P, R, N, and D3 positions for at least 10 seconds.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

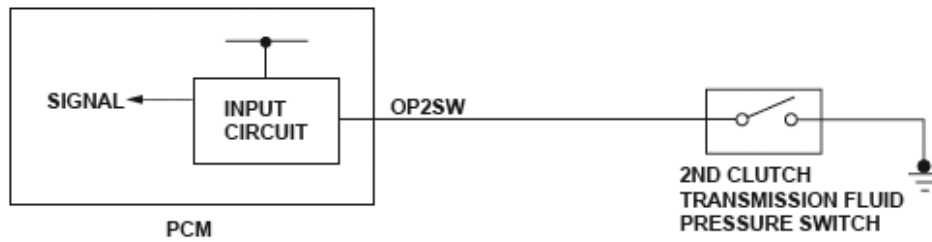
The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0842 (25): ADVANCED DIAGNOSTICS

DTC P0842: SHORT IN 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK ON

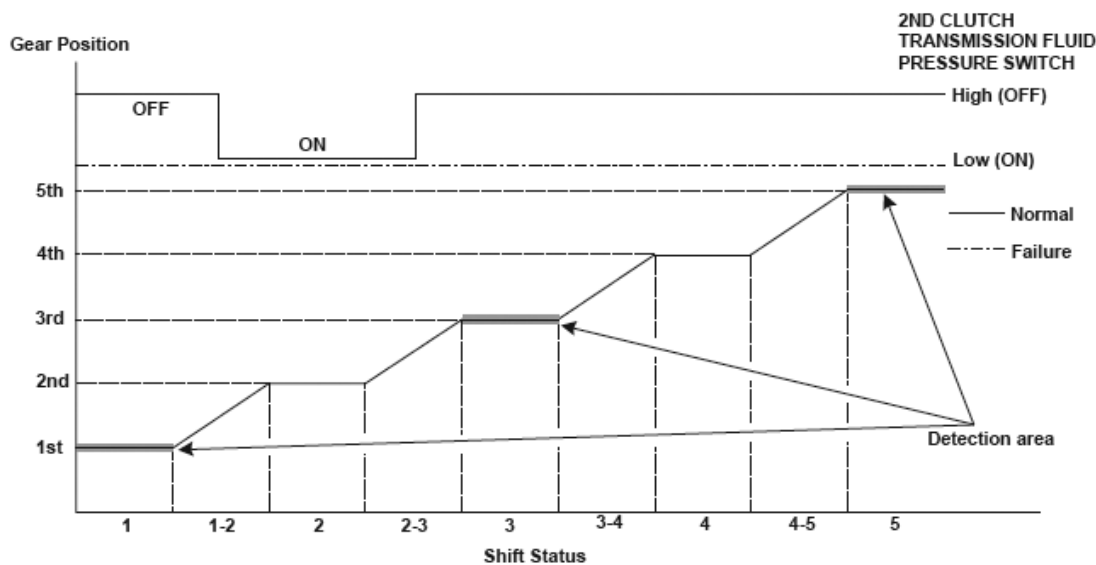
2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0842-0801

Fig. 200: Short In 2nd Clutch Transmission Fluid Pressure Switch - Circuit Diagram



P0842-0870

Fig. 201: Gear Position To Shift Status Graph

General Description

The 2nd clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 2nd clutch. When hydraulic pressure is supplied to the 2nd clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 2nd clutch, the switch is turned OFF. The signal from the 2nd clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 2nd gear (1st-->2nd, 3rd-->2nd) to reduce the shock that occurs at the gear change.

If the 2nd clutch transmission fluid pressure switch is ON while driving the vehicle with the speed ratio of the output shaft (countershaft) to the input shaft (mainshaft) other than the 2nd ratio, the PCM detects a 2nd clutch transmission fluid pressure switch failure and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
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Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	
Others	Not during shifting	

Malfunction Threshold

The input signal from the 2nd clutch transmission fluid pressure switch to the PCM is low when driving in 1st gear, 3rd gear, or 5th gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 3rd gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

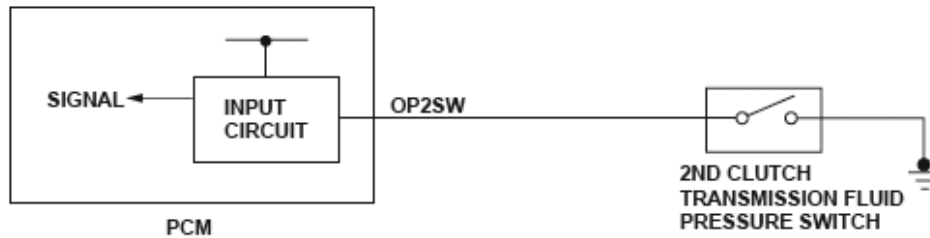
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0843 (25): ADVANCED DIAGNOSTICS

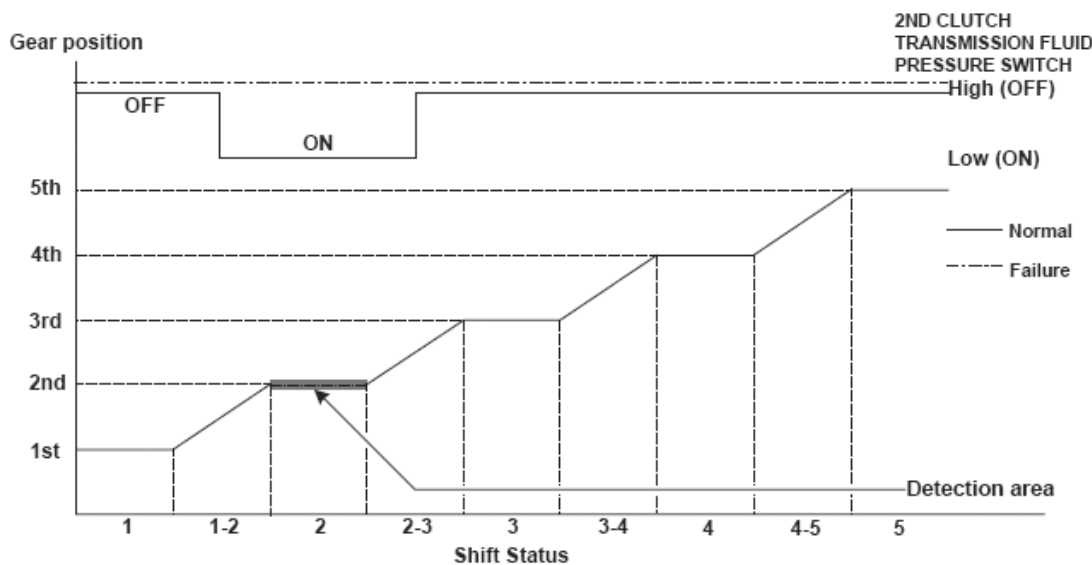
DTC P0843: OPEN IN 2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR

2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK OFF



P0842-0801

Fig. 202: Open In 2nd Clutch Transmission Fluid Pressure Switch - Circuit Diagram



P0843-0370

Fig. 203: Gear Position To Shift Status Graph

General Description

The 2nd clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 2nd clutch. When hydraulic pressure is supplied to the 2nd clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 2nd clutch, the switch is turned OFF. The signal from the 2nd clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 2nd gear (1st --> 2nd, 3rd --> 2nd) to reduce the shock that occurs at the gear change. If the 2nd clutch transmission fluid pressure switch is OFF while the rotation speed ratio of the input/output pulses is that of 2nd gear, the PCM detects a malfunction in the 2nd clutch transmission fluid pressure switch and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
-----------	------------

Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	
Others	Not during shifting	

Malfunction Threshold

The input signal from the 2nd clutch transmission fluid pressure switch to the PCM is high when driving in 2nd gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 2nd gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

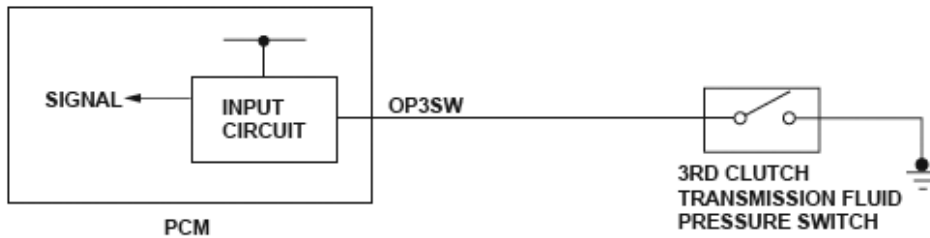
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0847 (26): ADVANCED DIAGNOSTICS

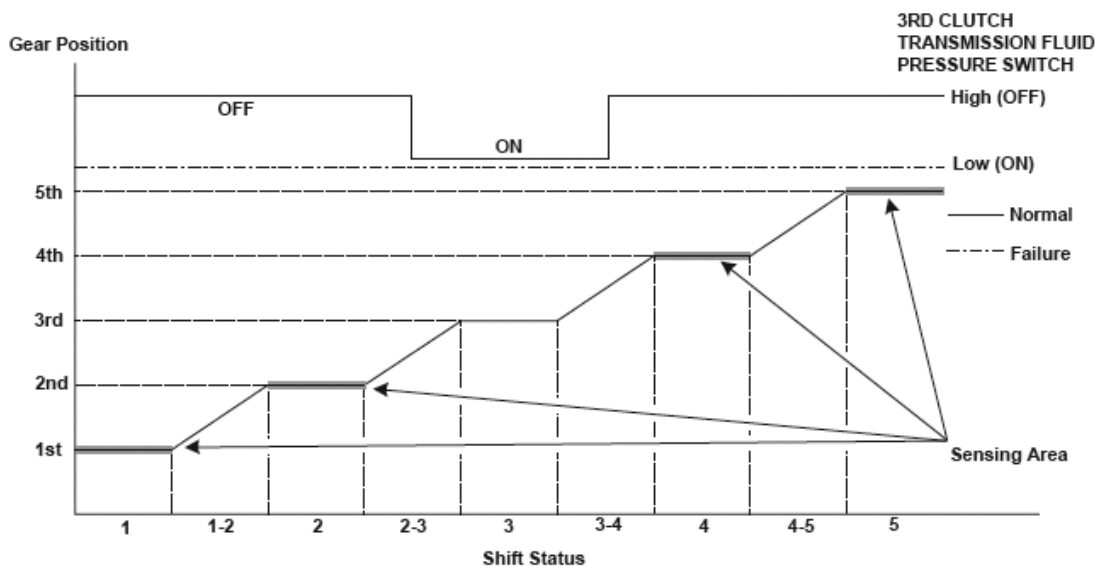
DTC P0847: SHORT IN 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR

3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK ON



P0847-0801

Fig. 204: Short In 3rd Clutch Transmission Fluid Pressure Switch - Circuit Diagram



P0847-0870

Fig. 205: Gear Position To Shift Status Graph

General Description

The 3rd clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 3rd clutch. When hydraulic pressure is supplied to the 3rd clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 3rd clutch, the switch is turned OFF. The signal from the 3rd clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 3rd gear (2nd --> 3rd, 4th --> 3rd) to reduce the shock that occurs at the gear change.

If the 3rd clutch transmission fluid pressure switch is ON while driving, and the speed ratio of the output shaft (countershaft) to the input shaft (mainshaft) is other than the 3rd ratio, the PCM detects a 3rd clutch transmission fluid pressure switch failure, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	
Other	Not during shifting	

Malfunction Threshold

The input signal from the 3rd clutch transmission fluid pressure switch to the PCM is low when driving in 1st gear, 2nd gear, 4th gear or 5th gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 4th gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

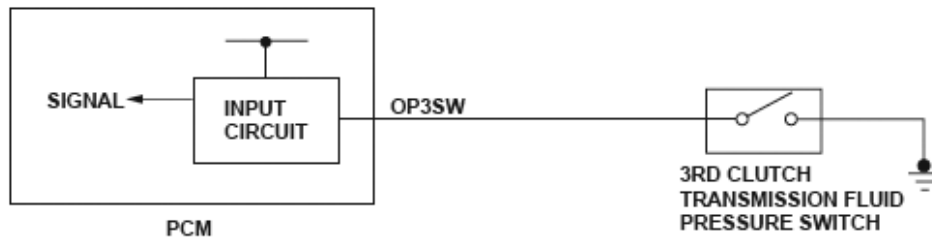
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

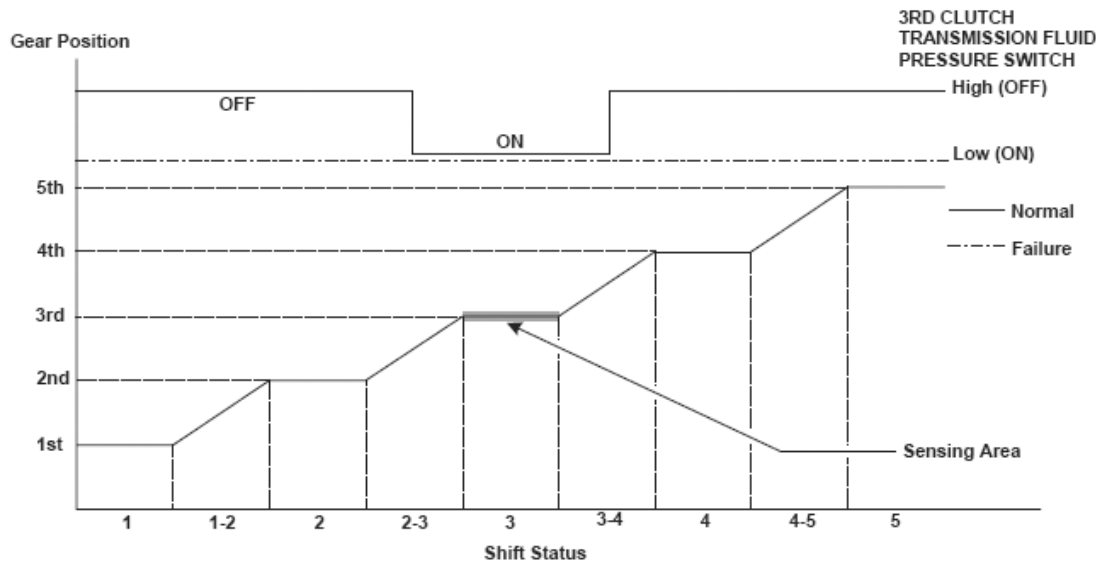
DTC P0848 (26): ADVANCED DIAGNOSTICS

DTC P0848: OPEN IN 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK OFF



P0847-0601

Fig. 206: Open In 3rd Clutch Transmission Fluid Pressure Switch - Circuit Diagram



P0848-0370

Fig. 207: Gear Position To Shift Status Graph

General Description

The 3rd clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 3rd clutch. When hydraulic pressure is supplied to the 3rd clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 3rd clutch, the switch is turned OFF. The signal from the 3rd clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 3rd gear (2nd --> 3rd, 4th --> 3rd) to reduce the shock that occurs at the gear change. If the 3rd clutch transmission fluid pressure switch is OFF while the rotation speed ratio of the input/output pulses is that of 3rd gear, the PCM detects a malfunction in the 3rd clutch transmission fluid pressure switch and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The input signal from the 3rd clutch transmission fluid pressure switch to the PCM is high when driving in 3rd gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 3rd gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

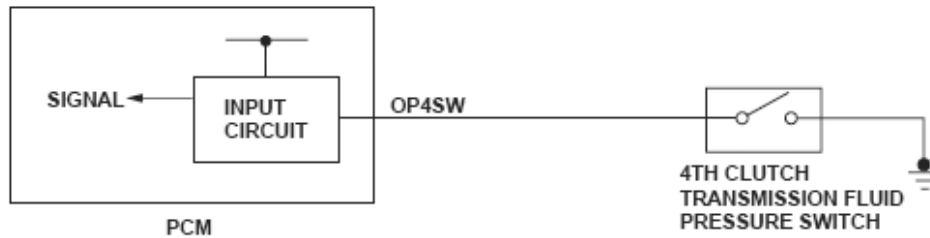
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

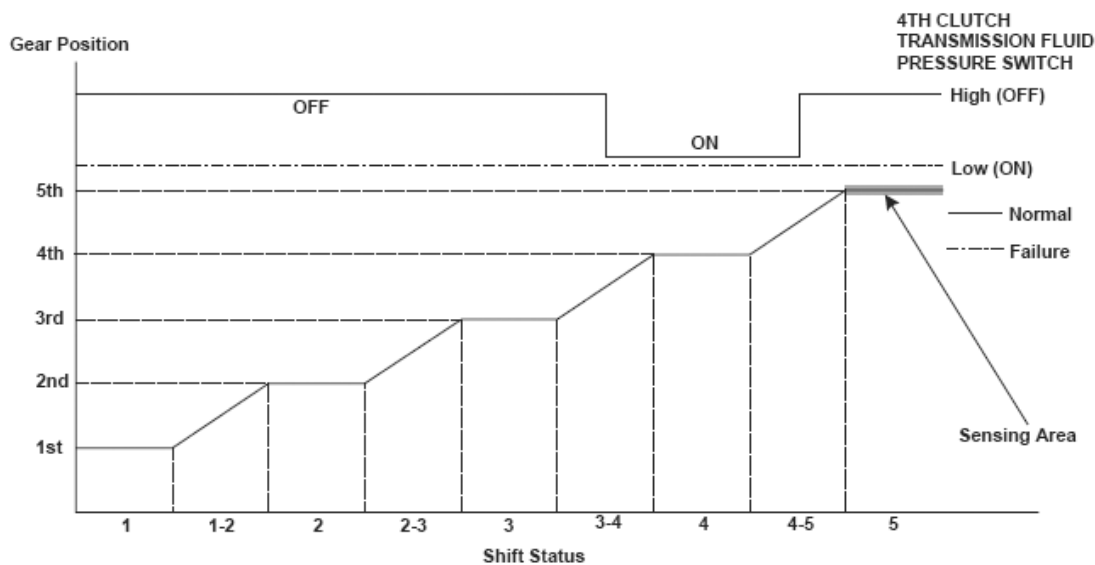
The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0872 (27): ADVANCED DIAGNOSTICS

DTC P0872: SHORT IN 4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR

4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK ON

P0872-0301

Fig. 208: Short In 4th Clutch Transmission Fluid Pressure Switch - Circuit Diagram

P0872-0370

Fig. 209: Gear Position To Shift Status Graph**General Description**

The 4th clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 4th clutch. When hydraulic pressure is supplied to the 4th clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 4th clutch, the switch is turned OFF. The signal from the 4th clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 4th gear (3rd --> 4th, 5th --> 4th) to reduce the shock that occurs at the gear change.

If the 4th clutch transmission fluid pressure switch is ON while driving, and the speed ratio of the output shaft (countershaft) to input shaft (mainshaft) is other than 4th gear (the ratio is Neutral or 5th), the PCM detects a 4th clutch transmission fluid pressure switch failure and stores DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The input signal from the 4th clutch transmission fluid pressure switch to the PCM is low when driving in 5th gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 5th gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the indicator

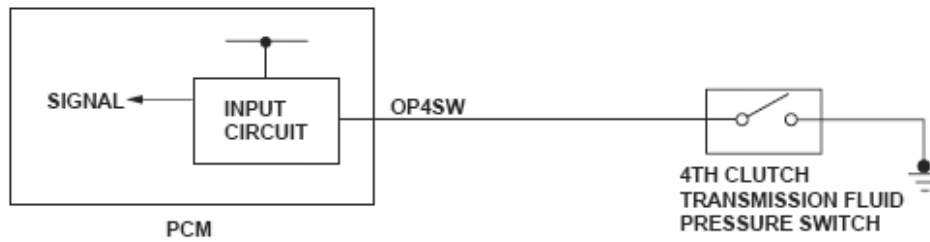
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

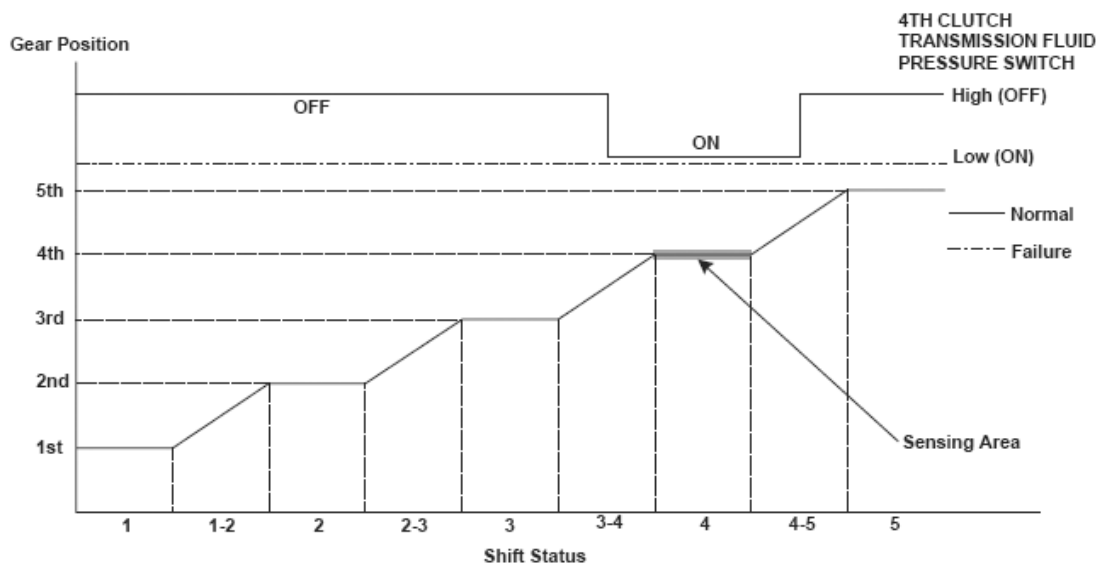
DTC P0873 (27): ADVANCED DIAGNOSTICS

DTC P0873: OPEN IN 4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH CIRCUIT, OR 4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH STUCK OFF



P0872-0301

Fig. 210: Open In 4th Clutch Transmission Fluid Pressure Switch - Circuit Diagram



P0873-0370

Fig. 211: Gear Position To Shift Status Graph

General Description

The 4th clutch transmission fluid pressure switch is installed in the hydraulic pressure circuit to the 4th clutch. When hydraulic pressure is supplied to the 4th clutch, the switch is turned ON. When hydraulic pressure is not supplied to the 4th clutch, the switch is turned OFF. The signal from the 4th clutch transmission fluid pressure switch is input to the powertrain control module (PCM). The PCM detects the hydraulic pressure supply conditions at the gear change to 4th gear (3rd --> 4th, 5th --> 4th) to reduce the shock that occurs at the gear change. If the 4th clutch transmission fluid pressure switch is OFF while driving with the rotation speed ratio of the input/output pulses in 4th gear, the PCM detects a 4th clutch transmission fluid pressure switch failure and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None

Duration	2 seconds or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0116, P0117, P0118, P0122, P0123, P0705, P0716, P0717, P0721, P0722, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744, P1745, P1780	

Malfunction Threshold

The input signal from the 4th clutch transmission fluid pressure switch to the PCM is high when driving in 4th gear.

Driving Pattern

Start the engine, and drive the vehicle in the D position and 4th gear for at least 2 seconds.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the indicator

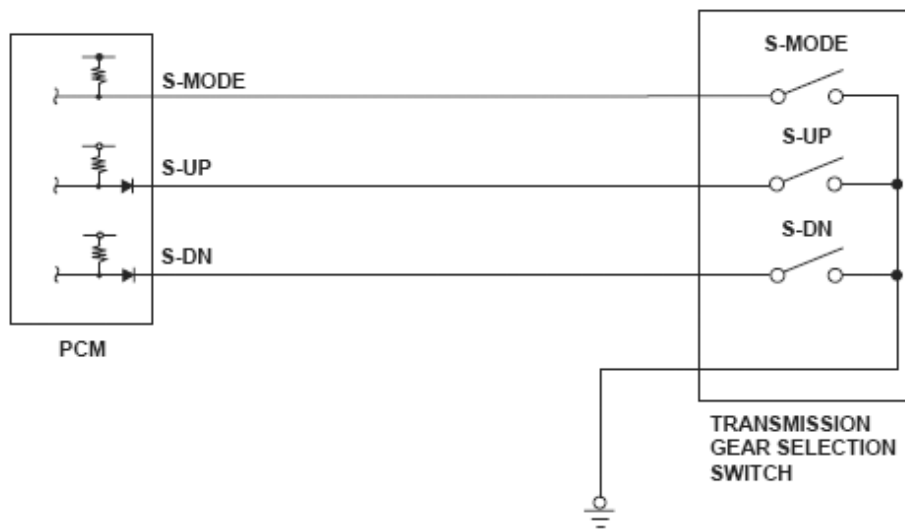
When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

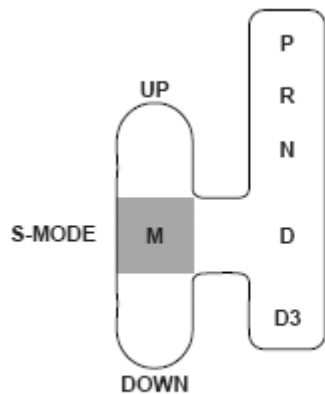
DTC P0957 (24): ADVANCED DIAGNOSTICS

DTC P0957: SHORT IN TRANSMISSION GEAR SELECTION SWITCH CIRCUIT, OR TRANSMISSION GEAR SELECTION SWITCH STUCK ON



P0815-0701

Fig. 212: Short In Transmission Gear Selection Switch - Circuit Diagram



P0957-0770

Fig. 213: Identifying Transmission Gear Shifting M Position

General Description

When the shift lever is moved to the M position (the sequential sportshift mode (S-MODE) is selected), the upshift (S-UP) switch and the downshift (S-DN) switch can be used. When the shift lever is moved toward the S-UP switch, an upshift is executed, and when the shift lever is moved toward the S-DN switch, a downshift is executed. The S-MODE switch signal, the S-UP switch signal, and the S-DN switch signal are grounded when turned on and opened when turned off.

When the S-MODE switch is turned on in the P, R, N, and D3 positions, a malfunction of the S-MODE switch is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0706, P0815, P0816, P0958	

Malfunction Threshold

The S-MODE switch signal is turned on in the P, R, N, and D3 positions for at least 10 seconds.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

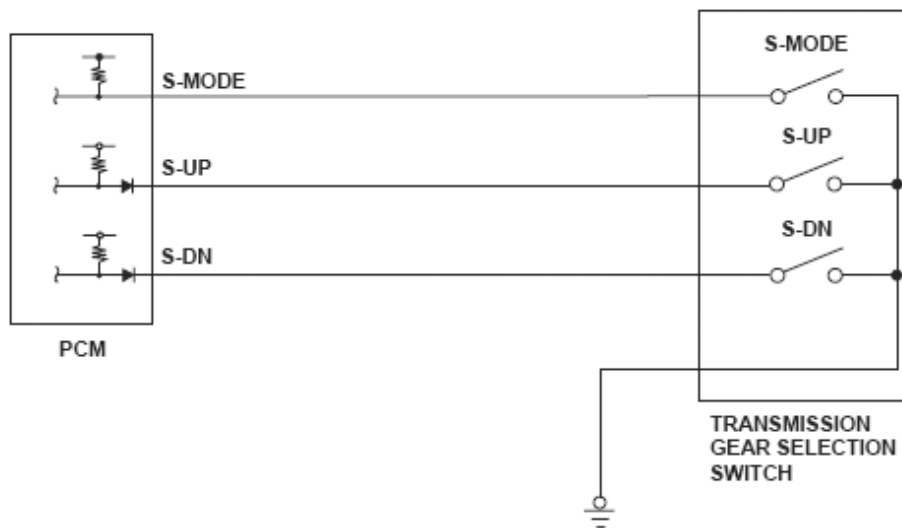
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

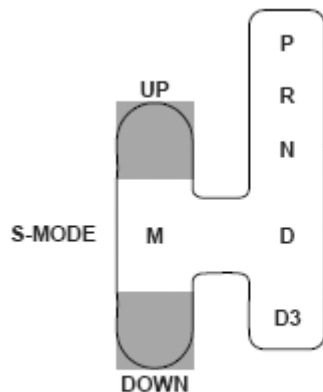
DTC P0958 (24): ADVANCED DIAGNOSTICS

DTC P0958: OPEN IN TRANSMISSION GEAR SELECTION SWITCH CIRCUIT, OR TRANSMISSION GEAR SELECTION SWITCH STUCK OFF



P0815-0701

Fig. 214: Open In Transmission Gear Selection Switch - Circuit Diagram



P0958-0770

Fig. 215: Identifying Transmission Gear Shifting Up And Down Positions

General Description

When the shift lever is moved to the M position (the sequential sportshift mode (S-MODE) is selected), the upshift (S-UP) switch and the downshift (S-DN) switch can be used. When the shift lever is moved toward the S-UP switch, an upshift is executed, and when the shift lever is moved toward the S-DN switch, a downshift is executed. The S-MODE switch signal, the S-UP switch signal, and the S-DN switch signal are grounded when turned on and opened when turned off. When there are S-UP switch or S-DN switch inputs while the S-MODE switch signal is turned off in the D position, a malfunction of the S-MODE switch is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0706, P0815, P0816, P0957	

Malfunction Threshold

The S-UP switch inputs or S-DN switch inputs are counted at least two times when the S-MODE switch signal is turned off in the D position.

Driving Pattern

Start the engine, switch the shift lever to S-MODE, and operate the S-UP and S-DN switches at least twice.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

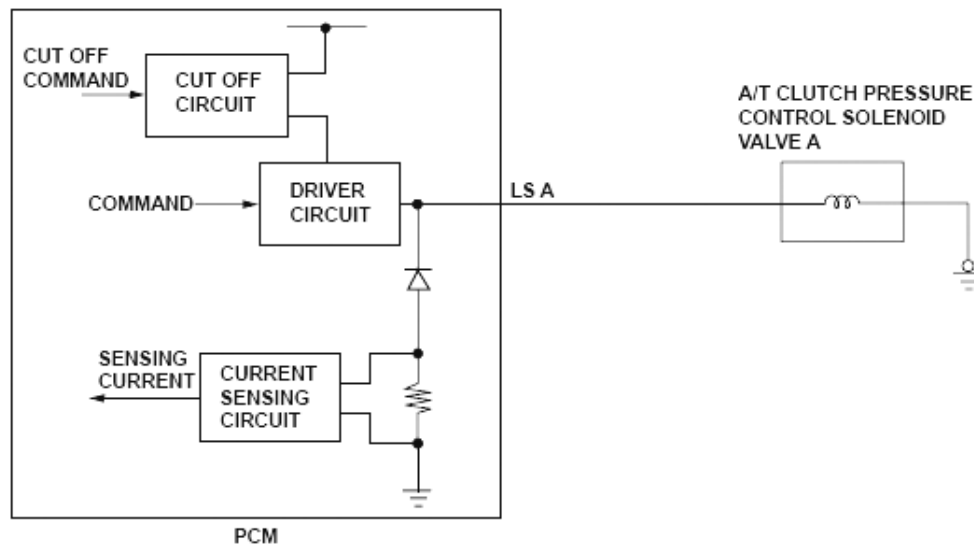
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

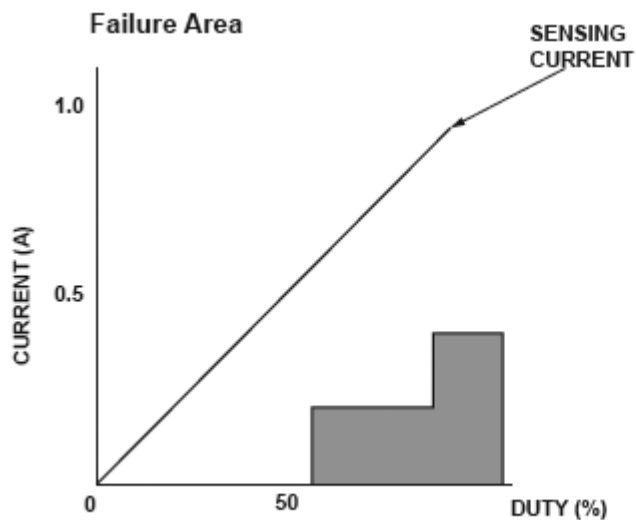
DTC P0962 (16): ADVANCED DIAGNOSTICS

DTC P0962: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A CIRCUIT



P0962-0302

Fig. 216: Problem In A/T Clutch Pressure Control Solenoid Valve A - Circuit Diagram



P0962-0370

Fig. 217: A/T Clutch Pressure Control Solenoid Valve Current Graph

General Description

A/T clutch pressure control solenoid valve A is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve A pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve A and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0963, P0966, P0967, P0970, P0971	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
57 - 89	Less than 0.2	Low Input
More than 89	Less than 0.4	Low Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

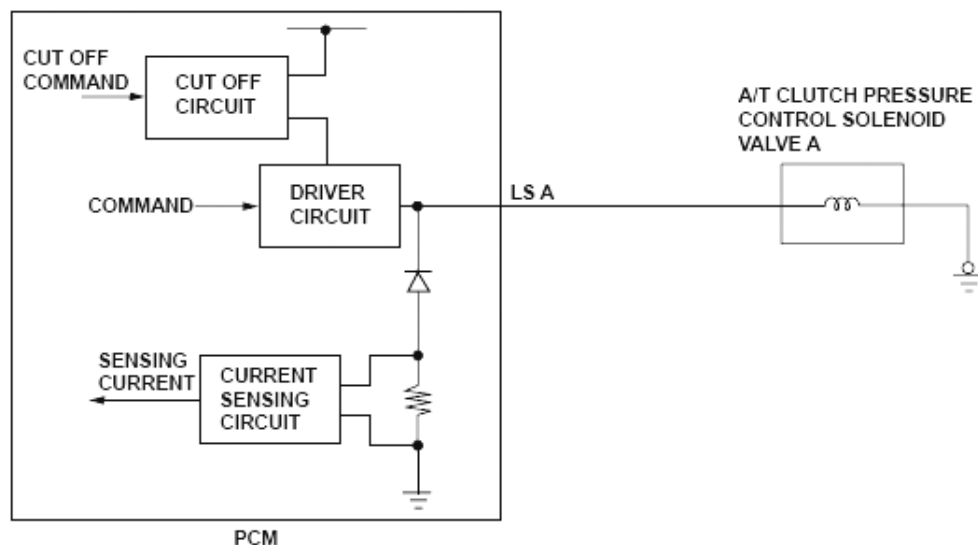
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

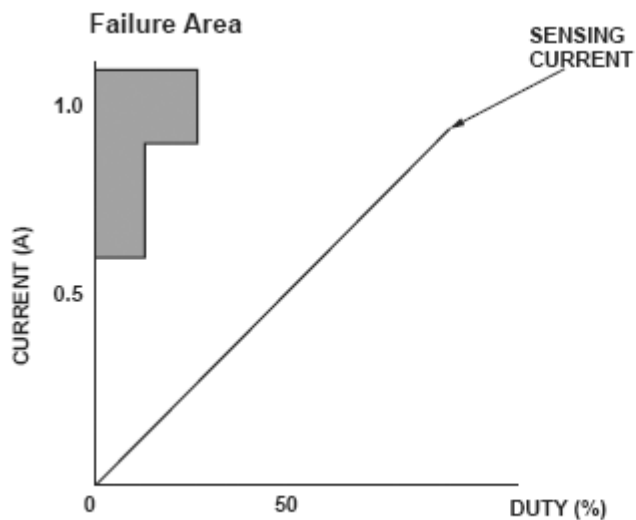
DTC P0963 (16): ADVANCED DIAGNOSTICS

DTC P0963: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A



P0962-0302

Fig. 218: Problem In A/T Clutch Pressure Control Solenoid Valve A - Circuit Diagram



P0963-0370

Fig. 219: A/T Clutch Pressure Control Solenoid Valve Current Graph

General Description

A/T clutch pressure control solenoid valve A is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve A pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve A and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0962, P0966, P0967, P0970, P0971	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
Less than 13	More than 0.6	High Input
13 - 27	More than 0.9	High Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

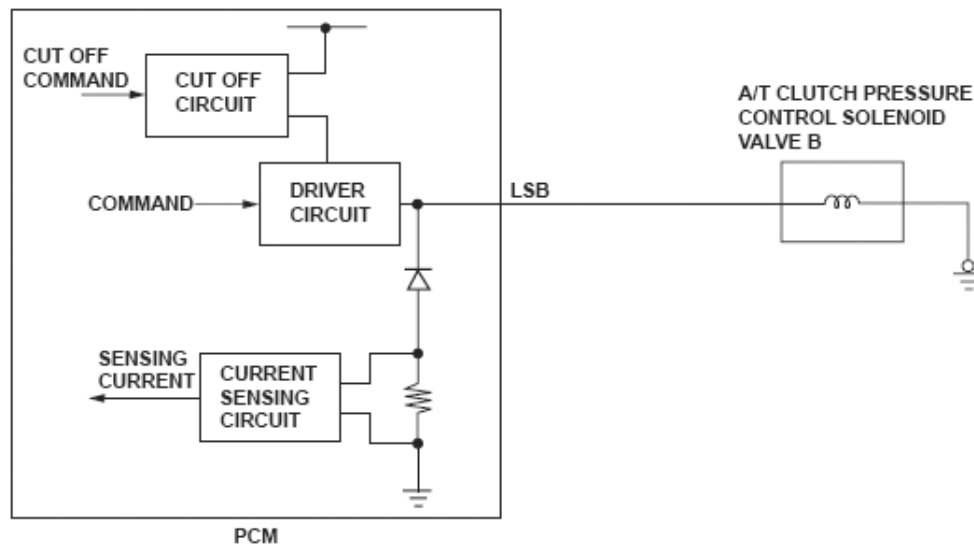
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

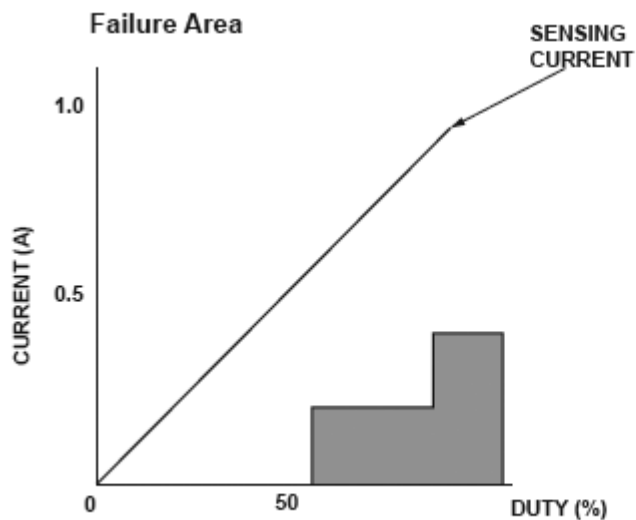
DTC P0966 (23): ADVANCED DIAGNOSTICS

DTC P0966: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B CIRCUIT



P0966-0302

Fig. 220: Problem In A/T Clutch Pressure Control Solenoid Valve B - Circuit Diagram



P0962-0370

Fig. 221: A/T Clutch Pressure Control Solenoid Valve B Current Graph

General Description

A/T clutch pressure control solenoid valve B is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve B pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve B and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0962, P0963, P0967, P0970, P0971	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
57 - 89	Less than 0.2	Low Input
More than 89	Less than 0.4	Low Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

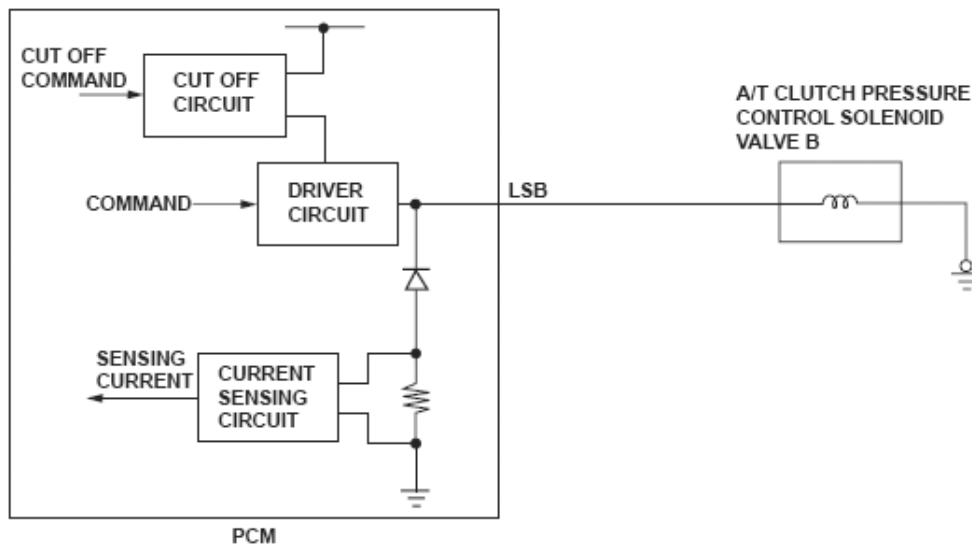
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

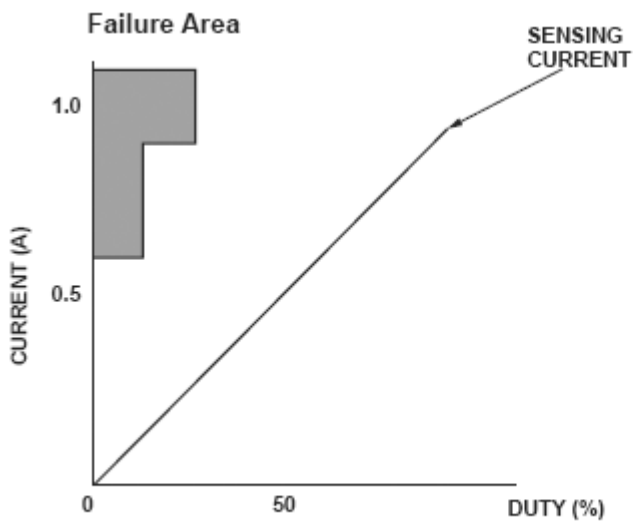
DTC P0967 (23): ADVANCED DIAGNOSTICS

DTC P0967: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B



P0966-0302

Fig. 222: Problem In A/T Clutch Pressure Control Solenoid Valve B - Circuit Diagram



P0963-0370

Fig. 223: A/T Clutch Pressure Control Solenoid Valve B Current Graph

General Description

A/T clutch pressure control solenoid valve B is used for clutch pressure control. A spool in A/T clutch pressure control solenoid valve B pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve B and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0962, P0963, P0966, P0970, P0971	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
Less than 13	More than 0.6	High Input
13 - 27	More than 0.9	High Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

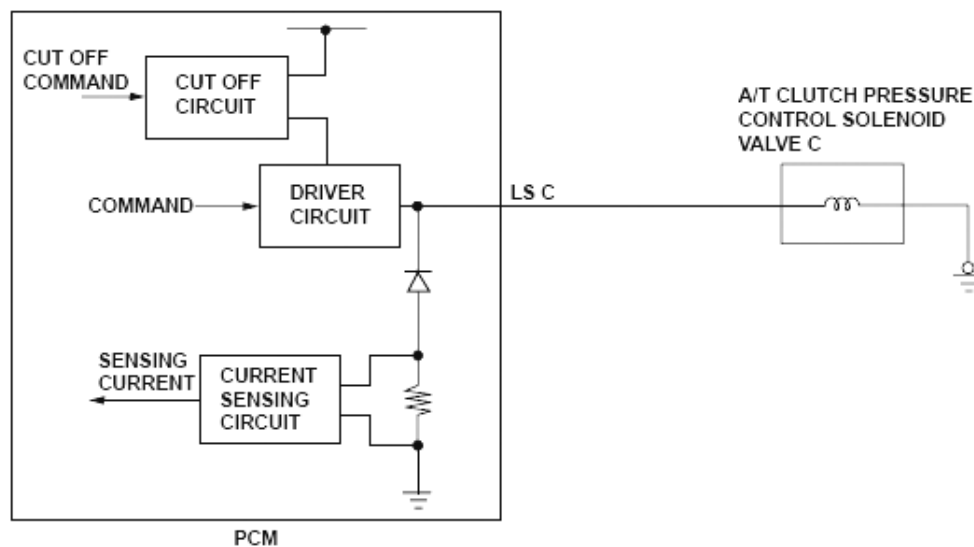
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

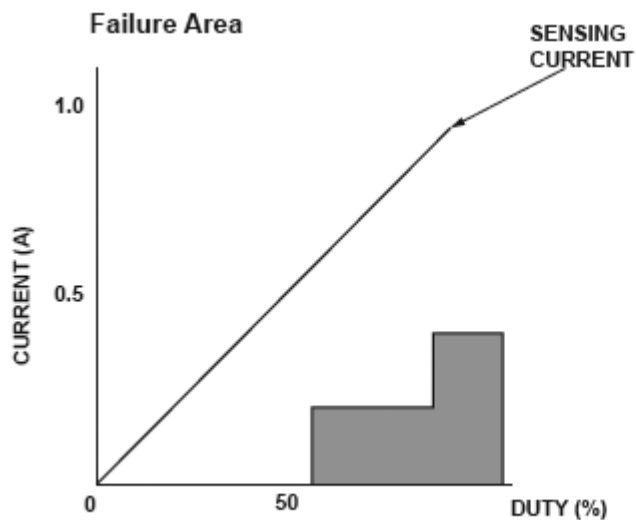
DTC P0970 (29): ADVANCED DIAGNOSTICS

DTC P0970: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C CIRCUIT



P0970-0302

Fig. 224: Problem In A/T Clutch Pressure Control Solenoid Valve C - Circuit Diagram



P0962-0370

Fig. 225: A/T Clutch Pressure Control Solenoid Valve C Current Graph

General Description

A/T clutch pressure control solenoid valve C is used for clutch pressure control and lock-up control. A spool in A/T clutch pressure control solenoid valve C pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve C and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0962, P0963, P0966, P0967, P0971	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
57 - 89	Less than 0.2	Low Input
More than 89	Less than 0.4	Low Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

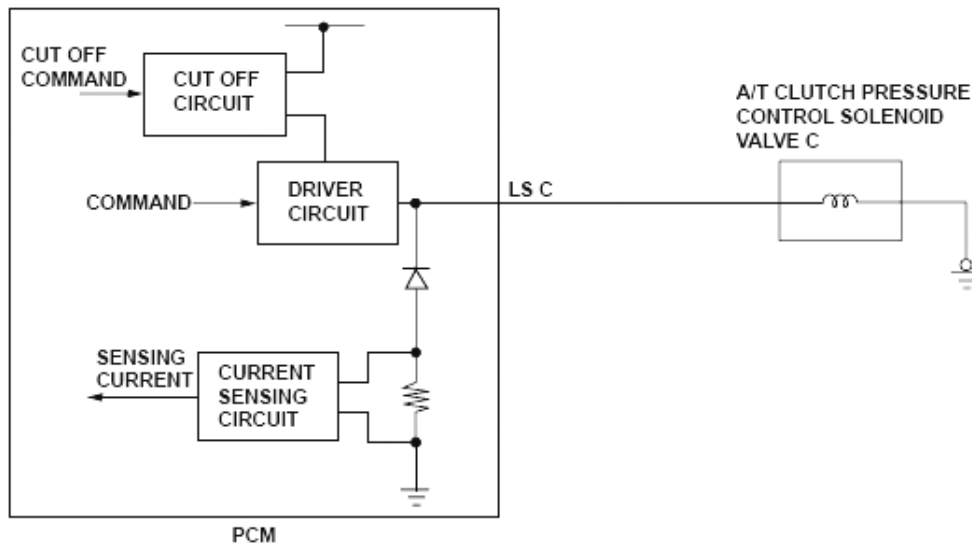
When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

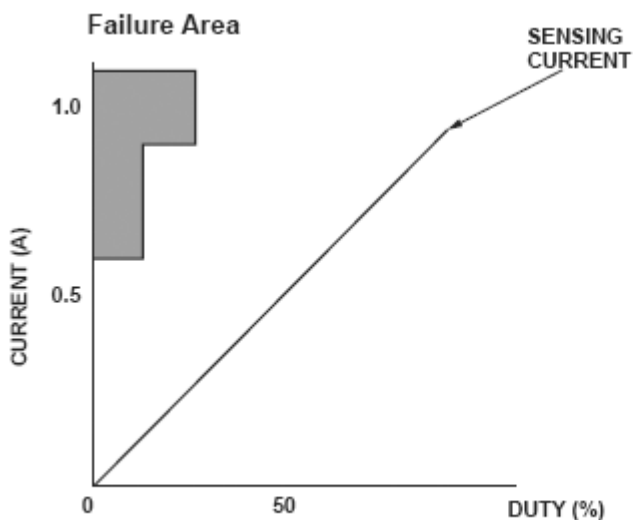
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0971 (29): ADVANCED DIAGNOSTICS

DTC P0971: PROBLEM IN A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C

P0970-0302

Fig. 226: Problem In A/T Clutch Pressure Control Solenoid Valve C - Circuit Diagram

P0963-0370

Fig. 227: A/T Clutch Pressure Control Solenoid Valve C Current Graph**General Description**

A/T clutch pressure control solenoid valve C is used for clutch pressure control and lock-up control. A spool in A/T clutch pressure control solenoid valve C pushes a valve according to the duty cycle that is controlled by the powertrain control module (PCM) so the hydraulic pressure is proportional to the current. The PCM measures the current flowing through A/T clutch pressure control solenoid valve C and uses feedback control to compensate for the difference between the actual current and the commanded one. If the measured current for

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

the PCM output duty cycle is not within a specified range (open or short), a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0962, P0963, P0966, P0967, P0970	

Malfunction Threshold

The measured current for the PCM's command value is as specified here for at least 1 second.

MALFUNCTION THRESHOLD CHART

Duty (%)	Current (A)	Failure mode
Less than 13	More than 0.6	High Input
13 - 27	More than 0.9	High Input

Driving Pattern

Start the engine, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

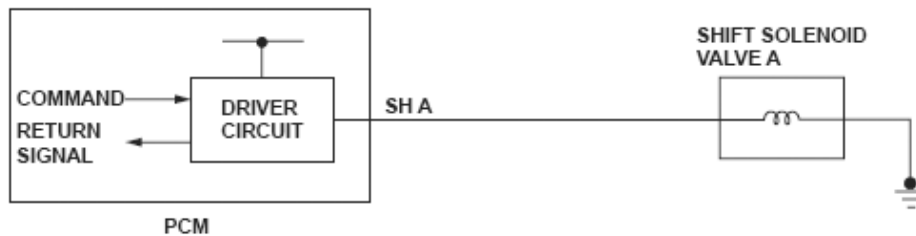
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0973 (7): ADVANCED DIAGNOSTICS

DTC P0973: SHORT IN SHIFT SOLENOID VALVE A CIRCUIT



P0753-9801

Fig. 228: Short In Shift Solenoid Valve A - Circuit Diagram

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 229: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn ON the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

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2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0974, P0982, P0983	

Malfunction Threshold

The return signal does not match the command to turn ON shift solenoid valve A for at least 1 second.

Driving Pattern

Start the engine, shift to the R position, and wait for at least 1 second.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

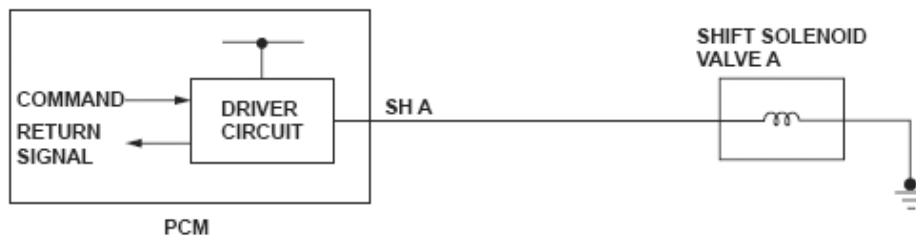
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0974 (7): ADVANCED DIAGNOSTICS

DTC P0974: OPEN IN SHIFT SOLENOID VALVE A CIRCUIT



P0753-9801

Fig. 230: Open In Shift Solenoid Valve A - Circuit Diagram

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 231: Shift Solenoid Valve And Gear Position Specification Chart**General Description**

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn OFF the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks

OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
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Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0973, P0982, P0983	

Malfunction Threshold

The return signal does not match the command to turn OFF shift solenoid valve A for at least 1 second.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

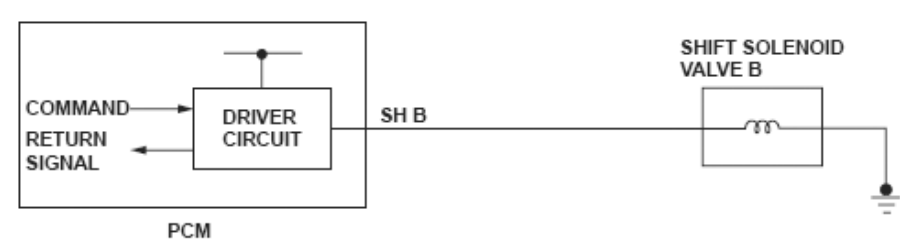
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0976 (8): ADVANCED DIAGNOSTICS

DTC P0976: SHORT IN SHIFT SOLENOID VALVE B CIRCUIT



P0758-0201

Fig. 232: Short In Shift Solenoid Valve B - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 233: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn ON the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0977, P0979, P0980	

Malfunction Threshold

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The return signal does not match the command to turn ON shift solenoid valve B for at least 1 second.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

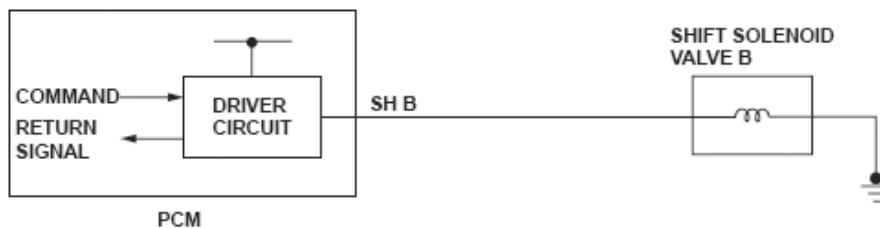
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0977 (8): ADVANCED DIAGNOSTICS

DTC P0977: OPEN IN SHIFT SOLENOID VALVE B CIRCUIT



P0758-0201

Fig. 234: Open In Shift Solenoid Valve B - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 235: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn OFF the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0976, P0979, P0980	

Malfunction Threshold

The return signal does not match the command to turn OFF shift solenoid valve B for at least 1 second.

Driving Pattern

Start the engine, drive the vehicle so that it shifts from 1st to 4th gear in the D position, then drive the vehicle in 3rd or 4th gear for at least 1 second.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

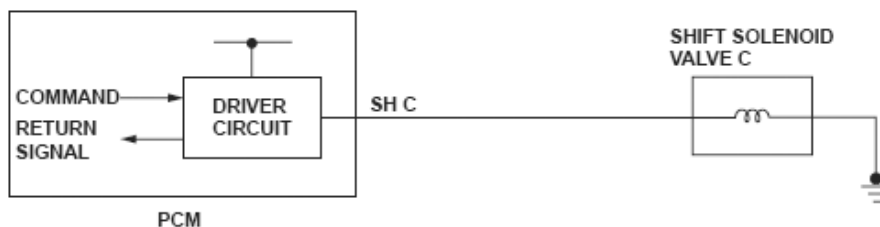
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0979 (22): ADVANCED DIAGNOSTICS

DTC P0979: SHORT IN SHIFT SOLENOID VALVE C CIRCUIT



P0763-0201

Fig. 236: Short In Shift Solenoid Valve C - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 237: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn ON the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0976, P0977, P0980	

Malfunction Threshold

The return signal does not match the command to turn ON shift solenoid valve C for at least 1 second.

Driving Pattern

Start the engine, and drive the vehicle in 1st gear in the D position for at least 1 second.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

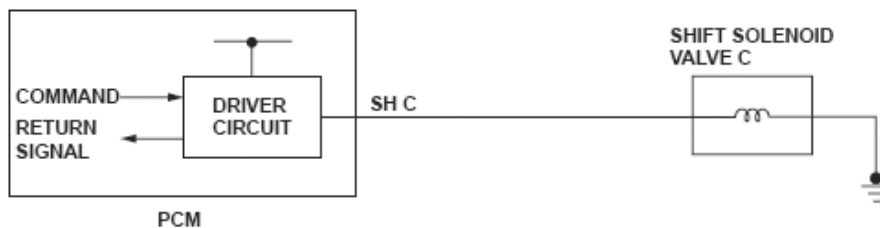
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0980 (22): ADVANCED DIAGNOSTICS**DTC P0980: OPEN IN SHIFT SOLENOID VALVE C CIRCUIT**

P0763-0201

Fig. 238: Open In Shift Solenoid Valve C - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 239: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn OFF the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0976, P0977, P0979	

Malfunction Threshold

The return signal does not match the command to turn OFF shift solenoid valve C for at least 1 second.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 1 second.

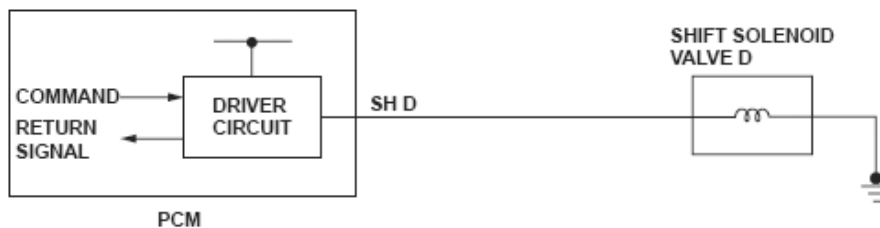
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0982 (60): ADVANCED DIAGNOSTICS**DTC P0982: SHORT IN SHIFT SOLENOID VALVE D CIRCUIT**

P0768-0201

Fig. 240: Short In Shift Solenoid Valve D - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 241: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn ON the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0973, P0974, P0983	

Malfunction Threshold

The return signal does not match the command to turn ON shift solenoid valve D for at least 1 second.

Driving Pattern

Start the engine, shift to the P position, and wait for at least 1 second.

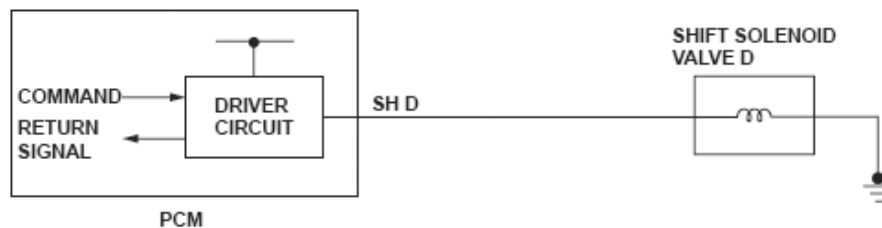
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P0983 (60): ADVANCED DIAGNOSTICS**DTC P0983: OPEN IN SHIFT SOLENOID VALVE D CIRCUIT**

P0768-0201

Fig. 242: Open In Shift Solenoid Valve D - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Gear position	Shift solenoid valve A	Shift solenoid valve B	Shift solenoid valve C	Shift solenoid valve D
Park	OFF	ON	OFF	ON
Reverse	ON	ON	OFF	ON
Neutral	OFF	ON	OFF	OFF
1st	OFF	ON	ON	OFF
1st - 2nd	ON	ON	ON	OFF/ON
2nd	ON	ON	OFF	OFF/ON
2nd - 3rd	ON	ON	ON	OFF/ON
3rd	ON	OFF	ON	OFF/ON
3rd - 4th	ON	OFF	OFF	OFF/ON
4th	OFF	OFF	OFF	OFF/ON
4th - 5th	OFF	OFF	ON	OFF/ON
5th	OFF	ON	ON	OFF/ON

Fig. 243: Shift Solenoid Valve And Gear Position Specification Chart

General Description

When shift solenoid valves A and D are turned ON, the hydraulic pressure circuit opens. When shift solenoid valves B and C are turned OFF, the hydraulic pressure circuit opens. The hydraulic pressure circuit supplies/discharges hydraulic pressure to/from each clutch according to the combination of the ON/OFF status of those valves and the shift valves. The powertrain control module (PCM) commands the driver circuit to turn on the shift solenoid valve. The circuit diagnoses malfunctions such as a circuit short or open, and sends back a return signal during the PCM's command. A malfunction is detected when the return signal does not match the PCM command to turn OFF the shift solenoid valve, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0973, P0974, P0982	

Malfunction Threshold

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The return signal does not match the command to turn OFF shift solenoid valve D for at least 1 second.

Driving Pattern

Start the engine, shift to the N position, and wait for at least 1 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

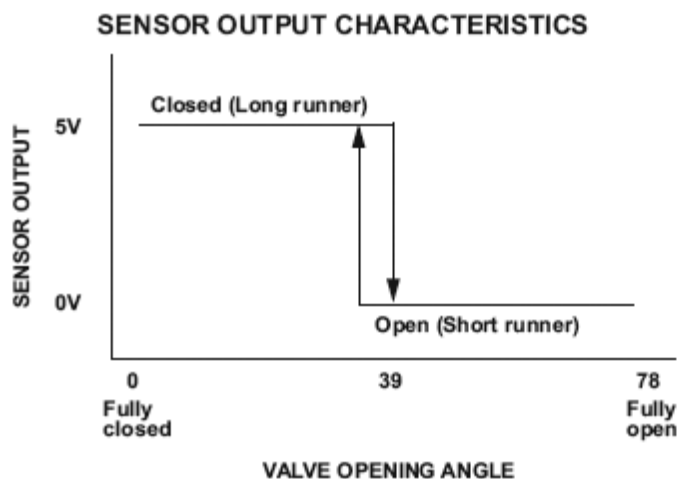
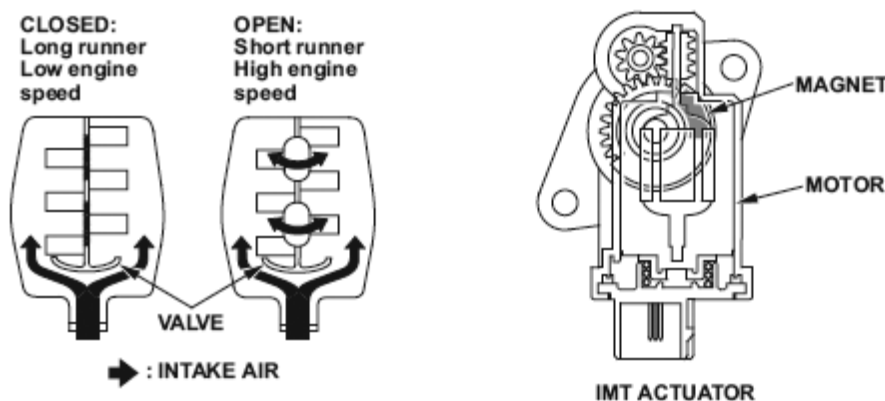
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1077 (106): ADVANCED DIAGNOSTICS

DTC P1077: INTAKE MANIFOLD TUNING (IMT) VALVE STUCK IN HIGH RPM POSITION



P1077-0572

Fig. 244: Identifying DTC P1077 Intake Manifold Tuning (IMT) Valve Position

General Description

The intake manifold tuning (IMT) system controls engine output by selecting either long or short intake runner lengths. The system consists of the IMT valve, the IMT actuator, and the powertrain control module (PCM). The IMT actuator is attached to the intake manifold and it includes the motor and the Hall-effect-IC position sensing unit. The PCM actuates the motor, which operates the IMT valve. When the IMT valve is closed, the long runner is selected, increasing torque at low engine speed. When the IMT valve is open, the short runner is selected, increasing torque at high engine speed. A Hall-effect-IC position sensing unit is integrated with the motor to provide precise open/close feedback to the PCM. The IMT actuator sends a long runner return signal to the PCM when the IMT valve is closed, and it sends a short runner return signal when the IMT valve is open.

If the PCM receives no closed return signal when it sends a close command, or if it receives no open return signal when sending an open command to the IMT actuator, for a specified time, it detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	7 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Intake air temperature	5°F (-15°C)	-
Engine speed	-	3,600 rpm
Battery voltage	10.5 V	-
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0563, P1128, P1129, P2227, P2228, P2229	

Malfunction Threshold

When the PCM sends a close (long runner) command, no long runner return signal is received for at least 7 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Let the engine idle for at least 7 seconds.

Diagnosis Details

Conditions for illuminating the MIL

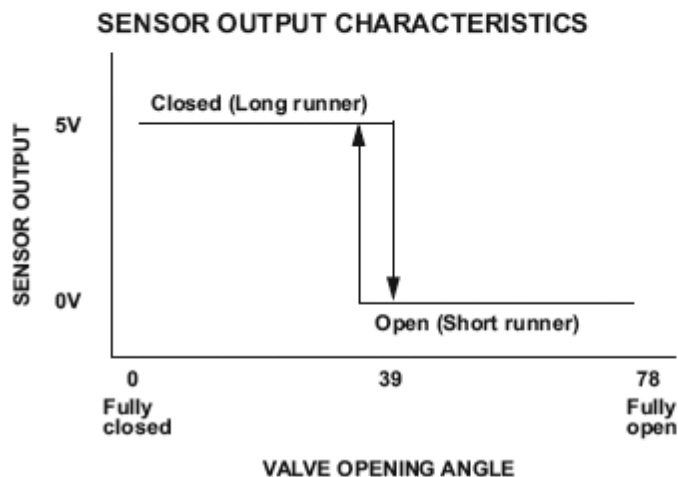
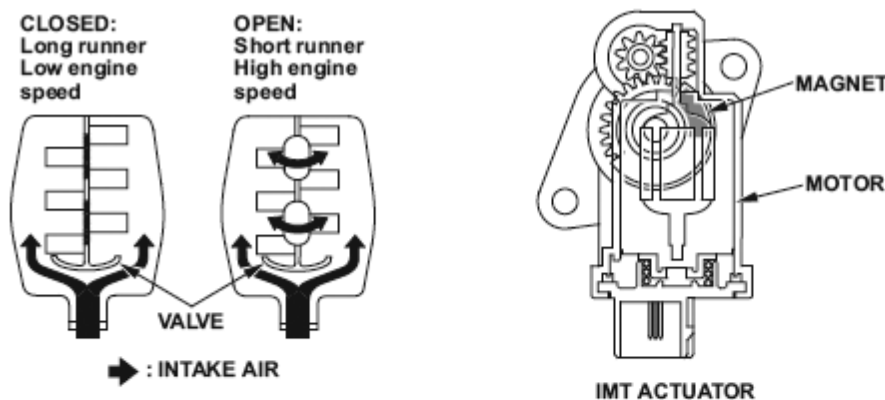
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1078 (106): ADVANCED DIAGNOSTICS

DTC P1078: INTAKE MANIFOLD TUNING (IMT) VALVE STUCK IN LOW RPM POSITION

P1077-0572

Fig. 245: Intake Manifold Tuning (IMT) Valve Position**General Description**

The intake manifold tuning (IMT) system controls engine output by selecting either long or short intake runner lengths. The system consists of the IMT valve, the IMT actuator, and the powertrain control module (PCM). The IMT actuator is attached to the intake manifold and it includes the motor and the Hall-effect-IC position sensing unit. The PCM actuates the motor, which operates the IMT valve. When the IMT valve is closed, the long runner is selected, increasing torque at low engine speed. When the IMT valve is open, the short runner is selected, increasing torque at high engine speed. A Hall-effect-IC position sensing unit is integrated with the motor to provide precise open/close feedback to the PCM. The IMT actuator sends a long runner return signal to the PCM when the IMT valve is closed, and it sends a short runner return signal when the IMT valve is open.

If the PCM receives no closed return signal when it sends a close command, or if it receives no open return signal when sending an open command to the IMT actuator, for a specified time, it detects a malfunction and stores a DTC.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Intake air temperature	5°F (-15°C)	-
Engine speed	3,800 rpm	-
Battery voltage	10.5 V	-
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0563, P1128, P1129, P2227, P2228, P2229	

Malfunction Threshold

When the PCM sends an open (short runner) command, no short runner return signal is received for at least 3 seconds.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Hold the engine speed to 3,800 rpm or more for at least 3 seconds.

Diagnosis Details

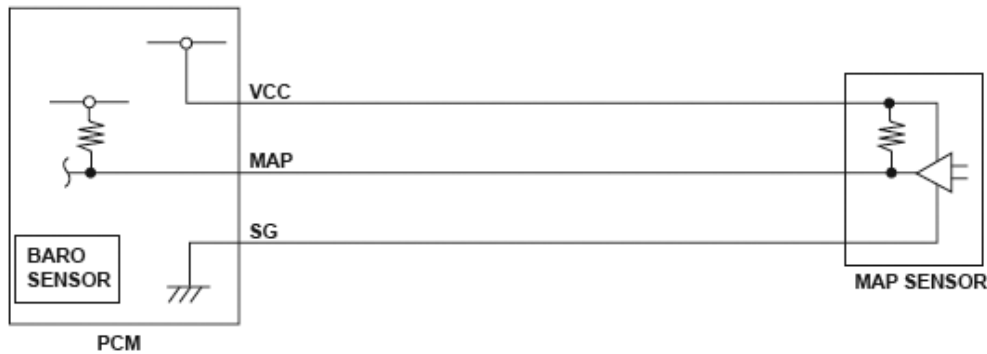
Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

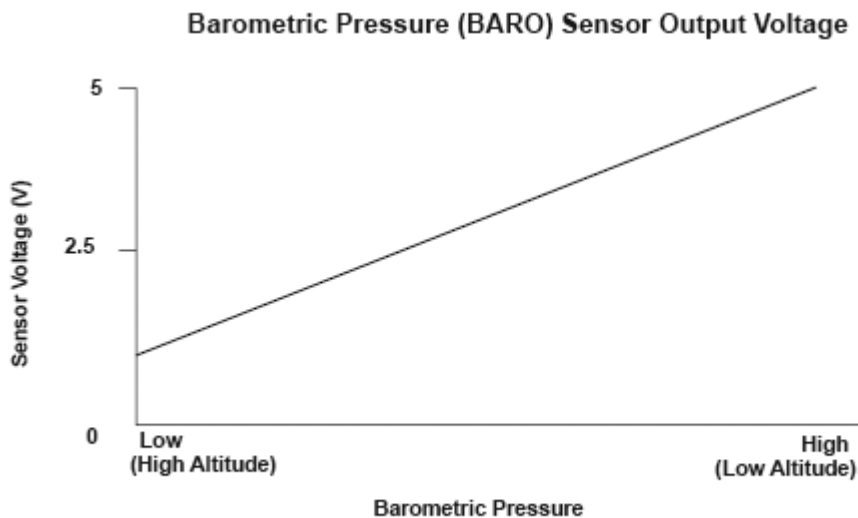
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1109 (13): ADVANCED DIAGNOSTICS**DTC P1109: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT OUT OF RANGE-HIGH**

P1107-9603

Fig. 246: Barometric Pressure (BARO) Sensor - Circuit Diagram

P1106-9671

Fig. 247: Barometric Pressure (BARO) Sensor Voltage Graph**General Description**

The barometric pressure (BARO) sensor is built into the powertrain control module (PCM) and monitors atmospheric pressure. The PCM estimates appropriate intake airflow from the manifold absolute pressure (MAP) sensor output voltage and BARO sensor output voltage. When BARO sensor output voltage is within the specified range, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2228, P2229

Malfunction Threshold

The BARO sensor output voltage is between 3.59 V to 4.49 V for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

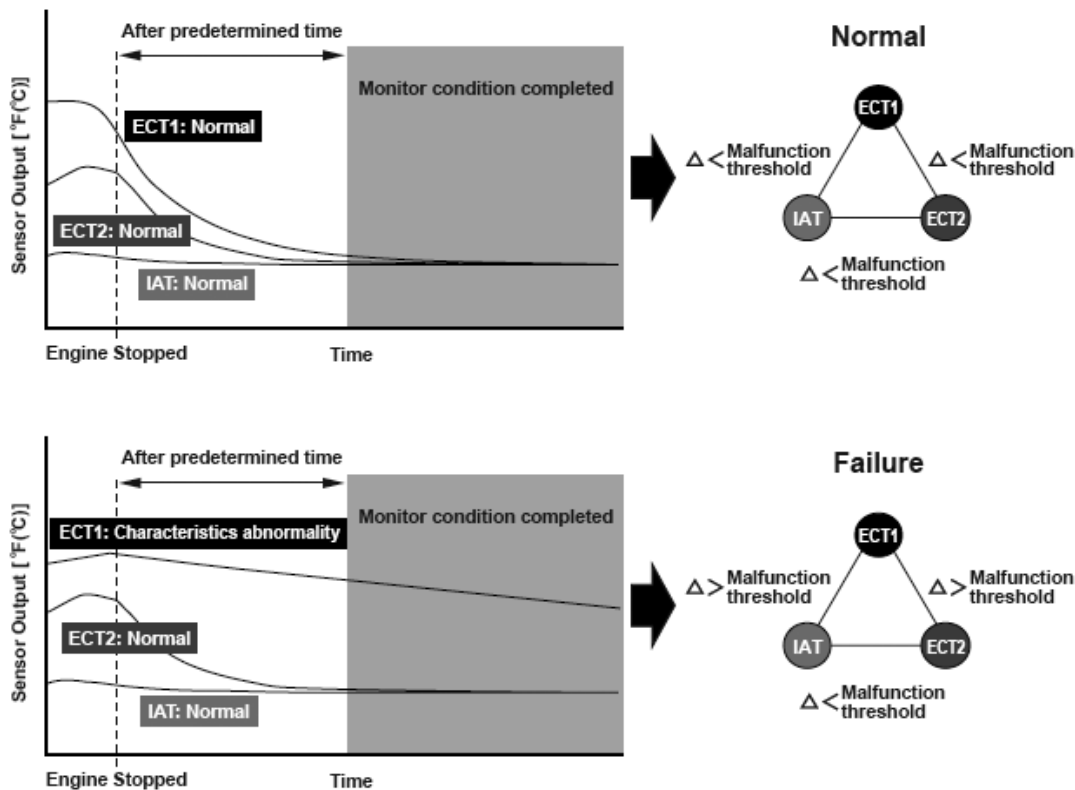
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1116 (86): ADVANCED DIAGNOSTICS

DTC P1116: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT RANGE/PERFORMANCE PROBLEM



P0111-0570

Fig. 248: Engine Coolant Temperature (ECT) Sensor 1 Performance Graph**General Description**

Two engine coolant temperature sensors and one intake air temperature sensor are used by the powertrain control module (PCM).

When the engine is stopped and enough time has passed, the temperature of the engine will equal the ambient temperature.

When an inappropriate temperature is detected after comparing the temperature readings of each sensor, a malfunction in the corresponding sensor is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine off time	6 hours	-
No active DTCs	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P2183, P2184, P2185, P2610	

Malfunction Threshold

A malfunction is detected if these three conditions are present after the engine and the ignition switch have been off for at least 6 hours:

- When the temperature difference between the IAT and ECT1 is 57°F (32°C) or more.
- When the temperature difference between the IAT and ECT2 is 30°F (17°C) or more.
- When the temperature difference between the ECT2 and ECT1 is 73°F (41°C) or more.

Driving Pattern

1. Turn the ignition off, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

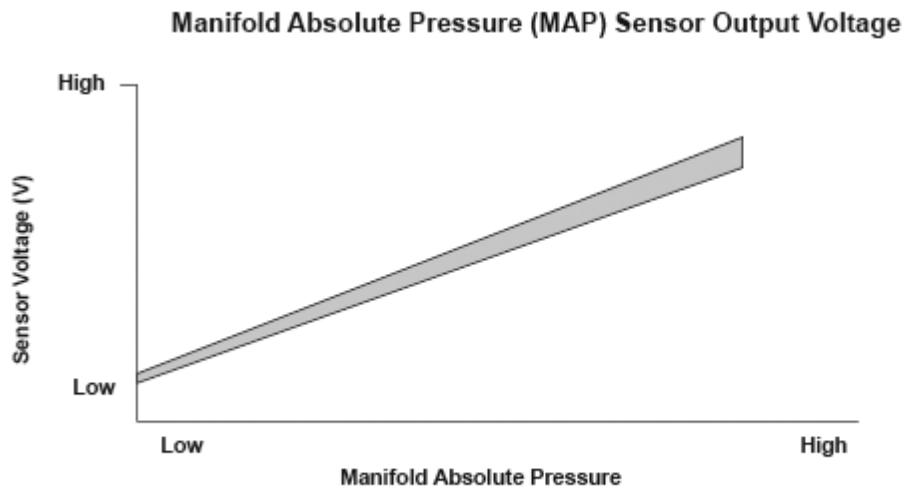
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

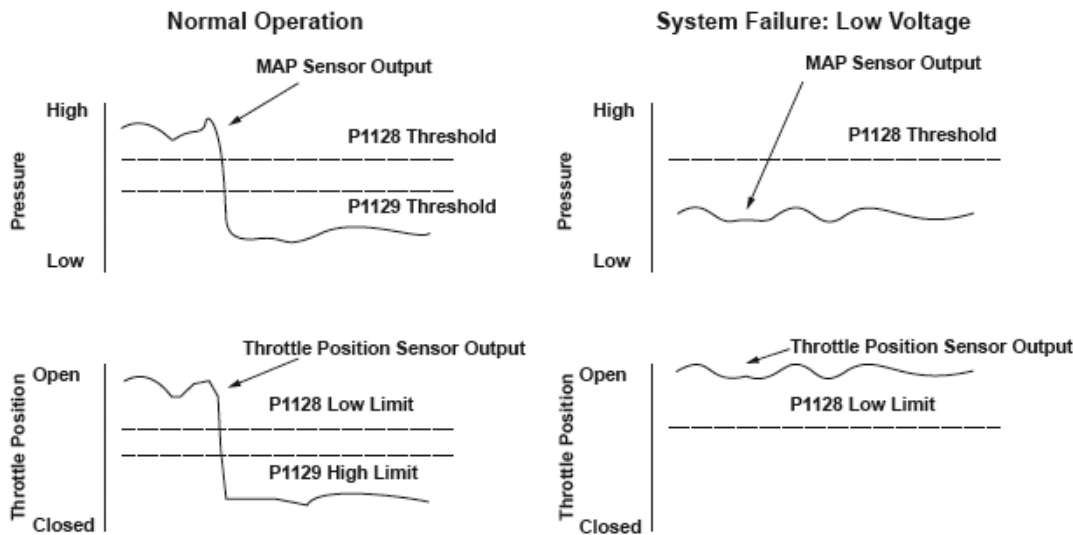
DTC P1128 (5): ADVANCED DIAGNOSTICS

DTC P1128: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR SIGNAL LOWER THAN EXPECTED



P0107-9671

Fig. 249: Manifold Absolute Pressure (MAP) Sensor Voltage Graph



P1128-9771

Fig. 250: Manifold Absolute Pressure (MAP) Sensor Operation Graph

General Description

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (idling) and high signal voltage at low-vacuum (throttle valve wide open).

The powertrain control module (PCM) compares a predetermined MAP value at a given throttle position and manifold absolute pressure to the output voltage value of the MAP sensor.

If the MAP sensor outputs lower voltage than expected, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition		Minimum	Maximum
Engine coolant temperature		156°F (69°C)	-
Engine speed		1,150 rpm	-
Vehicle speed		15 mph (24 km/h)	-
Throttle position	1,100 rpm	14.8°	-
	3,000 rpm	28.0°	-
No active DTCs		P0107, P0108, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P0404, P0461, P0506, P0507, P0627, P1077, P1078, P1129, P2101, P2108, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	
Other		Other than during fuel cut-off operation	

Malfunction Threshold

The MAP sensor output is 33 kPa (9.8 in.Hg, 249 mmHg) or less for at least 2 seconds when atmospheric pressure is 52 kPa (15.4 in.Hg, 392 mmHg).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed of 15 mph (24 km/h) or more with a throttle position as specified under Enable Conditions for at least 2 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If

the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

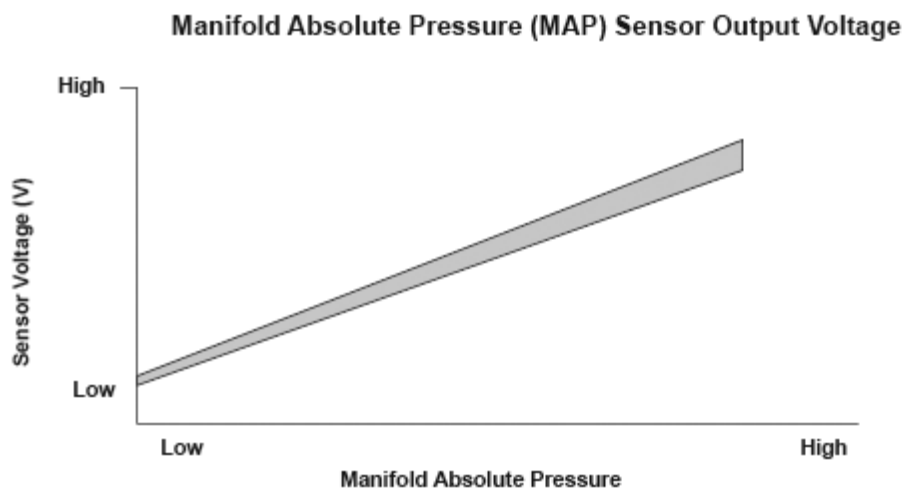
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1129 (5): ADVANCED DIAGNOSTICS

DTC P1129: MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR SIGNAL HIGHER THAN EXPECTED



P0107-9671

Fig. 251: Manifold Absolute Pressure (MAP) Sensor Voltage Graph

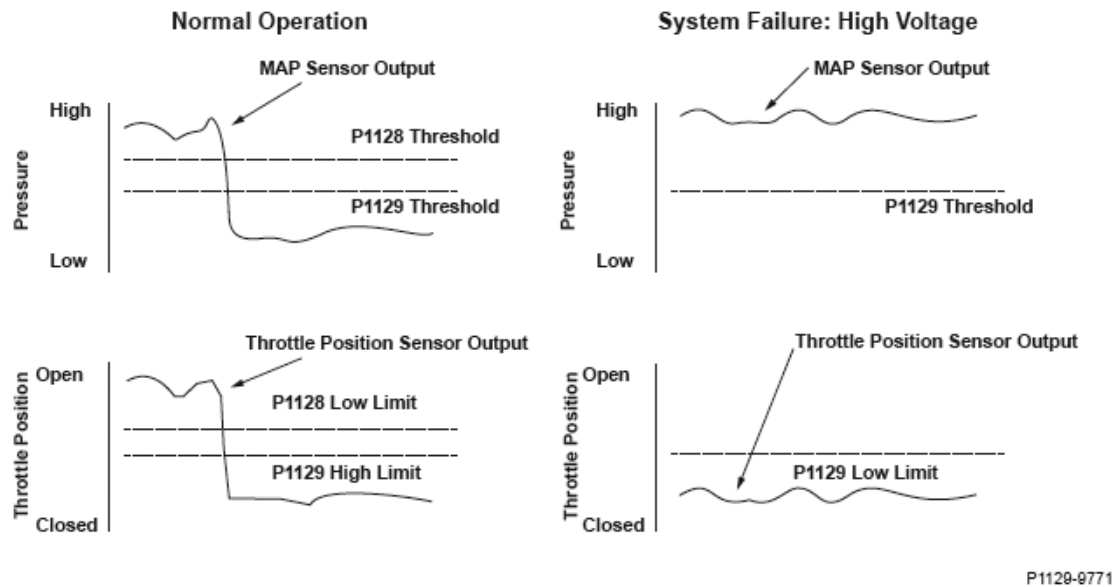


Fig. 252: Manifold Absolute Pressure (MAP) Sensor Operation Graph

General Description

The manifold absolute pressure (MAP) sensor senses manifold absolute pressure (vacuum) and converts it into electrical signals. The MAP sensor outputs low signal voltage at high-vacuum (throttle valve closed) and high signal voltage at low-vacuum (throttle valve wide open).

The powertrain control module (PCM) compares a predetermined MAP value at a given throttle position and manifold absolute pressure to the output voltage value of the MAP sensor.

If the MAP sensor outputs high voltage during fuel cut-off operation for deceleration with the throttle valve fully closed, which should make the manifold absolute pressure lower, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	156°F (69°C)	-

2008 Acura MDX

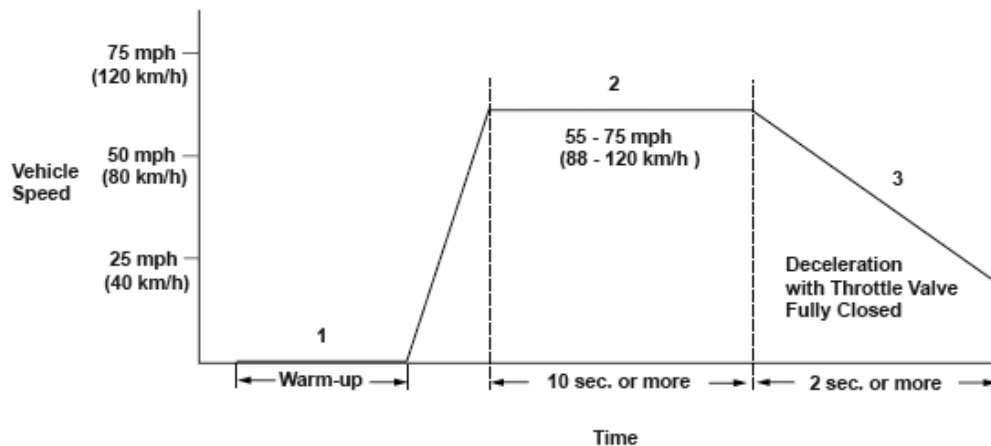
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Engine speed	1,150 rpm	5,600 rpm
Vehicle speed	15 mph (24 km/h)	-
Fuel feedback	During deceleration	
Throttle position	Fully closed	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P0404, P0443, P0496, P0497, P0506, P0507, P0627, P1077, P1078, P1128, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

The MAP sensor output is 36 kPa (10.9 in.Hg, 277 mmHg) or more for at least 2 seconds.

Driving Pattern



P1129-0050

Fig. 253: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
3. Then, decelerate with the throttle valve fully closed for at least 2 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze

frame data are stored.

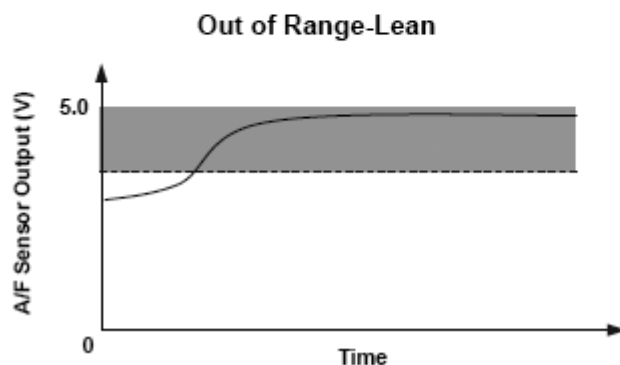
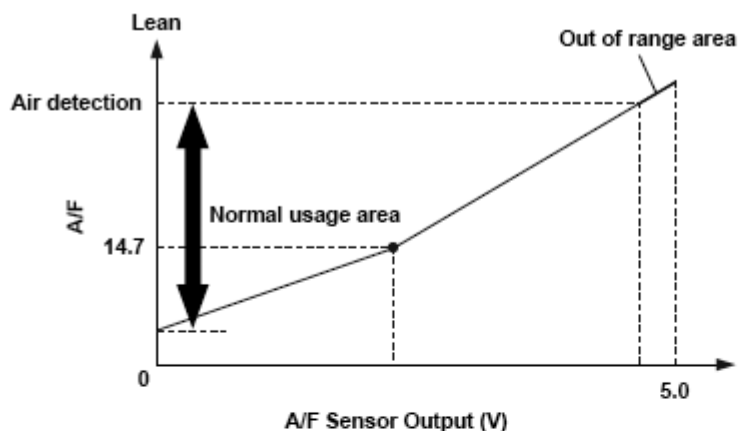
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1172 (157): ADVANCED DIAGNOSTICS

DTC P1172: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH



P1172-0570

Fig. 254: Rear Air/Fuel Ratio (A/F) Sensor - Out Of Range Graph

General Description

If a malfunction causes the rear air/fuel sensor (bank 1, sensor 1) signal to the powertrain control module (PCM) to deviate from the normal control area, the rear air/fuel ratio (A/F) sensor may still become active after the engine starts, but the air/fuel feedback does not start normally and the emissions deteriorate. When the rear

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

A/F sensor output is out of the normal area, and this condition continues after the rear A/F sensor is active, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	7 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0496, P0497, P0627, P1128, P1129, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252

Malfunction Threshold

A malfunction is detected when the rear A/F sensor (bank 1, sensor 1) output voltage is 4.7 V or more.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

Diagnosis Details

Conditions for illuminating the MIL

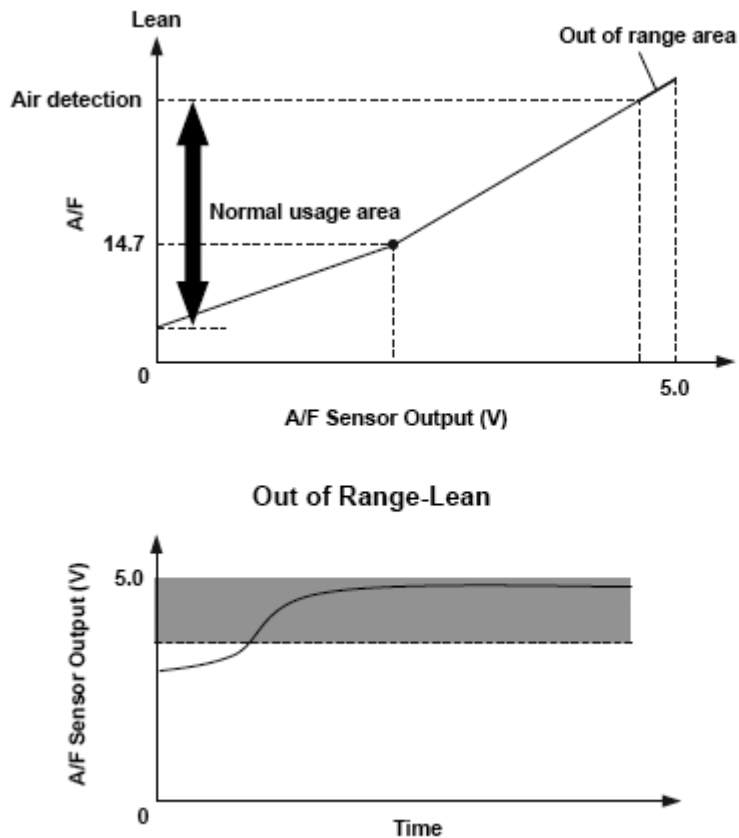
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1174 (158): ADVANCED DIAGNOSTICS

DTC P1174: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH

P1172-0570

Fig. 255: Front Air/Fuel Ratio (A/F) Sensor - Out Of Range Graph**General Description**

If a malfunction causes the front air/fuel sensor (bank 2, sensor 1) signal to the powertrain control module (PCM) to deviate from the normal control area, the front air/fuel ratio (A/F) sensor may still become active after the engine starts, but the air/fuel feedback does not start normally and the emissions deteriorate. When the front A/F sensor output is out of the normal area, and this condition continues after the front A/F sensor is active, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	7 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0154, P0155, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0496, P0497, P0627, P1128, P1129, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255

Malfunction Threshold

A malfunction is detected when the front A/F sensor (bank 2, sensor 1) output voltage is 4.7 V or more.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1297 (20): ADVANCED DIAGNOSTICS

DTC P1297: ELECTRICAL LOAD DETECTOR (ELD) CIRCUIT LOW VOLTAGE

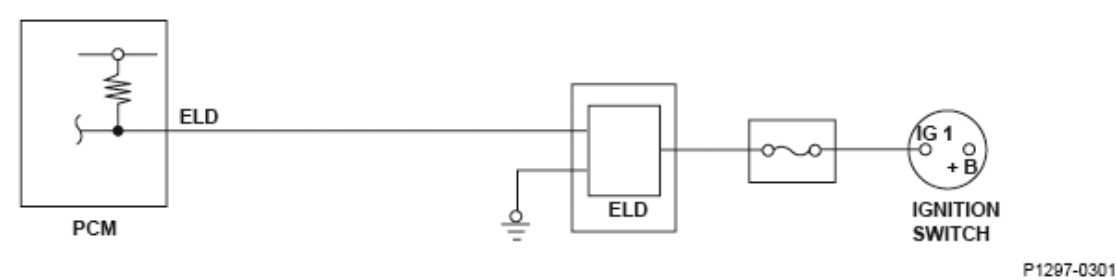


Fig. 256: Electrical Load Detector (ELD) (Low Voltage) - Circuit Diagram

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The electrical load detector (ELD) is built into the under-hood fuse/relay box. It monitors the current fed to the ignition switch and sends a signal to the powertrain control module (PCM). If the ELD output voltage is extremely low, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch	ON	
No active DTCs	P1298	

Malfunction Threshold

The ELD output voltage is 0.27 V or less for at least 5 seconds.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1298 (20): ADVANCED DIAGNOSTICS

DTC P1298: ELECTRICAL LOAD DETECTOR (ELD) CIRCUIT HIGH VOLTAGE

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

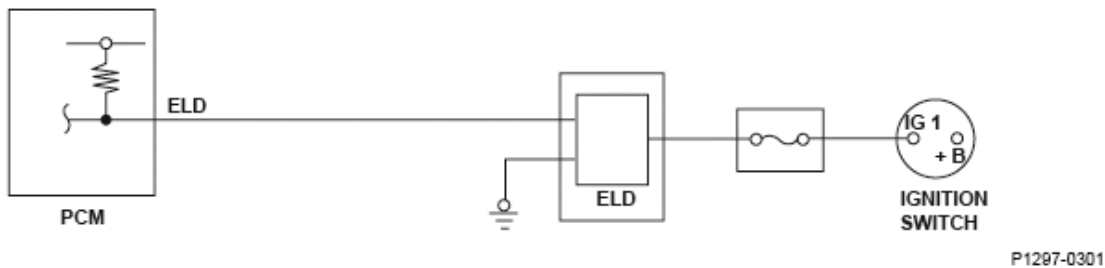


Fig. 257: Electrical Load Detector (ELD) (High Voltage) - Circuit Diagram

General Description

The electrical load detector (ELD) is built into the under-hood fuse/relay box. It monitors the current fed to the ignition switch and sends a signal to the powertrain control module (PCM). If the ELD output voltage is extremely high, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch	ON	
No active DTCs	P1297	

Malfunction Threshold

The ELD output voltage is 4.57 V or more for at least 5 seconds.

Diagnosis Details

Conditions for illuminating the indicator

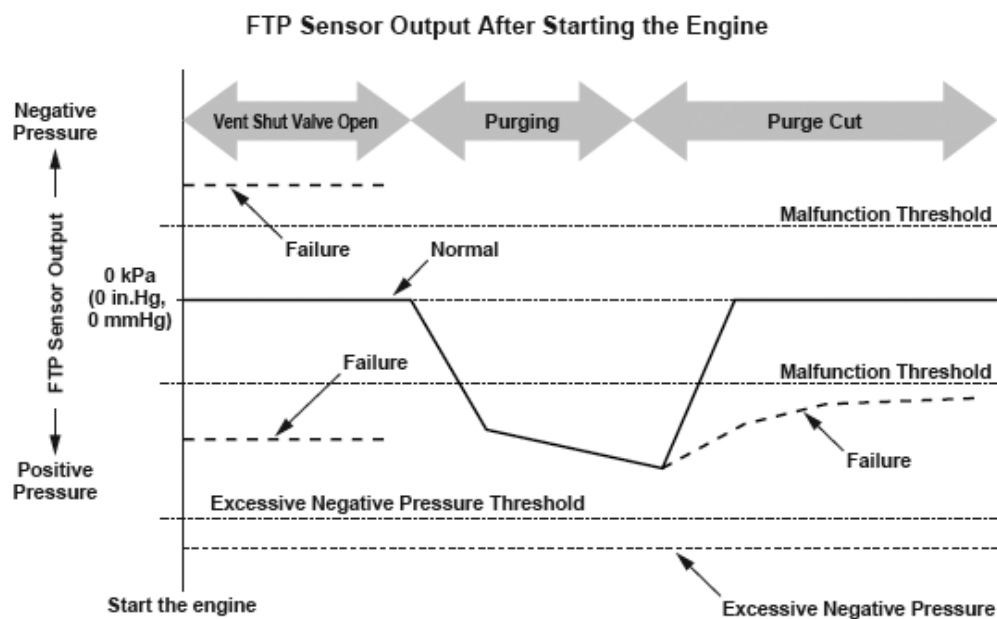
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1454 (91): ADVANCED DIAGNOSTICS

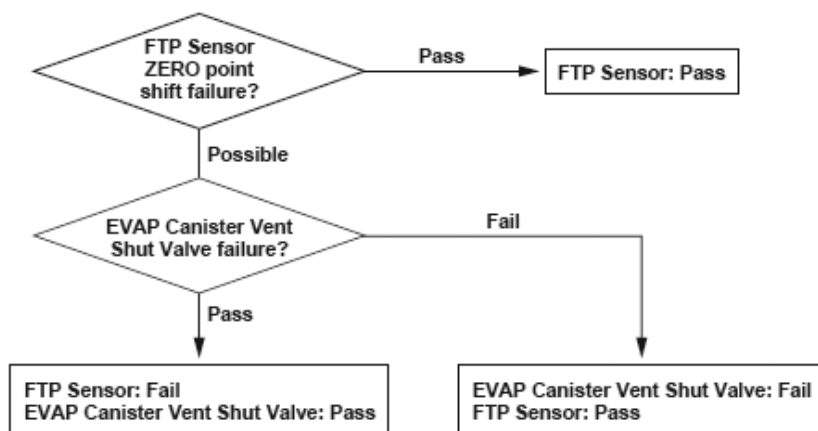
DTC P1454: FUEL TANK PRESSURE (FTP) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM



P1454-0570

Fig. 258: Fuel Tank Pressure (FTP) Sensor Performance Graph

Malfunction Judgment Flowchart of FTP Sensor and EVAP Canister Vent Shut Valve



P1454-0371

Fig. 259: Malfunction Judgment Flowchart Of FTP Sensor And EVAP Canister Vent Shut Valve

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

General Description

The fuel tank pressure is about 0 kPa (0 in.Hg, 0 mmHg) when starting a cold engine. When the fuel tank pressure (FTP) sensor output value is out of a specified range and the powertrain control module (PCM) judges that there's no other cause [no evaporative emission (EVAP) canister vent shut valve failure, etc.] of the FTP sensor zero point shift, the PCM detects an FTP sensor malfunction.

However, if the FTP sensor output when starting the engine is a prescribed negative value or less (excessive negative pressure is detected), the malfunction judgment should be done as follows because it is difficult to distinguish the FTP sensor zero point shift (P1454) from the EVAP canister vent shut valve failure (P2422).

1. If either Temporary DTC P1454 or P2422 is not stored, the PCM stores both DTCs.
2. If both P1454 and P2422 Temporary DTCs are stored and an excessive negative pressure is detected, both P1454 and P2422 DTCs are stored.
3. If either Temporary DTC P1454 or P2422 is stored and an excessive negative pressure is detected, the PCM stores the DTC of the temporary DTC that was stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	One per driving cycle
Sequence	P0452, P0453 are judged as OK
Duration	8 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	10 seconds	-
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0453, P0496, P0497, P0498, P0499, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2422	
Others	The EVAP canister vent shut valve has not been closing	
	Stopping the purge control	

Malfunction Threshold

One of these conditions is met.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

- The FTP sensor output fluctuates by 0.6 kPa (0.1 in.Hg, 5 mmHg) or more, or -0.6 kPa (-0.1 in.Hg, -5 mmHg) or less for at least 3 seconds.
- The FTP sensor output value is -1.3 kPa (-0.3 in.Hg, -10 mmHg) or less for at least 3 seconds.

Confirmation Procedure with the HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

Driving Pattern

Start the engine, and let it idle until the radiator fan comes on.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

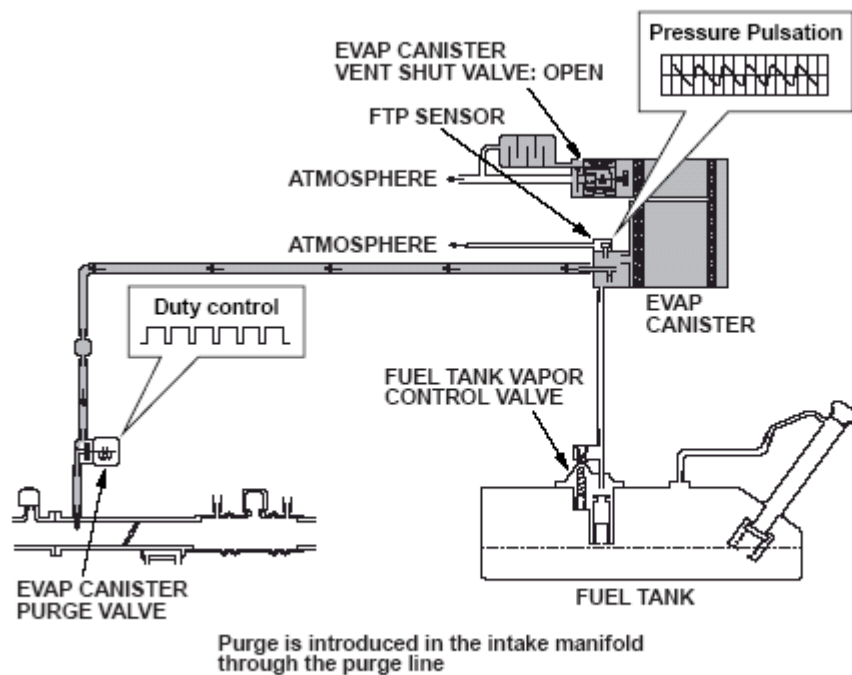
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P145C (90): ADVANCED DIAGNOSTICS

DTC P145C: EVAPORATIVE EMISSION (EVAP) SYSTEM PURGE FLOW MALFUNCTION



P145C-0770

Fig. 260: Evaporative Emission (EVAP) System - System Diagram

General Description

The fuel (vapor) vaporized in the fuel tank is stored in the canister temporarily and introduced in the engine through the evaporative emission (EVAP) canister purge valve. The powertrain control module (PCM) controls the amount of vapor introduced into the engine by repeatedly switching power to the EVAP canister purge valve at a constant frequency according to the condition of the engine.

< STEP 1 >

The EVAP canister purge valve opens normally (EVAP canister purge valve OPEN OK) and detects that the purge flow is normal when the pulse of the EVAP canister purge valve drive cycle is transmitted to the fuel tank pressure (FTP) sensor by the purge flow (pulse method).

OK determination: Pulse exists (P145C OK)

- P0497 Purge flow OK
- P0496 EVAP canister purge valve stuck Open OK

NG determination: No pulse (P145C NG)

- Either purge flow P0497 abnormality or P0496 EVAP canister purge valve OPEN failure.
- In this case, classify the failure part according to < STEP 2 >.

< STEP 2 >

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

If there is no pulse, it is determined as either no purge flow or the EVAP canister purge valve is stuck OPEN:

When the FTP sensor fluctuates from negative pressure to atmospheric pressure after the ignition is turned off:
P0496 EVAP canister purge valve stuck OPEN

When there is no fluctuation of the FTP sensor: P0497 purge flow NG

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	31 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Low load duration time	10 seconds	-
Engine coolant temperature before EVAP purge control starts	140°F (60°C)	-
MAP value	-	54 kPa (16.1 in.Hg, 410 mmHg)
Battery voltage	10.5 V	-
EVAP canister purge valve Duty	30 %	80 %
Fuel trim	0.73	1.47
Fuel feedback	Closed loop at stoichiometric	
No active DTCs	P0107, P0101, P0102, P0103, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0453, P0496, P0498, P0499, P1128, P1129, P1172, P1174, P1454, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2422	

Malfunction Threshold

The pulses detected by the fuel tank pressure sensor are 0.01% or less for at least 31 seconds.

Confirmation Procedure with the HDS

Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Driving Pattern

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 77 seconds.
3. Turn off the ignition for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1549 (34): ADVANCED DIAGNOSTICS

DTC P1549: CHARGING SYSTEM HIGH VOLTAGE

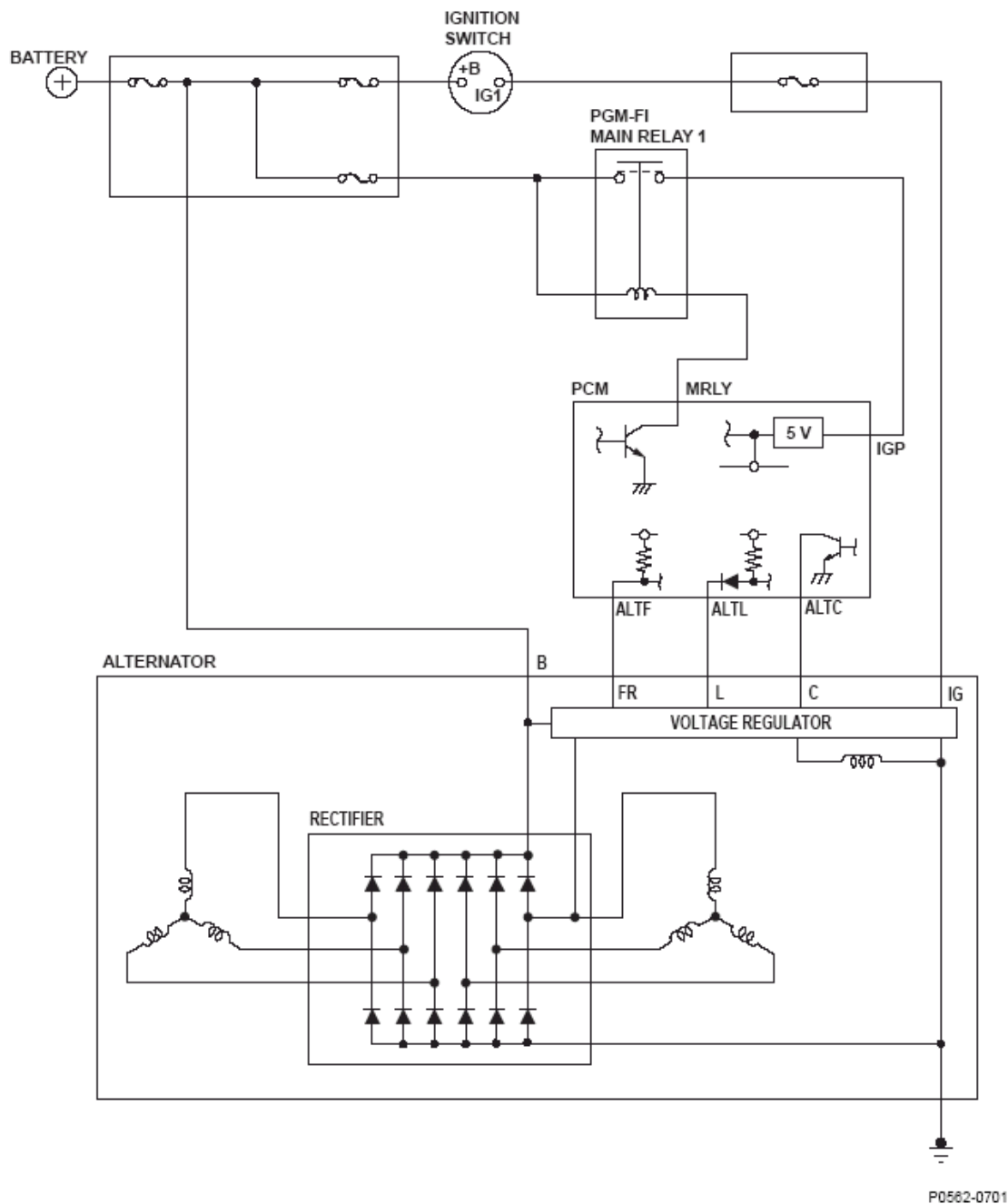


Fig. 261: Charging System (High Voltage) - Circuit Diagram

General Description

The alternator is driven by the engine and generates electricity to supply the necessary power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the powertrain control module (PCM)). The alternator output signal is sent to the PCM, and it varies according to the battery's state of charge, the electrical load, and engine speed.

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

When the IGP terminal voltage of the PCM is a set value or more for a set time, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	500 rpm	-

Malfunction Threshold

The IGP terminal voltage is 16.0 V or more for at least 60 seconds.

Diagnosis Details

Conditions for illuminating the indicator

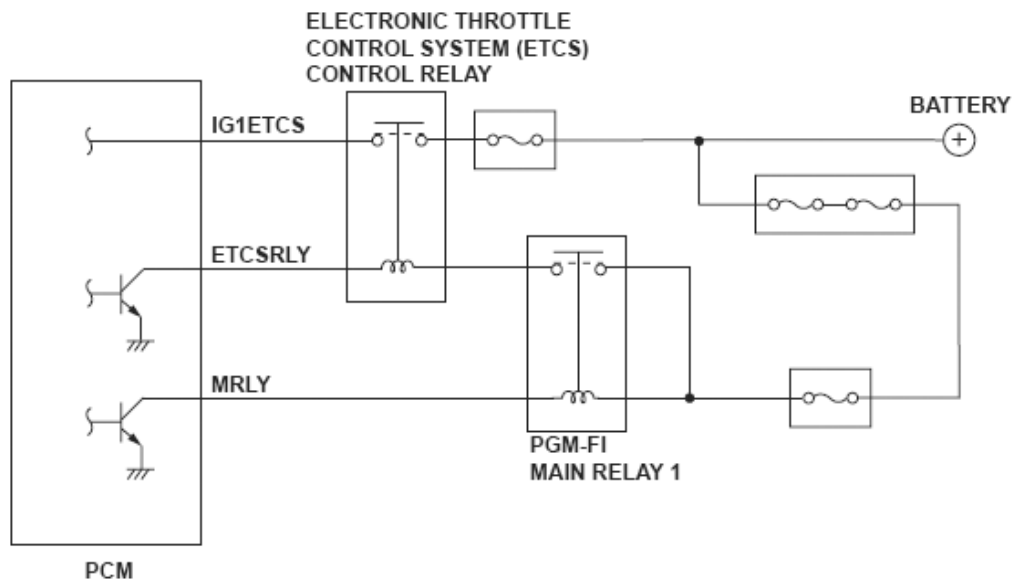
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1658 (40): ADVANCED DIAGNOSTICS

DTC P1658: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY ON MALFUNCTION



P1658-0702

Fig. 262: Electronic Throttle Control System (ETCS) Control Relay ON - Circuit Diagram

General Description

The powertrain control module (PCM) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the accelerator pedal position (APP) sensor, the electronic throttle control system (ETCS) control relay, and the PCM.

The APP sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position.

The PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A installed in the throttle body.

When the voltage is applied from the ETCS control relay to the IG1ETCS terminal for a set time after the ETCS control relay is turned off, the PCM detects a malfunction in the ETCS control relay power switch and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2.0 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	8.0 V	-
Ignition switch	OFF	
No active DTCs	P1659, P2101, P2118, P2135, P2176	

Malfunction Threshold

The communication signal is input from the throttle actuator control module for at least 2.0 seconds, after the throttle actuator control module relay is turned off.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

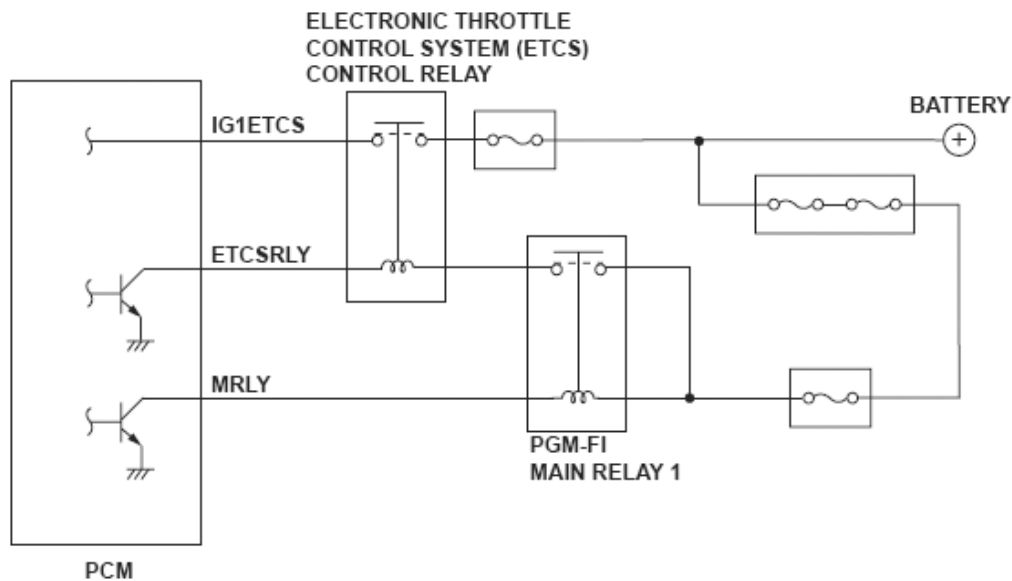
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1659 (40): ADVANCED DIAGNOSTICS

DTC P1659: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY OFF MALFUNCTION



P1658-0702

Fig. 263: Electronic Throttle Control System (ETCS) Control Relay OFF - Circuit Diagram**General Description**

The powertrain control module (PCM) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the accelerator pedal position (APP) sensor, the electronic throttle control system (ETCS) control relay, and the PCM.

The APP sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position.

The PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A installed in the throttle body.

When the voltage from the ETCS control relay is not input for a set time after the ETCS control relay is turned on when the ignition is turned on, or when voltage is not applied for a set time when the throttle actuator is operating, a malfunction in the ETCS control relay power switch is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Ignition switch	ON	
No active DTCs	P2101, P2118, P2135, P2176	

Malfunction Threshold

The voltage is not applied from the throttle actuator controller relay for at least 0.2 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1683 (40): ADVANCED DIAGNOSTICS

DTC P1683: THROTTLE VALVE DEFAULT POSITION SPRING PERFORMANCE PROBLEM

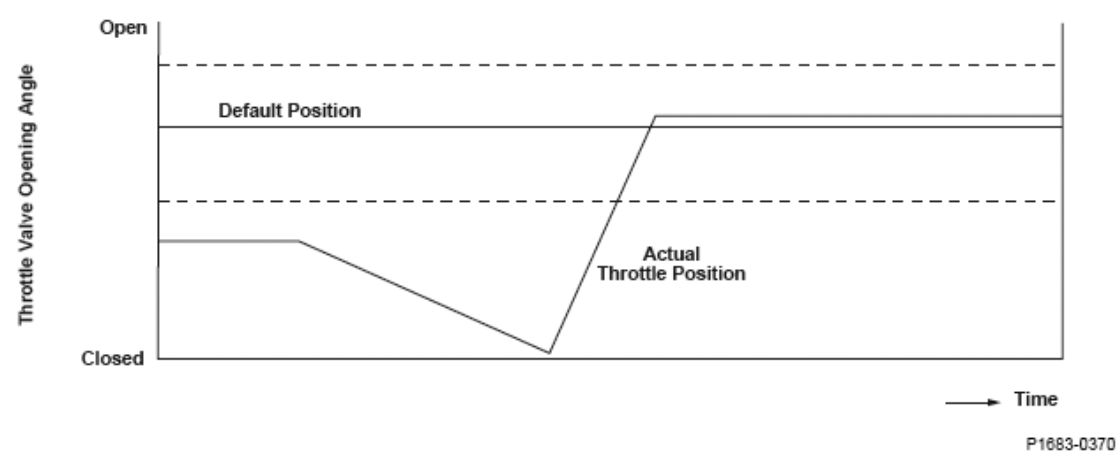


Fig. 264: Throttle Valve Default Position Spring Performance Graph

General Description

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

The electronic throttle control system (ETCS) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the throttle actuator control module, the throttle actuator control module relay, the accelerator pedal position (APP) sensor, and the powertrain control module (PCM).

The throttle valve default position spring is attached to the throttle valve gear. It opens the throttle valve to improve starting performance in cold conditions, or to retain minimum running performance in case of an electronic throttle control system failure.

If the throttle valve does not return to the default position when the throttle actuator control module moves the throttle actuator to the default position from the fully closed position, a malfunction is detected and the malfunction data is transmitted to the PCM. When the PCM receives the malfunction data from the throttle actuator control module, the PCM detects the malfunction of the throttle valve default position spring and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2.5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	158°F (70°C)	-
Battery voltage	6.0 V	-
Ignition switch	OFF	
No active DTCs	P0117, P0118, P2101, P2118, P2135, P2176	

Malfunction Threshold

The throttle valve is at a position greater than +5° from the fully closed position, or at a position lower than +3° from the fully closed position, for at least 2.5 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1684 (40): ADVANCED DIAGNOSTICS

DTC P1684: THROTTLE VALVE RETURN SPRING PERFORMANCE PROBLEM

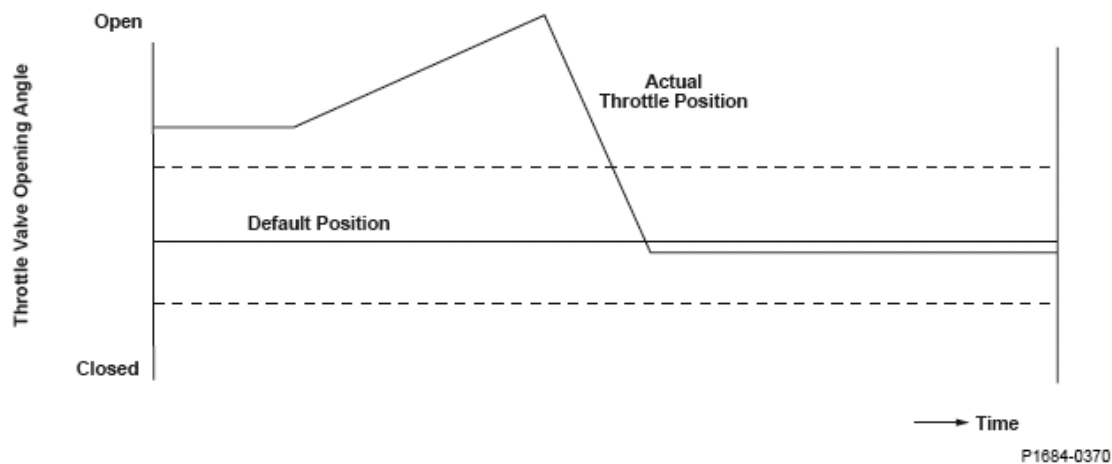


Fig. 265: Throttle Valve Return Spring Performance Graph

General Description

The electronic throttle control system (ETCS) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the throttle actuator control module, the throttle actuator control module relay, the accelerator pedal position (APP) sensor, and the powertrain control module (PCM).

The throttle valve return spring is attached to the throttle valve gear to return the throttle valve to the default position. If the throttle valve does not return to the default position when the throttle actuator control module moves the throttle actuator to the default position from the middle position, a malfunction is detected and the malfunction data is transmitted to the PCM. When the PCM receives the malfunction data from the throttle actuator control module, the PCM detects the malfunction of the throttle valve return spring and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2.5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	158°F (70°C)	-
Battery voltage	6.0 V	-
Ignition switch	OFF	
No active DTCs	P0117, P0118, P2101, P2118, P2135, P2176	

Malfunction Threshold

The throttle valve opening angle is 17° or more, or 11° or less, for at least 2.5 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON.

Diagnosis Details

Conditions for illuminating the MIL

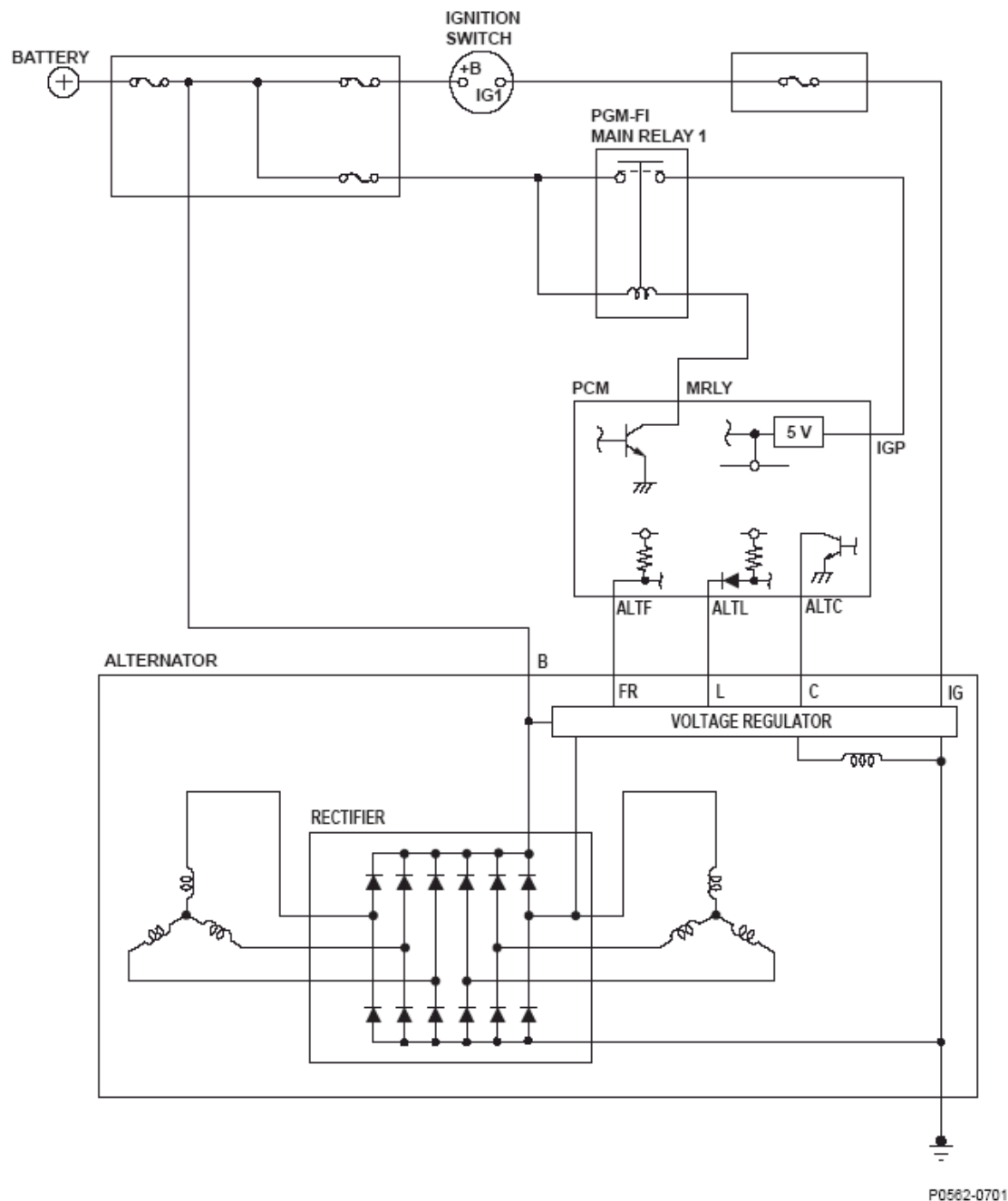
When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P16BB (116): ADVANCED DIAGNOSTICS

DTC P16BB: ALTERNATOR B TERMINAL CIRCUIT LOW VOLTAGE**Fig. 266: Alternator B Terminal (Low Voltage) - Circuit Diagram****General Description**

The alternator is driven by the engine and generates electricity to supply the necessary power to the electrical system and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the powertrain control module (PCM)). The alternator output signal is sent to the PCM, and it varies according to the battery's state of charge, the electrical load, and

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

the engine speed.

When the engine speed is a specified value and the IGP terminal voltage is below a set value when the alternator is in the 14.5 V mode, and the alternator power generation amount is within the set range and this condition continues more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	500 rpm	3,000 rpm
Alternator control mode	14.5 V mode	

Malfunction Threshold

The IGP terminal voltage is 12.0 V or less, and the alternator power generation amount is within 1.0% to 50.0%, for at least 60 seconds.

Driving Pattern

1. Start the engine.
2. Maintain an engine speed of 500 rpm to 3,000 rpm.
3. Turn on the headlights (high beam) and rear window defogger.

Diagnosis Details

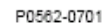
Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P16BC: ALTERNATOR FR TERMINAL CIRCUIT/IGP CIRCUIT LOW VOLTAGE



General Description

The alternator is driven by the engine and generates electricity to supply the necessary power to the electrical

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

load and to charge the battery. The alternator voltage target values of 14.5 V and 12.5 V are achieved by switching the alternator control mode (controlled by the powertrain control module (PCM)). The alternator output signal is sent to the PCM, and it varies according to the battery's state of charge, the electrical load, and the engine speed.

When the engine speed is a specified value, the IGP terminal voltage is below a set value when the alternator is in the 14.5 V mode, and the alternator power generation amount is a set range or less, and this condition continues more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	500 rpm	3,000 rpm
Alternator control mode	14.5 V mode	

Malfunction Threshold

The IGP terminal voltage is 12.0 V or less, and the alternator power generation amount is 0.5% or less, for at least 60 seconds.

Driving Pattern

1. Start the engine.
2. Maintain an engine speed of 500 rpm to 3,000 rpm.
3. Turn on the headlights (high beam) and rear window defogger.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

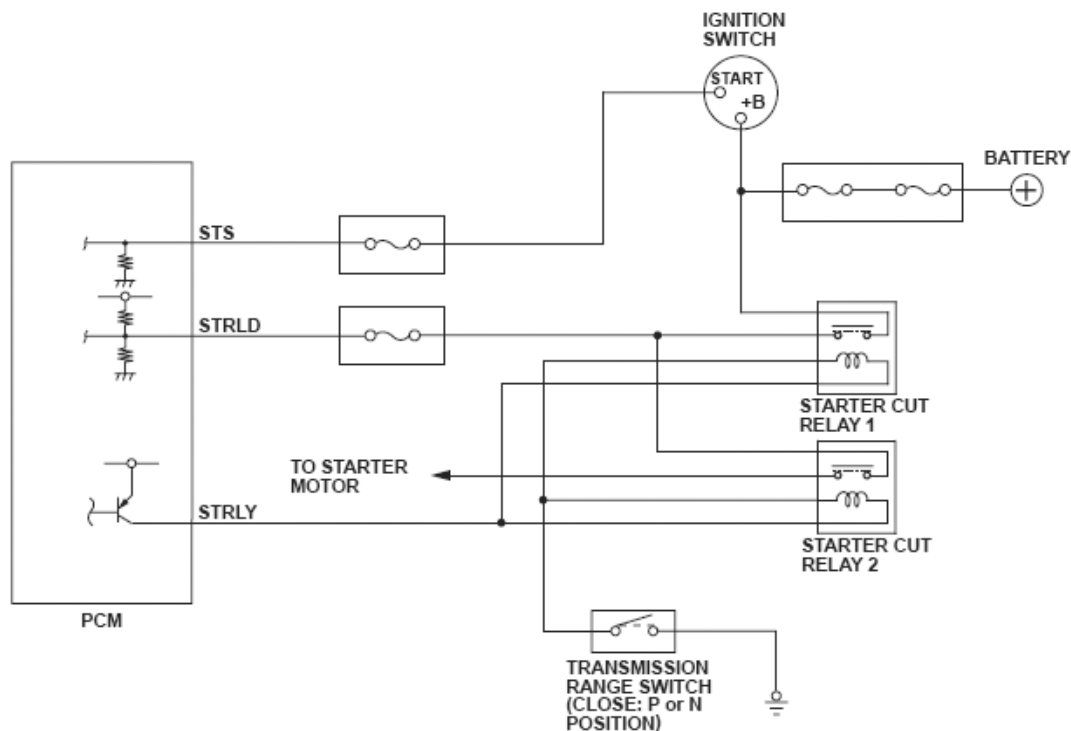
Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting

the battery.

DTC P16BD (198): ADVANCED DIAGNOSTICS

DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION



P0615-0701

Fig. 268: Starter Cut Relay 2 - Circuit Diagram

General Description

To prevent the starter from continuing to rotate due to a switching failure of the starter cut relay, two starter cut relays are connected in series.

When the input voltage of the STRLD terminal drops to a set voltage even when the starter cut relay output (STRLY) is turned off, the powertrain control module (PCM) detects a malfunction of starter cut relay 2 (ST CUT) and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF

OBD Status	N/A
------------	-----

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
Starter switch	OFF
No active DTCs	P16BE

Malfunction Threshold

The terminal voltage of the STRLD drops to 2.2 V for at least 5 seconds when the starter cut relay output is turned off.

Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

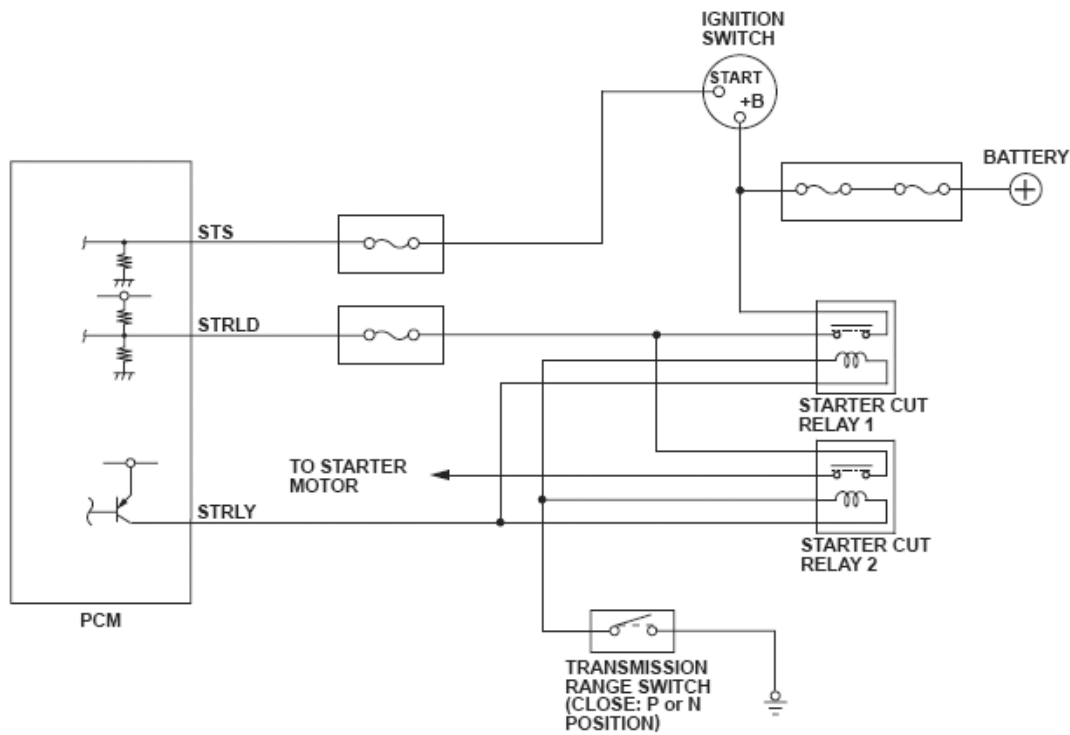
The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P16BE (198): ADVANCED DIAGNOSTICS

DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P0615-0701

Fig. 269: Starter Cut Relay 1 - Circuit Diagram

General Description

To prevent the starter from continuing to rotate due to a switching failure of the starter cut relay, two starter cut relays are connected in series.

When the input voltage of the STRLD terminal exceeds a set voltage even when the starter cut relay output (STRLY) is turned off, the powertrain control module (PCM) detects a starter cut relay 1 turn on switching failure and a DTC is stored. When the starter is turned on, but the STRLD terminal input voltage does not exceed the upper or lower limit, a simultaneous failure of both starter cut relays or the STRLD open circuit is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 0.8 second or more ⁽²⁾
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

(1) Starter cut relay turn on switching failure

(2) STRLD open circuit failure

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
Starter switch	OFF ⁽¹⁾ , ON ⁽²⁾
No active DTCs	P16BD
(1) Starter cut relay turn on switching failure	
(2) STRLD open circuit failure	

Malfunction Threshold

One of these conditions occurs.

- The terminal voltage of the STRLD exceeds 3.0 V for at least 5 seconds when the starter cut relay output is turned off.
- The terminal voltage of the STRLD is 2.4 V to 2.6 V for at least 0.8 second when the starter cut relay output is turned on.

Diagnosis Details

Conditions for illuminating the indicator

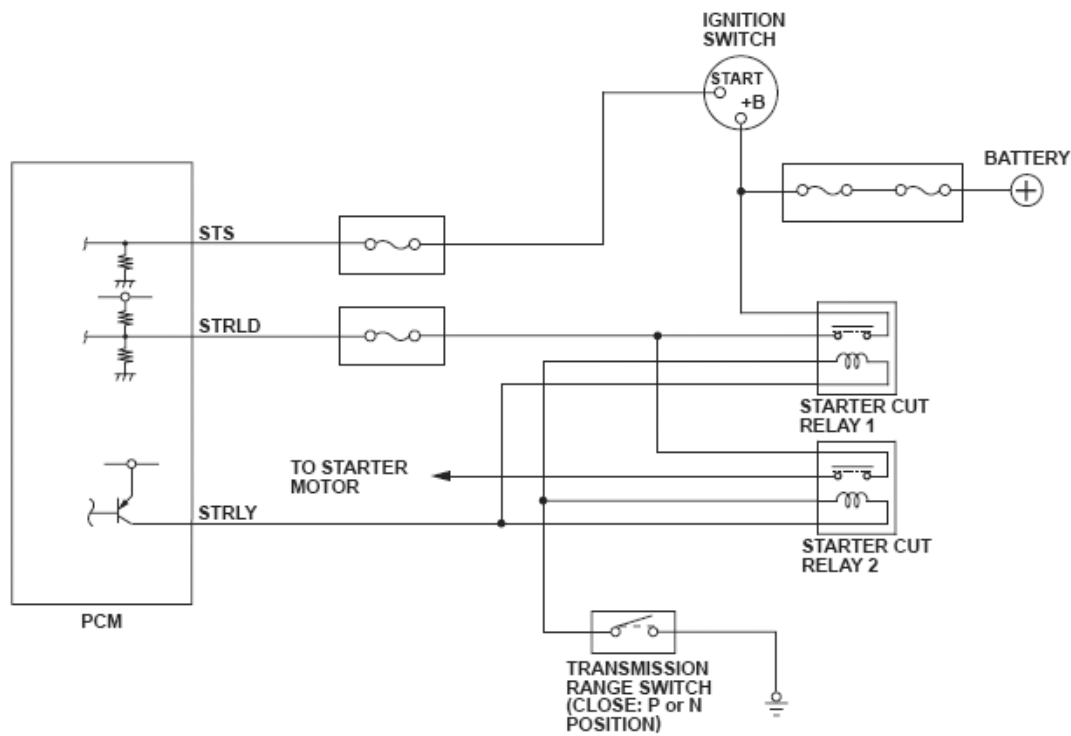
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P16BF (198): ADVANCED DIAGNOSTICS

DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION



P0615-0701

Fig. 270: Starter Cut Relay STRLY - Circuit Diagram

General Description

The powertrain control module (PCM) compares the signal of the drive command to the starter and the return signal from the starter cut relay. When the signal of the drive command to the starter and the return signal from the starter cut relay do not coincide for a set time or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold

The signal of the drive command from the PCM to the starter and the return signal from the starter cut relay do not coincide for at least 5 seconds.

Diagnosis Details

Conditions for illuminating the indicator

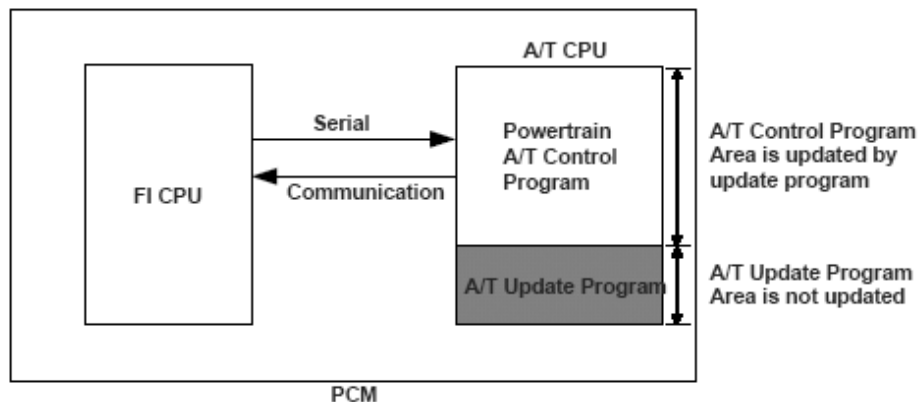
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P16C0 (99): ADVANCED DIAGNOSTICS

DTC P16C0: POWERTRAIN CONTROL MODULE (PCM) A/T CONTROL SYSTEM INCOMPLETE UPDATE



P16C0-0570

Fig. 271: Powertrain Control Module (PCM) A/T Control System - Communication Diagram

General Description

The control program in the powertrain control module (PCM) has a rewriting function that can be done in the field. The program in the CPU is classified into a powertrain control program (re-writable program) and a program for the rewrite function (non-re-writable program), and the program rewrite function only rewrites the powertrain control program.

When the program rewriting process is not finished normally due to an irregular process, such as turning off the PCM power during the A/T CPU re-writing process, and the ignition switch is turned on again, the A/T CPU starts according to the rewriting function program, and this DTC is sent to the FI CPU via serial communication and stored in the PCM.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second
DTC Type	One drive cycle, MIL ON, D indicator OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold

The program rewriting process does not finish normally due to an irregular process, such as turning off the PCM power during the A/T CPU rewriting process, and the ignition switch is turned on again.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

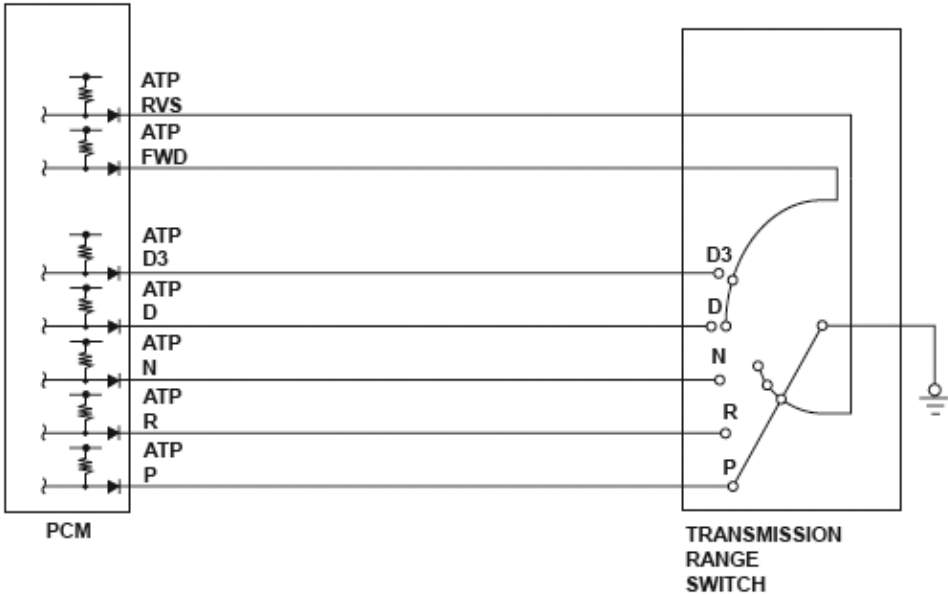
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1717 (99): ADVANCED DIAGNOSTICS

DTC P1717: OPEN IN TRANSMISSION RANGE SWITCH ATP RVS SWITCH CIRCUIT



P0705-0503

Fig. 272: Transmission Range Switch ATP RVS Switch - Circuit Diagram

TRANSMISSION RANGE SWITCH SPECIFICATION

Shift lever position	Input per switch						
	P	R	N	D	D3	FWD	RVS
P	o	X	X	X	X	X	o
R	X	o	X	X	X	X	o
N	X	X	o	X	X	X	o
D	X	X	X	o	X	o	X
D3	X	X	X	X	o	o	X

o: Closed X: Open

General Description

The transmission range switch is attached to the control shaft. Operating the shift lever makes the control shaft rotate via the shift cable. The A/T gear position indicator indicates which position is selected according to the Low/High signal combinations which vary based on the control shaft rotational angle. The control shaft changes the position of the transmission range switch, activates the manual valve, and switches hydraulic pressure to shift the transmission through forward/neutral/reverse. The transmission range switch signal is used to determine the shift schedule. The voltage is 12 V (High) at the powertrain control module (PCM) input terminal when each transmission range switch position is open, and it is 0 V (Low) when each switch is closed. If the RVS switch is OPEN with the shift lever in the R position while shifting between the P, R, and N positions, the PCM detects a RVS switch OPEN failure and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0705, P0812	

Malfunction Threshold

No RVS signal is detected with the shift lever in the R position while shifting between the P, R, and N positions.

Driving Pattern

1. Start the engine, and shift to the P, R, and N positions.
2. Shift to the R position, and wait for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

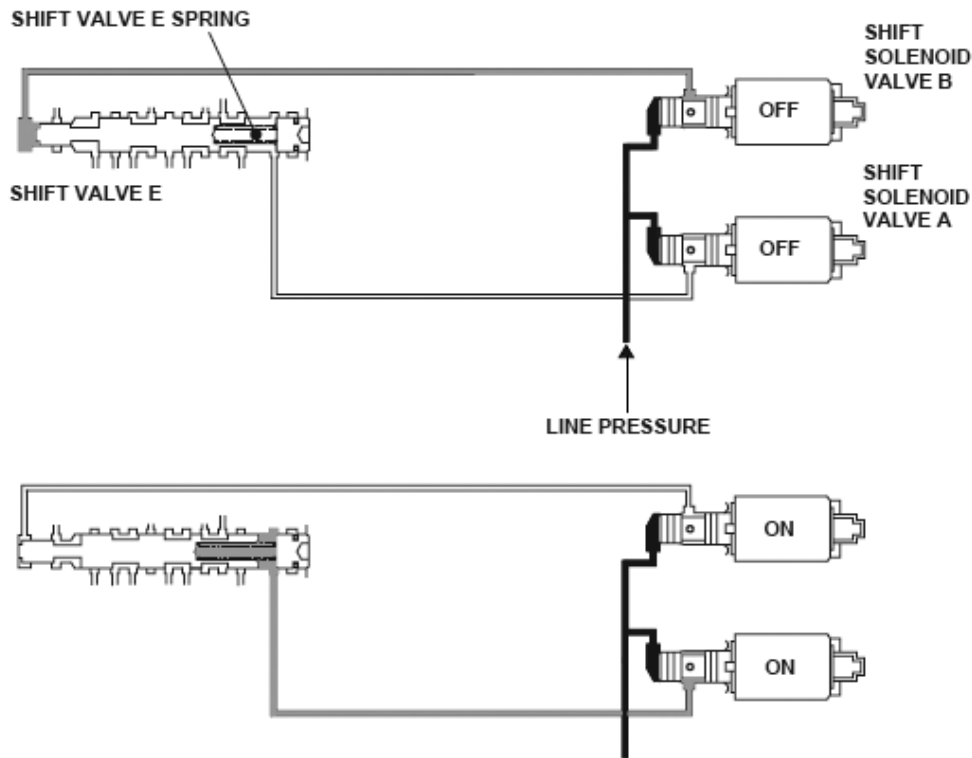
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

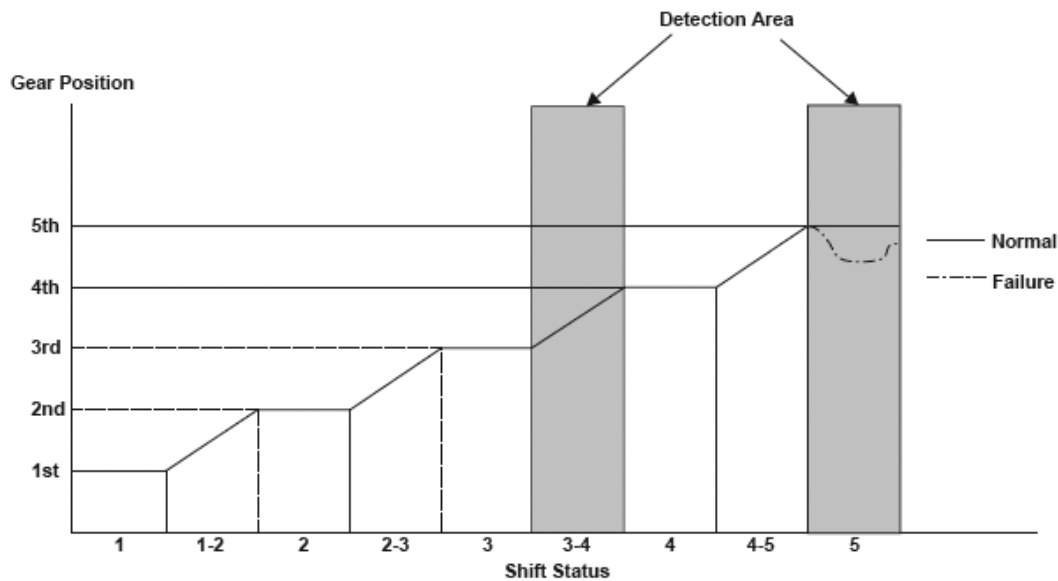
DTC P1743 (45): ADVANCED DIAGNOSTICS

DTC P1743: PROBLEM IN SHIFT CONTROL SYSTEM; SHIFT VALVE E STUCK OFF



P1743-0571

Fig. 273: Shift Control System; Shift Valve E (Stuck OFF) - System Diagram



P1743-0570

Fig. 274: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 275: Shift Solenoid Valve And Clutch Specification Chart

General Description

Shift valve E is incorporated in the control circuit of the transmission. It is controlled by pressure from shift solenoid valve B, and it is locked by the line pressure. It switches off when shift solenoid valve B turns off and shift solenoid valve A turns on. The PCM monitors the mainshaft speed and the countershaft speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift valve E OFF failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Torque converter slip ratio	96 %	110 %
Shift lever position	D	

No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1744, P1745
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Malfunction Threshold

The transmission is neutral against the 5th gear shift command for at least 2 seconds, without records that the engine speed flares when upshifting to 3rd - 4th.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

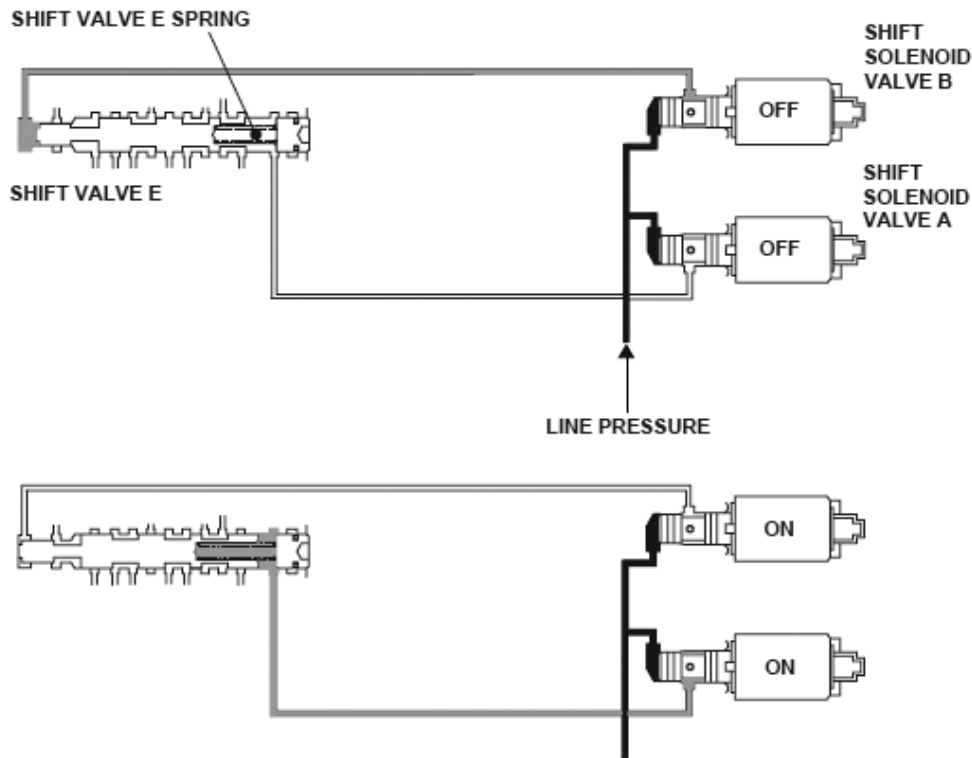
When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

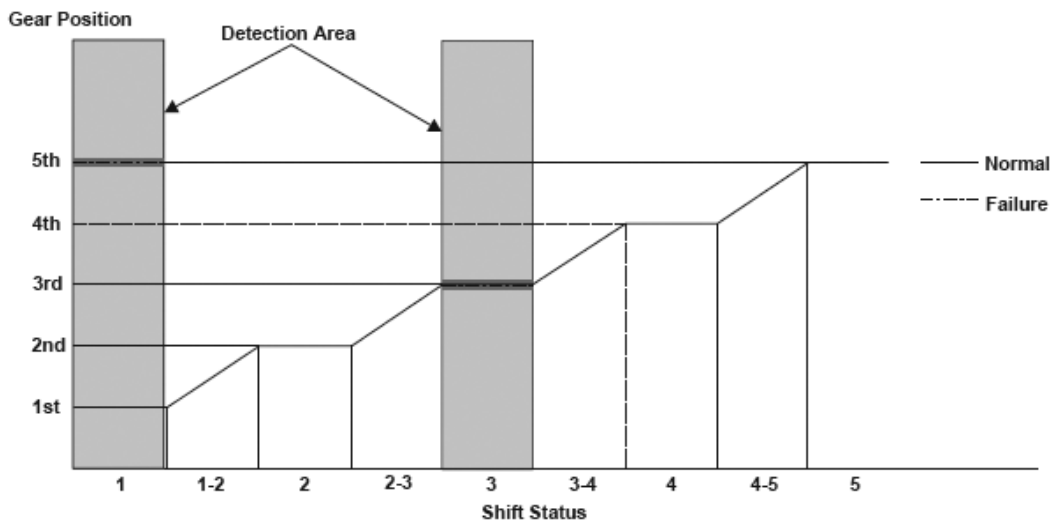
DTC P1744 (45): ADVANCED DIAGNOSTICS

DTC P1744: PROBLEM IN SHIFT CONTROL SYSTEM; SHIFT VALVE E STUCK ON



P1743-0571

Fig. 276: Shift Control System; Shift Valve E (Stuck ON) - System Diagram



P1744-0571

Fig. 277: Gear Position To Shift Status Graph

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 278: Shift Solenoid Valve And Clutch Specification Chart

General Description

Shift valve E is incorporated in the control circuit of the transmission. It is controlled by pressure from shift solenoid valve B, and it is locked by the line pressure. It switches off when shift solenoid valve B turns off and shift solenoid valve A turns on. The PCM monitors the mainshaft speed and the countershaft speed at the gear change determined by the shift schedule. When an improper gear ratio is output compared to the predetermined gear change mode, a shift valve E ON failure is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976.	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

P0977, P0979, P0980, P0982, P0983, P1743, P1745

Malfunction Threshold

- The transmission is held in 5th gear against the 1st gear shift command for at least 1.5 seconds.
- After driving the vehicle in 3rd gear in the D position for at least 1.5 seconds.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

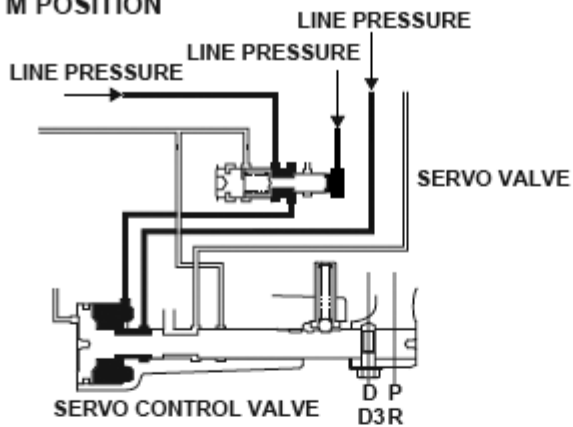
Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

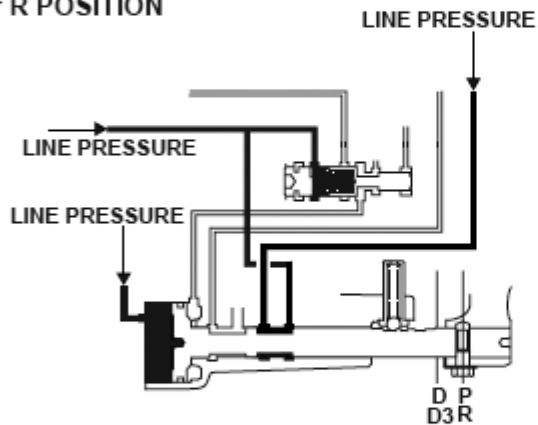
DTC P1745 (45): ADVANCED DIAGNOSTICS

DTC P1745: PROBLEM IN SHIFT CONTROL SYSTEM; SERVO CONTROL VALVE STUCK OFF OR SERVO CONTROL VALVE STUCK ON

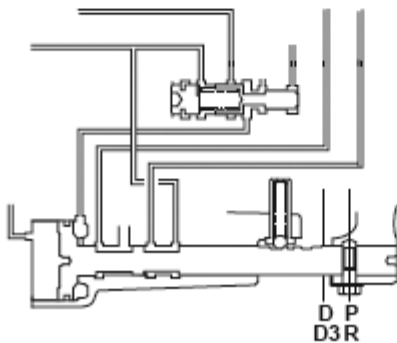
D, D3, or M POSITION



P or R POSITION



N POSITION

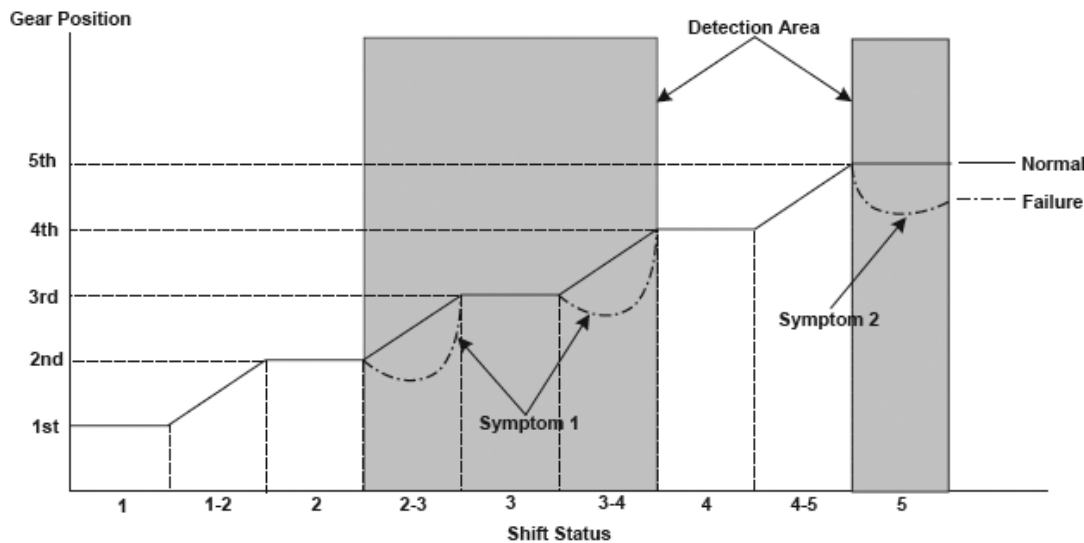


P1745-0570

Fig. 279: Servo Control Valve (Stuck OFF) Or Servo Control Valve (Stuck ON) - System Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P1745-0571

Fig. 280: Gear Position To Shift Status Graph

Shift solenoid valve Clutch		In gear	1st	1st - 2nd	2nd	2nd - 3rd	3rd	3rd - 4th	4th	4th - 5th	5th
	A	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
	B	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	C	OFF	ON	ON	OFF	ON	ON	OFF	OFF	ON	ON
	D	OFF	OFF	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON	OFF/ ON
1st Clutch		CPC C	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE	LINE
2nd Clutch		CPC A		CPC A	LINE	CPC A		CPC C			
3rd Clutch				CPC B		CPC B	LINE	CPC B			
4th Clutch								CPC A	LINE	CPC A	
5th Clutch										CPC B	LINE

CPC: Clutch Pressure Control pressure

Fig. 281: Shift Solenoid Valve And Clutch Specification Chart

General Description

The servo control valve and the servo valve are incorporated into the control circuit of the transmission. The servo control valve and the servo valve operate when the shift lever is in the D, D3, or M position due to line pressure and turn off when the shift lever is in the P, R, or N position.

The PCM monitors the mainshaft speed and the countershaft speed at the gear change determined by the shift schedule.

When an improper gear ratio is output compared to the predetermined gear change mode, a servo control valve OFF or servo valve OFF failure is detected and a DTC is stored.

2008 Acura MDX**2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX****Monitor Execution, Sequence, Duration, DTC Type, OBD Status****MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	0.5 second or more (symptom 1-A, 1-B) 2.0 seconds or more (symptom 2)
DTC Type	Two drive cycles, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C) ⁽¹⁾	-
ATF temperature	-4°F (-20°C) ⁽¹⁾	-
Vehicle speed	5 mph (9 km/h)	-
Battery voltage	11.0 V	-
Accelerator pedal position variation	-	6 %/ 20 milliseconds ⁽¹⁾
Accelerator pedal position	Except fully closed ⁽¹⁾	
Shift lever position	D	
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976, P0977, P0979, P0980, P0982, P0983, P1743, P1744	
(1) Symptom 1		

Malfunction Threshold

One of these symptoms occurs:

SYMPTOM CHART

Symptom	Gear position commanded by the PCM	Actual gear position
1-A	2nd --> 3rd gear upshift	The engine speed flares when upshifting to 2nd - 3rd
1-B	3rd --> 4th gear upshift	The engine speed flares when upshifting to 3rd - 4th

SYMPTOM CHART

Symptom	Gear position commanded by the PCM	Actual gear position
2	Driving in 5th gear	Neutral

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the DTC and the freeze frame data are stored. The MIL does not come on.

Conditions for clearing the MIL

The DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P1780 (49): ADVANCED DIAGNOSTICS

DTC P1780: PROBLEM IN SHIFT CONTROL SYSTEM

General Description

When the powertrain control module (PCM) detects a mechanical malfunction in the automatic transmission, the transmission switches to a default mode according to the malfunction, and this DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	Depending on the driving pattern
DTC Type	Two drive cycles, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	11.0 V	-
No active DTCs	P0122, P0123, P0705, P0716, P0717, P0718, P0721, P0722, P0723, P0746, P0747, P0751, P0752, P0756, P0757, P0761, P0762, P0766, P0767, P0776, P0777, P0796, P0797, P0842, P0843, P0847, P0848, P0962, P0963, P0966, P0967, P0970, P0971, P0973, P0974, P0976,	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

P0977, P0979, P0980, P0982, P0983

Malfunction Threshold

The A/T control switches to the default mode due to a mechanical malfunction.

Driving Pattern

Start the engine, and accelerate the vehicle until the transmission shifts into 5th gear in the D position.

- Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

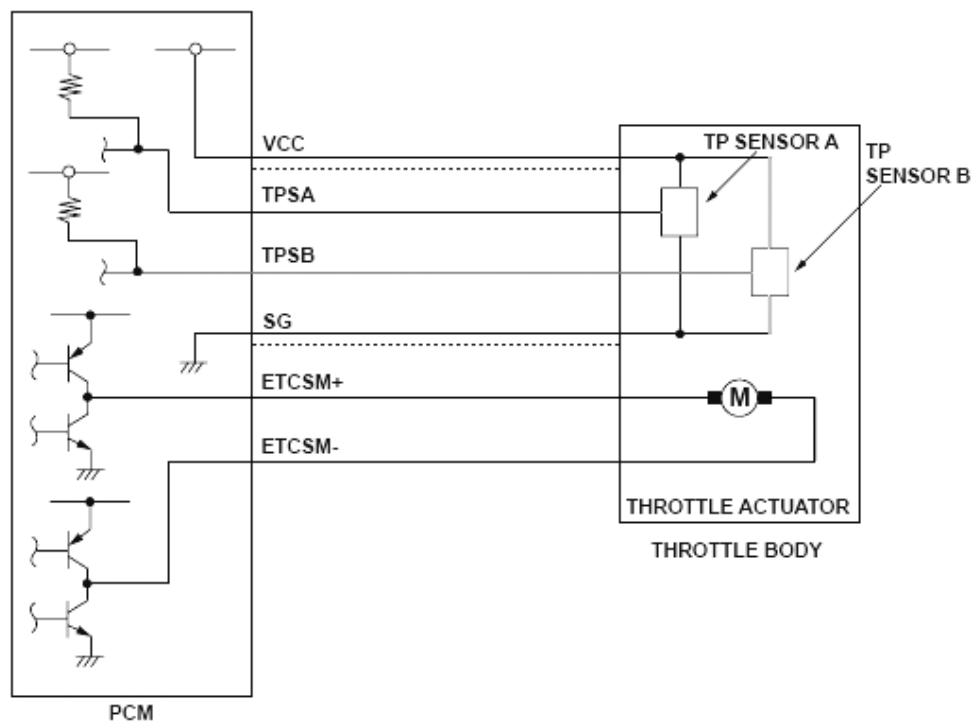
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2101 (40): ADVANCED DIAGNOSTICS

DTC P2101: ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) MALFUNCTION



P0122-0503

Fig. 282: Electronic Throttle Control System (ETCS) - Circuit Diagram

General Description

The electronic throttle control system (ETCS) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the throttle actuator control module, the throttle actuator control module relay, the accelerator pedal position (APP) sensor, and the powertrain control module (PCM).

The accelerator pedal position (APP) sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position. The target position signal is then transmitted to the throttle actuator control module.

The throttle actuator control module determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A installed in the throttle body.

The throttle actuator control module compares the throttle valve target opening angle and the actual throttle valve opening angle from TP sensor A, and when the difference exceeds the specification, the throttle actuator control module transmits the malfunction data to the PCM. When the PCM receives the malfunction data from the throttle actuator control module, the PCM detects the malfunction of the throttle actuator system and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.25 seconds or more ⁽¹⁾ , 0.5 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	N/A
(1) Throttle valve closed direction	
(2) Throttle valve open direction	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch	ON	
No active DTCs	P2118, P2135, P2176	

Malfunction Threshold

One of the conditions in this table must be met for at least 0.25 seconds* (0.5 seconds**).

MALFUNCTION THRESHOLD CHART

Throttle valve target position	Difference between the throttle valve target position and the actual throttle valve position
2°	4° or more
6°	5.4° or more
10°	5.7° or more
15°	6° or more
90°	6° or more

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

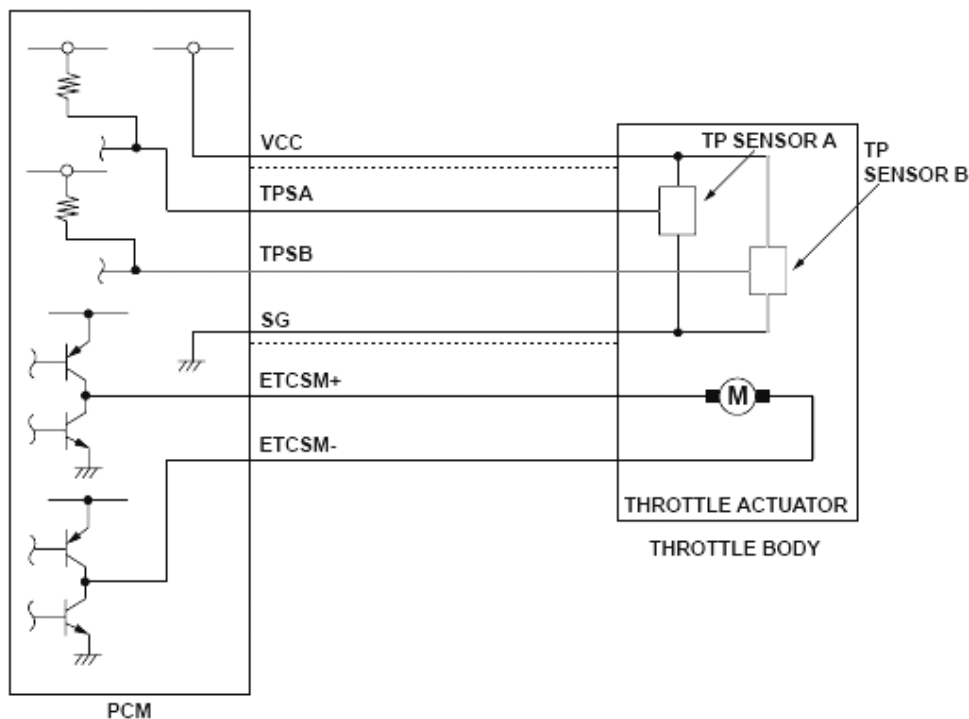
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by

disconnecting the battery.

DTC P2118 (40): ADVANCED DIAGNOSTICS

DTC P2118: THROTTLE ACTUATOR CURRENT RANGE/PERFORMANCE PROBLEM



P0122-0503

Fig. 283: Throttle Actuator Current Range - Circuit Diagram

General Description

The electronic throttle control system (ETCS) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the throttle actuator control module, the throttle actuator control module relay, the accelerator pedal position (APP) sensor, and the powertrain control module (PCM).

The APP sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position. The target position signal is then transmitted to the throttle actuator control module.

The throttle actuator control module determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A installed in the throttle body.

When the output current to the throttle actuator exceeds the specification for a set time, the throttle actuator

control module detects a malfunction and transmits the malfunction data to the PCM. When the PCM receives the malfunction data from the throttle actuator control module, the PCM detects a malfunction of the throttle actuator system and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch	ON	
No active DTCs	P2101, P2135, P2176	

Malfunction Threshold

The current flow to the throttle actuator is 11 A or more for at least 0.2 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

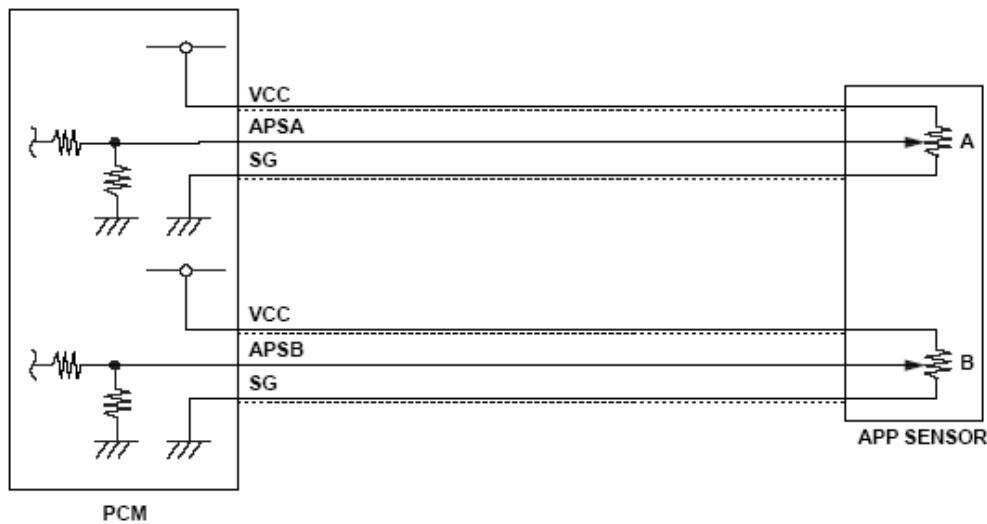
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2122 (20): ADVANCED DIAGNOSTICS

DTC P2122: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT LOW VOLTAGE INPUT (EXCEPT PGM-FI SYSTEM)



P2122-0602

Fig. 284: Accelerator Pedal Position (APP) Sensor A (Low Voltage Input) - Circuit Diagram

General Description (Except PGM-FI System)

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value or less, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2123

Malfunction Threshold (Except PGM-FI System)

The APP sensor A output voltage is 0.1 V or less for at least 0.2 second.

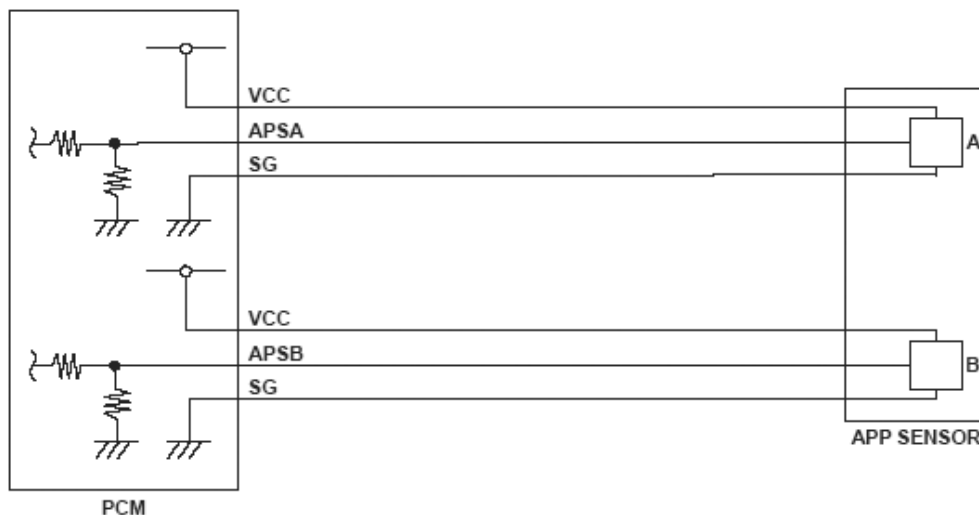
Diagnosis Details (Except PGM-FI System)**Conditions for illuminating the MIL (Except PGM-FI System)**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (Except PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2122 (37) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS**DTC P2122: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT LOW VOLTAGE (PGM-FI SYSTEM)**

P2122-0700

Fig. 285: Accelerator Pedal Position (APP) Sensor A (Low Voltage) - Circuit Diagram

General Description (PGM-FI System)

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value or less, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2123

Malfunction Threshold (PGM-FI System)

The APP sensor A output voltage is 0.2 V or less for at least 0.2 second.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

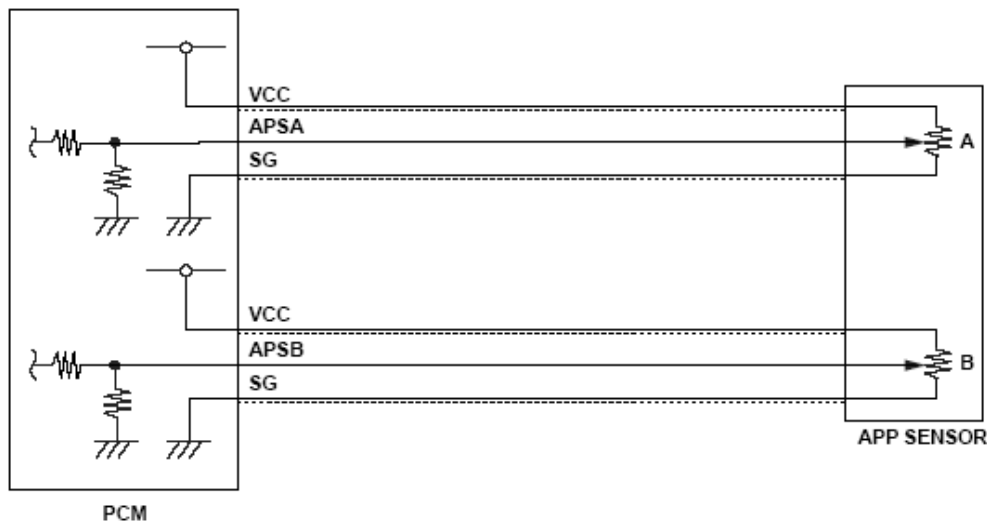
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2123 (20): ADVANCED DIAGNOSTICS

DTC P2123: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT HIGH VOLTAGE INPUT (EXCEPT PGM-FI SYSTEM)



P2122-0602

Fig. 286: Accelerator Pedal Position (APP) Sensor A (High Voltage Input) - Circuit Diagram

General Description (Except PGM-FI System)

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value or more, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P2122

Malfunction Threshold (Except PGM-FI System)

The APP sensor A output voltage is 4.85 V or more for at least 0.2 second.

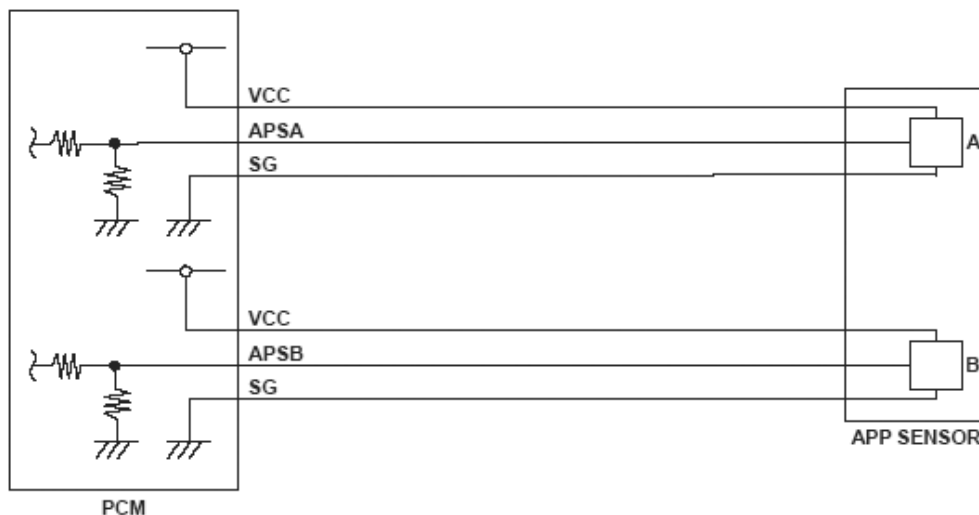
Diagnosis Details (Except PGM-FI System)**Conditions for illuminating the MIL (Except PGM-FI System)**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (Except PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2123 (37) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS**DTC P2123: ACCELERATOR PEDAL POSITION (APP) SENSOR A (THROTTLE POSITION (TP) SENSOR D) CIRCUIT HIGH VOLTAGE (PGM-FI SYSTEM)**

P2122-0700

Fig. 287: Accelerator Pedal Position (APP) Sensor A (High Voltage) - Circuit Diagram**General Description (PGM-FI System)**

Accelerator pedal position (APP) sensor A is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor A is a set value or more, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P2122

Malfunction Threshold (PGM-FI System)

The APP sensor A output voltage is 4.9 V or more for at least 0.2 second.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

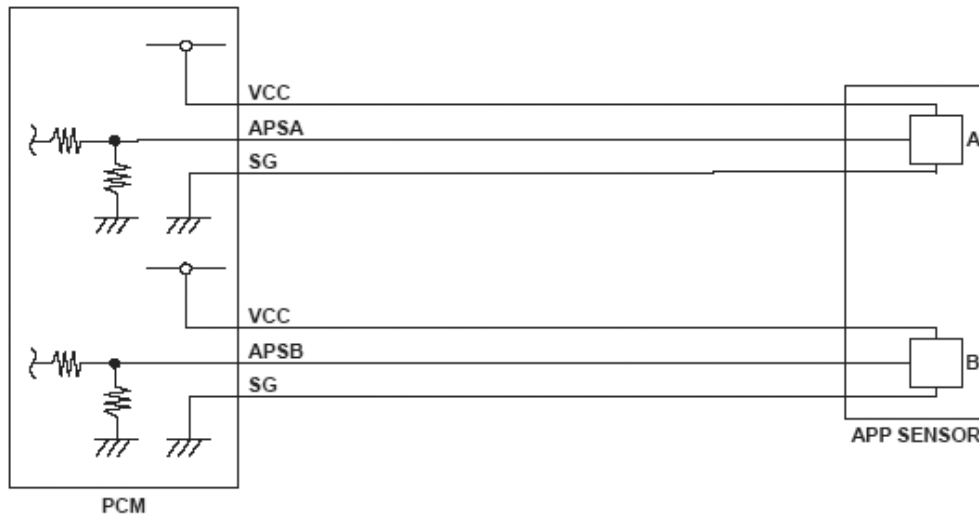
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2127 (37): ADVANCED DIAGNOSTICS

DTC P2127: ACCELERATOR PEDAL POSITION (APP) SENSOR B (THROTTLE POSITION (TP) SENSOR E) CIRCUIT LOW VOLTAGE



P2122-0700

Fig. 288: Accelerator Pedal Position (APP) Sensor B (Low Voltage) - Circuit Diagram

General Description

Accelerator pedal position (APP) sensor B is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor B is a set value or less, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2128

Malfunction Threshold

The APP sensor B output voltage is 0.2 V or less for at least 0.2 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

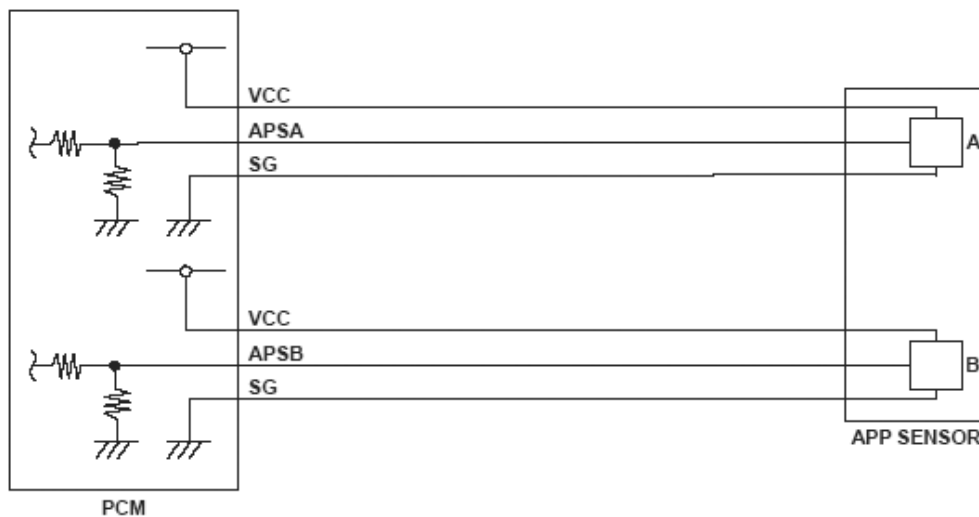
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2128 (37): ADVANCED DIAGNOSTICS

DTC P2128: ACCELERATOR PEDAL POSITION (APP) SENSOR B (THROTTLE POSITION (TP) SENSOR E) CIRCUIT HIGH VOLTAGE



P2122-0700

Fig. 289: Accelerator Pedal Position (APP) Sensor B (High Voltage) - Circuit Diagram

General Description

Accelerator pedal position (APP) sensor B is a part of the electronic throttle control system (ETCS), and it is used to convert the position of the accelerator pedal into electrical signals. Based on these signals, the powertrain control module (PCM) controls the throttle actuator so that the throttle position agrees with the accelerator pedal position. If the signal voltage from APP sensor B is a set value or more, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P2127

Malfunction Threshold

The APP sensor B output voltage is 4.0 V or more for at least 0.2 second.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

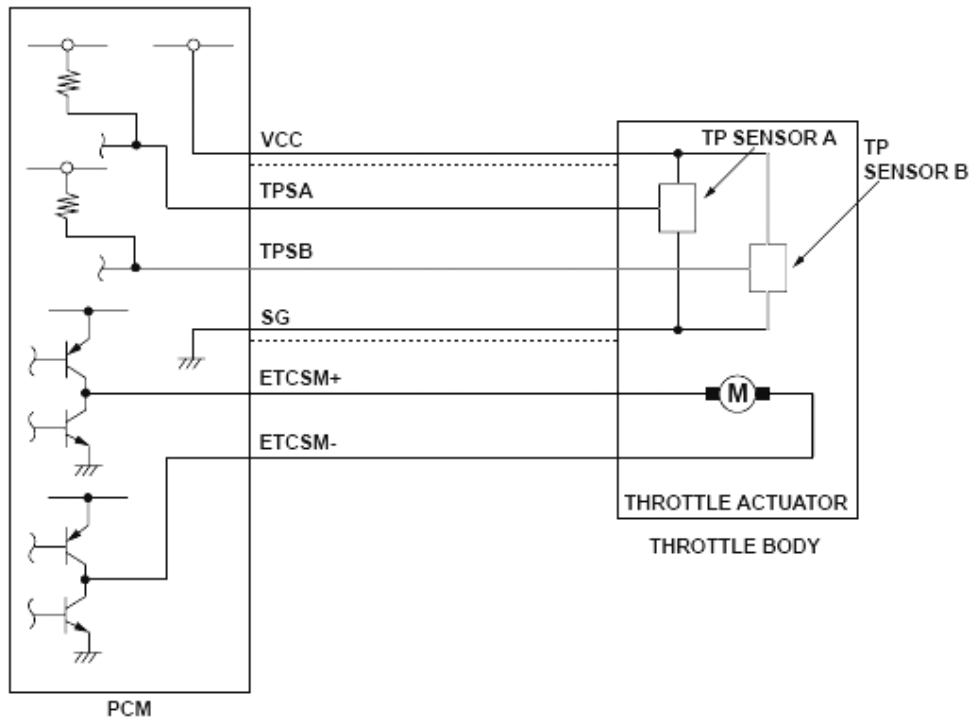
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

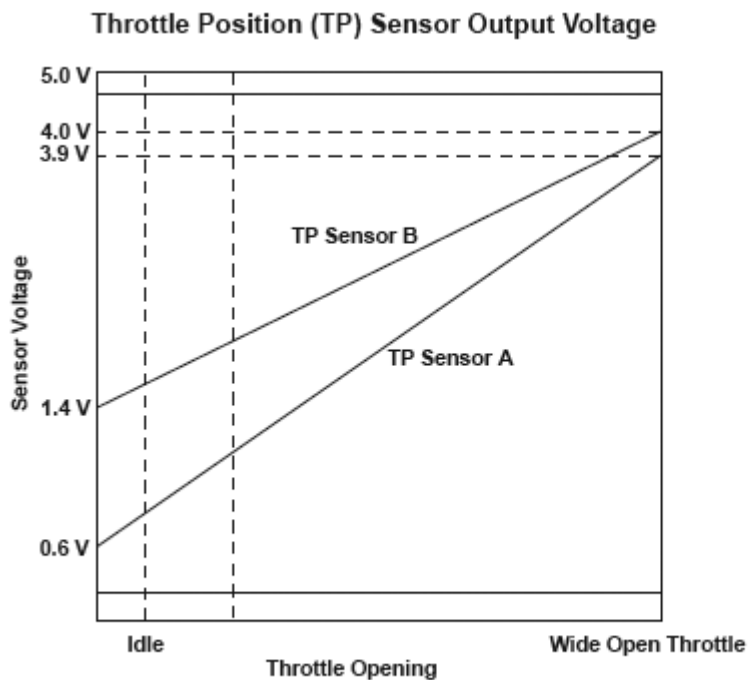
DTC P2135 (7): ADVANCED DIAGNOSTICS

DTC P2135: THROTTLE POSITION (TP) SENSOR A/B VOLTAGE INCORRECT CORRELATION



P0122-0503

Fig. 290: Throttle Position (TP) Sensor A/B Voltage Incorrect Correlation - Circuit Diagram



P2135-0371

Fig. 291: Throttle Position (TP) Sensor A/B Voltage Graph

General Description

The powertrain control module (PCM) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the accelerator pedal position (APP) sensor, and the PCM.

The APP sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position.

The PCM determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A, installed in the throttle body.

The PCM compares the voltages and the throttle valve positions of TP sensor A and TP sensor B. If the difference of the voltages or the throttle valve positions is a fixed value or below for a set time, the PCM detects a malfunction in the relationship between TP sensor A and TP sensor B, and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
TP sensor B voltage	-	2.3 V
Ignition switch	ON	
No active DTCs	P0122, P0123, P0222, P0223, P2101, P2118, P2176	
Other	After the throttle valve fully closed position registration is completed	

Malfunction Threshold

The difference between the throttle valve positions indicated by TP sensor A and TP sensor B exceeds the value shown for at least 0.2 seconds.

MALFUNCTION THRESHOLD CHART

Throttle valve position determined by TP sensor A	Difference between TP sensor A and TP sensor B
0°	1.8° or more

83.3°

14.7° or more

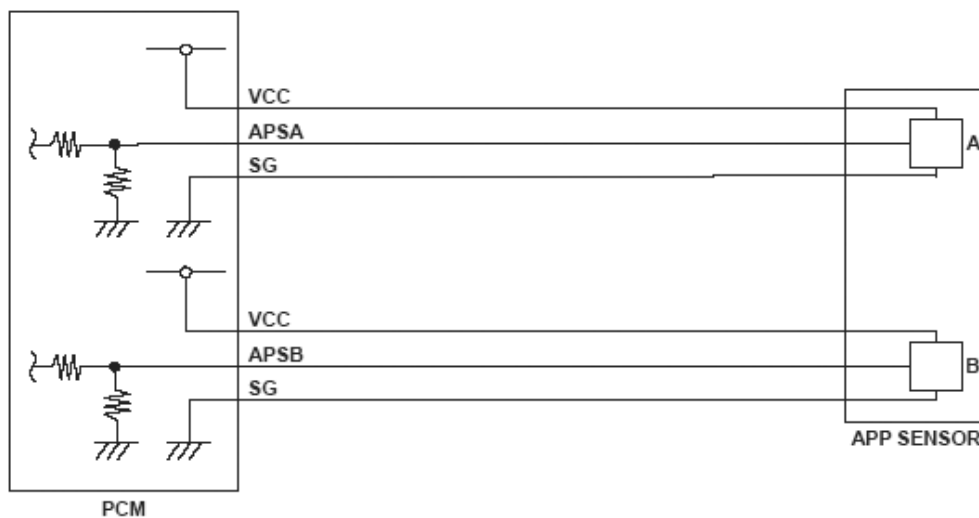
Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

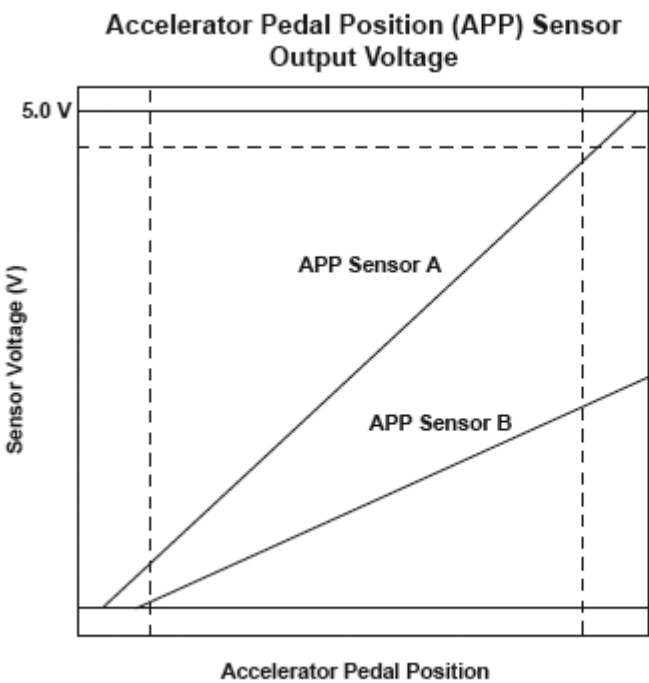
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2138 (37): ADVANCED DIAGNOSTICS**DTC P2138: ACCELERATOR PEDAL POSITION (APP) SENSOR A/B (THROTTLE POSITION (TP) SENSOR D/E) INCORRECT VOLTAGE CORRELATION**

P2122-0700

Fig. 292: Accelerator Pedal Position (APP) Sensor A/B Incorrect Voltage Correlation - Circuit Diagram



P2138-0371

Fig. 293: Accelerator Pedal Position (APP) Sensor A/B Voltage Graph

General Description

Accelerator pedal position (APP) sensor A and accelerator pedal position (APP) sensor B are potentiometers, and they are installed in the engine compartment. These sensor output voltages differ from each other.

APP sensors A and B are operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in APP sensors A and B and transmitted to the powertrain control module (PCM) to compute the target position. The target position signal is then transmitted to the throttle actuator control module.

APP sensor A is for the primary control, and APP sensor B is a back-up of APP sensor A in case it malfunctions. Both sensors compare their output voltage to each other for malfunction detection.

When the voltage difference of APP sensor B is out of a fixed range for a set time, the PCM detects a malfunction, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.3 second or more
DTC Type	One drive cycle, MIL ON

OBD Status	N/A
------------	-----

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2122, P2123, P2127, P2128

Malfunction Threshold

One of these conditions must be met for at least 0.3 second.

- If the APP sensor B voltage exceeds the range from 0 V or less to 0.361 V or more when the APP sensor A voltage is 0.361 V.
- If the APP sensor B voltage exceeds the range from 2.319 V or less to 2.681 V or more when the APP sensor A voltage is 4.995 V.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2176 (40): ADVANCED DIAGNOSTICS

DTC P2176: THROTTLE ACTUATOR CONTROL SYSTEM IDLE POSITION NOT LEARNED

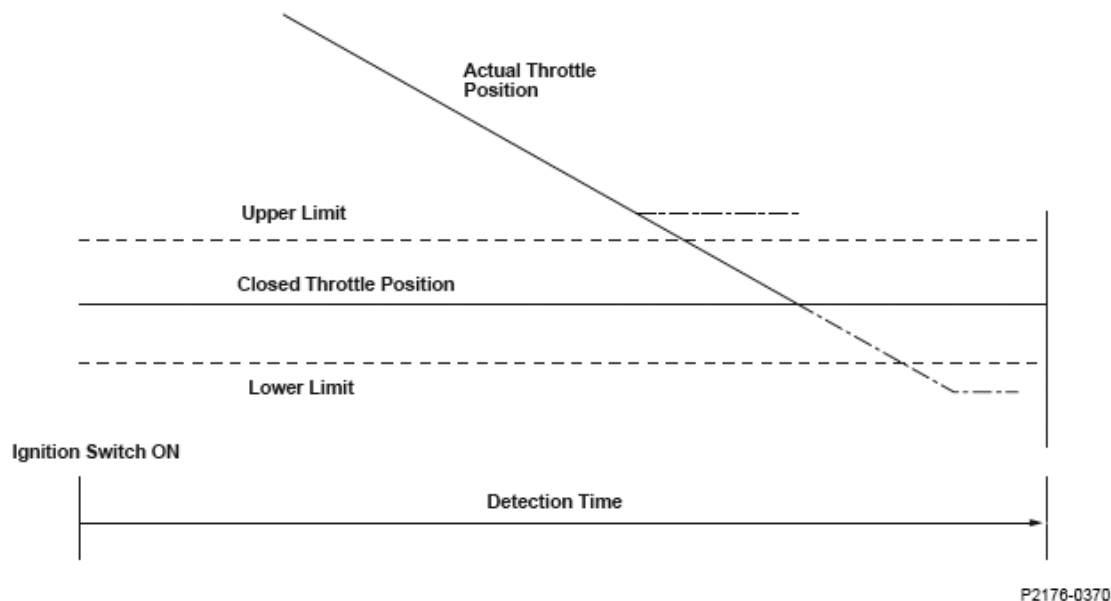


Fig. 294: Identifying Throttle Position

General Description

The electronic throttle control system (ETCS) controls the throttle valve opening. The system is composed of the throttle actuator, the throttle valve, throttle position (TP) sensors A and B, the throttle actuator control module, the throttle actuator control module relay, the accelerator pedal position (APP) sensor, and the powertrain control module (PCM).

The APP sensor is operated via the throttle cable to determine the accelerator opening value when the driver presses the accelerator pedal. The accelerator pedal opening value is converted to a signal in the APP sensor and transmitted to the PCM to compute the target position. The target position signal is then transmitted to the throttle actuator control module. The throttle actuator control module determines the throttle valve target position according to the signal received and operates the throttle actuator to move the throttle valve to the target position. The actual throttle valve position is determined by TP sensor A installed in the throttle body.

The throttle actuator control module transmits a signal to the throttle actuator and moves the throttle valve to the fully closed position to register the throttle valve fully closed position after the ignition switch is turned ON.

The throttle actuator control module detects the malfunction of the throttle actuator control system, and it transmits a malfunction signal to the PCM when the registration of the throttle valve fully closed position is not completed within a predetermined time or the registered value is out of predetermined range after the ignition switch is turned ON. When the PCM receives the malfunction data from the throttle actuator control module, the PCM detects a malfunction in the throttle actuator control system and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle

Sequence	None
Duration	0.7 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	6.0 V	-
Ignition switch	ON	
No active DTCs	P0122, P0123, P0222, P0223, P2101, P2118, P2135	
Other	Engine is stopped and ignition switch is not in the ON position	

Malfunction Threshold

One of these condition must be met for at least 0.7 seconds.

- The registration of the throttle valve fully closed position is not completed within a predetermined time after the ignition switch is turned ON.
- The registered value of the throttle valve fully closed position is 0.74 V^{*1} , 1.61 V^{*2} or more, or 0.49 V^{*1} , 1.37 V^{*2} or less.

*1: TP sensor A

*2: TP sensor B

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

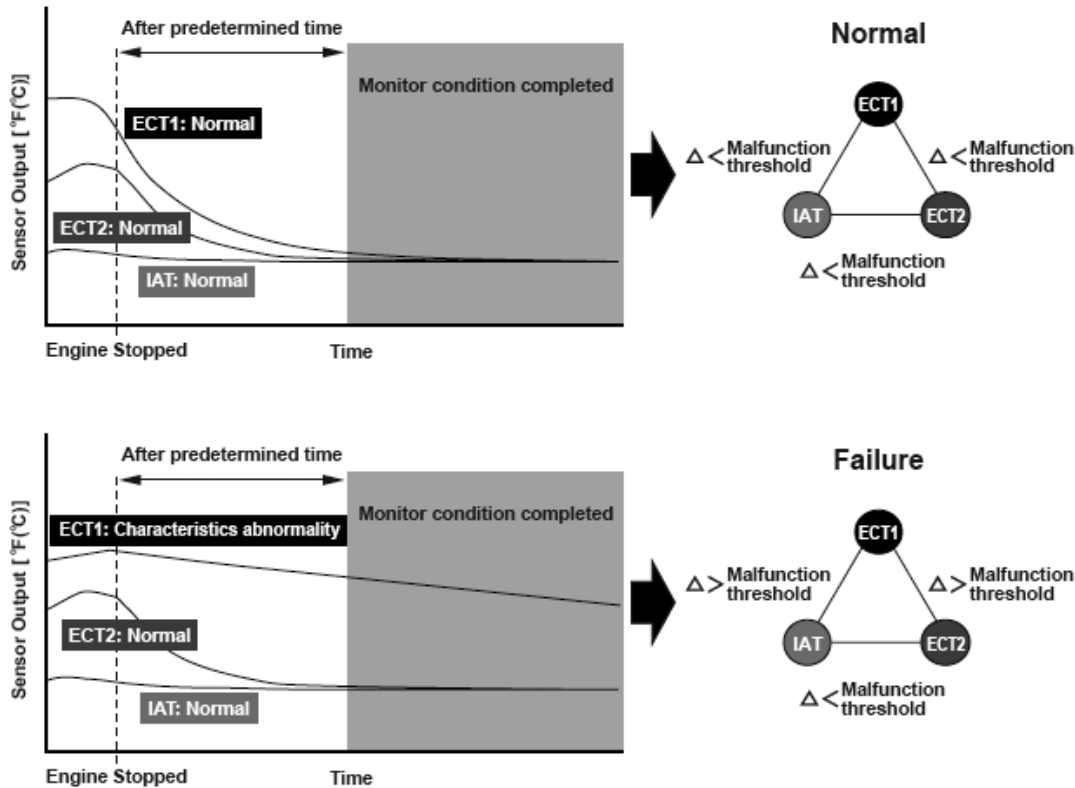
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2183 (192): ADVANCED DIAGNOSTICS

DTC P2183: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT

RANGE/PERFORMANCE PROBLEM

P0111-0570

Fig. 295: Engine Coolant Temperature (ECT) Sensor 2 Performance Graph**General Description**

Two engine coolant temperature sensors and one intake air temperature sensor are used by the powertrain control module (PCM).

When the engine is stopped and enough time has passed, the temperature of the engine will equal the ambient temperature. When an inappropriate temperature is detected after comparing the temperature readings of each sensor, a malfunction in the corresponding sensor is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	10 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	N/A

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine off time	6 hours	-
No active DTCs	P0111, P0112, P0113, P0116, P0117, P0118, P0125, P1116, P2184, P2185, P2610	

Malfunction Threshold

A malfunction is detected if these three conditions are present after the engine and the ignition switch have been off for at least 6 hours:

- When the temperature difference between the IAT and ECT1 is 57°F (32°C) or more.
- When the temperature difference between the IAT and ECT2 is 30°F (17°C) or more.
- When the temperature difference between the ECT2 and ECT1 is 73°F (41°C) or more.

Driving Pattern

1. Turn the ignition off, and wait at least 6 hours.
2. Start the engine, and let it idle for at least 10 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2184 (192): ADVANCED DIAGNOSTICS

DTC P2184: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT LOW VOLTAGE

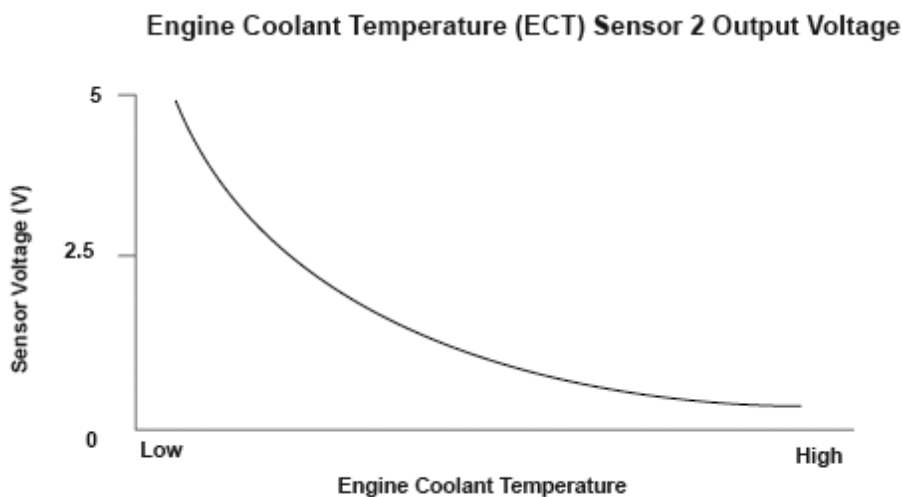
2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P2184-0502

Fig. 296: Engine Coolant Temperature (ECT) Sensor 2 (Low Voltage) - Circuit Diagram



P2184-0570

Fig. 297: Engine Coolant Temperature (ECT) Sensor Voltage Graph

General Description

Engine coolant temperature (ECT) sensor 2 is a thermistor attached to the radiator. The powertrain control module (PCM) applies voltage (about 5 V) to the ECT2 signal circuit through a pull up resistor. As the engine coolant temperature cools, ECT sensor 2 resistance increases, and the PCM detects a high signal voltage. As the engine coolant warms, the sensor resistance decreases, and the PCM detects a low ECT2 signal voltage.

If the ECT sensor 2 output voltage is less than a set value when the engine coolant temperature is high, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON

OBD Status	N/A
------------	-----

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2185

Malfunction Threshold

The ECT sensor 2 output voltage is 0.08 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2185 (192): ADVANCED DIAGNOSTICS

DTC P2185: ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2 CIRCUIT HIGH VOLTAGE

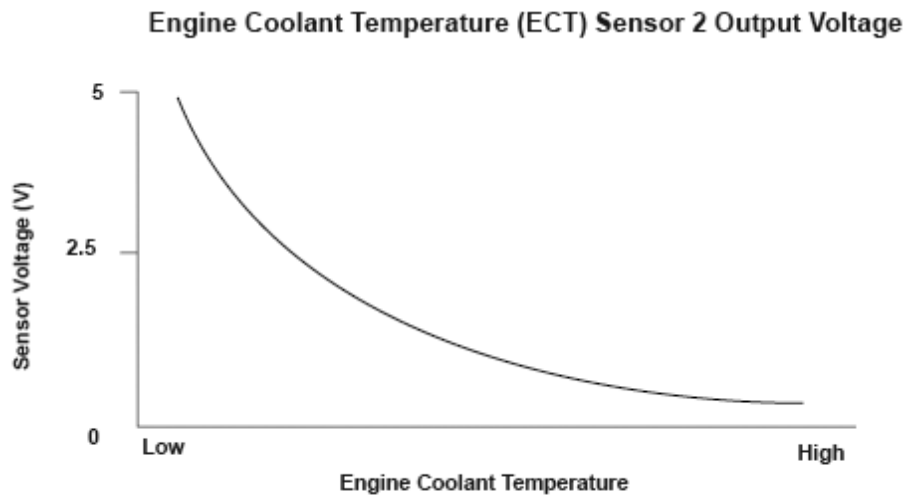


P2184-0502

Fig. 298: Engine Coolant Temperature (ECT) Sensor 2 (High Voltage) - Circuit Diagram

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P2184-0570

Fig. 299: Engine Coolant Temperature (ECT) Sensor Voltage Graph

General Description

Engine coolant temperature (ECT) sensor 2 is a thermistor attached to the radiator. The powertrain control module (PCM) applies voltage (about 5 V) to the ECT2 signal circuit through a pull up resistor. As the engine coolant temperature cools, ECT sensor 2 resistance increases, and the PCM detects a high signal voltage. As the engine coolant warms, the sensor resistance decreases, and the PCM detects a low ECT2 signal voltage.

If the ECT sensor 2 output voltage is more than a set value when the engine coolant temperature is low, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P2184

Malfunction Threshold

The ECT sensor 2 output voltage is 4.92 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2195 (155): ADVANCED DIAGNOSTICS

DTC P2195: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) SIGNAL STUCK LEAN

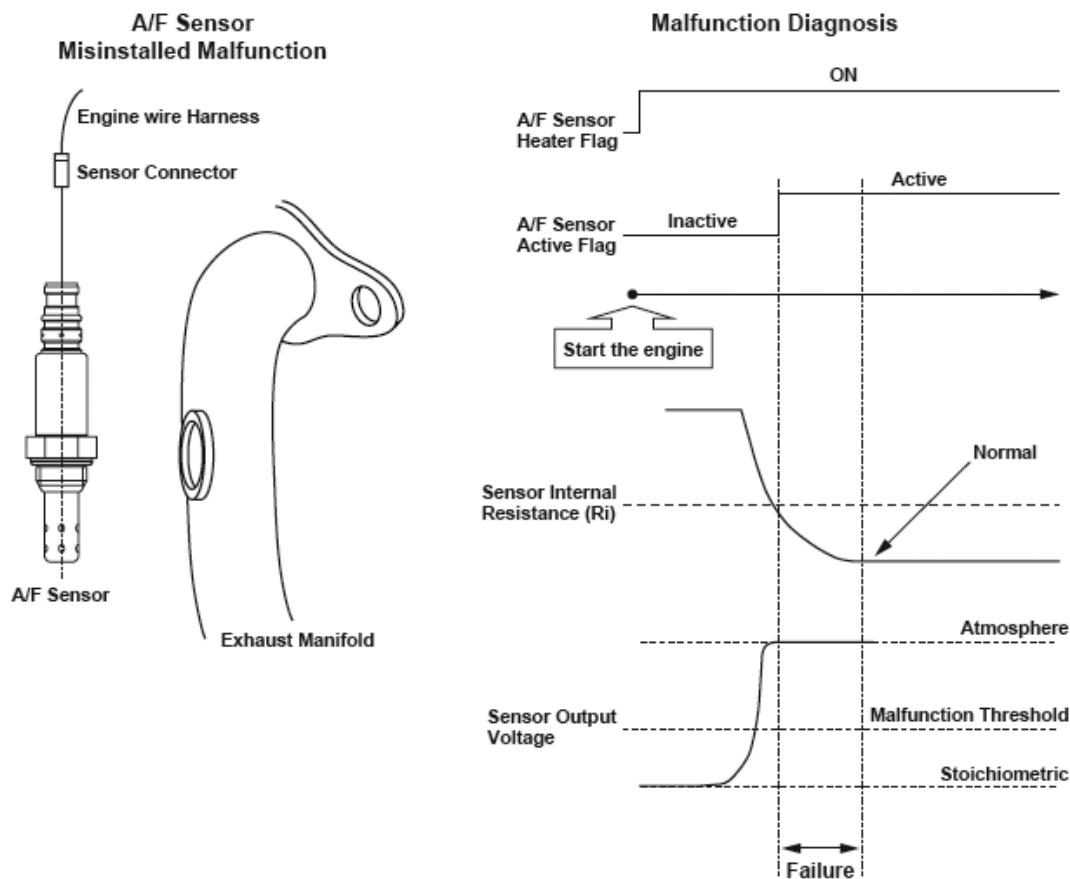


Fig. 300: Rear Air/Fuel Ratio (A/F) Sensor Malfunction

General Description

When the rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is properly connected to the engine wire harness, but it is not installed in the exhaust pipe, the A/F feedback is not done properly even if the rear A/F sensor is active after starting the engine. Thus, the exhaust emissions increase.

When the rear A/F sensor output stays out of the normal range after the rear A/F sensor becomes active, the powertrain control module (PCM) detects that the rear A/F sensor is not properly installed and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	7 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Fuel feedback	Other than during fuel cut-off operation
No active DTCs	P0134, P0135, P0171, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0627, P1172, P2237, P2238, P2243, P2245, P2251, P2252

Malfunction Threshold

The rear A/F sensor (bank 1, sensor 1) output voltage is 3.48 V or more for at least 7 seconds.

Driving Pattern

Start the engine, then let it idle for at least 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

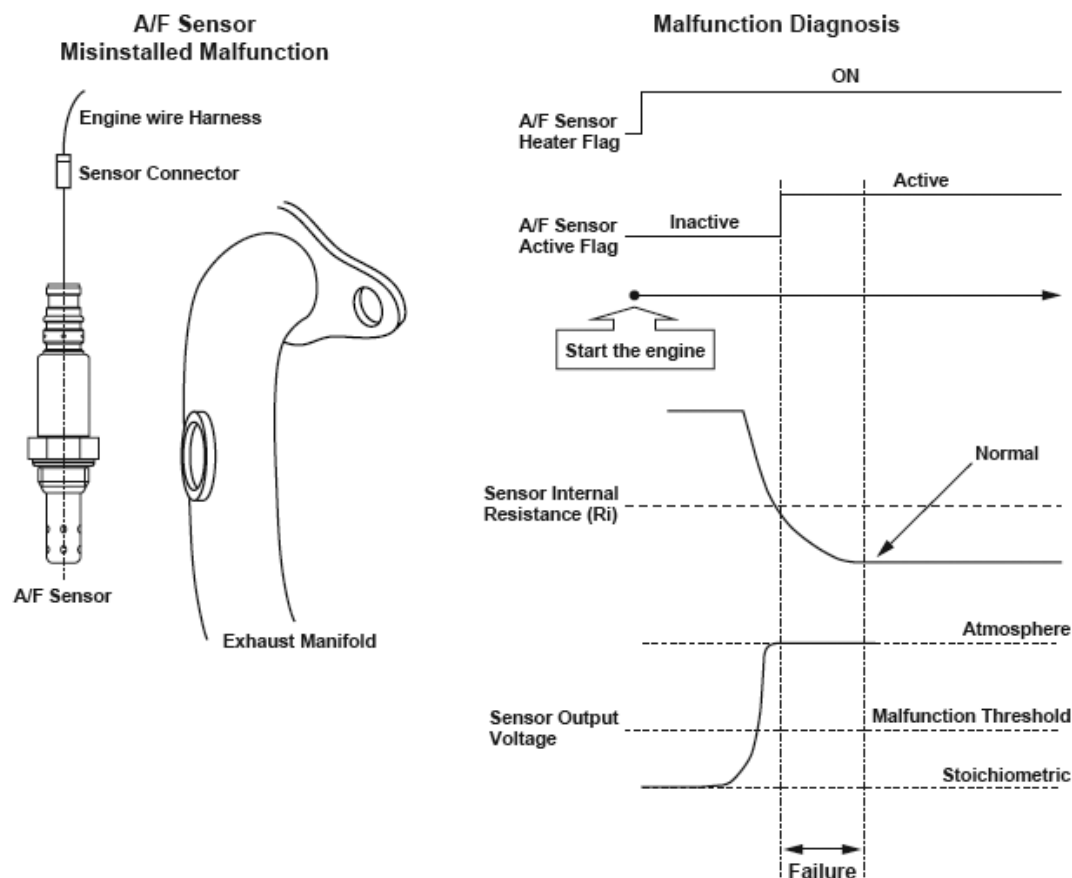
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2197 (156): ADVANCED DIAGNOSTICS

DTC P2197: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN



P2195-0470

Fig. 301: Front Air/Fuel Ratio (A/F) Sensor Malfunction

General Description

When the front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is properly connected to the engine wire harness, but it is not installed in the exhaust pipe, the A/F feedback is not done properly even if the front A/F sensor is active after starting the engine. Thus, the exhaust emissions increase.

When the front A/F sensor output stays out of the normal range after the front A/F sensor becomes active, the powertrain control module (PCM) detects that the front A/F sensor is not properly installed and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	7 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Fuel feedback	Other than during fuel cut-off operation
No active DTCs	P0154, P0155, P0174, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0627, P1174, P2240, P2241, P2247, P2249, P2254, P2255

Malfunction Threshold

The front A/F sensor (bank 2, sensor 1) output voltage is 3.48 V or more for at least 7 seconds.

Driving Pattern

Start the engine, then let it idle for at least 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

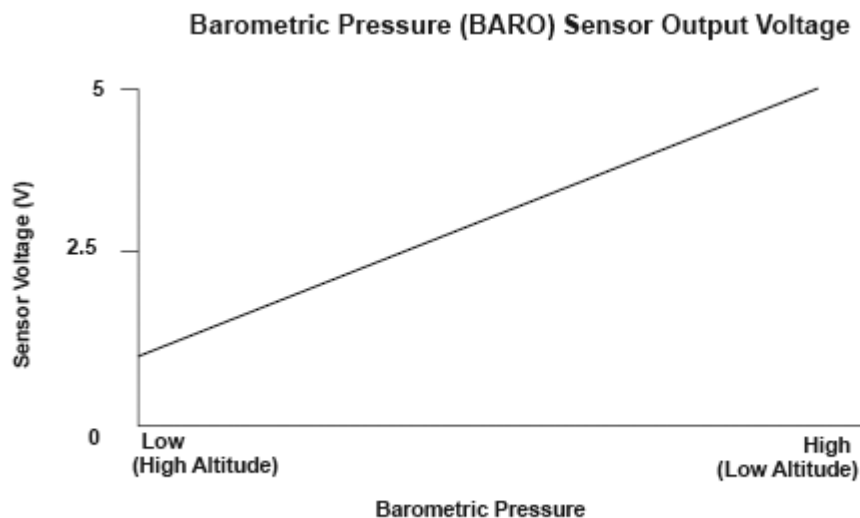
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

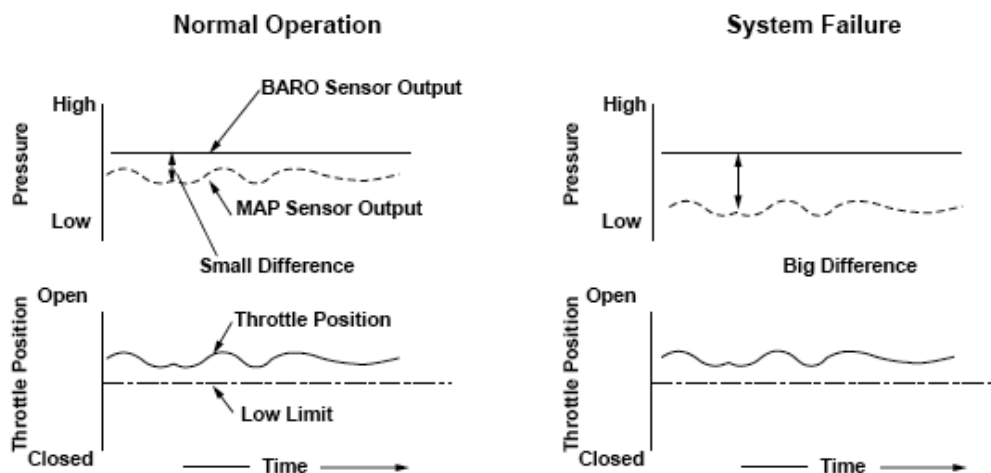
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2227 (13): ADVANCED DIAGNOSTICS

DTC P2227: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM



P1106-9671

Fig. 302: Barometric Pressure (BARO) Sensor Voltage Graph

P1106-9771

Fig. 303: Barometric Pressure (BARO) Sensor Operation Graph

General Description

The barometric pressure (BARO) sensor is built into the powertrain control module (PCM) and monitors atmospheric pressure. When the throttle valve is wide open, the manifold absolute pressure (MAP) sensor output is nearly equal to the BARO sensor output. Making use of this characteristic, a malfunction can be detected in the BARO sensor output.

If the throttle position is beyond a value stored in the PCM that is used to detect "wide-open throttle," and if the difference between the MAP sensor output and the BARO sensor output is equal to or greater than a set value, a malfunction in the BARO sensor output is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	2.5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition		Minimum	Maximum
Throttle position	1,100 rpm	17.0°	-
	3,000 rpm	33.0°	-
No active DTCs		P0107, P0108, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0401, P0403, P0404, P0461, P0506, P0507, P0627, P1077, P1078, P1128, P1129, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2228, P2229, P2279, P2413, P2646, P2647, P2648, P2649	

Malfunction Threshold

The difference between the BARO sensor output and the MAP sensor output is 26 kPa (7.5 in.Hg, 190 mmHg) or more for at least 2.5 seconds.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle with the throttle position as specified under Enable Conditions for at least 2.5 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

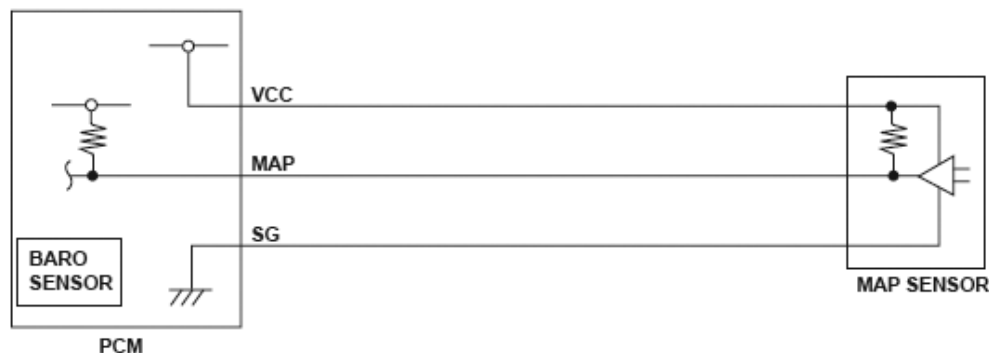
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

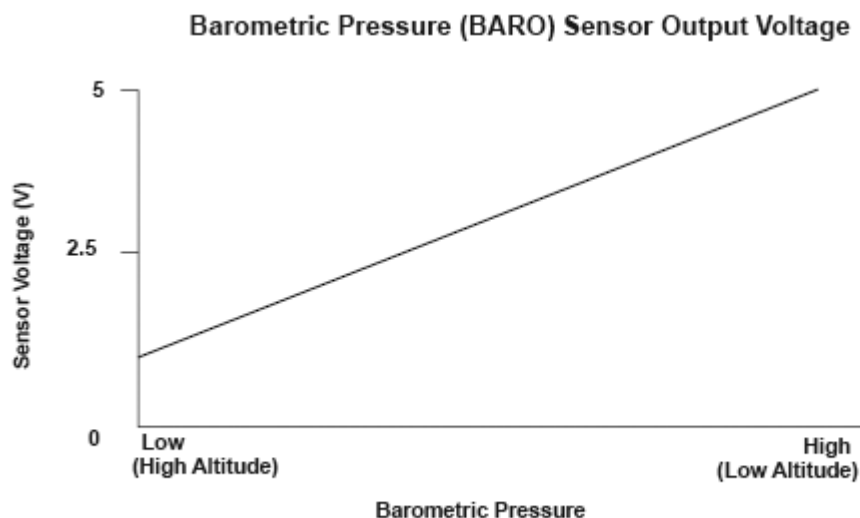
DTC P2228 (13): ADVANCED DIAGNOSTICS

DTC P2228: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT LOW VOLTAGE



P1107-9803

Fig. 304: Barometric Pressure (BARO) Sensor (Low Voltage) - Circuit Diagram



P1106-9871

Fig. 305: Barometric Pressure (BARO) Sensor Voltage Graph

General Description

The barometric pressure (BARO) sensor is built into the powertrain control module (PCM) and monitors atmospheric pressure. The PCM estimates appropriate intake airflow from the manifold absolute pressure (MAP) sensor output voltage and BARO sensor output voltage. If the BARO sensor output voltage is a specified value or less, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P1109, P2229

Malfunction Threshold

The BARO sensor output voltage is 1.31 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

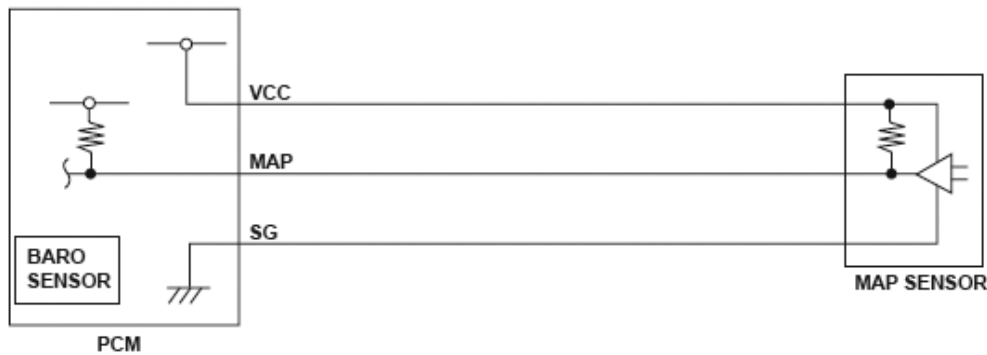
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

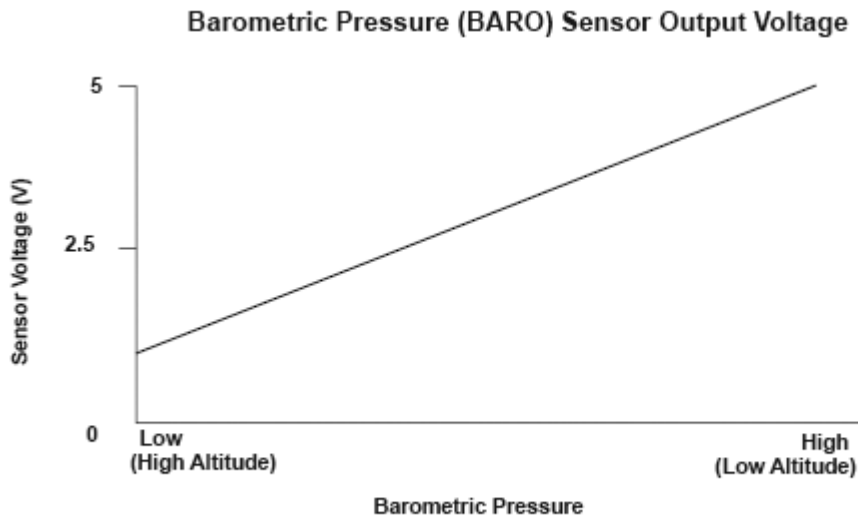
DTC P2229 (13): ADVANCED DIAGNOSTICS

DTC P2229: BAROMETRIC PRESSURE (BARO) SENSOR CIRCUIT HIGH VOLTAGE



P1107-9603

Fig. 306: Barometric Pressure (BARO) Sensor (High Voltage) - Circuit Diagram



P1106-9671

Fig. 307: Barometric Pressure (BARO) Sensor Voltage Graph

General Description

The barometric pressure (BARO) sensor is built into the powertrain control module (PCM) and monitors atmospheric pressure. The PCM estimates appropriate intake airflow from the manifold absolute pressure (MAP) sensor output voltage and BARO sensor output voltage. If the BARO sensor output voltage is a specified value or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON

OBD Status	N/A
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Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON
No active DTCs	P1109, P2228

Malfunction Threshold

The BARO sensor output voltage is 4.49 V or more for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2237 (155): ADVANCED DIAGNOSTICS

DTC P2237: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

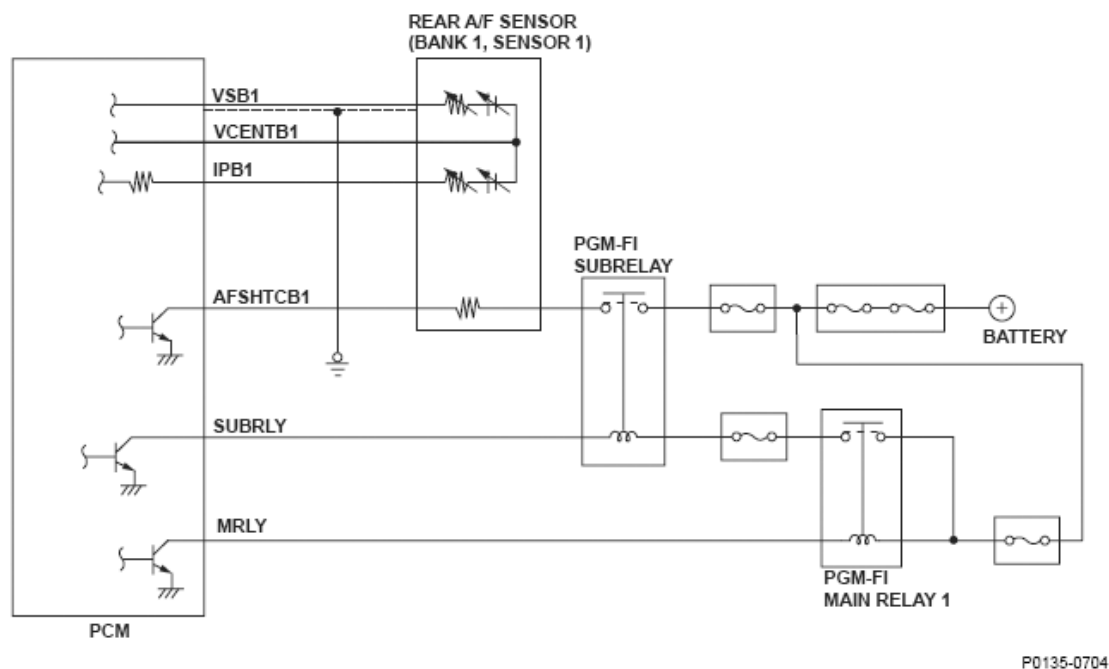


Fig. 308: Rear Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB1 terminal voltage is out of a specified range, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	15 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
VSB1 terminal voltage	3.4 V	4.8 V
State of the engine	Running	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

No active DTCs	P0135, P2195, P2238, P2243, P2245, P2251, P2252, P2627, P2628
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Malfunction Threshold

The IPB1 terminal voltage is 2.0 V or less, or 5.6 V or more, for at least 15 seconds.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2238 (155): ADVANCED DIAGNOSTICS

DTC P2238: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) IP CIRCUIT LOW VOLTAGE

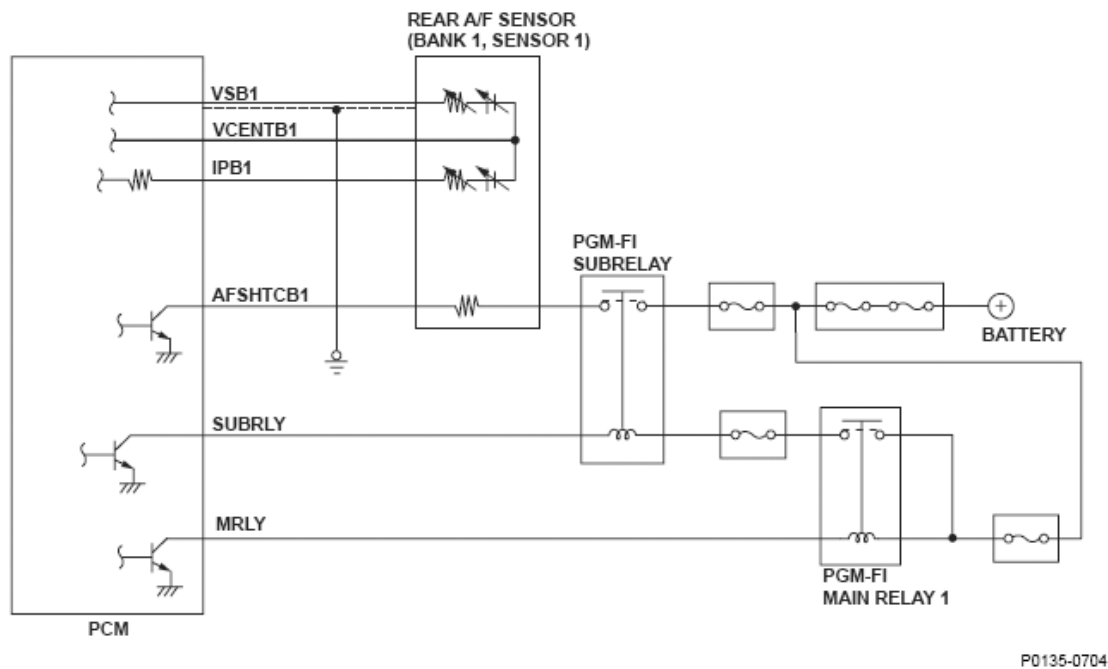


Fig. 309: Rear Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB1 terminal voltage is a specified value or less, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

ENABLE CONDITIONS CHART

2008 Acura MDX	
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX	

Condition	
State of the engine	Running
No active DTCs	P0135, P2195, P2237, P2243, P2245, P2251, P2252, P2627, P2628

Malfunction Threshold

The IPB1 input terminal voltage is 1.0 V or less for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2240 (156): ADVANCED DIAGNOSTICS

DTC P2240: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

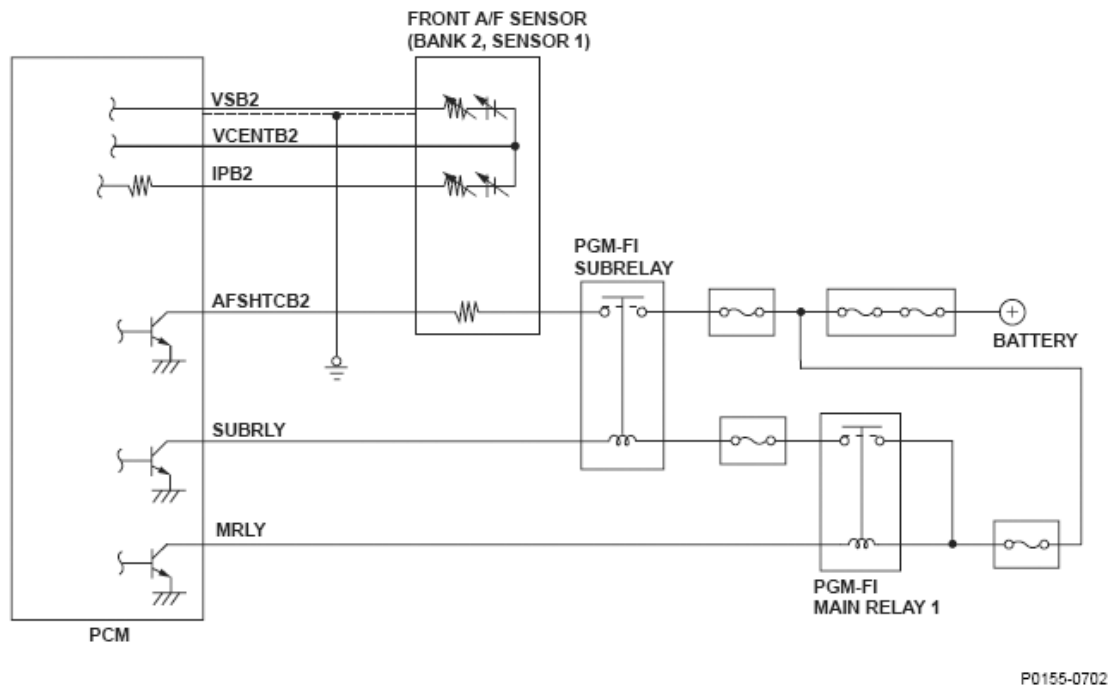


Fig. 310: Front Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB2 terminal voltage is out of a specified range, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	15 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
VSB2 terminal voltage	3.4 V	4.8 V

State of the engine	Running
No active DTCs	P0155, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2630, P2631

Malfunction Threshold

The IPB2 terminal voltage is 5.6 V or more, or 2.0 V or less, for at least 15 seconds.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2241 (156): ADVANCED DIAGNOSTICS

DTC P2241: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE

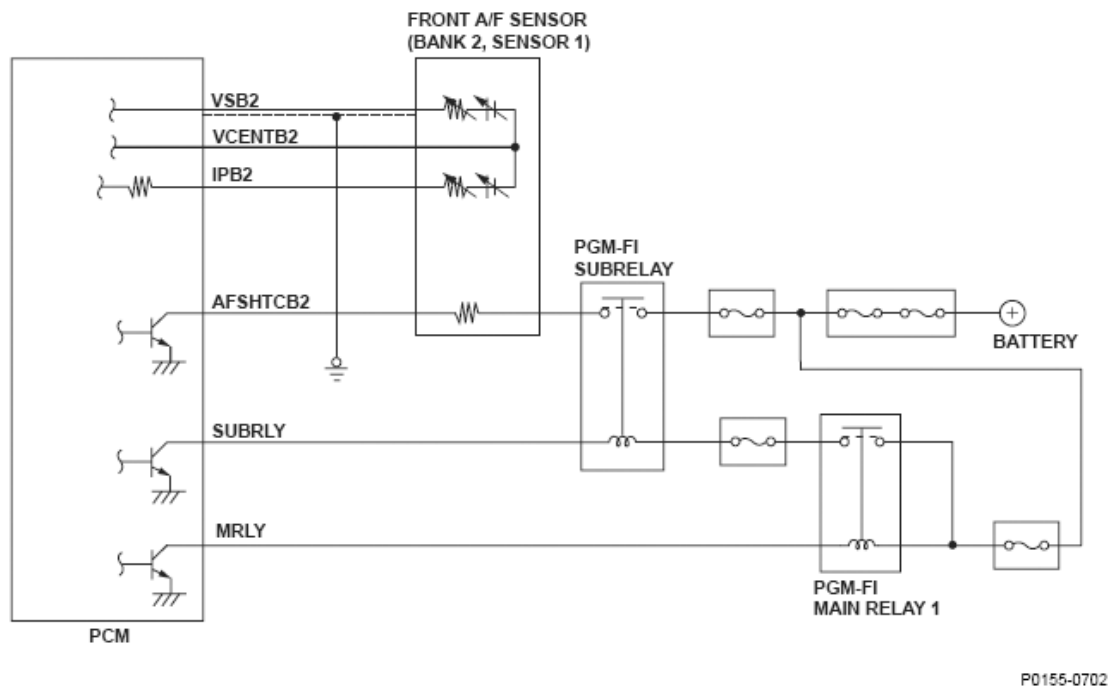


Fig. 311: Front Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB2 terminal voltage is a specified value or less, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0155, P2197, P2240, P2247, P2249, P2254, P2255, P2630, P2631

Malfunction Threshold

The IPB2 input terminal voltage is 1.0 V or less for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

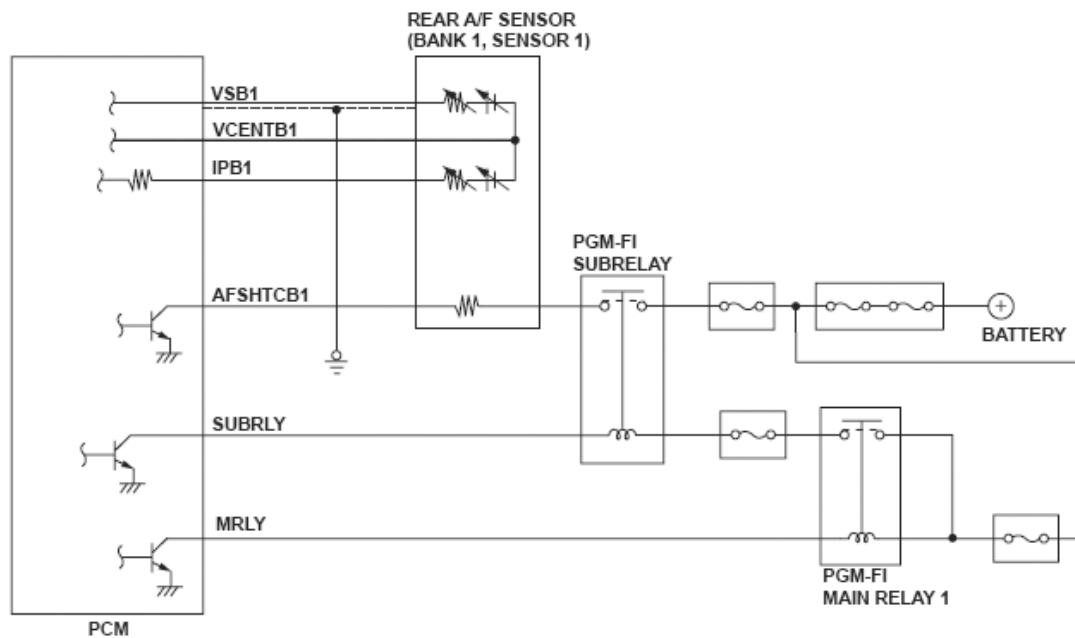
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

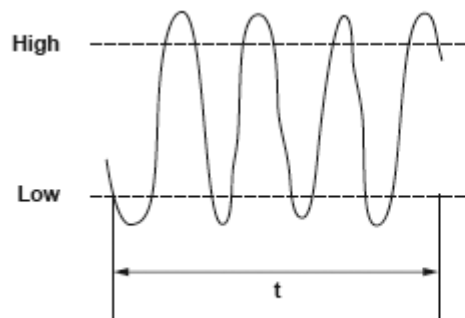
DTC P2243 (155): ADVANCED DIAGNOSTICS

DTC P2243: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE



P0135-0704

Fig. 312: Rear Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram



P2243-0370

Fig. 313: Identifying Rear Air/Fuel Ratio (A/F) Sensor Waveform

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB1 terminal voltage repeatedly fluctuates between a value above the specification and a value below the specification at a certain frequency, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0135, P2195, P2237, P2238, P2245, P2251, P2252, P2627, P2628

Malfunction Threshold

The VSB1 terminal voltage repeatedly fluctuates from a value above 4.8 V to a value below 3.4 V, at least 150 times.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2245 (155): ADVANCED DIAGNOSTICS

DTC P2245: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

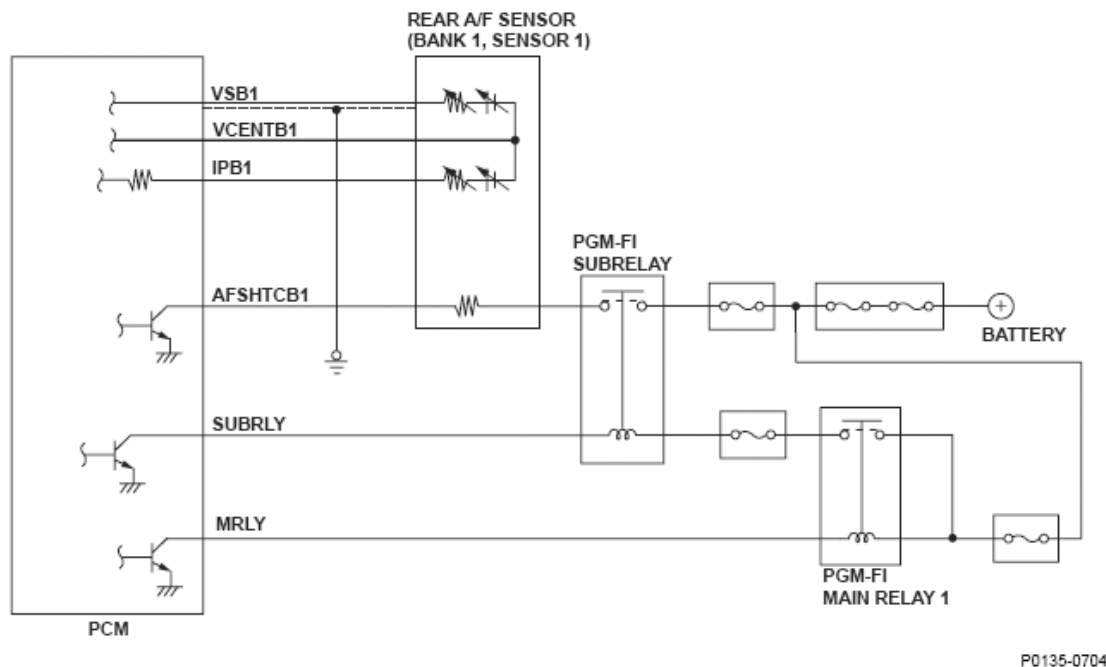


Fig. 314: Rear Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB1 terminal voltage is a specified value or more, and the VCENB1 terminal voltage is less than the specified value, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
VSB1 terminal voltage	0.3 V	1.5 V
State of the engine	Running	
No active DTCs	P0135, P2195, P2237, P2238, P2243, P2251, P2252, P2627, P2628	

Malfunction Threshold

The IPB1 input terminal voltage is 1.0 V or less for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2247 (156): ADVANCED DIAGNOSTICS

DTC P2247: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE

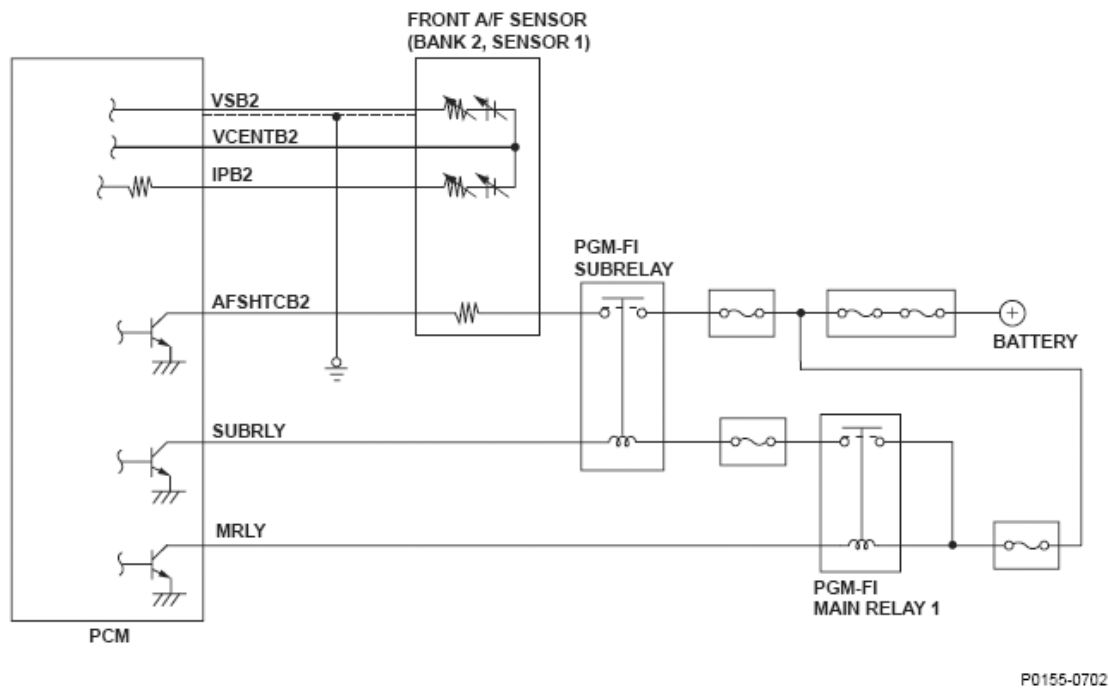


Fig. 315: Front Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram

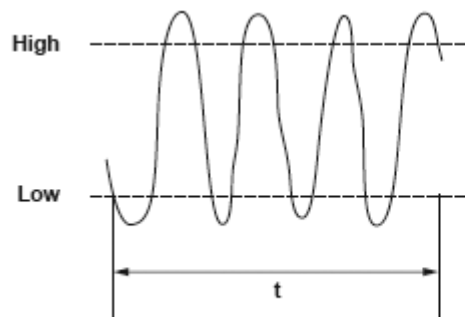


Fig. 316: Identifying Front Air/Fuel Ratio (A/F) Sensor Waveform

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB2 terminal voltage repeatedly fluctuates between a value above the specification and a value below the specification at a certain frequency, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX	
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX	

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	-
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0155, P2197, P2240, P2241, P2249, P2254, P2255, P2630, P2631

Malfunction Threshold

The VSB2 terminal voltage repeatedly fluctuates from a value above 4.8 V to a value below 3.4 V, at least 150 times.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2249 (156): ADVANCED DIAGNOSTICS

DTC P2249: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

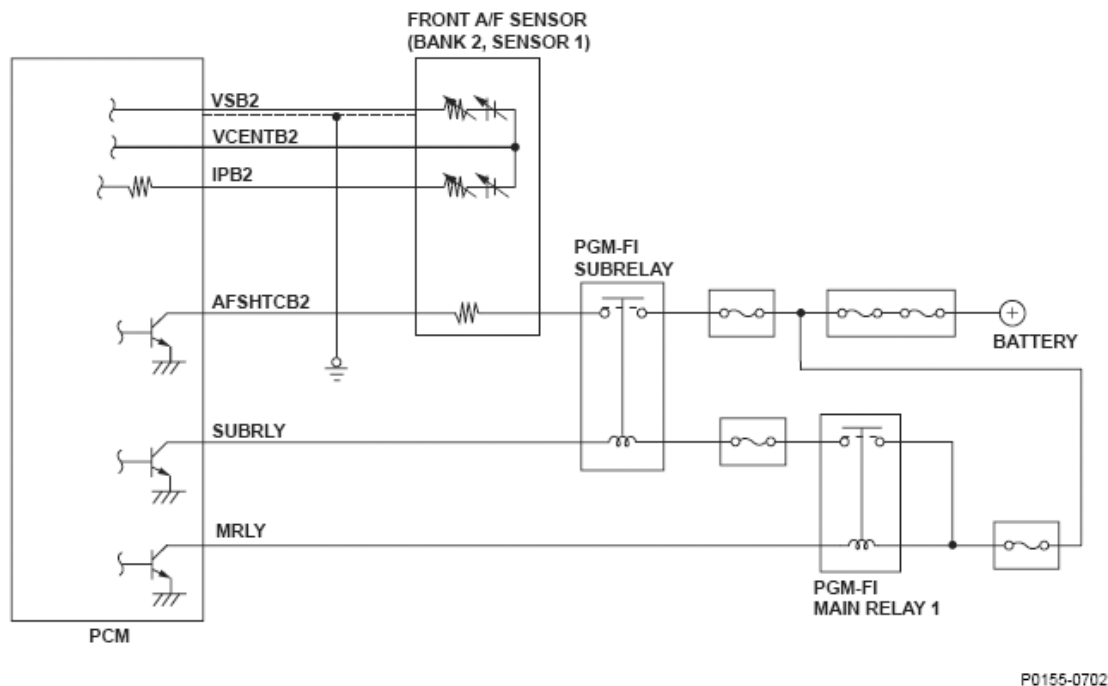


Fig. 317: Front Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

If the IPB2 terminal voltage is a specified value or more, and the VCENTB2 terminal voltage is less than the specified value, the PCM detects a malfunction and stores a DTC.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
VSB2 terminal voltage	0.3 V	1.5 V
State of the engine	Running	
No active DTCs	P0155, P2197, P2240, P2241, P2247, P2254, P2255, P2630, P2631	

Malfunction Threshold

The IPB2 input terminal voltage is 1.0 V or less for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

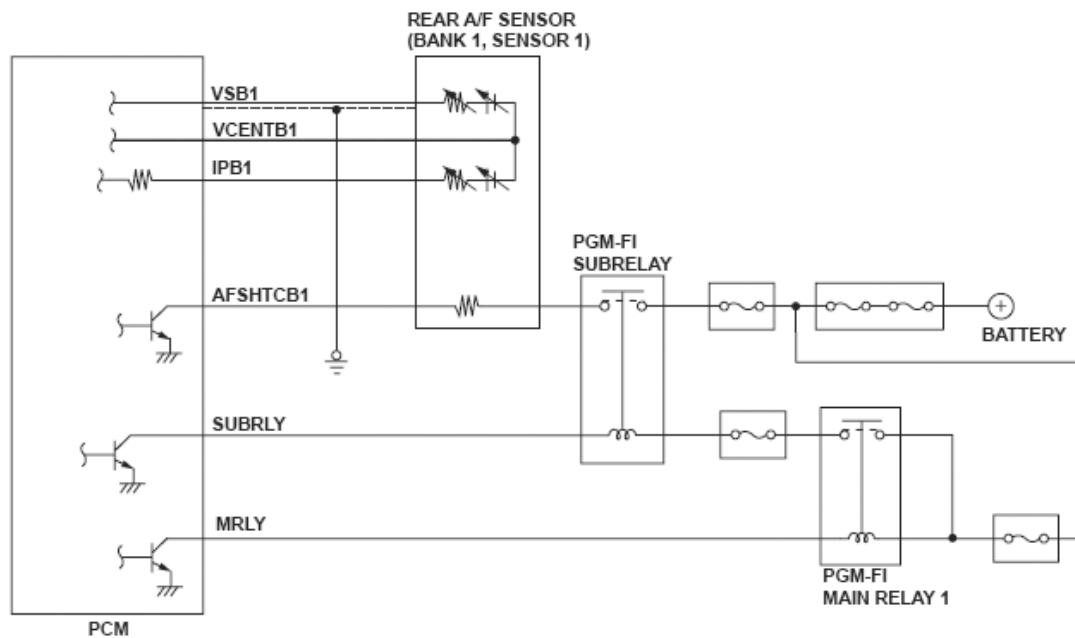
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2251 (155): ADVANCED DIAGNOSTICS

DTC P2251: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE



P0135-0704

Fig. 318: Rear Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram**General Description**

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB1 terminal voltage and the PCM internal signal voltage are more than a specified value for more than a predetermined time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	
State of the engine	Running

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

No active DTCs	P0135, P2195, P2237, P2238, P2243, P2245, P2252, P2627, P2628
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Malfunction Threshold

The VSB1 terminal voltage is 6.0 V or more, and the PCM internal signal voltage is 4.6 V or more, for at least 5 seconds.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2252 (155): ADVANCED DIAGNOSTICS

DTC P2252: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE

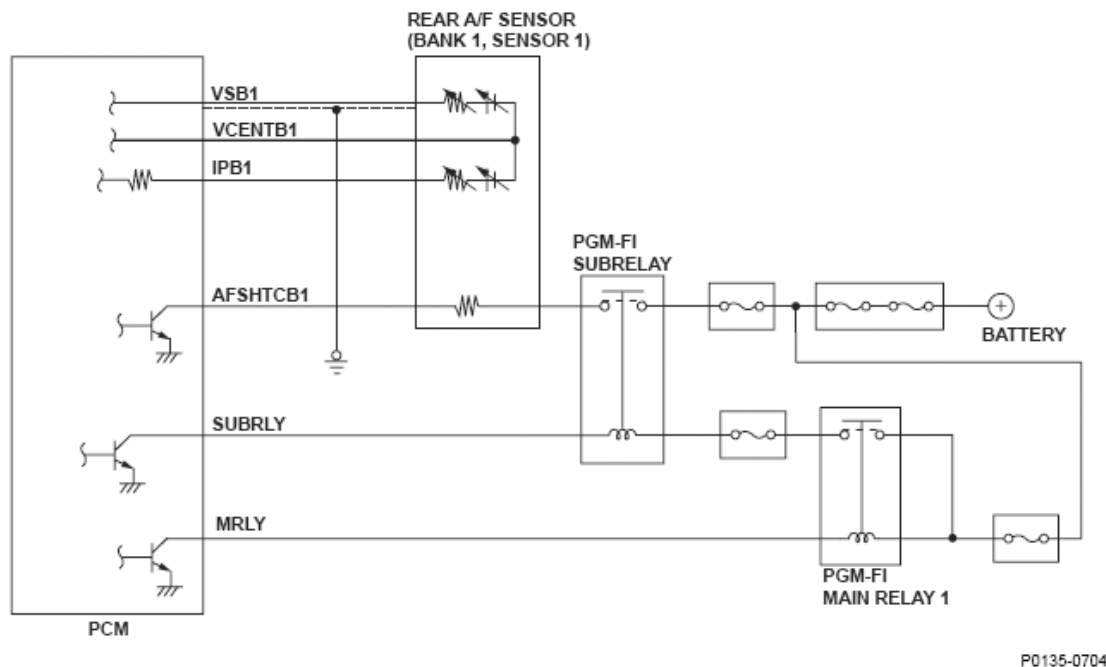


Fig. 319: Rear Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The rear A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the rear A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB1 terminal voltage is less than the specified value and the IPB1 terminal voltage is more than the specified value for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0135, P2195, P2237, P2238, P2243, P2245, P2251, P2627, P2628

Malfunction Threshold

The VSB1 terminal voltage is 0.3 V or less, and the IPB1 terminal voltage is 1.0 V or more, for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2254 (156): ADVANCED DIAGNOSTICS

DTC P2254: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE

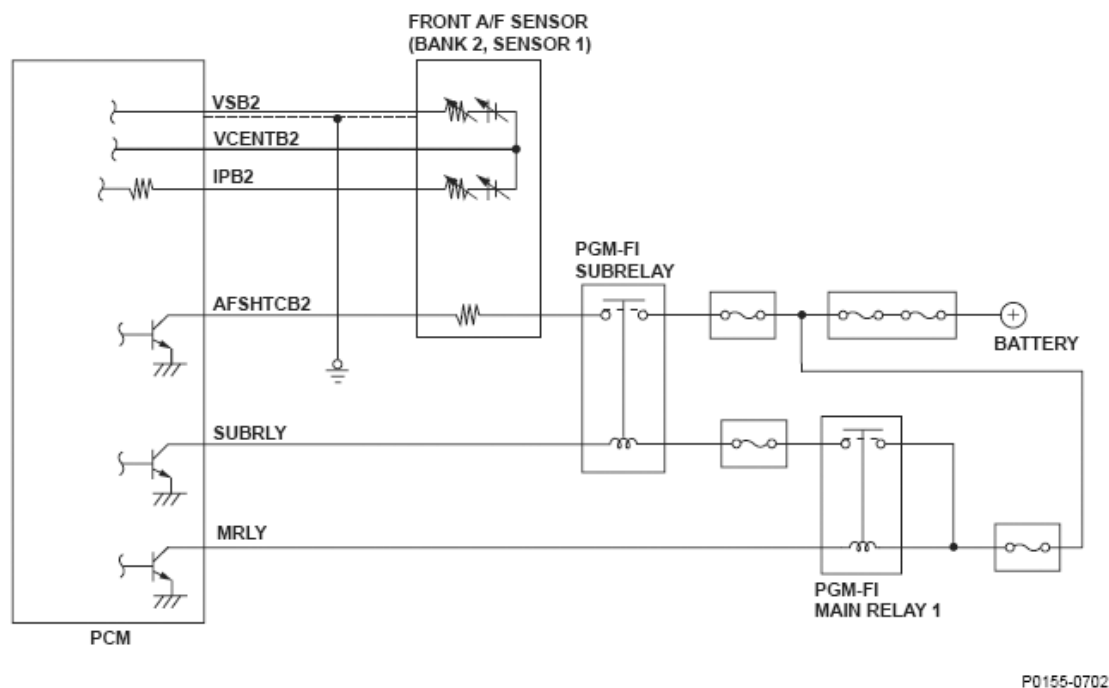


Fig. 320: Front Air/Fuel Ratio (A/F) Sensor (High Voltage) - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB2 terminal voltage and the PCM internal signal voltage are more than a specified value for more than a predetermined time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	

2008 Acura MDX	
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX	

State of the engine	Running
No active DTCs	P0155, P2197, P2240, P2241, P2247, P2249, P2255, P2630, P2631

Malfunction Threshold

The VSB2 terminal voltage is 6.0 V or more, and the PCM internal signal voltage is 4.6 V or more, for at least 5 seconds.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2255 (156): ADVANCED DIAGNOSTICS

DTC P2255: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE

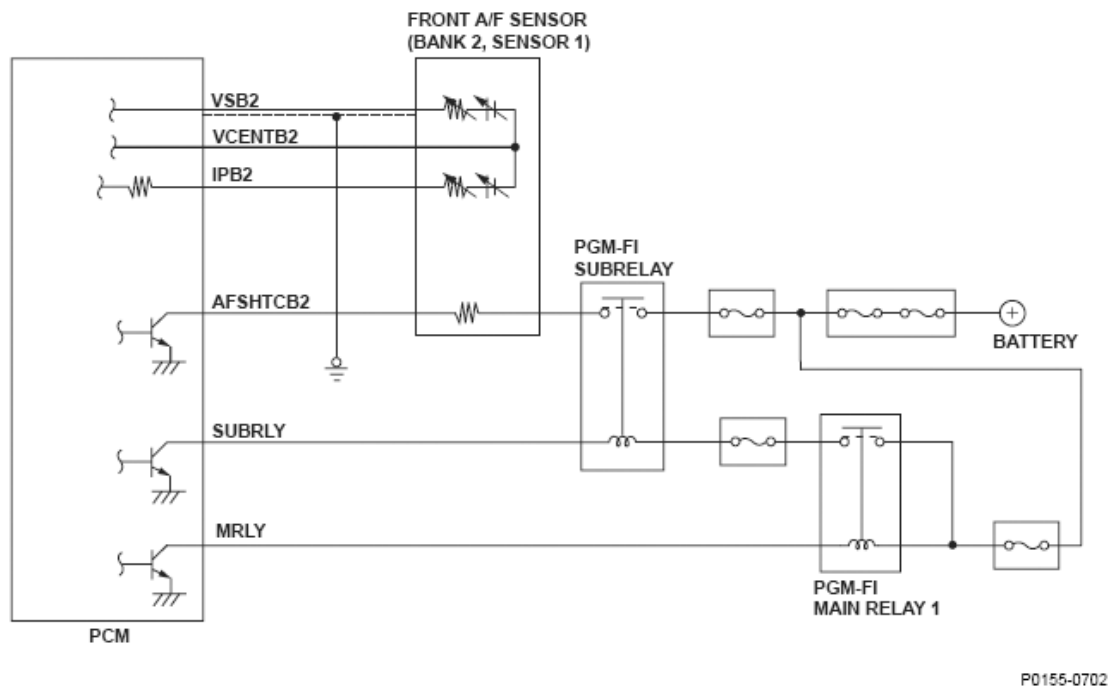


Fig. 321: Front Air/Fuel Ratio (A/F) Sensor (Low Voltage) - Circuit Diagram

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) is installed in the exhaust manifold and detects oxygen content in the exhaust gas. The front A/F sensor transmits a signal to the powertrain control module (PCM). The PCM controls fuel injection duration by comparing the target air/fuel ratio with the front A/F sensor signal. The sensor includes the VS cell, the pump cell, the atmospheric reference cavity, the diffusion layer, and the heater, and it enables overall feedback control.

When the VSB2 terminal voltage is less than the specified value and the IPB2 terminal voltage is more than the specified value for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	5 seconds or more ⁽¹⁾ , 85 seconds or more ⁽²⁾
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) After the sensor becomes active	
(2) Before the sensor becomes active	

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	
State of the engine	Running
No active DTCs	P0155, P2197, P2240, P2241, P2247, P2249, P2254, P2630, P2631

Malfunction Threshold

The VSB2 terminal voltage is 0.3 V or less, and the IPB2 terminal voltage is 1.0 V or more, for at least 5 seconds*, 85 seconds**.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 2 minutes.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

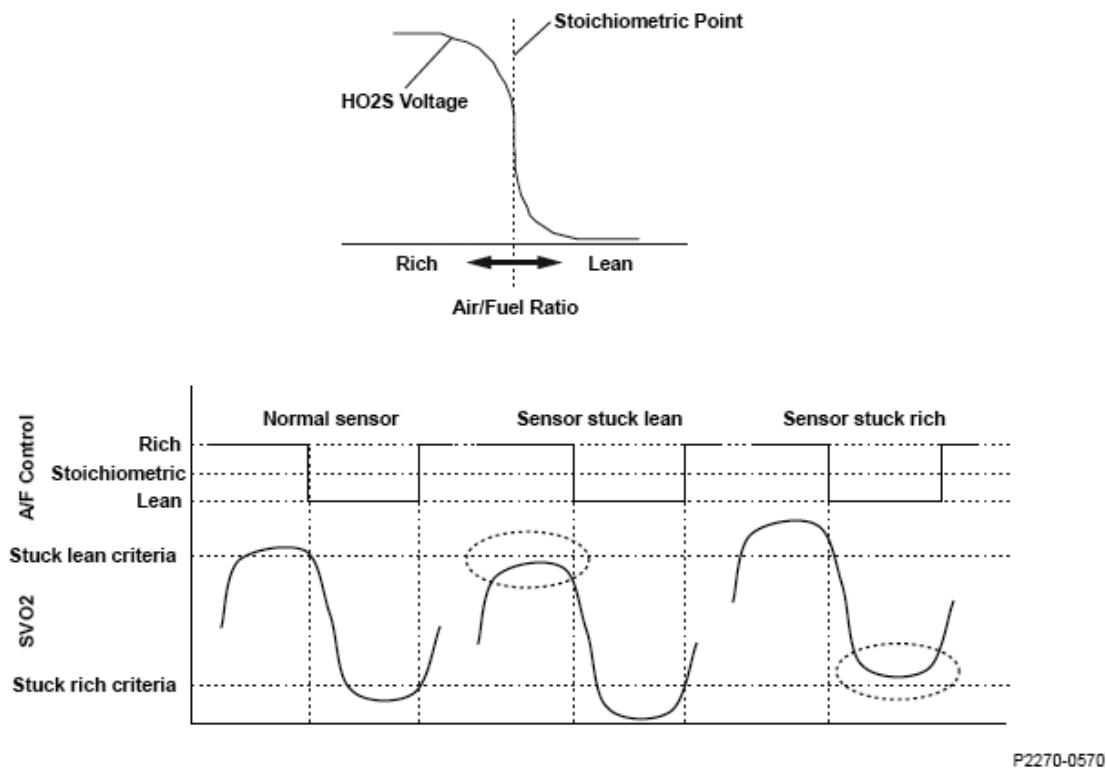
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2270 (161): ADVANCED DIAGNOSTICS

DTC P2270: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT SIGNAL STUCK LEAN



P2270-0570

Fig. 322: Rear Secondary Heated Oxygen Sensor Mixture Ratio Pattern

General Description

The rear secondary HO2S (bank 1, sensor 2) detects the oxygen concentration in the exhaust gas downstream of the three-way catalyst (TWC). The rear sensor output voltage characteristics are similar to the air/fuel ratio (A/F) sensor. The oxygen concentration is detected after the TWC during fuel feedback control using the A/F sensor, and it optimizes the fuel feedback control to maximize the effect of the TWC. If, after current is applied to the rear secondary HO2S heater, the rear secondary HO2S does not fluctuate and the output is stuck within the specified area, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	36.3 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum

Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after the fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0137, P0138, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2413, P2646, P2647, P2648, P2649, P2A00	

Malfunction Threshold

The rear secondary HO2S (bank 1, sensor 2) output voltage is 0.650 V or less.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 36.3 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2271 (161): ADVANCED DIAGNOSTICS

DTC P2271: REAR SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 1, SENSOR 2)) CIRCUIT SIGNAL STUCK RICH

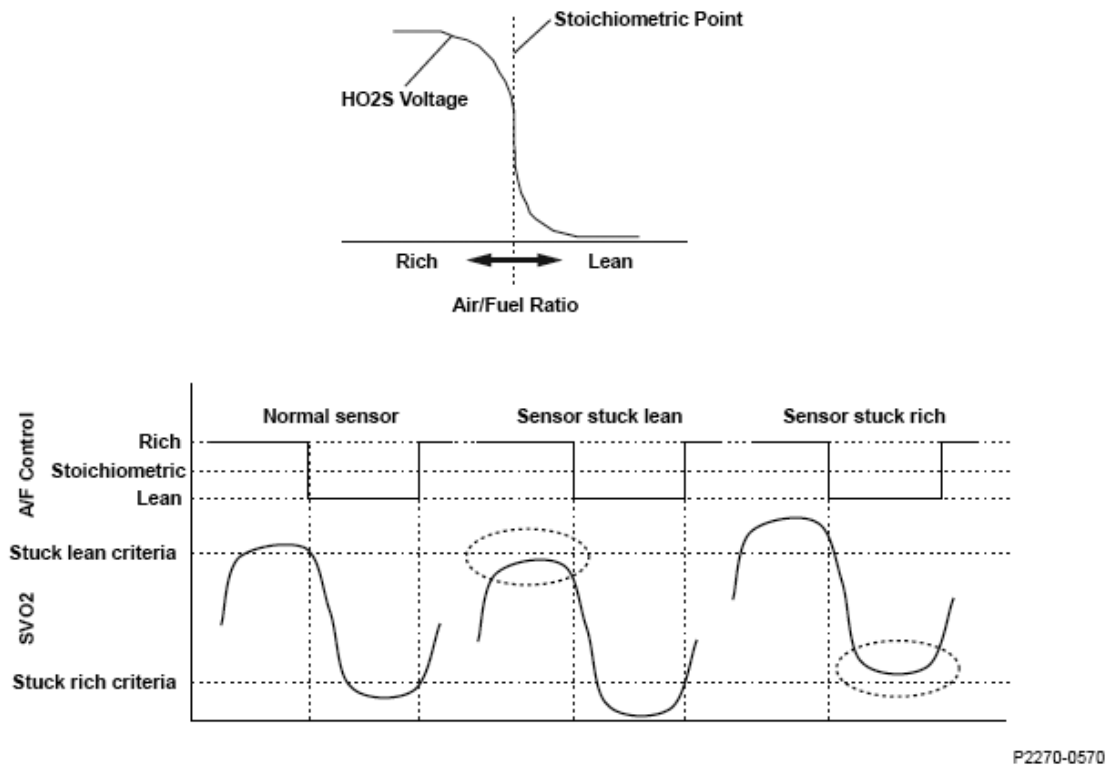


Fig. 323: Rear Secondary Heated Oxygen Sensor Mixture Ratio Pattern

General Description

The rear secondary HO2S (bank 1, sensor 2) detects the oxygen concentration in the exhaust gas downstream of the three-way catalyst (TWC). The rear sensor output voltage characteristics are similar to the air/fuel ratio (A/F) sensor. The oxygen concentration is detected after the TWC during fuel feedback control using the A/F sensor, and it optimizes the fuel feedback control to maximize the effect of the TWC. If, after current is applied to the rear secondary HO2S heater, the rear secondary HO2S does not fluctuate and the output is stuck within the specified area, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	36.3 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after the fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0133, P0134, P0135, P0137, P0138, P0141, P0171, P0172, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0403, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1172, P145C, P2195, P2237, P2238, P2243, P2245, P2251, P2252, P2270, P2413, P2646, P2647, P2648, P2649, P2A00	

Malfunction Threshold

The rear secondary HO2S (bank 1, sensor 2) output voltage is 0.293 V or more.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 36.3 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

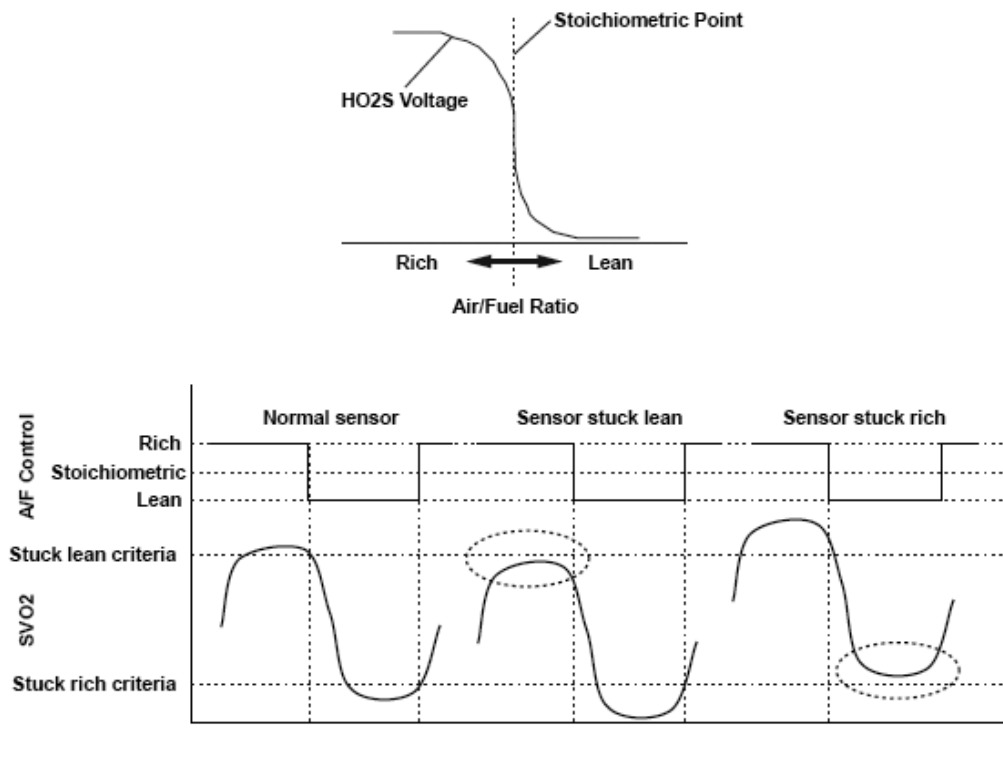
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear

command or by disconnecting the battery.

DTC P2272 (162): ADVANCED DIAGNOSTICS

DTC P2272: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT SIGNAL STUCK LEAN



P2270-0570

Fig. 324: Front Secondary Heated Oxygen Sensor Mixture Ratio Pattern

General Description

The front secondary HO2S (bank 2, sensor 2) detects the oxygen concentration in the exhaust gas downstream of the three-way catalyst (TWC). The front sensor output voltage characteristics are similar to the air/fuel ratio (A/F) sensor. The oxygen concentration is detected after the TWC during fuel feedback control using the A/F sensor, and it optimizes the fuel feedback control to maximize the effect of the TWC. If, after current is applied to the front secondary HO2S heater, the front secondary HO2S does not fluctuate and the output is stuck within the specified area, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	36.3 seconds or less

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after the fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0157, P0158, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2413, P2646, P2647, P2648, P2649, P2A03	

Malfunction Threshold

The front secondary HO2S (bank 2, sensor 2) output voltage is 0.650 V or less.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 36.3 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2273 (162): ADVANCED DIAGNOSTICS

DTC P2273: FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S (BANK 2, SENSOR 2)) CIRCUIT SIGNAL STUCK RICH

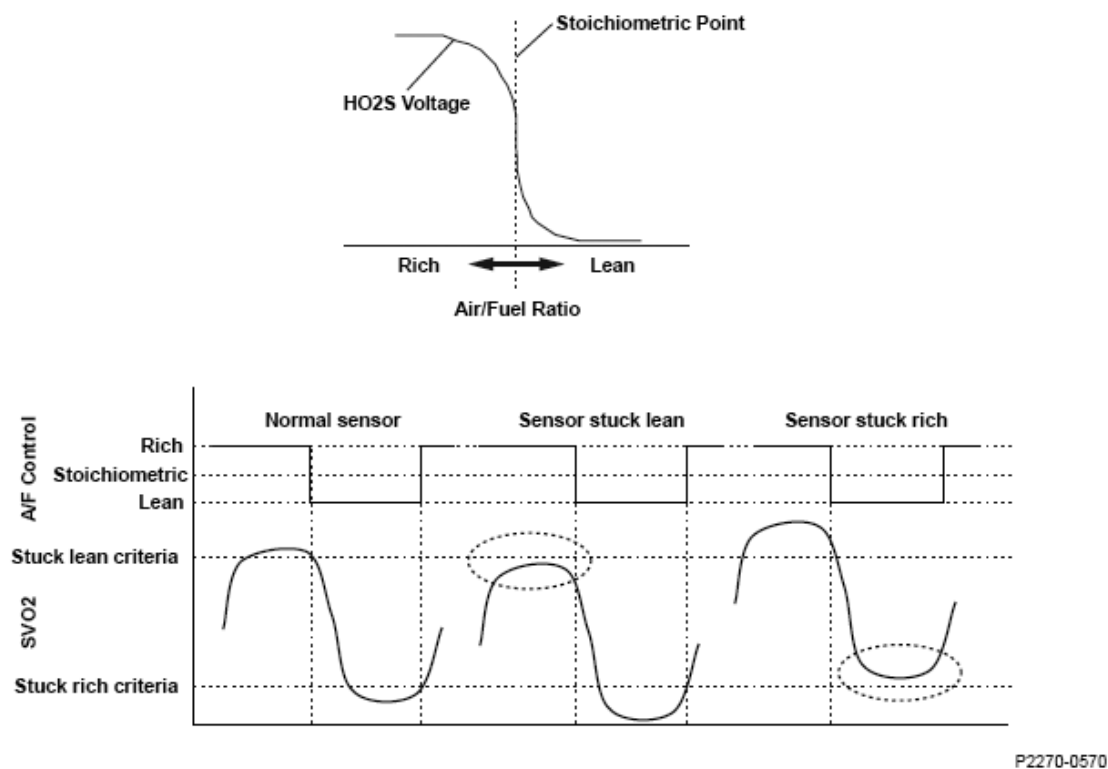


Fig. 325: Front Secondary Heated Oxygen Sensor Mixture Ratio Pattern

General Description

The front secondary HO2S (bank 2, sensor 2) detects the oxygen concentration in the exhaust gas downstream of the three-way catalyst (TWC). The front sensor output voltage characteristics are similar to the air/fuel ratio (A/F) sensor. The oxygen concentration is detected after the TWC during fuel feedback control using the A/F sensor, and it optimizes the fuel feedback control to maximize the effect of the TWC. If, after current is applied to the front secondary HO2S heater, the front secondary HO2S does not fluctuate and the output is stuck within the specified area, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Execution	Once per driving cycle
Sequence	None
Duration	36.3 seconds or less
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time that secondary HO2S activity is not monitored after starting the engine	20 seconds	-
Elapsed time after the fuel cut-off	-	150 seconds
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	1,180 rpm	2,000 rpm
MAP value	34 kPa (9.9 in.Hg, 250 mmHg)	73 kPa (21.6 in.Hg, 550 mmHg)
Vehicle speed	30 mph (48 km/h)	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0111, P0112, P0113, P0117, P0118, P0153, P0154, P0155, P0157, P0158, P0161, P0174, P0175, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0340, P0341, P0344, P0401, P0404, P0443, P0496, P0497, P0627, P1077, P1078, P1128, P1129, P1174, P145C, P2197, P2240, P2241, P2247, P2249, P2254, P2255, P2272, P2413, P2646, P2647, P2648, P2649, P2A03	

Malfunction Threshold

The front secondary HO2S (bank 2, sensor 2) output voltage is 0.293 V or more.

Driving Pattern

1. Start the engine. Let it idle until the radiator fan comes on.
2. Drive the vehicle at a steady speed of 35 mph (57 km/h) or more for at least 36.3 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If

the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

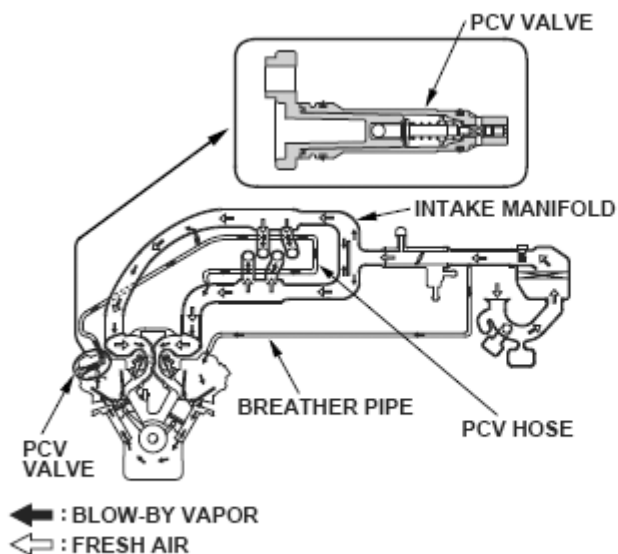
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

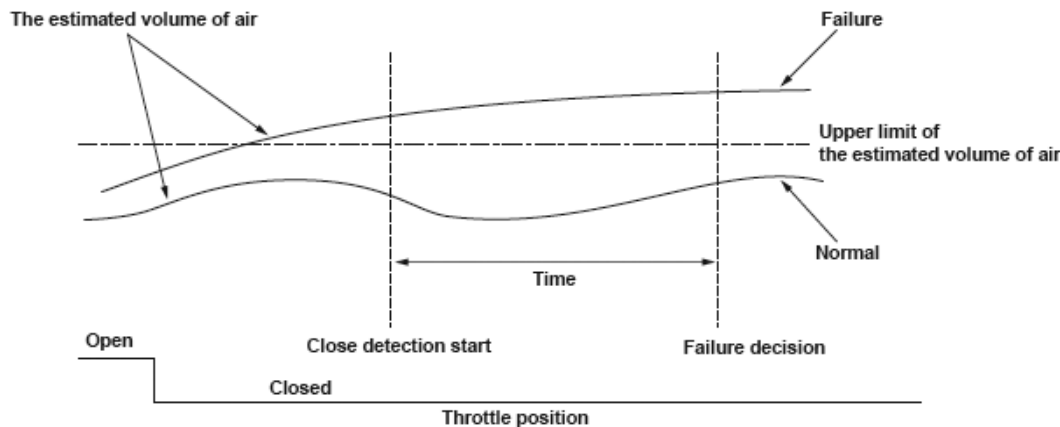
DTC P2279 (109): ADVANCED DIAGNOSTICS

DTC P2279: INTAKE AIR SYSTEM LEAK



P2279-0771

Fig. 326: Intake Air System - System Diagram



P1505-0272

Fig. 327: Intake Air System Throttle Position Graph**General Description**

The positive crankcase ventilation (PCV) system reduces hydrocarbons (HC). The PCV system recirculates unburned air/fuel mixture (blow-by vapor) into the intake manifold so that it is drawn into the engine and burned, thus reducing HC. If the PCV hose comes off while air is supplied mainly via the idle control system with the throttle closed, the amount of air supplied to the engine is considerably more than the amount of air the idle control system supplies.

The powertrain control module (PCM) estimates the amount of air supplied to the engine while the throttle valve is fully closed, and if the estimated amount is more than the upper limit, it detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	22 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Elapsed time after starting the engine	15 seconds	-
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	19°F (-7°C)	-
MAP value	-	74 kPa (22.0 in.Hg, 560 mmHg)

Battery voltage	10.5 V	-
Fuel trim	0.73	1.47
Fuel feedback	Closed loop	
No active DTCs	P0107, P0108, P0112, P0113, P0117, P0118, P0122, P0123, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0351, P0352, P0353, P0354, P0355, P0356, P0401, P0403, P0404, P0496, P0497, P0511, P0627, P1109, P1128, P1129, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2227, P2228, P2229, P2413, P2646, P2647, P2648, P2649	
Other	At idle	

Malfunction Threshold

Either of these conditions is met.

- The estimated volume of intake air is 310 l/min (327.6 US qt/min, 272.8 lmp qt/min) or more when the MAP value is 35 kPa (10.3 in.Hg, 260 mmHg).
- The estimated volume of intake air is 302 l/min (319.2 US qt/min, 265.8 lmp qt/min) or more when the MAP value is 62 kPa (18.2 in.Hg, 460 mmHg).

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Let the engine idle for at least 22 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

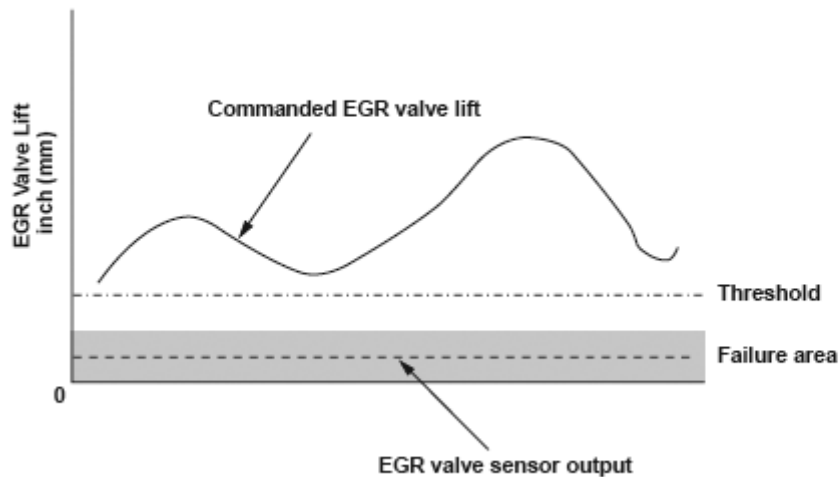
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2413 (12): ADVANCED DIAGNOSTICS

DTC P2413: EXHAUST GAS RECIRCULATION (EGR) SYSTEM MALFUNCTION

Malfunction Determination

P2413-0370

Fig. 328: Exhaust Gas Recirculation Malfunction Determination Graph**General Description**

The exhaust gas recirculation (EGR) valve, which is controlled by the powertrain control module (PCM), is opened and the exhaust gas flows from the exhaust manifold through the EGR valve and the intake manifold and the EGR passage. The exhaust gas is circulated into the air/fuel mixture and the mixture is drawn into the combustion chamber to lower the combustion temperatures, thus reducing oxides of nitrogen (NOx) emissions.

A sensor (lift sensor) is built into the EGR valve and detects the amount of valve lift. The command value for the target valve lift is stored in the PCM so that exhaust gas recirculation can be optimized according to driving conditions.

Comparing this command value with the lift sensor output signal value, the PCM controls the EGR valve to make the amount of actual valve lift equal to the command value.

If the valve sensor output is insufficient for the commanded valve lift, a malfunction is detected.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Once per driving cycle
Sequence	None
Duration	5 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine speed	-	4,400 rpm
Battery voltage	10.5 V	-
Commanded EGR valve lift	0.040 in. (1 mm)	-
No active DTCs	P0101, P0101, P0102, P0103, P0107, P0108, P0112, P0113, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0401, P0406, P1128, P1129, P1172, P1174, P2195, P2197, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255	

Malfunction Threshold

If the actual valve lift is 0.006 in. (0.15 mm) or less for at least 5 seconds, the valve is considered stuck closed.

Confirmation Procedure with the HDS

Do the EGR TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 15 - 75 mph (24 - 120 km/h) for at least 5 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

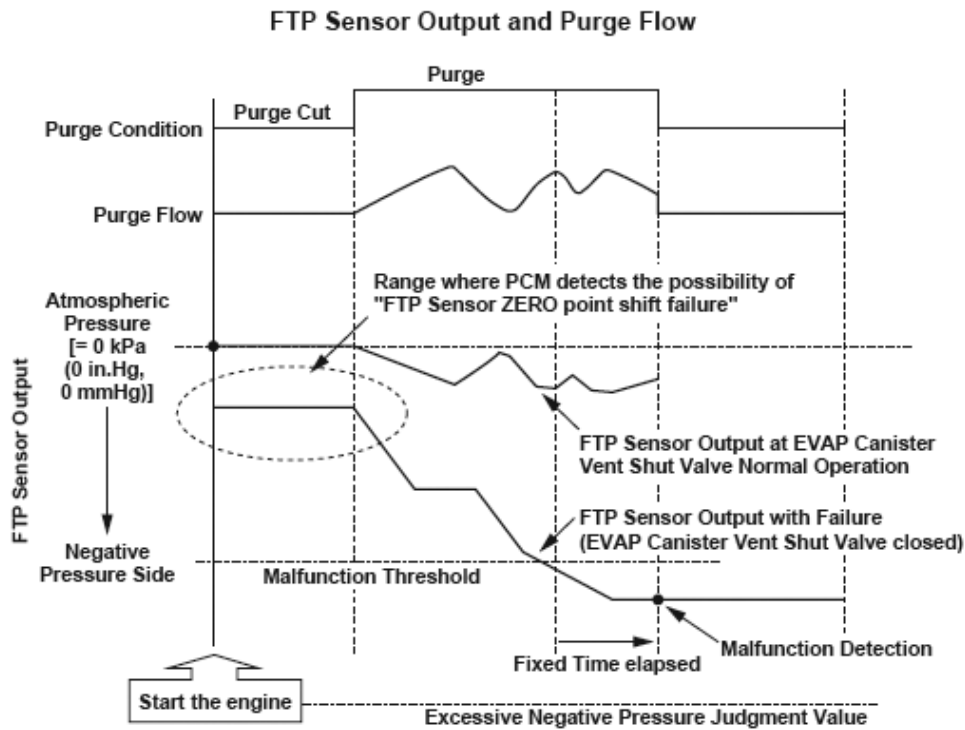
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2422 (117): ADVANCED DIAGNOSTICS

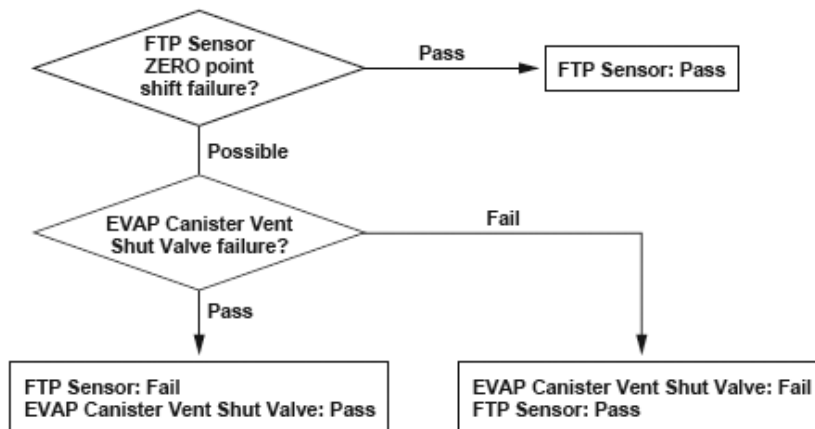
DTC P2422: EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE CLOSE MALFUNCTION



P2422-0373

Fig. 329: Evaporative Emission (EVAP) Canister Vent Shut Valve Purge Flow

Malfunction Judgment Flowchart of FTP Sensor and EVAP Canister Vent Shut Valve



P1454-0371

Fig. 330: Malfunction Judgment Flow Chart FTP Sensor And EVAP Canister Vent Shut Valve

General Description

The fuel tank pressure (FTP) sensor output indicates about atmospheric pressure 0 kPa (0 in.Hg, 0 mmHg) before purge starts since the evaporative emission (EVAP) canister vent shut valve is normally open (open to the atmosphere). The sensor indicates a negative pressure value (vacuum) during purging.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

When the FTP sensor indicates vacuum after starting the engine, there is the possibility of an FTP sensor zero point shift failure or an EVAP canister vent shut valve stuck closed failure. So the powertrain control module (PCM) monitors the FTP sensor output after purge starts. The PCM detects a malfunction of the EVAP canister vent shut valve if the output indicates excessive vacuum.

However, if the fuel tank internal pressure is below the specified value (excessive vacuum is detected) when starting the engine, the malfunction detection should be done as follows because it is difficult to distinguish the FTP sensor range problem (P1454) from the EVAP canister vent shut valve stuck closed (P2422).

1. If neither Temporary DTC (P1454 nor P2422) is stored, both DTCs are stored.
2. If both Temporary DTCs (P1454 and P2422) are stored and excessive vacuum is detected, both DTCs are stored.
3. If either Temporary DTC (P1454 or P2422) is stored and excessive vacuum is detected, the PCM stores the DTC of the Temporary DTC that was stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	P0452, P0453 are judged as OK
Duration	1.04 ⁽¹⁾ , 8 ⁽²⁾ seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)
(1) Elapsed time after the FTP sensor output exceeds the malfunction threshold.	
(2) Excessive negative pressure is detected.	

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine**	10 seconds	-
Engine coolant temperature ⁽¹⁾	140°F (60°C)	-
Battery voltage	10.5 V	-
Fuel feedback	Closed loop	
No active DTCs	P0101, P0102, P0103, P0107, P0108, P0117, P0118, P0134, P0135, P0154, P0155, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0339, P0443, P0451, P0452, P0496, P0497, P0498, P0499, P1128, P1129, P1172, P1174, P145C, P2195, P2197, P2227, P2228, P2229, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255	
Others	The EVAP canister vent shut valve has not been closing	
	Stopping the purge control	

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

(1) Condition to start the purge control.

Malfunction Threshold

The output from the fuel tank pressure sensor is -4 kPa (-1.0 in.Hg, -25 mmHg)*, -2 kPa (-0.4 in.Hg, -10 mmHg)** or less for at least 1.04*, 8** seconds.

*: Elapsed time after the FTP sensor output exceeds the malfunction threshold.

**: Excessive negative pressure is detected.

Confirmation Procedure with the HDS

Do the EVAP CVS ON in the INSPECTION MENU with the HDS.

Driving Pattern

Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

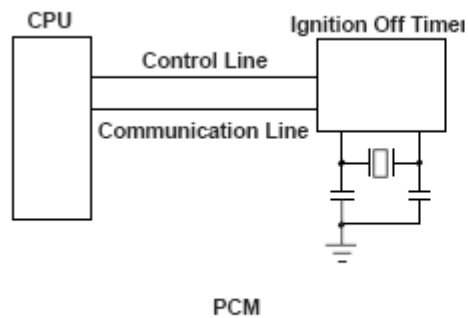
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2610 (132): ADVANCED DIAGNOSTICS

DTC P2610: POWERTRAIN CONTROL MODULE (PCM) INTERNAL POWER OFF TIMER MALFUNCTION



P2810-0871

Fig. 331: Powertrain Control Module (PCM) - Communication Diagram**General Description**

The powertrain control module (PCM) has a built-in ignition off timer that measures the time the ignition switch is off. This measurement is used for evaporative emission (EVAP) leak detection and temperature assumption of the catalytic converter. The CPU in the PCM accesses the ignition off timer when reading the measured time. When the access process fails, a malfunction is detected and a DTC is stored. When an abnormality is found in the read data, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	10 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	
Ignition switch	ON ⁽¹⁾
(1) Ignition switch on when a battery is disconnected and connected again is excluded.	

Malfunction Threshold

The access process to the ignition off timer fails, or a malfunction is found in the read data for at least 10 seconds.

Diagnosis Details**Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

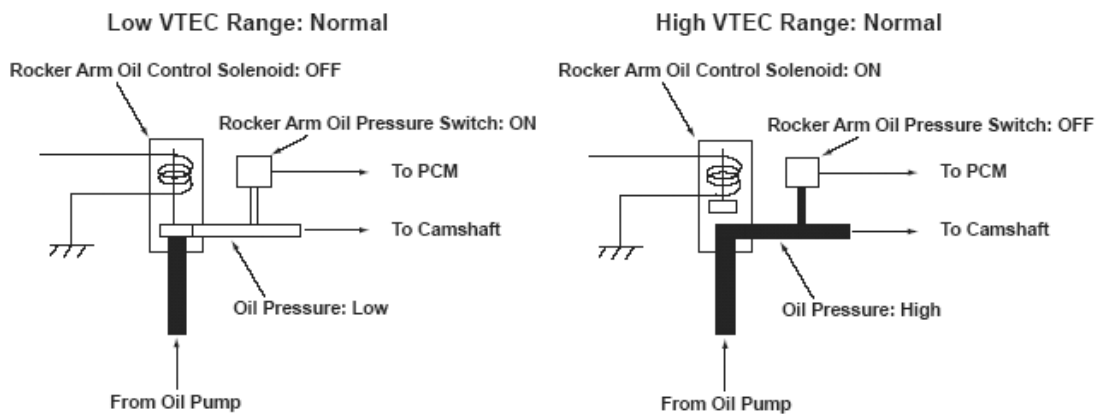
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2646 (22): ADVANCED DIAGNOSTICS

DTC P2646: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT LOW VOLTAGE



P2646-0771

Fig. 332: Low And High VTEC Oil Pressure Switch - Flow Diagram

ROCKER ARM OIL PRESSURE SWITCH CHART

Logic Decision	Rocker Arm Oil Pressure Switch	
	'ON'	'OFF'
Rocker Arm Oil Control Solenoid Command 'ON'	Failure	Normal
Rocker Arm Oil Control Solenoid Command 'OFF'	Normal	Failure

General Description

The VTEC system activates the rocker arm oil control solenoid by command from the powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between Low and High. The PCM monitors oil pressure in the hydraulic circuit of the VTEC mechanism using the rocker arm oil pressure switch downstream of the rocker arm oil control solenoid. If there is a difference between the oil pressure condition in the hydraulic circuit that is determined by the PCM command and the oil pressure condition that is determined by the status of the rocker arm oil pressure switch, the system is considered faulty, and a DTC is stored.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	7 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Engine coolant temperature	50°F (10°C)	-
Engine speed (High lift cam operation)	4,300 rpm	-
Vehicle speed	7 mph (10 km/h)	-
Battery voltage	10.5 V	-
Gear position	Other than P or N position	
No active DTCs	P2648, P2649	

Malfunction Threshold

When the rocker arm oil control solenoid is ON, the rocker arm oil pressure switch remains ON.

Confirmation Procedure with the HDS

Do the VTEC TEST in the INSPECTION MENU with the HDS.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle in a lower gear at 4,300 rpm or more for at least 7 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

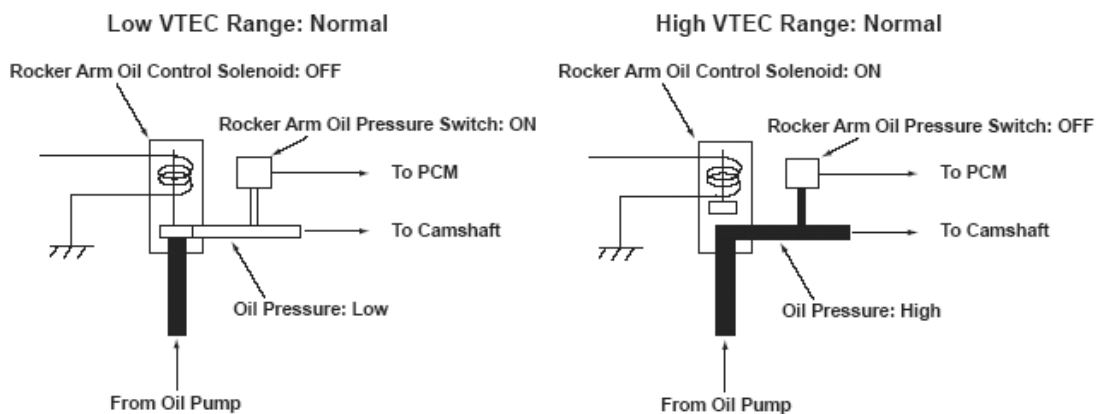
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2647 (22): ADVANCED DIAGNOSTICS

DTC P2647: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE



P2646-0771

Fig. 333: Low And High VTEC Oil Pressure Switch - Flow Diagram

ROCKER ARM OIL PRESSURE SWITCH CHART

Logic Decision	Rocker Arm Oil Pressure Switch	
	'ON'	'OFF'
Rocker Arm Oil Control Solenoid Command 'ON'	Failure	Normal
Rocker Arm Oil Control Solenoid Command 'OFF'	Normal	Failure

General Description

The VTEC system activates the rocker arm oil control solenoid by command from the powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between Low and High. The PCM monitors oil pressure in the hydraulic circuit of the VTEC mechanism using the rocker arm oil pressure switch downstream of the rocker arm oil control solenoid. If there is a difference between the oil pressure condition in the hydraulic circuit that is determined by the PCM command and the oil pressure condition that is determined by the status of the rocker arm oil pressure switch, the system is considered faulty, and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	One per driving cycle

2008 Acura MDX
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Sequence	None
Duration	7 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.5 V	-
No active DTCs	P2648, P2649	
Other	At idle	

Malfunction Threshold

When the rocker arm oil control solenoid is OFF, the rocker arm oil pressure switch remains OFF.

Confirmation Procedure with the HDS

Do the VTEC TEST in the INSPECTION MENU with the HDS.

Driving Pattern

Start the engine, and let it idle for at least 7 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2648 (21): ADVANCED DIAGNOSTICS

DTC P2648: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT LOW VOLTAGE



P2648-0700

Fig. 334: Rocker Arm Oil Control Solenoid (Low Voltage) - Circuit Diagram**General Description**

The VTEC system activates the rocker arm oil control solenoid by command from the powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between low and high. If the return signal is OFF (low) when the PCM outputs the ON (high) signal to the rocker arm oil control solenoid 1, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status**MONITOR DESCRIPTION CHART**

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions**ENABLE CONDITIONS CHART**

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
No active DTCs	P2649	

Malfunction Threshold

The return signal is OFF (low) for at least 2 seconds when the PCM outputs the ON (high) signal to the rocker arm oil control solenoid.

Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle in a lower gear at 4,400 rpm or more, for at least 7 seconds.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2649 (21): ADVANCED DIAGNOSTICS

DTC P2649: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT HIGH VOLTAGE



P2648-0700

Fig. 335: Rocker Arm Oil Control Solenoid (High Voltage) - Circuit Diagram

General Description

The VTEC system activates the rocker arm oil control solenoid by command from the powertrain control module (PCM), and it charges/discharges the hydraulic circuit of the VTEC mechanism that switches valve timing between low and high. If the return signal is ON (high) when the PCM outputs the OFF (low) signal to the rocker arm oil control solenoid, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
State of the engine	Running	
No active DTCs	P2648	

Malfunction Threshold

The return signal is ON (high) for at least 2 seconds when the PCM outputs the OFF (low) signal to the rocker arm oil control solenoid.

Driving Pattern

Start the engine, and let it idle for at least 7 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

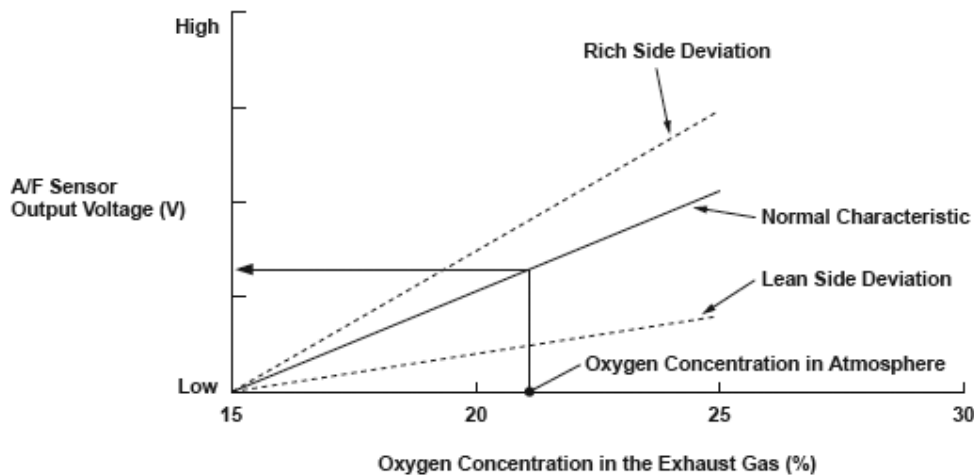
The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2A00 (157): ADVANCED DIAGNOSTICS

DTC P2A00: REAR AIR/FUEL RATIO (A/F) SENSOR (BANK 1, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



P1164-9871

Fig. 336: Rear Air/Fuel Ratio (A/F) Sensor Voltage Graph

General Description

The rear air/fuel ratio (A/F) sensor (bank 1, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the rear A/F sensor output voltage and uses the fuel feedback control to improve exhaust emissions. The PCM monitors the rear A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

* Output to the scan tool exhibits a relationship between the rear A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage as the stoichiometric ratio is 0.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-

2008 Acura MDX

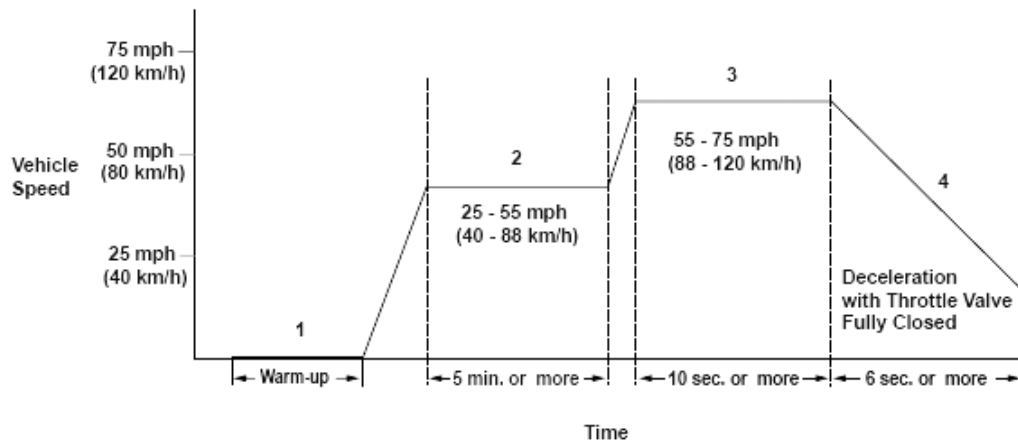
2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Engine speed	-	2,400 rpm
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs	P0112, P0113, P0117, P0118, P0122, P0123, P0133, P0134, P0135, P0171, P0172, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0443, P0496, P0497, P0627, P1172, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2195, P2227, P2228, P2229, P2237, P2238, P2243, P2245, P2251, P2252	

Malfunction Threshold

The rear A/F sensor (bank 1, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

Driving Pattern



P2A00-0550

Fig. 337: Identifying Driving Pattern

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Then, drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If

the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

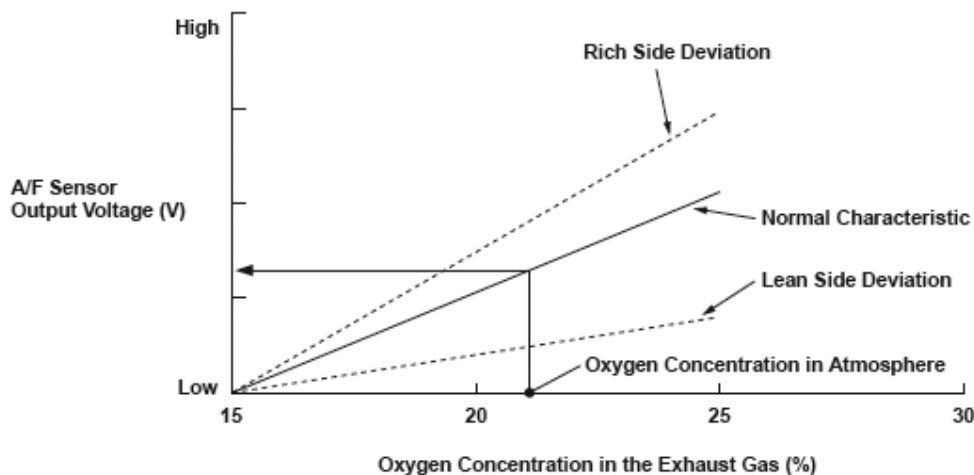
Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC P2A03 (158): ADVANCED DIAGNOSTICS

DTC P2A03: FRONT AIR/FUEL RATIO (A/F) SENSOR (BANK 2, SENSOR 1) CIRCUIT RANGE/PERFORMANCE PROBLEM



P1164-9871

Fig. 338: Front Air/Fuel Ratio (A/F) Sensor Voltage Graph

General Description

The front air/fuel ratio (A/F) sensor (bank 2, sensor 1) has a linear signal output in relation to the oxygen concentration. The powertrain control module (PCM) computes the air/fuel ratio from the front A/F sensor output voltage and uses the fuel feedback control to improve exhaust emissions. The PCM monitors the front A/F sensor output voltage during deceleration with the throttle fully closed, and if the output voltage deviates greatly from normal oxygen concentration levels, it detects a malfunction and stores a DTC.

* Output to the scan tool exhibits a relationship between the front A/F sensor output and oxygen concentration, which is opposite to the characteristic shown in the graph. That is, a deviation toward the rich side increases the output voltage and one toward the lean side decreases the output voltage as the stoichiometric ratio is 0.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

MONITOR DESCRIPTION CHART

Execution	Once per driving cycle
Sequence	None
Duration	5.3 seconds or more
DTC Type	Two drive cycles, MIL ON
OBD Status	PASSED/FAILED/EXECUTING/OUT OF (TEST) CONDITION

Enable Conditions

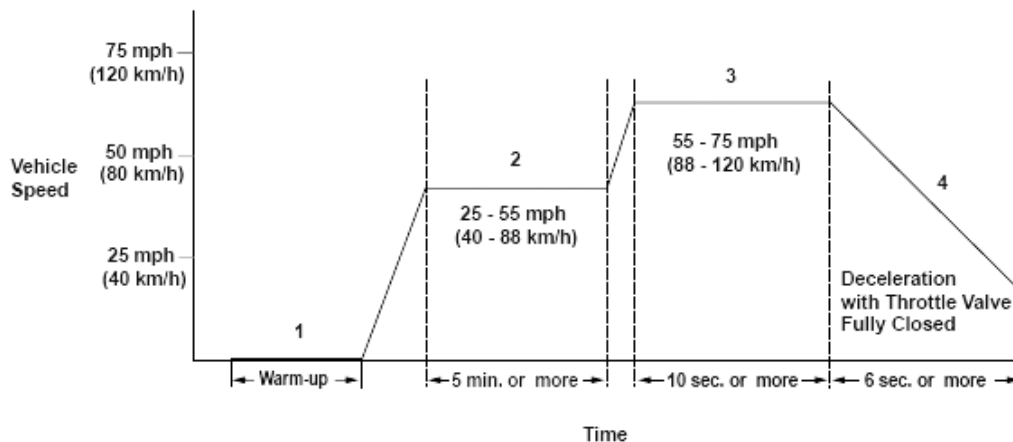
ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Elapsed time after starting the engine	60 seconds	-
Engine coolant temperature	156°F (69°C)	-
Intake air temperature	-13°F (-25°C)	-
Engine speed	-	2,400 rpm
Vehicle speed	30 mph (48 km/h)	-
Fuel feedback	During deceleration	
No active DTCs	P0112, P0113, P0117, P0118, P0122, P0123, P0153, P0154, P0155, P0174, P0175, P0222, P0223, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0443, P0496, P0497, P0627, P1174, P145C, P2101, P2118, P2122, P2123, P2127, P2128, P2135, P2138, P2176, P2197, P2227, P2228, P2229, P2240, P2241, P2247, P2249, P2254, P2255	

Malfunction Threshold

The front A/F sensor (bank 2, sensor 1) output voltage is 2.55 V or less, or 4.50 V or more.

Driving Pattern



P2A00-0550

Fig. 339: Identifying Driving Pattern

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Drive the vehicle at a speed between 25 - 55 mph (40 - 88 km/h) for at least 5 minutes.
3. Then, drive immediately at a steady speed between 55 - 75 mph (88 - 120 km/h) for at least 10 seconds.
4. Decelerate with the throttle valve fully closed for at least 6 seconds.
 - If the EVAP monitor runs instead of the HO2S monitor, turn the engine off, then restart it, and the HO2S monitor will restart.
 - Drive the vehicle in this manner only if the traffic regulations and ambient conditions allow.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected during the first drive cycle, a Temporary DTC is stored in the PCM memory. If the malfunction recurs during the next (second) drive cycle, the MIL comes on and the DTC and the freeze frame data are stored.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

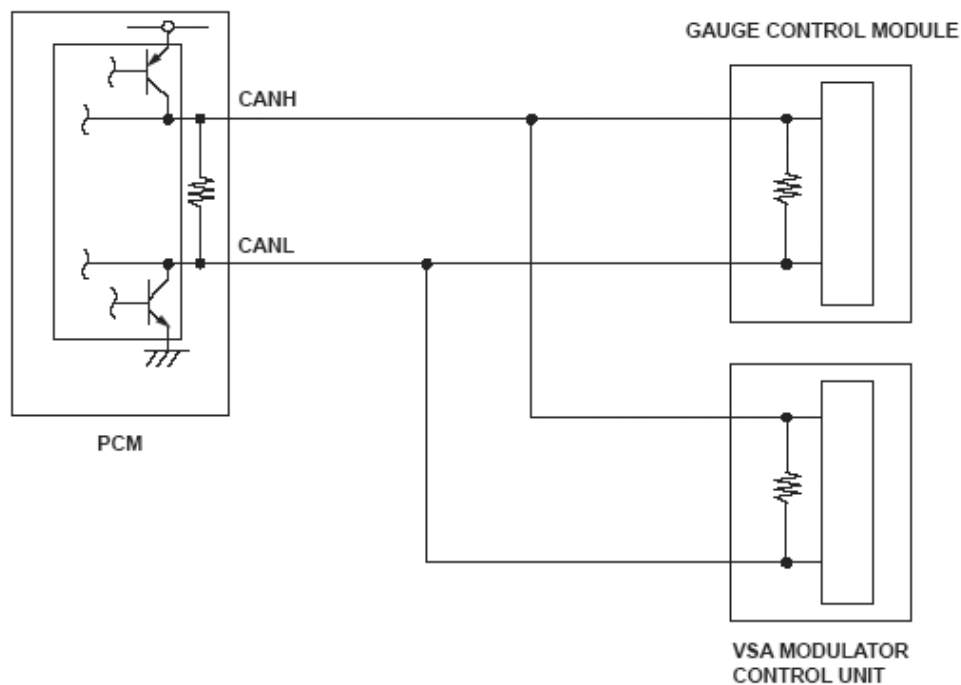
The MIL, the DTC, the Temporary DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0028 (107): ADVANCED DIAGNOSTICS

DTC U0028: F-CAN COMMUNICATION CIRCUIT ERROR (F-CAN BUS OFF) (EXCEPT PGM-FI SYSTEM)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



U0028-0700

Fig. 340: F-CAN Communication Error (F-CAN Bus OFF) - Circuit Diagram

General Description (Except PGM-FI System)

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals via the CAN lines for a set time or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Elapsed time after ignition switch on	3 seconds	-

Malfunction Threshold (Except PGM-FI System)

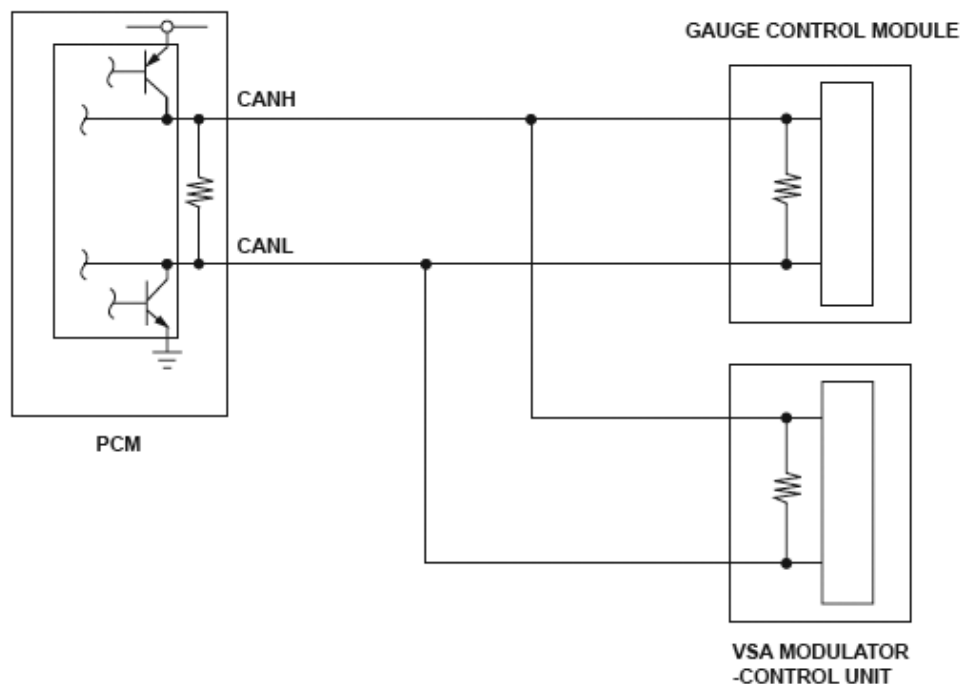
The PCM does not receive any signals for at least 1 second.

Diagnosis Details (Except PGM-FI System)**Conditions for illuminating the indicator (Except PGM-FI System)**

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0028 (126) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS**DTC U0028: F-CAN MALFUNCTION (BUS-OFF) (PGM-FI SYSTEM)**

U0073-0502

Fig. 341: F-CAN Malfunction (BUS-OFF) - Circuit Diagram**General Description (PGM-FI System)**

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

When the powertrain control module (PCM) does not receive the signals via the CAN lines for a set time or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-
Elapsed time after ignition switch ON	3 seconds	-

Malfunction Threshold (PGM-FI System)

No signals via the CAN lines are received for at least 1 second.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the MIL (PGM-FI System)

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

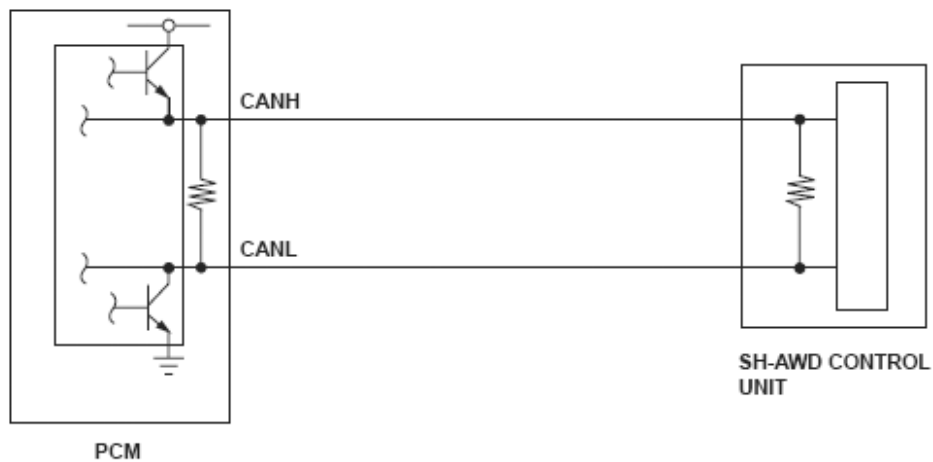
Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0114 (126): ADVANCED DIAGNOSTICS

DTC U0114: F-CAN MALFUNCTION (POWERTRAIN CONTROL MODULE (PCM)-SH-AWD CONTROL UNIT)



U0114-0503

Fig. 342: F-CAN Malfunction (Powertrain Control Module (PCM)-SH-AWD Control Unit) - Circuit Diagram

General Description

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals via the CAN lines for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

Malfunction Threshold

No signals via the CAN lines are received for at least 1 second.

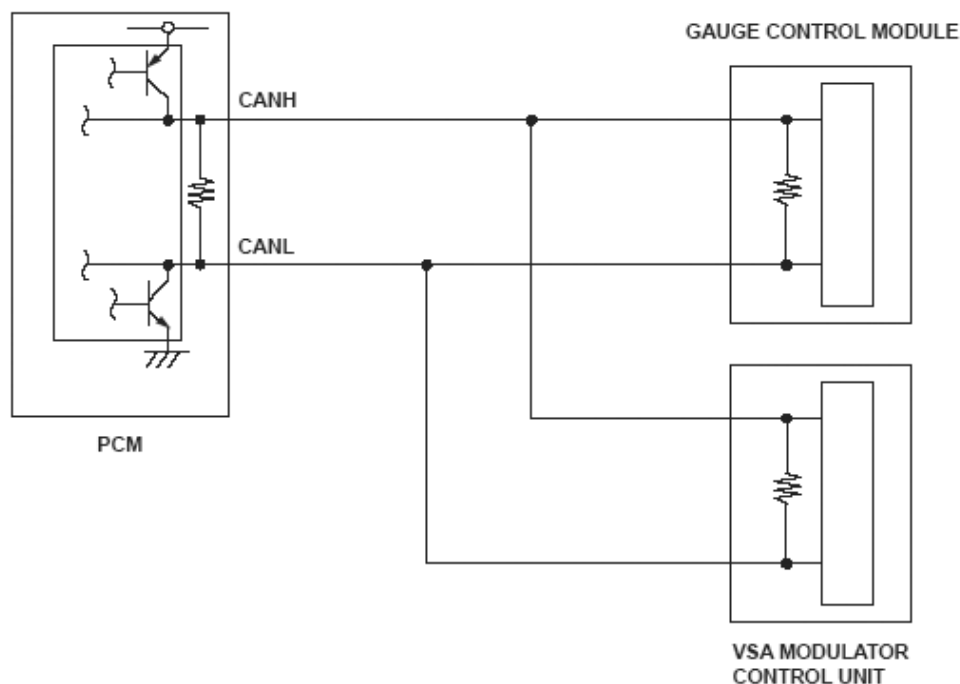
Diagnosis Details

Conditions for illuminating the indicator

When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0122 (107): ADVANCED DIAGNOSTICS**DTC U0122: LOST COMMUNICATION WITH VSA MODULATOR-CONTROL UNIT (EXCEPT PGM-FI SYSTEM)**

U0028-0700

Fig. 343: Lost Communication With VSA Modulator-Control Unit - Circuit Diagram

General Description (Except PGM-FI System)

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals via the CAN lines for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

Malfunction Threshold (Except PGM-FI System)

No signals from the VSA modulator-control unit via the CAN lines are received for at least 1 second.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

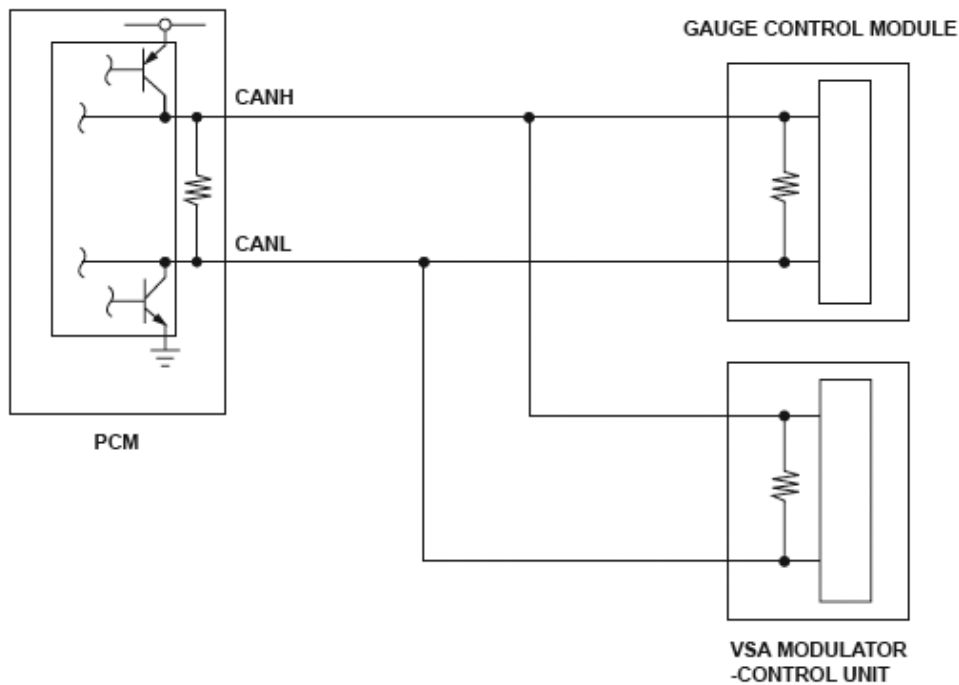
The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0122 (126) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC U0122: F-CAN MALFUNCTION (POWERTRAIN CONTROL MODULE (PCM)-VSA MODULATOR-CONTROL UNIT) (PGM-FI SYSTEM)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



U0073-0502

Fig. 344: F-CAN Malfunction (Powertrain Control Module (PCM)-VSA Modulator-Control Unit) - Circuit Diagram

General Description (PGM-FI System)

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals via the CAN lines for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

Malfunction Threshold (PGM-FI System)

No signals via the CAN lines are received for at least 1 second.

Diagnosis Details (PGM-FI System)

Conditions for illuminating the indicator (PGM-FI System)

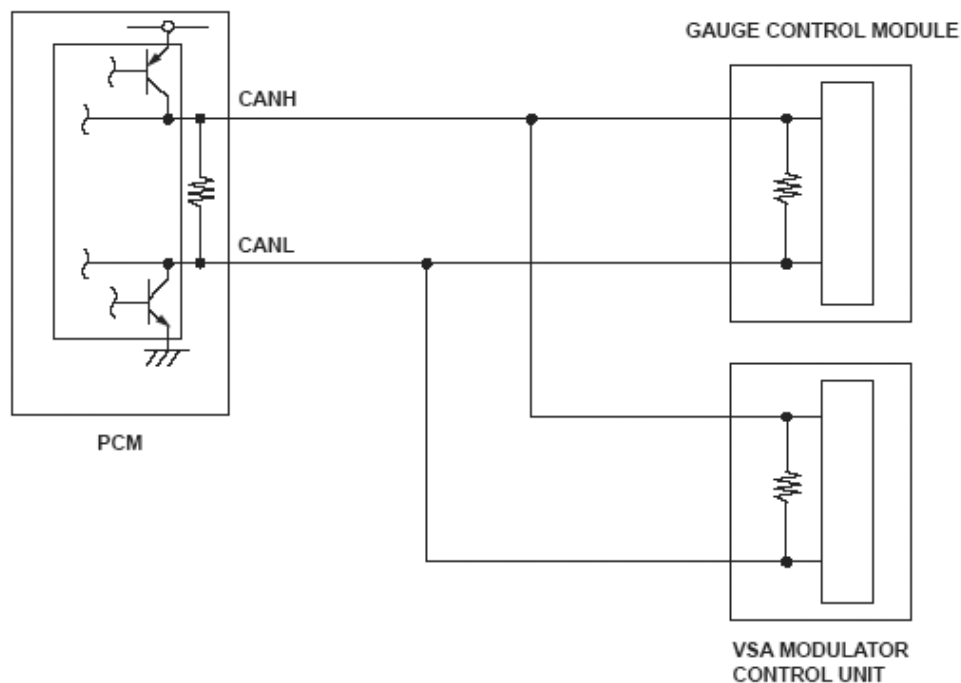
When a malfunction is detected, the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (PGM-FI System)

The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0155 (107): ADVANCED DIAGNOSTICS

DTC U0155: LOST COMMUNICATION WITH GAUGE CONTROL MODULE (EXCEPT PGM-FI SYSTEM)



U0028-0700

Fig. 345: Lost Communication With Gauge Control Module - Circuit Diagram

General Description (Except PGM-FI System)

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules

simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals from the gauge control module via the CAN lines for a set time or more, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (Except PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL OFF, D indicator blinks
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Enable Conditions (Except PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

Malfunction Threshold (Except PGM-FI System)

No signals from the gauge control module via the CAN lines are received for at least 1 second.

Diagnosis Details (Except PGM-FI System)

Conditions for illuminating the indicator (Except PGM-FI System)

When a malfunction is detected, the D indicator blinks, and the DTC and the freeze frame data are stored in the PCM memory. The MIL does not come on.

Conditions for clearing the DTC (Except PGM-FI System)

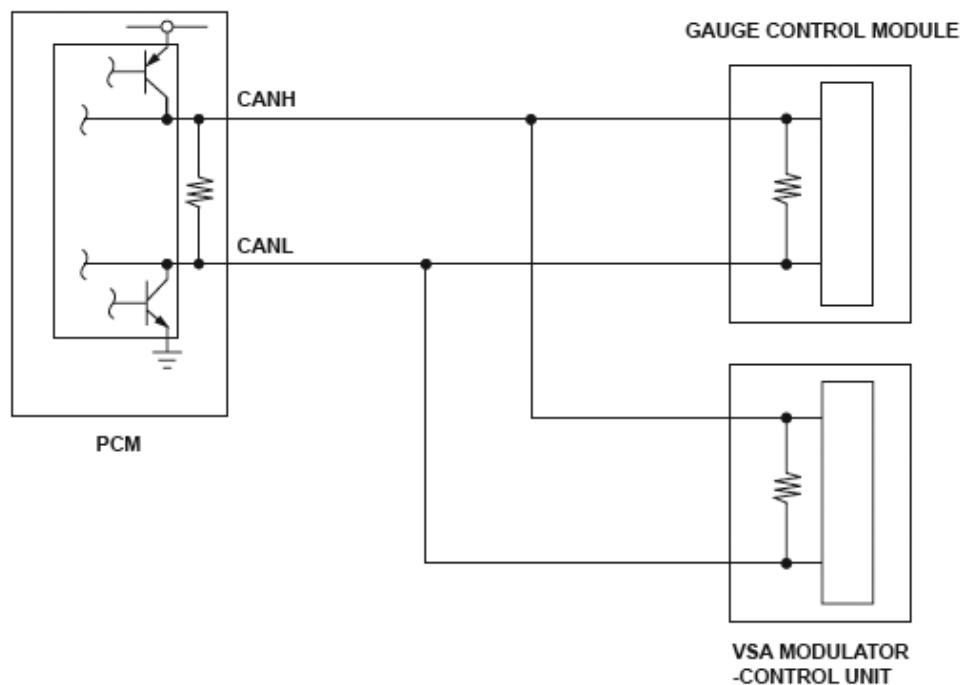
The DTC and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0155 (126) (PGM-FI SYSTEM): ADVANCED DIAGNOSTICS

DTC U0155: F-CAN MALFUNCTION (POWERTRAIN CONTROL MODULE (PCM)-GAUGE CONTROL MODULE) (PGM-FI SYSTEM)

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX



U0073-0502

Fig. 346: F-CAN Malfunction (Powertrain Control Module (PCM)-Gauge Control Module) - Circuit Diagram

General Description (PGM-FI System)

The controller area network (CAN) transmits/receives pulsing signals to/from the control modules simultaneously by using two signal lines (CANH and CANL).

When the powertrain control module (PCM) does not receive the signals from the gauge control module via the CAN lines for more than a set time, the PCM detects a malfunction and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status (PGM-FI System)

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	1 second or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions (PGM-FI System)

ENABLE CONDITIONS CHART

Condition	Minimum	Maximum
Battery voltage	10.0 V	-

Malfunction Threshold (PGM-FI System)

No signals from the gauge assembly via the CAN lines are received for at least 1 second.

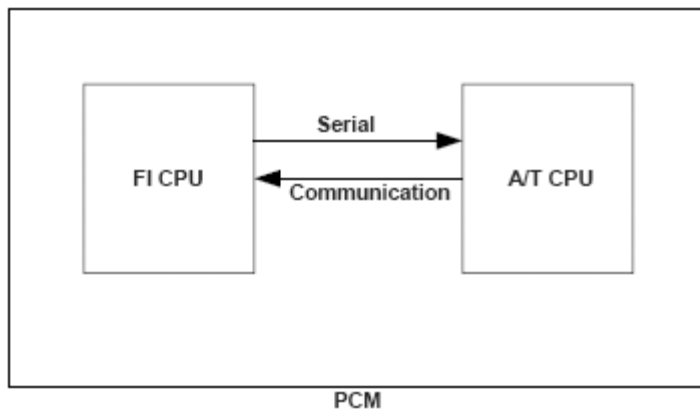
Diagnosis Details (PGM-FI System)**Conditions for illuminating the MIL (PGM-FI System)**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL (PGM-FI System)

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

DTC U0300 (131): ADVANCED DIAGNOSTICS**DTC U0300: PGM-FI SYSTEM AND A/T SYSTEM PROGRAM VERSION MISMATCH**

U0300-0570

Fig. 347: PGM-FI System And A/T System Program Version Mismatch - Communication Diagram

General Description

A serial communication data version check of the communication data set is performed during the serial communication that takes place between the FI CPU and the A/T CPU.

When the rewriting of the FI CPU or the A/T CPU is done at the powertrain control module (PCM), and when different data of the serial communication data version is rewritten, a malfunction is detected and a DTC is stored.

2008 Acura MDX

2008 ENGINE PERFORMANCE Advanced Diagnostics - MDX

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

MONITOR DESCRIPTION CHART

Execution	Continuous
Sequence	None
Duration	0.5 seconds or more
DTC Type	One drive cycle, MIL ON
OBD Status	N/A

Enable Conditions

ENABLE CONDITIONS CHART

Condition	
Ignition switch	ON

Malfunction Threshold

The rewriting of the FI CPU or the A/T CPU is done at the PCM, and different data of the serial communication data version is rewritten.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.

2007-09 RESTRAINTS

SRS (Supplemental Restraint System) - MDX

COMPONENT LOCATION INDEX

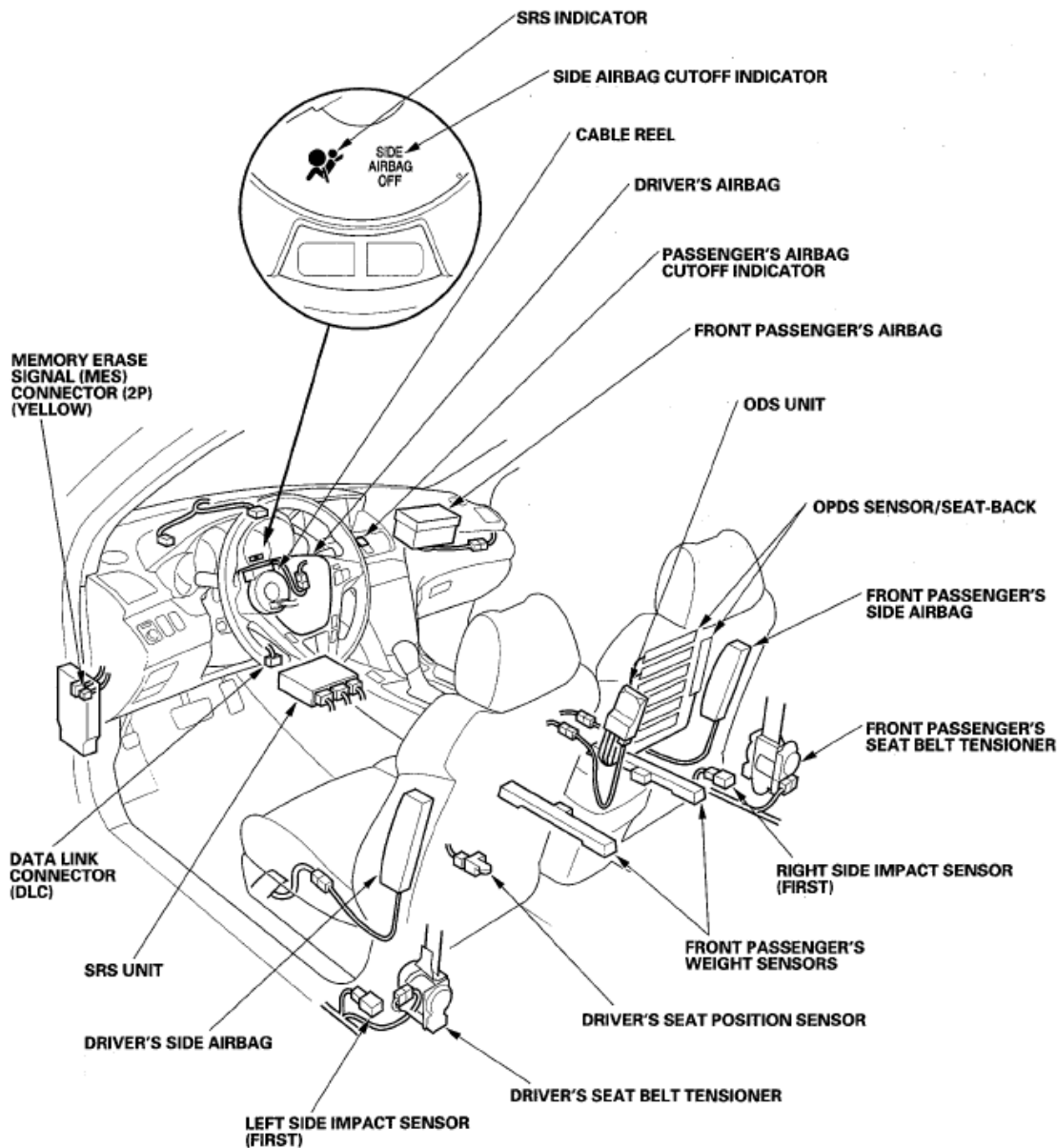


Fig. 1: SRS Component Location Index (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

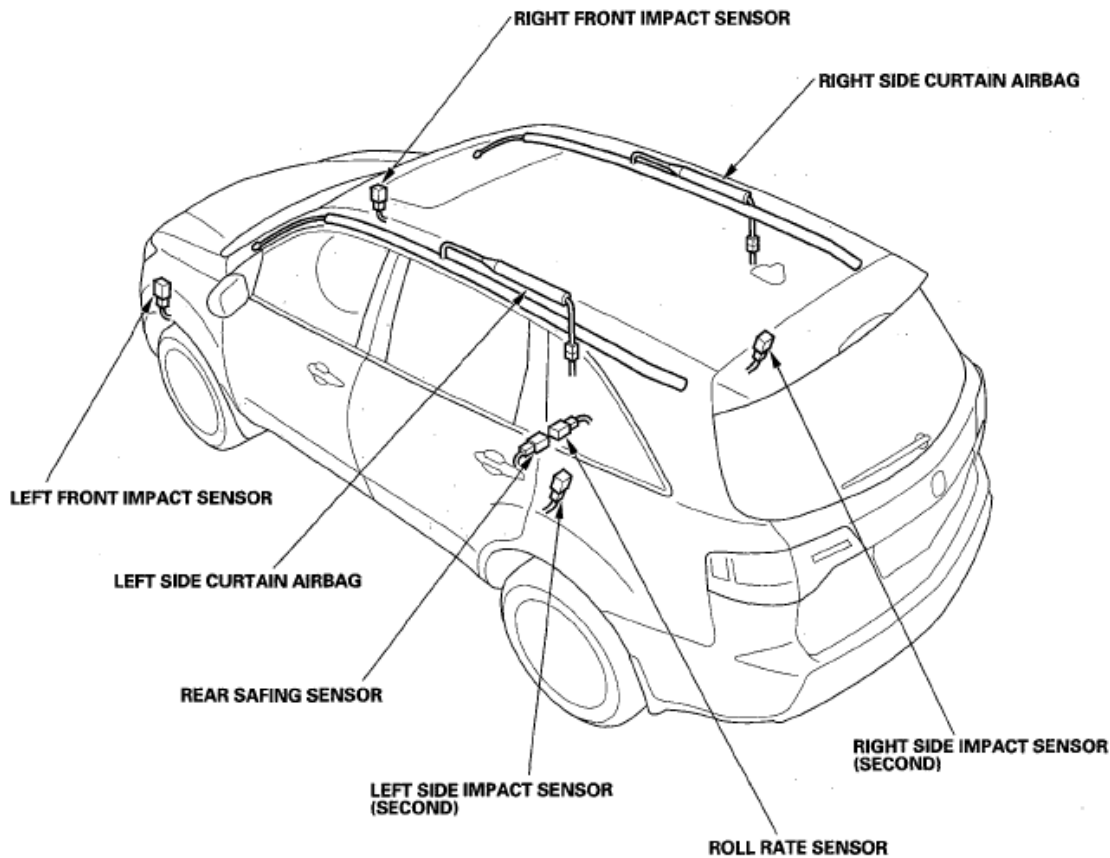


Fig. 2: SRS Component Location Index (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PRECAUTIONS AND PROCEDURES

GENERAL PRECAUTIONS

Please read the following precautions carefully before servicing the airbag system. Observe the instructions described in this manual, or the airbags could accidentally deploy and cause damage or injuries.

- Except when doing electrical inspections, always turn the ignition switch to LOCK (0), do the battery terminal disconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION** , then wait for 3 minutes before starting work.

NOTE: **The SRS memory is not erased even if the ignition switch is turned to LOCK (0) or the battery cables are disconnected from the battery.**

- Use replacement parts which are manufactured to the same standards and quality as the original parts. Do not install used SRS parts. Use only new parts when making SRS repairs.
- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.

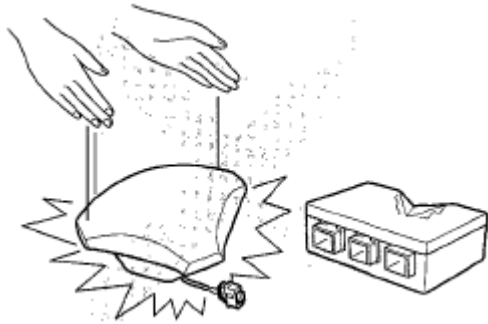


Fig. 3: Precautions For SRS Parts Handling
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Before removing the SRS unit connectors, always disconnect the appropriate SRS parts connectors.
- Use only a digital multimeter to check the system. If it is not a Honda multimeter, make sure its output is 10 mA (0.01 A) or less when switched to the lowest value in the ohmmeter range. A tester with a higher output could cause accidental deployment and possible injury.
- Do not put objects on the front passenger's airbag.
- The original audio system has a coded theft protection circuit. Make sure you have the anti-theft codes for the audio system and the navigation system (if equipped).

STEERING-RELATED PRECAUTIONS

Cable Reel Alignment

- Misalignment of the cable reel could cause an open in the wiring, making the SRS system, remote steering wheel controls, and the horn inoperative. Center the cable reel whenever the following is performed (see step 6).
 - Installation of the steering wheel
 - Installation of the cable reel
 - Installation of the steering column
 - Other steering-related adjustment or installation
- Do not disassemble the cable reel.
- Do not apply grease to the cable reel.
- If the cable reel shows any signs of damage, replace it with a new one. For example, if it does not rotate smoothly, replace the cable reel.

AIRBAG HANDLING AND STORAGE

Do not disassemble an airbag. It has no serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.

For temporary storage of an airbag during service, observe the following precautions.

- Store the removed airbag with the pad surface up. Never put anything on the airbag.

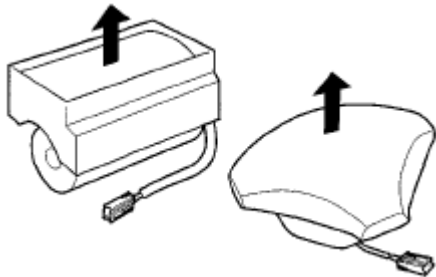


Fig. 4: Precautions For Store Removed Airbag

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- To prevent damage to the airbag, keep it away from any oil, grease, detergent, or water.

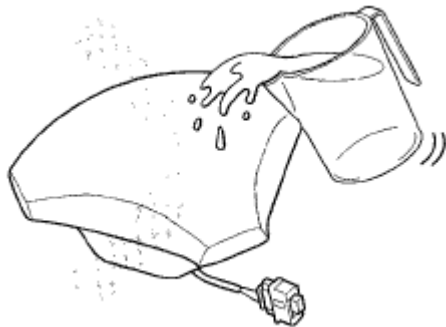


Fig. 5: Precautions For Airbag Damage - Keep It Away From Any Oil, Grease, Detergent, Or Water

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Store the removed airbag on a secure, flat surface away from any high heat source (exceeding 200°F/ 93°C).

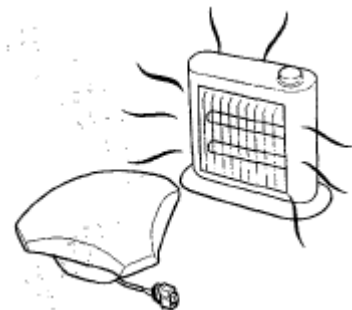


Fig. 6: Precautions For Store Removed Airbag On Secure, Flat Surface Away From Any High Heat Source (Exceeding 200°F/ 93°C)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Never do electrical tests on the airbags, such as measuring resistance.
- Do not position yourself in front of the airbag during removal, inspection, or replacement.

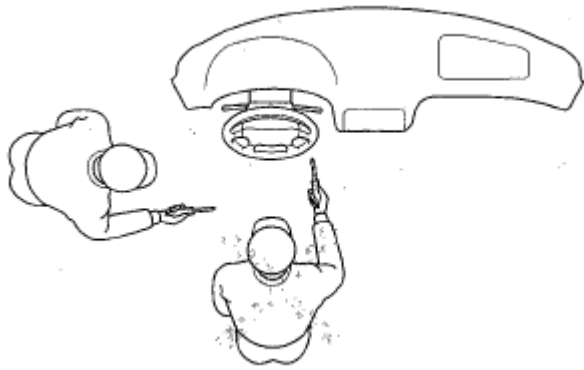


Fig. 7: Precautions For Airbag During Removal, Inspection, Or Replacement
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- For proper disposal of a damaged airbag, refer to airbag disposal (see **AIRBAG AND TENSIONER DISPOSAL**).
- The side curtain airbag inflator assembly is a long, jointed part containing an inflator (A), a flexible bag (B), and brackets (C).

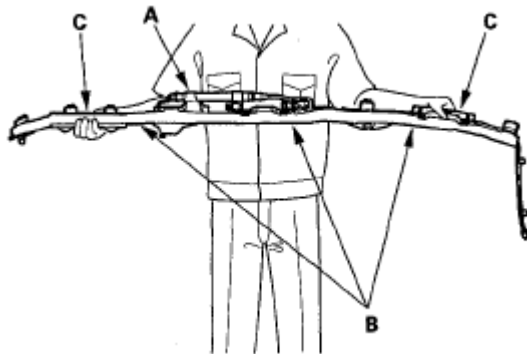


Fig. 8: Identifying Side Curtain Airbag Inflator Assembly Is Long, Jointed Part Containing Inflator, Flexible Bag And Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- When removing or installing the side curtain airbag inflator assembly, never handle the flexible bag (B).

SRS UNIT, FRONT AND SIDE IMPACT SENSORS, DRIVER'S SEAT POSITION SENSOR, AND FRONT PASSENGER'S WEIGHT SENSORS

- Turn the ignition switch OFF, disconnect the negative cable from the battery, and wait at least 3 minutes before beginning installation or replacement of the SRS unit or disconnecting the connectors from the SRS unit.
- Be careful not to bump or impact the SRS unit, front impact sensors, or side impact sensors when the

ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned OFF.

- During installation or replacement, be careful not to bump (by impact wrench, hammer, etc.) the area around the SRS unit, front impact sensors, or side impact sensors. The airbags could accidentally deploy and cause damage or injury.

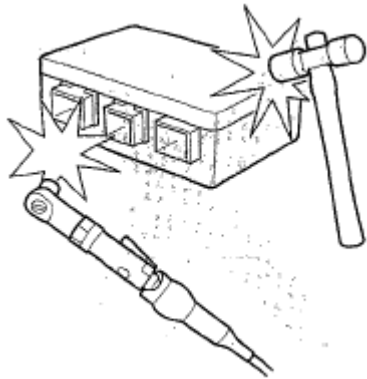


Fig. 9: Precautions For During Installation Or Replacement
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- After a collision where a front airbag, side curtain airbags, or a seat belt tensioner deployed, go to **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**. After a collision where the airbags or the side airbags did not deploy, inspect for any damage or any deformation on the SRS unit, front impact sensors, rear safing sensor, and side impact sensors. Replace all damaged parts.

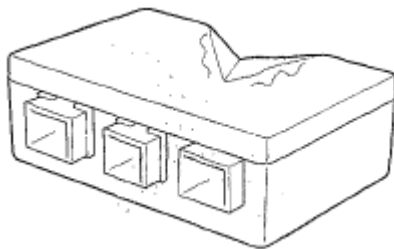


Fig. 10: Identifying For Any Damage Or Any Deformation On SRS Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Do not disassemble the SRS unit, front impact sensors, side impact sensors, driver's seat position sensor, and front passenger's weight sensors.
- Be sure the SRS unit, front impact sensors, and side impact sensors are installed securely with the mounting bolts torqued to 9.8 N.m (1.0 kgf.m, 7.2 lbf.ft).
- Do not spill water or oil on the SRS unit or the side impact sensors, and keep them away from dust.
- Store the SRS unit, front impact sensors and side impact sensors in a cool (less than 104°F/40°C) and dry (less than 80 % relative humidity, no moisture) area.

WIRING PRECAUTIONS

Some of the SRS wiring can be identified by special yellow outer covering, and the SRS connectors can be

identified by their yellow color. Observe the instructions.

- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage in SRS wiring, replace the harness.

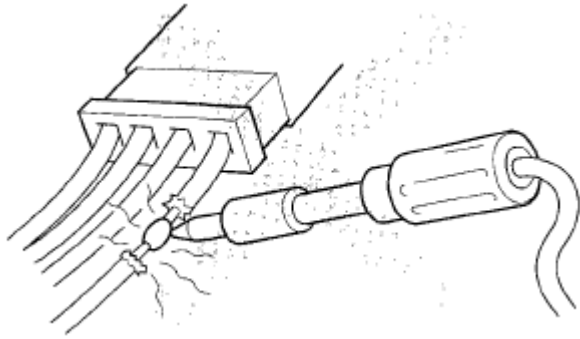


Fig. 11: Precautions For SRS Wiring (Never Attempt To Modify, Splice, Or Repair SRS Wiring)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Be sure to install the harness wires so they do not get pinched or interfere with other parts.

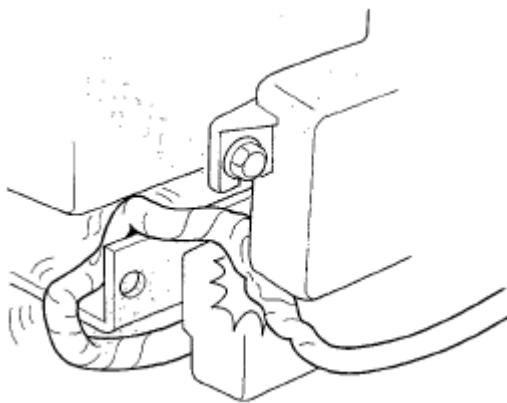


Fig. 12: Precautions For SRS Wiring (Harness Wires So They Do Not Get Pinched Or Interfere With Other Parts)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Make sure all SRS ground locations are clean, and grounds are securely fastened for optimum metal-to-metal contact. Poor grounds can cause intermittent problems that are difficult to diagnose.
- Do not use any silicone based cleaners or lubricants on any SRS connectors or terminals.

PRECAUTIONS FOR ELECTRICAL INSPECTIONS

- When using electrical test equipment, insert the probe of the tester into the wire side of the connector. Do not insert the probe of the tester into the terminal side of the connector, and do not tamper with the connector.

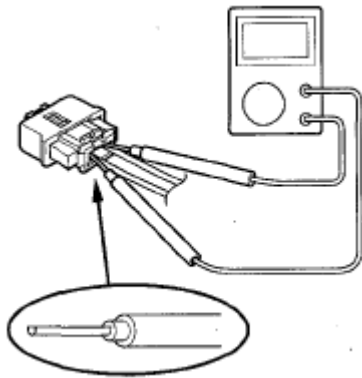


Fig. 13: Precautions For Using Electrical Test Equipment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Use a U-shaped probe. Do not insert the probe forcibly.

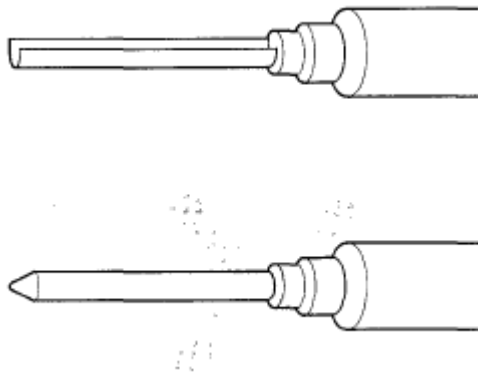


Fig. 14: Precautions For Use U-Shaped Probe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Use specified service connectors in troubleshooting. Using improper tools could cause an error in inspection due to poor metal-to-metal contact.

SPRING-LOADED LOCK CONNECTOR

Some SRS system connectors have a spring-loaded lock.

Front Airbag Connectors

Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (B) while holding the opposite half of the connector. Then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector.

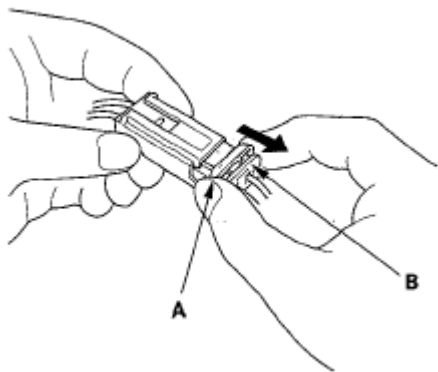


Fig. 15: Disconnecting Front Airbag Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

To reconnect, hold the pawl-side connector, and press on the back of the sleeve-side connector in the direction shown. As the two connector halves are pressed together, the sleeve is pushed back by the pawl (C). Do not touch the sleeve.

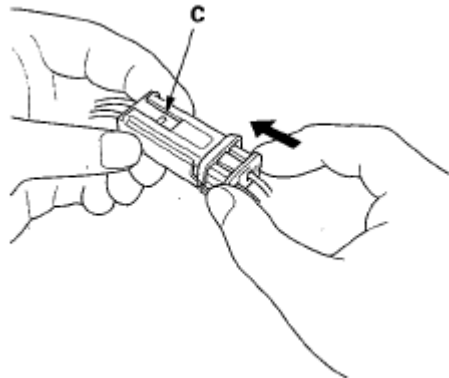


Fig. 16: Connecting Front Airbag Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag Connector

Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (B) while holding the opposite half of the connector. Then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector half.

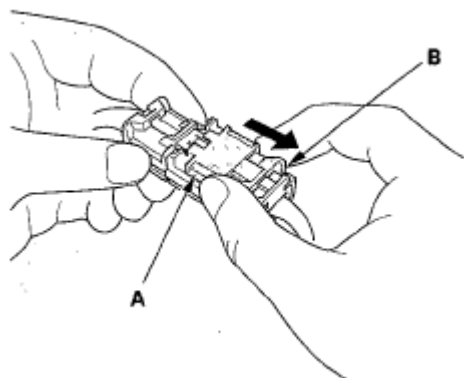


Fig. 17: Disconnecting Side Airbag Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting

Hold both connector halves, and press them firmly together until the projection (C) of the sleeve-side connector clicks.

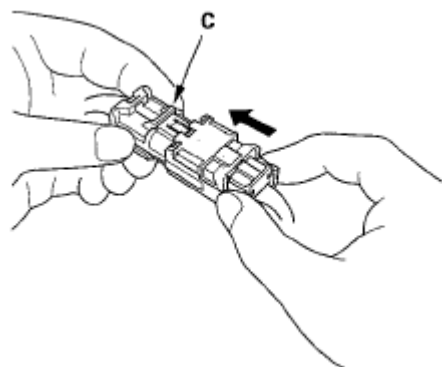


Fig. 18: Connecting Side Airbag Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS

Special Tools Required

SRS short canceller 070AZ-SAA0100

NOTE:

- To prevent damaging the connector cavity, insert the short canceller straight into the cavity from the terminal side.
- Before installing the short canceller, wash it with electrical contact clearer, then dry it with compressed air.
- Do not use the short canceller if it is damaged.
- Make sure to remove the short canceller before reconnection.

When SRS unit connectors A (28P) or B (28P) are disconnected, a short circuit is created in the connector by its own function to prevent an airbag deployment. The circuit may need to be open sometimes when diagnosis is done on the system. Insert the short canceller (No. 070AZ-SAA0100) in the specified cavities when it is necessary to keep the circuit open for diagnosis.

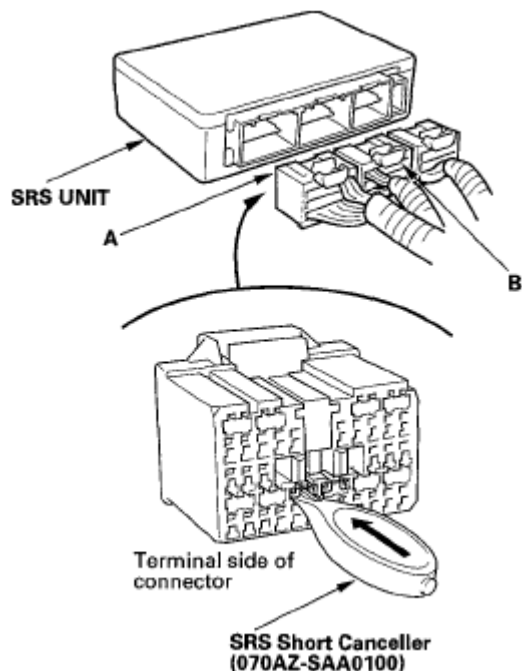


Fig. 19: Identifying SRS Unit Connectors A (28P) Or B (28P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Terminal numbers are shown from the wire side of the female terminals. Insert the short canceller(s) into the cavities on the terminal side of the connector.

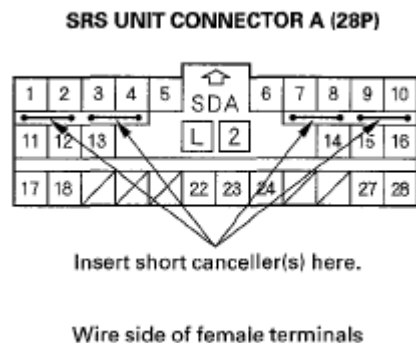


Fig. 20: Identifying SRS Unit Connectors A (28P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

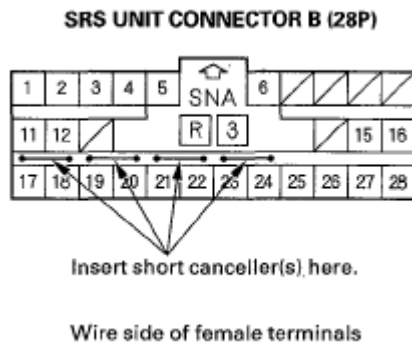


Fig. 21: Identifying SRS Unit Connectors B (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEATS WITH SIDE AIRBAGS

Seats with side airbags have a "SIDE AIRBAG" label on the seat-back.



Fig. 22: Identifying Side Airbag Label
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- When cleaning, use a damp cloth to clean the seat. Do not soak the seat with liquid. Do not spray steam on the seat.
- Do not repair a torn or frayed seat-back cover. Replace the seat-back cover.
- After a collision where the side airbag was deployed, replace the side airbag and seat frame with new parts. If the seat-back cushion is split, it must be replaced.
- Never put aftermarket accessories on the seat (covers, pads, seat heaters, lights, etc.).

DISCONNECTING SYSTEM CONNECTORS

Turn the ignition switch OFF disconnect the negative cable from the battery, then wait for 3 minutes before starting the following procedures.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

- Before disconnecting the cable reel 4P connector (1), disconnect the driver's airbag 4P connector (2).
- Before disconnecting SRS unit connector B from the SRS unit, disconnect both seat belt tensioner 4P connectors (3, 4).

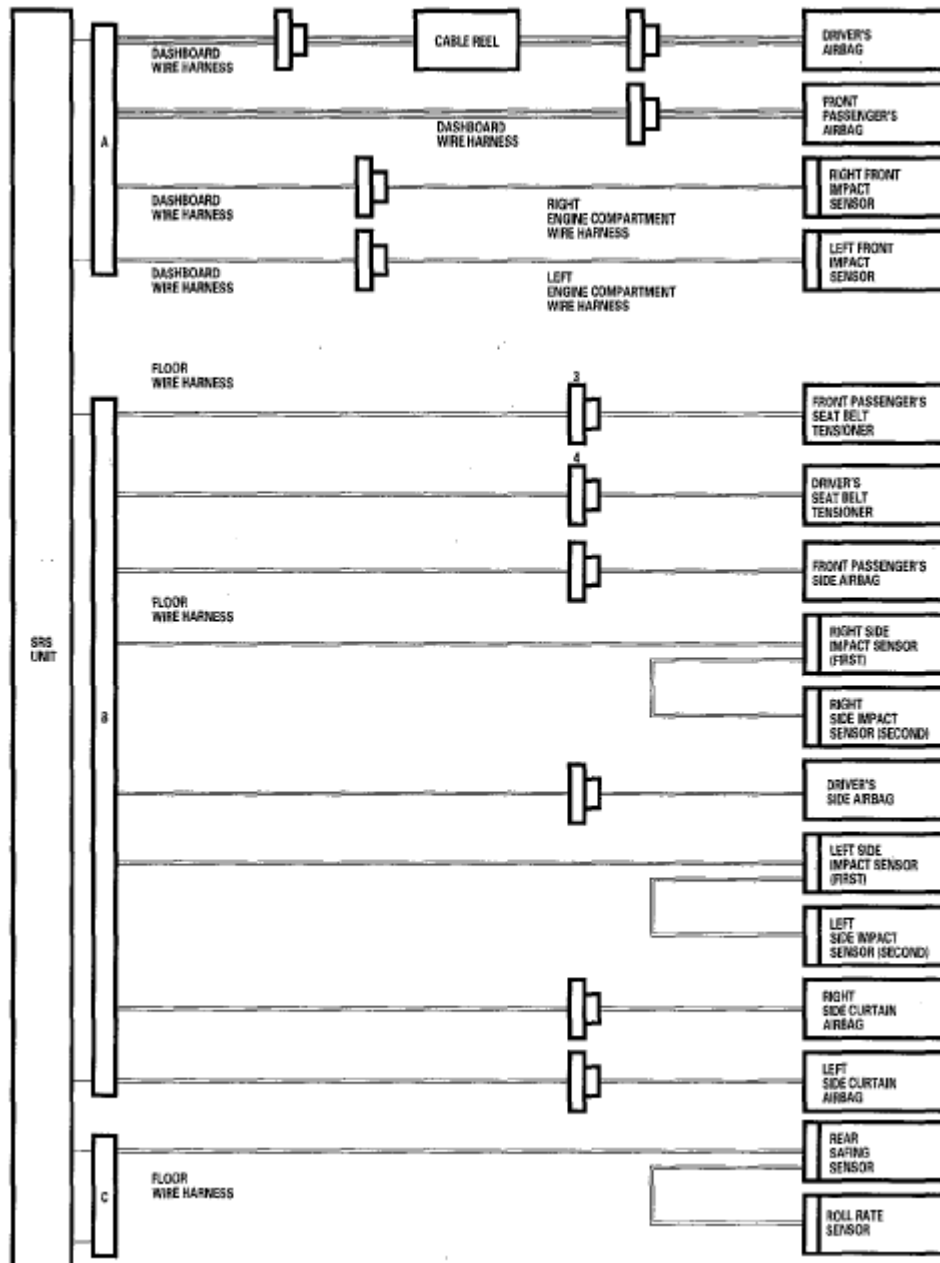


Fig. 23: SRS Unit System Connectors Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Disconnect the negative cable from the battery, then wait for 3 minutes.

Driver's Airbag

2. Remove the access panel (A) from the steering wheel, then disconnect the driver's airbag 4P connector (B) from the cable reel.

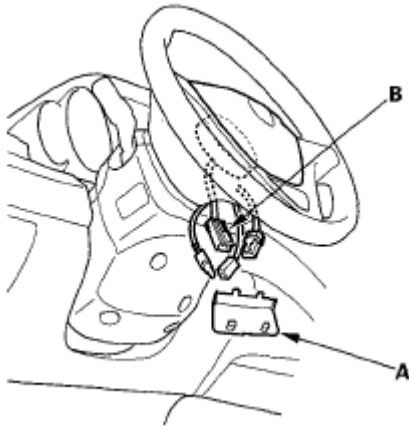


Fig. 24: Identifying Access Panel And Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Airbag

3. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**), then disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

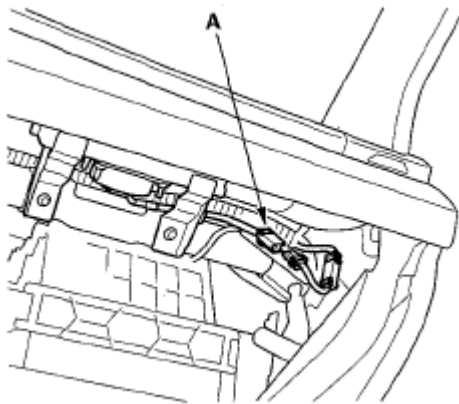


Fig. 25: Identifying Front Passenger's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag

4. Disconnect both side airbag 2P connectors (A) from the floor wire harness.



Fig. 26: Identifying Side Airbag 2P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Curtain Airbag

5. Remove the quarter pillar trim (see **QUARTER PILLAR TRIM**).
6. Disconnect both floor wire harness 2P connectors (A) from the side curtain airbags.

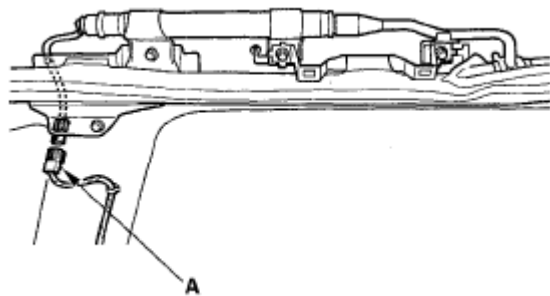


Fig. 27: Identifying Floor Wire Harness 2P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Seat Belt Tensioner

7. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**), then disconnect both floor wire harness 4P connectors (A) from the seat belt tensioners.

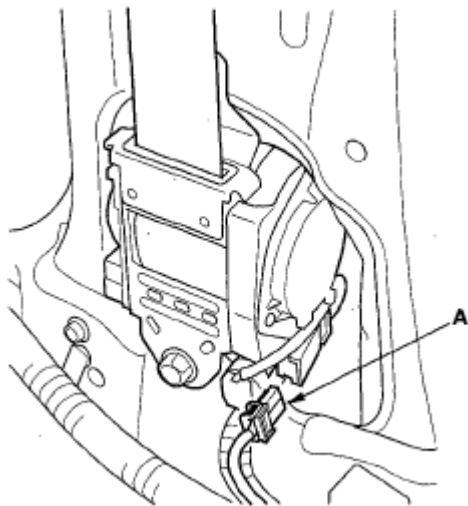


Fig. 28: Identifying Floor Wire Harness 4P Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SRS Unit

8. Remove the driver's center console trim (see step 5 **CENTER CONSOLE REMOVAL/INSTALLATION**), SRS unit connector A (28P), SRS unit connector B (28P), and SRS unit connector C (16P) from the SRS unit.

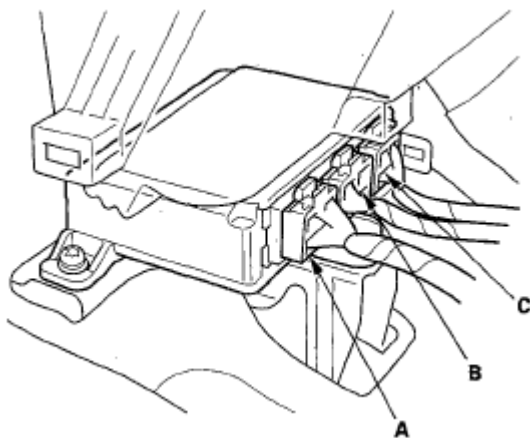


Fig. 29: Identifying SRS Unit Connector A (28P), SRS Unit Connector B (28P) And SRS Unit Connector C (16P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

DTC (DIAGNOSTIC TROUBLE CODES)

The self-diagnostic function of the SRS system allows it to locate the causes of system problems and then store

this information in memory. For easier troubleshooting, this data can be retrieved via a data link circuit.

- When you turn the ignition switch ON (II), the SRS indicator comes on. If it goes off after 6 seconds, the system is normal, and is not currently detecting any abnormality.
- If there is an abnormality, the system locates and defines the problem, stores this information in memory, and turns the SRS indicator on. The data remains in the memory even when the ignition switch is turned off or if the battery is disconnected.
- The data is stored in memory as a diagnostic trouble code (DTC).
- DTCs are either latching or resetting depending on the malfunction. With resetting DTCs, the SRS indicator goes off the next time the ignition switch is turned ON and the system is normal, but the DTC is still stored. With latching DTCs, the SRS indicator does not turn OFF until the malfunction is repaired and the DTC is cleared.
- When you connect the HDS to the 16P data link connector (DLC), you can retrieve a more detailed DTC in the Honda Systems "SRS" menu.
- After reading and recording the DTC, proceed with the troubleshooting procedure for that code.

Precautions

- Use only a digital multimeter to check the system. If it's not a Honda multimeter, make sure its output is 10 mA (0.01 A) or less when switched to the smallest value in the ohmmeter range. A tester with a higher output could damage the airbag circuit or cause accidental airbag deployment and possible injury.
- Whenever the ignition switch is ON (II), or has been turned OFF for less than 3 minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Before you remove the dashboard wire harness or floor wire harness, disconnect the driver's airbag connector, the front passenger's airbag connector, both side airbag connectors, both side curtain airbag connectors, and both seat belt tensioner connectors.
- Make sure the battery is fully charged. If the battery is dead or low, measuring values may not be correct.
- Do not touch a tester probe to the terminals in the SRS unit or harness connectors, and do not connect the SRS unit terminals or the sensor terminals with a jumper wire. Use only the backprobe set and the multimeter. Backprobe spring-loaded lock type connectors correctly.

READING THE DTC

1. Make sure the ignition switch is OFF.
2. Connect the HDS to the data link connector (DLC) (A).

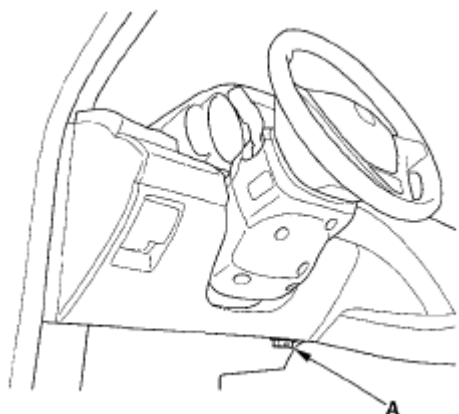


Fig. 30: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Use the HDS to check for DTCs.
6. Read and record the DTC.
7. Turn the ignition switch OFF, then wait for 10 seconds.
8. Disconnect the HDS from the DLC.
9. Do the troubleshooting procedure for the DTC.

CLEAR THE DTC MEMORY WITH THE HDS

NOTE: **Make sure the battery is fully charged before you begin.**

1. Make sure the ignition switch is OFF.
2. Connect the HDS to the data link connector (DLC) (A).

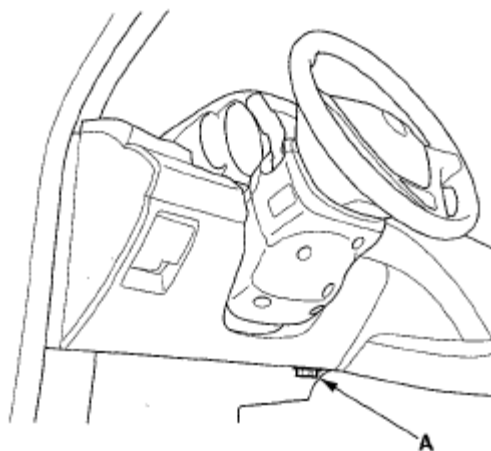


Fig. 31: Identifying Data Link Connector**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. In the SRS MENU of the HDS, select SRS, then DTC to clear DTC(s).
6. Turn the ignition switch OFF, then wait for 10 seconds.
7. Disconnect the HDS from the DLC.

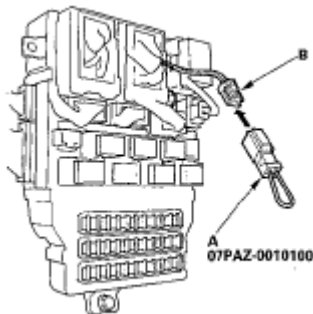
CLEAR THE DTC MEMORY USING MES CONNECTOR WITHOUT THE HDS**Special Tools Required**

SCS Service Connector 07PAZ-001010A

NOTE: **Make sure the battery is fully charged before you begin.**

To clear the DTC(s) from the SRS unit, use the HDS or the following procedure.

1. Make sure the ignition switch is OFF.
2. Connect the SCS service connector (A) to the yellow MES 2P connector (B). Do not use a jumper wire.

**Fig. 32: Identifying SCS Service Connector And Yellow MES 2P Connector****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

3. Turn the ignition switch ON (II).
4. The SRS indicator will come on for about 6 seconds, and then go off. Remove the SCS service connector from the MES connector (2P) within 4 seconds after the indicator goes off.
5. The SRS indicator will come on again. Reconnect the SCS service connector to the MES connector (2P) within 4 seconds after the indicator comes on.
6. When the SRS indicator goes off, remove the SCS service connector from the MES connector (2P) within 4 seconds.
7. The SRS indicator blinks two times, indicating that the memory has been cleared.

8. Turn the ignition switch OFF, then wait for 10 seconds.
9. Turn the ignition switch ON (II) again. If the SRS indicator comes on for 6 seconds, and then goes off, the system is OK.

TROUBLESHOOTING INTERMITTENT FAILURES

If there was a malfunction that sets a DTC, but it does not recur, it will be stored in the memory as an intermittent failure, and the SRS indicator may come on depending on the malfunction detected.

NOTE:

- Check the condition of the battery (see **BATTERY TEST**), and the charging system (see **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING**). Low battery voltage may cause some intermittent failures.
- A faulty cable reel can cause intermittent connections related to the driver's airbag inflator DTCs.
- Check all of the connections in the circuit for the DTC you are troubleshooting.

After checking the DTC, troubleshoot as follows:

1. Read the DTC (see "**READING THE DTC**").
2. Clear the DTC memory (see "**CLEAR THE DTC**").
3. Set the parking brake, then start the engine, and let it idle.
4. The SRS indicator comes on for about 6 seconds and then goes off.
5. Shake the related wire harnesses then the connectors, then look for loose connections and poor grounds.
6. Take a test-drive (quick acceleration, quick braking, and cornering), turn the steering wheel fully left and right, and hold it there for 5 to 10 seconds. If the problem recurs, the SRS indicator will come on.
7. If you cannot duplicate the concern, ask the client about the conditions when it occurred, or ask the client to demonstrate the concern.
8. If you cannot duplicate the intermittent failure, the system is OK at this time.

CHECKING FRONT PASSENGER'S WEIGHT SENSORS AFTER A VEHICLE COLLISION

1. Position the front passenger's seat to the rearmost position, adjust the seat-back to the forward most position. Do not move it from this position.
2. Drive the vehicle, accelerate to 20 mph (36 km/h), then stop on level ground.
3. Make sure the ignition switch is OFF.
4. Connect the HDS to the data link connector (DLC) (A).

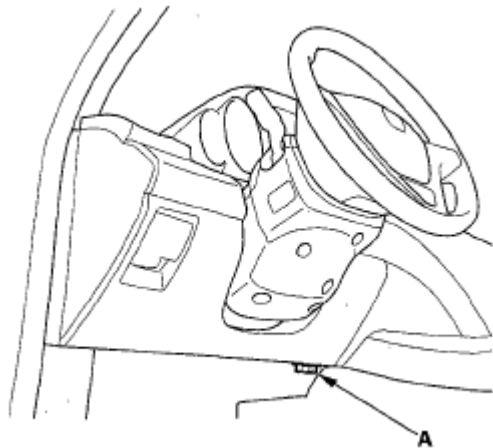


Fig. 33: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the ignition switch ON (II).
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
7. From the SRS inspection menu, select Seat Weight Sensor, then Misc test, then "SEAT OUTPUT CHK" and follow the prompts until the front passenger's weight sensor operation check is completed.

ODS UNIT INITIALIZATION

When a seat-back cover, seat-back cushion, and/or ODS unit is replaced, initialize the ODS by doing this procedure.

NOTE: **A new (uninitialized) ODS unit installed with a faulty OPDS sensor can cause DTC 85-71.**

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Make sure the front passenger's seat is dry. Set the seat-back in a normal position, and make sure there is nothing on the seat.
3. Make sure the ignition switch is OFF and the MES connector is not shorted.
4. Connect the HDS to the data link connector (DLC) (A).

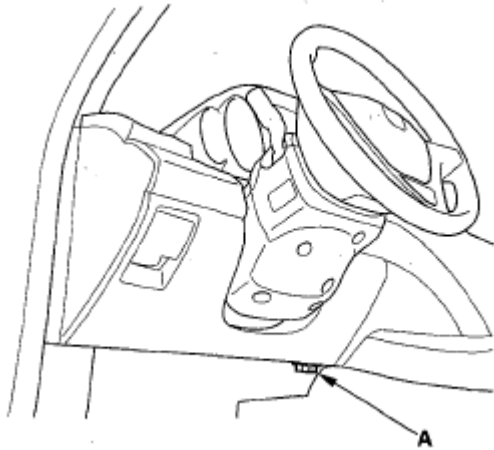


Fig. 34: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn the ignition switch ON (II).
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
7. From the HDS Main Menu, select SRS, then SRS, then Calibration. In the Calibration Menu, select ODS INITIALIZATION. Follow the screen prompts to initialize the ODS unit.
8. Turn the ignition switch OFF.
9. Disconnect the HDS from the DLC.

NOTE: If the ODS system fails to initialize after several attempts, replace the OPDS sensor/seat-back and retry. If the ODS system continues to fail to initialize, replace the ODS unit (see **ODS UNIT REPLACEMENT**).

ODS UNIT CALIBRATION

When you replace the SRS unit, front passenger's weight sensors, or the ODS unit, calibrate the ODS unit.

While calibrating the ODS unit, observe these precautions:

- Make sure all components of the front passenger's seat are correctly installed.
- Make sure nothing is on or under the front passenger's seat.
- Make sure there is nothing in the front passenger's seat-back pocket.
- Keep all the windows closed.
- Do all calibration procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.
- Keep the A/C and the heater off.
- Do not touch the front passenger's seat until you are prompted to or when you have completed the calibration.

- Do not expose the front passenger's seat to sudden temperature changes.
1. Position the front passenger's seat to the rearmost position, and adjust the seat-back to the forward most position. Do not move the seat from this position.
 2. Connect the HDS to the data link connector (DLC) (A).

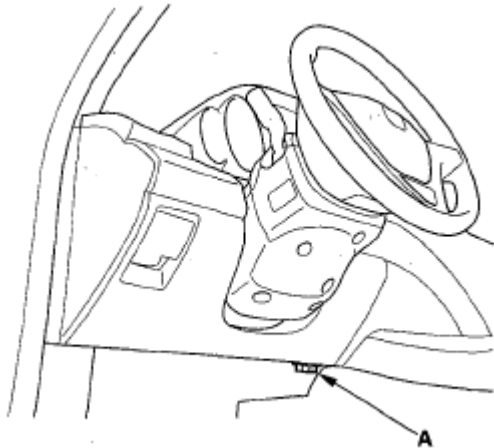


Fig. 35: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Drive the vehicle, and accelerate to 20 mph (36 km/h), then stop on level ground.
5. From the Main Menu, select SRS, then Calibration, then Misc Test, then select "SWS INITIALIZATION," and follow the prompts until the calibration has been completed.

ODS UNIT OPERATION CHECK

- Replacement of front passenger's seat component(s) (except ODS unit and/or weight sensors)
- After a vehicle collision
- SRS unit replacement

PRE-OPERATION CHECK SET-UP

- Make sure all the components of the front passenger's seat are correctly installed.
- Position the front passenger's seat to the rearmost position. Adjust the seat-back to the forward most position. Do not move the seat from this position.
- Make sure nothing is on or under the front passenger's seat.
- Make sure there is nothing in the front passenger's seat-back pocket.
- Keep the windows closed.
- Do all calibration procedures, except test-driving, in the service bay.

- Make sure the vehicle is on level ground.
- Turn the heater and the A/C off.
- Do not touch the passenger's seat during the calibration.
- Do not expose the front passenger's seat to sudden temperature changes.
- Make sure all aftermarket devices such as amplifiers, fluorescent light, air purifiers, CB or HAM radios, etc. are turned off.

AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S)

1. Connect the HDS to the data link connector (DLC) (A).

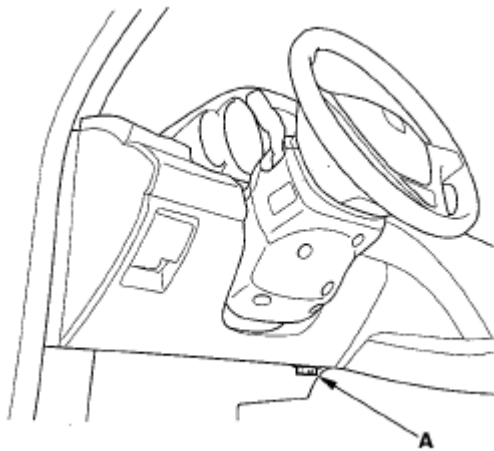


Fig. 36: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Drive the vehicle, accelerate to 20 mph (36 km/h), then stop on level ground.
4. From the HDS Main Menu, select SRS, then Inspection. In the HDS Inspection Menu, select "SEAT OUTPUT CHK" and follow the prompts until the ODS operation check has been completed.

DRIVER'S SEAT POSITION SENSOR OPERATION CHECK

Check the driver's seat position after any of these actions.

- Driver's seat position sensor replacement
 - Cover plate (front side of driver's seat slide rail) replacement
1. Make sure the driver's seat is at its full forward position.
 2. Make sure the ignition switch is OFF (0).
 3. Connect the HDS to the data link connector (DLC) (A).

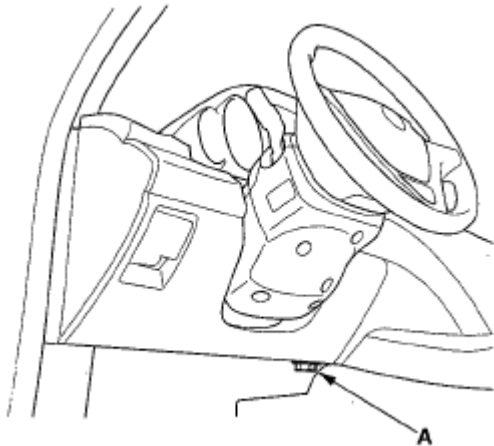


Fig. 37: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the HDS Main Menu, select SRS, then Parameter Information, then Buckle Switch, Seat Position Sensor.
7. Using a piece of tape (A), mark the location on the seat's outer cover (B) where the front riser cover meets the seat riser (C). The driver's seat position sensor should read "NEAR."

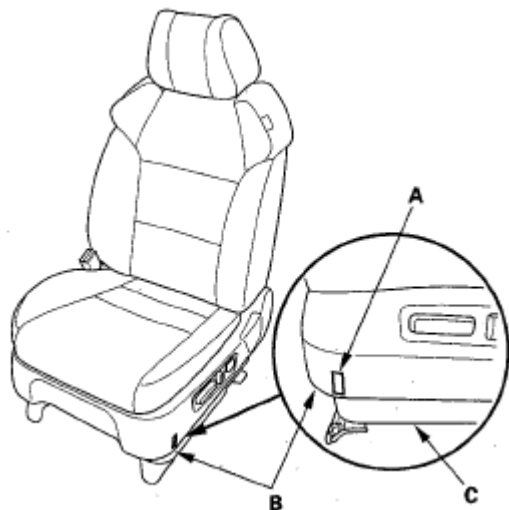


Fig. 38: Identifying Location On Seat's Outer Cover Where Front Riser Cover Meets Seat Riser

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Move the seat back in small increments (about 0.2 in., 5 mm) until the driver's seat position sensor reads "NOT NEAR." The seat should be about 1 in. (25 mm) from the front.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NOTE: It takes a few seconds for the HDS to display changes, so wait for about 5 seconds between each move.

If the driver's seat position sensor data does not work as described above, check the driver's seat position sensor or the cover plate for damage, and replace parts as needed.

9. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

DTC TROUBLESHOOTING INDEX**DTC TROUBLESHOOTING INDEX**

DTC	Latch ⁽¹⁾	Reset ⁽²⁾	Detection Item
<u>11-1x</u>		o	Open in driver's airbag first inflator
11-2x			Increased resistance in driver's airbag first inflator
<u>11-3x</u>			Short to another wire or decreased resistance in driver's airbag first inflator
<u>11-4x</u>			Open in driver's airbag second inflator
11-5x			Increased resistance in driver's airbag second inflator
<u>11-6x</u>			Short to another wire or decreased resistance in driver's airbag second inflator
<u>11-8x</u>	o		Short to power in driver's airbag first inflator
<u>11-9x</u>			Short to ground in driver's airbag first inflator
<u>11-Ax</u>			Short to power in driver's airbag second inflator
<u>11-Bx</u>			Short to ground in driver's airbag second inflator
<u>12-1x</u>		o	Open in front passenger's airbag first inflator
12-2x			Increased resistance in front passenger's airbag

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

			first inflator
<u>12-3x</u>			Short to another wire or decreased resistance in front passenger's airbag first inflator
<u>12-4x</u>			Open in front passenger's airbag second inflator
12-5x			Increased resistance in front passenger's airbag second inflator
<u>12-6x</u>			Short to another wire or decreased resistance in front passenger's airbag second inflator
<u>12-8x</u>	o		Short to power in front passenger's airbag first inflator
<u>12-9x</u>			Short to ground in front passenger's airbag first inflator
<u>12-Ax</u>			Short to power in front passenger's airbag second inflator
<u>12-Bx</u>			Short to ground in front passenger's airbag second inflator
<u>21-1x</u>		o	Open in driver's seat belt tensioner
21-2x			Increased resistance in driver's seat belt tensioner
<u>21-3x</u>			Short to another wire or decreased resistance in driver's seat belt tensioner
<u>21-8x</u>	o		Short to power in driver's seat belt tensioner
<u>21-9x</u>			Short to ground in driver's seat belt tensioner
<u>22-1x</u>		o	Open in front passenger's seat belt tensioner
22-2x			Increased resistance in front passenger's seat belt tensioner
<u>22-3x</u>			Short to another wire or decreased resistance in front passenger's seat belt

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

			tensioner
<u>22-8x</u>		o	Short to power in front passenger's seat belt tensioner
<u>22-9x</u>			Short to ground in front passenger's seat belt tensioner
<u>31-1x</u>		o	Open in driver's side airbag inflator
31-2x			Increased resistance in driver's side airbag inflator
<u>31-3x</u>			Short to another wire or decreased resistance in driver's side airbag inflator
<u>31-8x</u>	o		Short to power in driver's side airbag inflator
<u>31-9x</u>			Short to ground in driver's side airbag inflator
<u>32-1x</u>		o	Open in front passenger's side airbag inflator
32-2x			Increased resistance in front passenger's side airbag inflator
<u>32-3x</u>			Short to another wire or decreased resistance in front passenger's side airbag inflator
<u>32-8x</u>	o		Short to power in front passenger's side airbag inflator
<u>32-9x</u>			Short to ground in front passenger's side airbag inflator
<u>33-1x</u>		o	Open in left side curtain airbag inflator
33-2x			Increased resistance in left side curtain airbag inflator
<u>33-3x</u>			Short to another wire or decreased resistance in left side curtain airbag inflator

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

<u>33-8x</u>	o		Short to power in left side curtain airbag inflator
<u>33-9x</u>			Short to ground in left side curtain airbag inflator
<u>34-1x</u>		o	Open or in right side curtain airbag inflator
34-2x			Increased resistance in right side curtain airbag inflator
<u>34-3x</u>			Short to another wire or decreased resistance in right side curtain airbag inflator
<u>34-8x</u>	o		Short to power in right side curtain airbag inflator
<u>34-9x</u>			Short to ground in right side curtain airbag inflator
<u>41-1x</u>		o	No signal from the left front impact sensor
<u>41-2x</u>			Internal failure of the left front impact sensor
41-8x	o		
41-9x			
41-Ax			
41-Bx			
<u>42-1x</u>		o	No signal from the right front impact sensor
<u>42-2x</u>			Internal failure of the right front impact sensor
42-8x	o		
42-9x			
42-Ax			
42-Bx			
<u>43-1x</u>		o	No signal from the left side impact sensor (first)
<u>43-2x</u>			Internal failure of the left side impact sensor (first)
43-8x	o		
43-9x			
43-Ax			
43-Bx			
<u>44-1x</u>		o	No signal from the right side impact sensor (first)

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

<u>44-2x</u>			Internal failure of the right side impact sensor (first)
44-8x	o		
44-9x			
44-Ax			
44-Bx			
<u>45-1x</u>		o	No signal from left side impact sensor (second)
<u>45-2X</u>			Internal failure of left side impact sensor (second)
45-8x	o		
45-9x			
45-Ax			
45-Bx			
<u>46-1x</u>		o	No signal from right side impact sensor (second)
<u>46-2x</u>			Internal failure of right side impact sensor (second)
46-8x	o		
46-9x			
46-Ax			
46-Bx			
<u>B1-1x</u>		o	No signal from roll rate sensor
<u>B1-2x</u>			Internal failure of roll rate sensor
B1-8x	o		
B1-9x			
B1-Ax			
B1-Bx			
<u>B2-1x</u>		o	No signal from rear safing sensor
<u>B2-2x</u>			Internal failure of rear safing sensor
B2-8x	o		
B2-9x			
B2-Ax			
B2-Bx			
<u>51-xx</u>		o	Internal failure of the SRS unit
52-xx	o		
53-xx		o	
54-xx			
55-xx			
57-xx	o		
<u>61-1x</u>		o	Open in driver's seat belt buckle switch

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

<u>61-2x</u>			Short in driver's seat belt buckle switch
<u>62-1x</u>			Open in front passenger's seat belt buckle switch
<u>62-2x</u>			Short in front passenger's seat belt buckle switch
<u>71-1x</u>			Open in driver's seat position sensor
<u>71-2x</u>			Short in driver's seat position sensor
<u>81-4x</u>		o	Internal failure of the ODS unit
<u>81-61</u>			No signal from ODS unit
81-62			Response data error from the ODS unit
<u>81-63</u>			Internal failure of the ODS unit
81-64			ODS unit does not calibrate
<u>81-71</u>			Front passenger's weight sensors initial check failure
81-78			No signal from the inner side front passenger's weight sensor
<u>81-79</u>			No signal from the outer side front passenger's weight sensor
82-1x			Internal failure of the ODS unit
<u>83-2x</u>			No signal from the ODS unit
85-4x			Response data error from the ODS unit
<u>85-61</u>			Internal failure of the ODS unit
85-62			ODS unit not initialized
<u>85-63</u>			OPDS sensor initial check failure
85-64			Faulty OPDS sensor
<u>85-71</u>			
85-78			
<u>85-79</u>			
86-1x			
86-2x			
<u>92-1x</u>			Open in passenger's

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

		airbag cutoff indicator
<u>92-2x</u>		Open or short to ground in passenger's airbag cutoff indicator
<u>A1-1x</u>		Faulty power supply (VA line)
<u>A2-1x</u>		Faulty power supply (VB line)
<u>EX-XX</u>		Control operation recorded
Fx-xx		Airbags and/or tensioners deployment recorded

NOTE:

The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you will see on the HDS display. The character is unrelated to your troubleshooting; it designates the SRS unit manufacturer and other detail used for product analysis.

- (1) The SRS indicator turns on and stays on whenever the ignition switch is in the ON (II) position, or until the code is cleared.
- (2) The SRS indicator turns on when the DTC is set. The SRS indicator will not turn on after the ignition switch is cycled from ON (II) to OFF (0), but the DTC will be stored in the SRS unit.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
SRS indicator does not come on	Symptom Troubleshooting (see <u>SRS indicator does not come on</u>)	Communication with HDS
SRS indicator stays on, but no DTCs are stored	Symptom Troubleshooting (see <u>SRS indicator stays on, but no DTCs are stored</u>)	Charging system for under or overcharging
Side airbag cutoff indicator is flashing	Check the DTC. If DTC indicated, go to the <u>DTC troubleshooting</u>	• ODS Initialization • Communication with HDS
Side airbag cutoff indicator stays on	Symptom Troubleshooting (see <u>SIDE AIRBAG CUTOFF INDICATOR STAYS ON</u>)	Communication with HDS
Side airbag cutoff indicator does not come on	Symptom Troubleshooting (see <u>SIDE AIRBAG CUTOFF INDICATOR DOES NOT COME ON</u>)	• ODS Initialization • Communication with HDS
Passenger's airbag cutoff indicator is flashing	Check the DTC. If DTC indicated, go to the <u>DTC troubleshooting</u>	Communication with HDS
Passenger's airbag cutoff indicator stays on or comes on suddenly	Symptom Troubleshooting (see <u>PASSENGER'S AIRBAG CUTOFF INDICATOR STAYS ON OR COMES ON SUDDENLY</u>)	Communication with HDS

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

Passenger's airbag cutoff indicator does not come on	Check the DTC. If DTC indicated, go to the <u>DTC troubleshooting</u>	Communication with HDS
HDS does not communicate with the SRS unit or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>)	Communication with HDS

SYSTEM DESCRIPTION

SRS COMPONENTS

Airbags

The SRS is a safety device which, when used with the seat belt, is designed to help protect the driver and front passenger in a frontal impact exceeding a certain set limit. The system consists of the SRS unit, including safing sensor and impact sensor (A), the cable reel (B), the driver's airbag (C), the front passenger's airbag (D), side airbags (E), side curtain airbags (F), seat belt tensioners (G), side impact sensors (first) (H), front impact sensors (I), roll rate sensor (J), rear safing sensor (K) and side impact sensors (second) (L). Since the driver's and front passenger's airbags use the same sensors, both normally inflate at the same time. However, it is possible for only one airbag to inflate. This can occur when the severity of a collision is at the margin, or threshold, that the SRS unit determines whether or not the airbags will deploy. In such cases, the seat belt will provide sufficient protection, and the supplemental protection offered by the airbag would be minimal.

Front Passenger's Weight Sensors

The ODS unit (M) is in the front passenger's seat-back along with the weight sensors (N). The weight sensors detect the weight on the seat, and send the information to the ODS unit. If the total weight is about 65 lbs (30 kg) or less, the ODS unit sends a signal to the SRS unit to prevent the passenger's airbag from deploying. When the passenger's airbag is disabled, the passenger airbag cutoff indicator on the center panel comes on to alert the driver that the front passenger's airbag will not deploy in a front-end collision.

Driver's Seat Position Sensor

The driver's seat position sensor (O) is under the driver's seat on the left side. When the driver's seat is moved to its full forward position, the deployment of the driver's airbag is moderated to decrease its force of impact during a front-end collision.

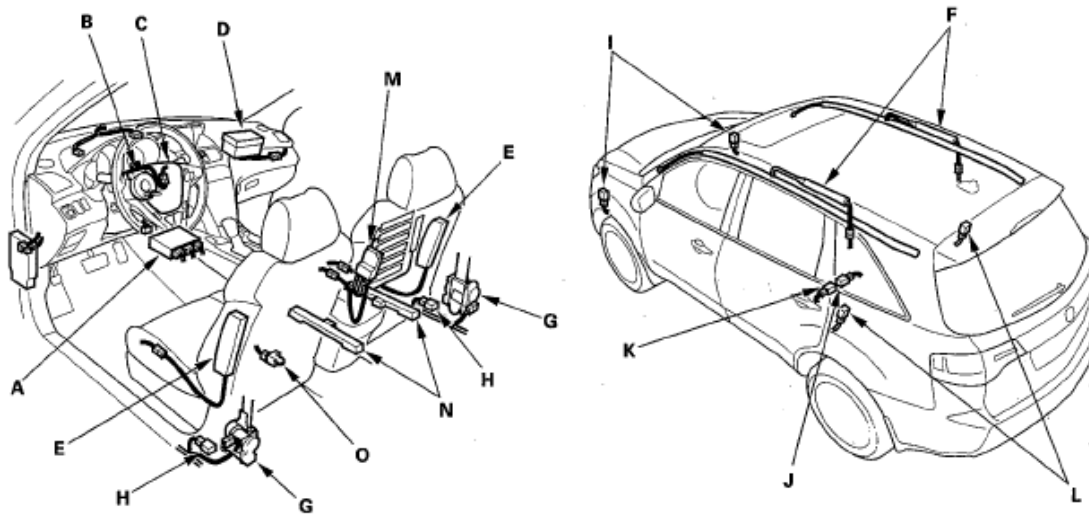


Fig. 39: Identifying SRS Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Roll Rate Sensor

The roll rate sensor is located under the second row seat. It detects the amount of roll of the vehicle and sends the information to the SRS unit. The SRS unit uses this information to determine if a vehicle rollover is imminent. If so, it deploys both side curtain airbags and the front seat belt tensioners.

Rear Safing Sensor

The rear safing sensor is located under the second row seat. The rear safing sensor performs the same basic function as the safing sensor in the SRS unit. It measures sideways G force, such as the force the vehicle would receive in a side collision in the rear, and sends that information to the SRS unit. The SRS unit uses that information, and the information from the second side impact sensors to determine the side that is impacted and the force. If the threshold is met, the SRS unit deploys the side airbag, the side curtain airbag and the seat belt tensioner on that side.

SIDE AIRBAG CUTOFF INDICATOR/ODS OPERATION

The indicator comes on if the front passenger's seat is occupied by a small adult or child who is leaning into the deployment path, or an object (grocery bag, briefcase, purse, etc.) is in the seat. This indicates the passenger's side airbag is off and will not deploy; there is no problem with the side airbag. If the passenger sits upright or moves to another seat, or you remove the object from the seat, the light should go off. There will be some delay between the occupant's repositioning and when the indicator will turn on or off.

PASSENGER AIRBAG CUTOFF INDICATOR

The indicator comes on if the weight of the front passenger is about 65 lbs (30 kg) or less. This indicates the passenger's front airbag is off and will not deploy. The front airbag is shut off to reduce the chance of airbag-caused injuries.

SRS OPERATION

The main circuit in the SRS unit senses and judges the force of impact and, if necessary, ignites the inflator charges. If battery voltage is too low or power is disconnected due to the impact, the voltage regulator and the back-up power circuit will keep voltage at a constant level.

For the SRS to operate

Seat Belt Tensioners

1. A front impact sensor, side impact sensor or the rear safing sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and send them to the tensioners.
3. The charges must ignite and deploy the tensioners.

Driver's and Front Passenger's Airbag(s)

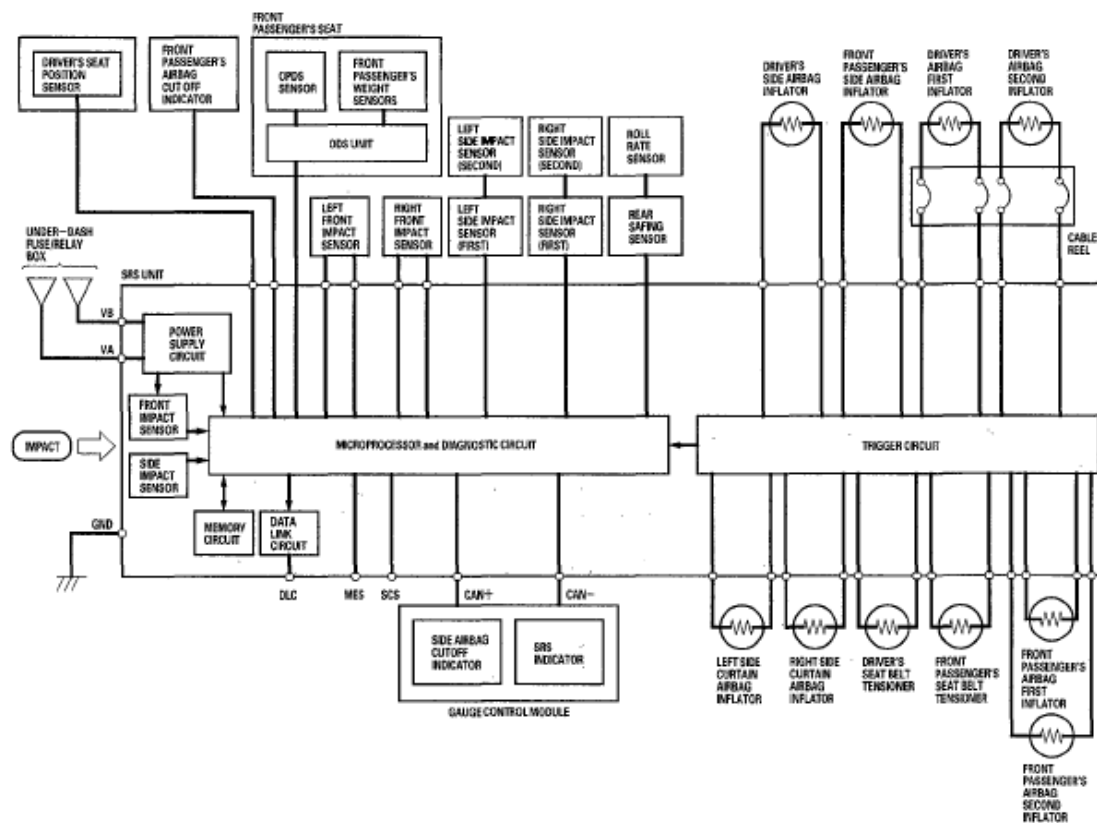
1. A front impact sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and send them to the airbag inflator(s).
3. The inflators that receives signals must ignite and deploy the airbags.

Side Airbag(s)

1. A side impact sensor must activate and send electric signals to the microprocessor.
2. The microprocessor must compute the signals and send them to the side airbag inflator(s). However, the microprocessor cuts off the signals to the front passenger's side airbag if the SRS unit determines that the front passenger's head is in the deployment path of the side airbag.
3. The inflator that receives the signal must ignite and deploy the side airbag.

Side Curtain Airbag(s)

1. Side impact sensor, roll rate sensor, or the rear safing sensor must activate, and send electrical signals to the microprocessor.
2. The microprocessor must compute the signals and send them to the side curtain airbag and side airbag inflator(s).
3. The inflator that receives the signals must ignite and deploy the side curtain airbag and side airbag at the same time.

**Fig. 40: SRS Operation Diagram**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Self-diagnostic System

A self-diagnostic circuit is built into the SRS unit; when the ignition switch is turned ON (II), the SRS indicator comes on and goes off after about 6 seconds if the system is operating normally.

If the indicator does not come on, or does not go off after 6 seconds, or if it comes on while driving, it indicates an abnormality in the system. The system must be inspected and repaired as soon as possible.

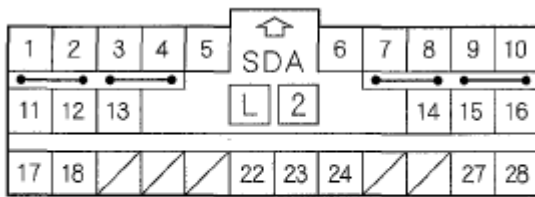
For better serviceability, the SRS unit memory stores a DTC that relates to the cause of the malfunction, and the unit is connected to the data link connector (DLC). This information can be read with the HDS when it is connected to the DLC (16P) (see **DTC (Diagnostic Trouble Codes)**).

NOTE: Before you disconnect the negative cable from the battery for troubleshooting, make sure you have the anti-theft codes for the audio system and the navigation system (if equipped).

SRS UNIT INPUTS AND OUTPUTS AT CONNECTOR A (28P)

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX



Wire side of female terminals

Fig. 41: Identifying SRS Unit Inputs And Outputs At Connector A (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TERMINALS DESCRIPTION

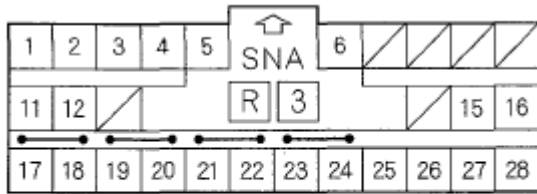
Terminal Number	Wire Color	Terminal Name	Description
1	GRN	LA2+	Power source for driver's airbag second inflator
2	PUR	LA2-	Ground for driver's airbag second inflator
3	LT GRN	RA2+	Power source for passenger's airbag second inflator
4	LT BLU	RA2-	Ground for passenger's airbag second inflator
5	LT GRN	MES	Memory delete signal input
6	BRN	SCS	Service check signal input
7	LT BLU	LA1+	Power source for driver's airbag first inflator
8	BRN	LA1-	Ground for driver's airbag first inflator
9	YEL	RA1+	Power source for passenger's airbag first inflator
10	BLU	RA1-	Ground for passenger's airbag first inflator
11	WHT	CAN HI	Sends and receives communication signal with the gauge control module
12	RED	CAN LO	Sends and receives communication signal with the gauge control module
13	BLU	PTT	Passenger's airbag cutoff indicator output line
14	GRN	ODS	Sends and receives communication signal with the ODS unit
15	BRN	LFS-	Ground for left front impact sensor (G505)
16	LT BLU	RFS-	Ground for right front impact sensor (G505)
17	GRN	VA	SRS system sub power (common with ODS)
18	RED	VB	SRS dedicated power (dedicated booster circuit)
22	BLK	SRS GND(1)	Ground circuit for the SRS
23	BLK	SRS GND(2)	Ground circuit for the SRS
24	LT BLU	K-LINE	Sends and receives scan tool signal (serial data)
27	RED	LFS+	Power source for left front impact sensor
28	GRN	RFS+	Power source for right front impact sensor

NOTE: BLU or BRN wires may be substituted for the wire colors in this table.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

SRS UNIT INPUTS AND OUTPUTS AT CONNECTOR B (28P)



Wire side of female terminals

Fig. 42: Identifying SRS Unit Inputs And Outputs At Connector B (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TERMINALS DESCRIPTION

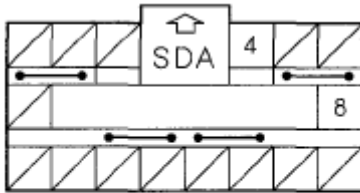
Terminal Number	Wire Color	Terminal Name	Description
1	RED	LRP+	Power source for driver's seat belt tensioner
2	BRN	LRP-	Ground for driver's seat belt tensioner
3	GRN	RRP+	Power source for front passenger's seat belt tensioner
4	LT BLU	RRP-	Ground for front passenger's seat belt tensioner
5	GRN	SS-	Ground for driver's seat position sensor
6	BLU	SS+	Power source for driver's seat position sensor
11	YEL	LBSC	Driver's seat belt buckle switch unbuckled signal
12	LT GRN	LBSO	Driver's seat belt buckle switch buckled signal
15	BLU	RBSC	Front passenger's seat belt buckle switch unbuckled signal
16	ORN	RBSO	Front passenger's seat belt buckle switch buckled signal
17	GRN	LSA+	Power source for driver's side airbag inflator
18	RED	LSA-	Ground for driver's side airbag inflator
19	WHT	RSA+	Power source for front passenger's side airbag inflator
20	BLU	RSA-	Ground for front passenger's side airbag inflator
21	BRN	LCA1+	Power source for left side curtain airbag inflator
22	BLU	LCA1-	Ground for left side curtain airbag inflator
23	GRY	RCA1+	Power source for right side curtain airbag inflator
24	RED	RCA1-	Ground for right side curtain airbag inflator
25	PNK	LBS1+	Power source for left side impact sensor (first), left side impact sensor (second)
26	GRY	LBS1-	Ground for left side impact sensor (first), left side impact sensor (second)
27	BRN	RBS1+	Power source for right side impact sensor (first), right side impact sensor (second)
28	LTGRN	RBS1-	Ground for right side impact sensor (first), right side impact sensor (second)

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NOTE: BLU or BRN wires may be substituted for the wire colors in this table.

SRS UNIT INPUTS AND OUTPUTS AT CONNECTOR C (16P)



Wire side of female terminals

Fig. 43: Identifying SRS Unit Inputs And Outputs At Connector C (16P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TERMINALS DESCRIPTION

Terminal Number	Wire Color	Terminal Name	Description
4	BLU	SSS-	Ground for rear safing sensor
8	RED	SSS+	Power source for rear safing sensor

CIRCUIT DIAGRAM

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX



2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

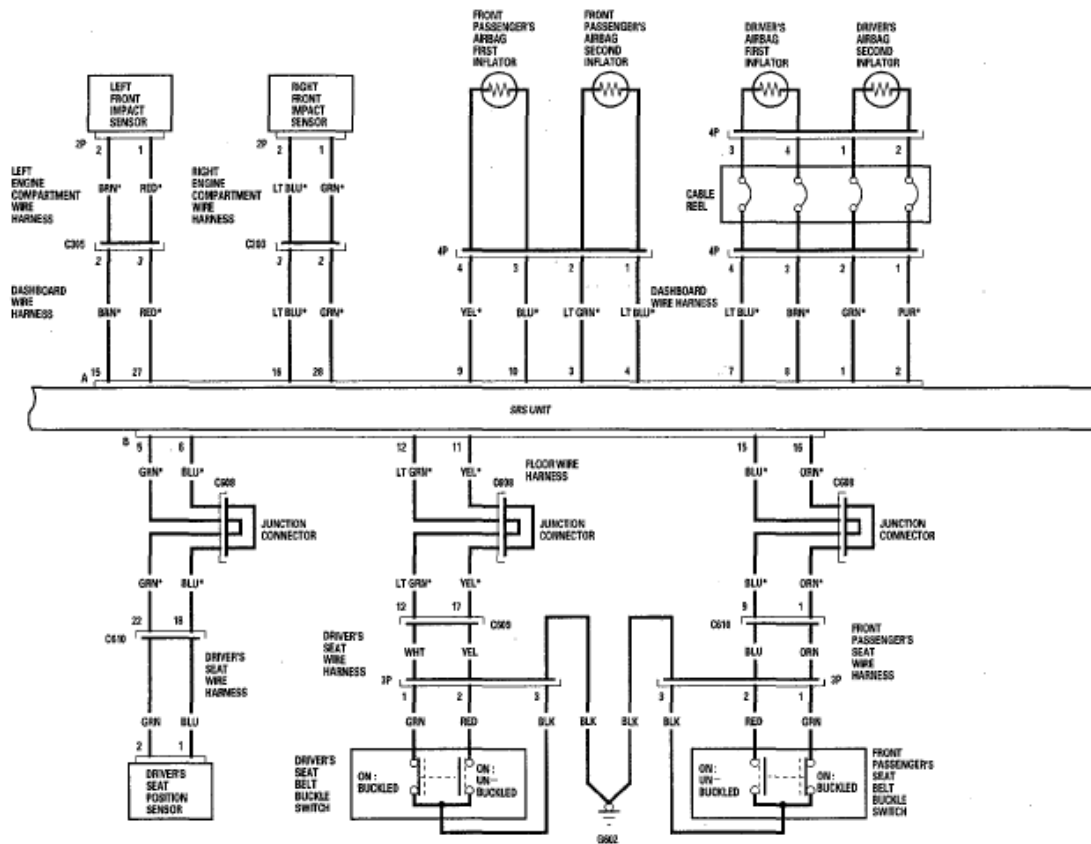


Fig. 45: SRS System Circuit Diagram (2 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

BLU or BRN wire color
can be used for the SRS circuits
that have a * mark

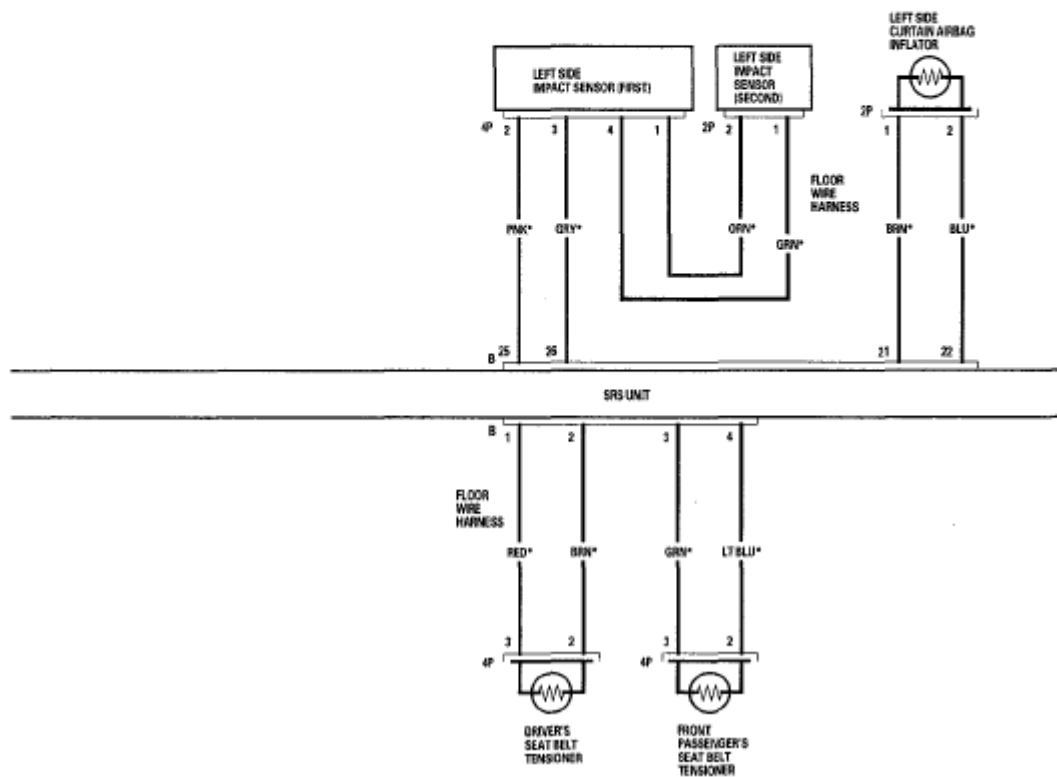


Fig. 46: SRS System Circuit Diagram (3 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLU or BRN wire color
can be used for the SRS circuits
that have a * mark

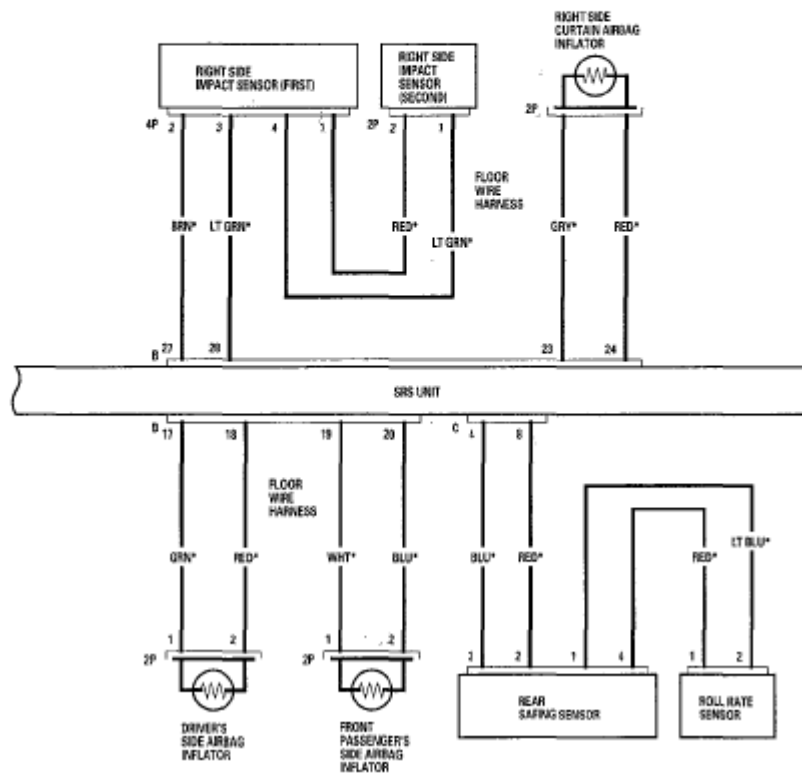


Fig. 47: SRS System Circuit Diagram (4 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-4X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S AIRBAG SECOND INFLATOR; DTC 11-5X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the driver's airbag 4P connector (A) from the cable reel.

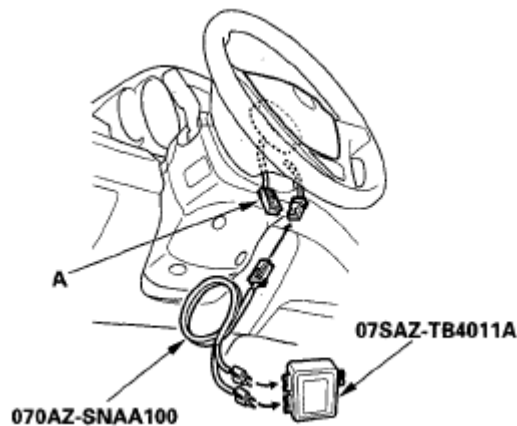


Fig. 48: Identifying Driver's Airbag 4P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the cable reel.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see GENERAL TROUBLESHOOTING INFORMATION).

Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the dashboard wire harness 4P connector (A) from the cable reel.

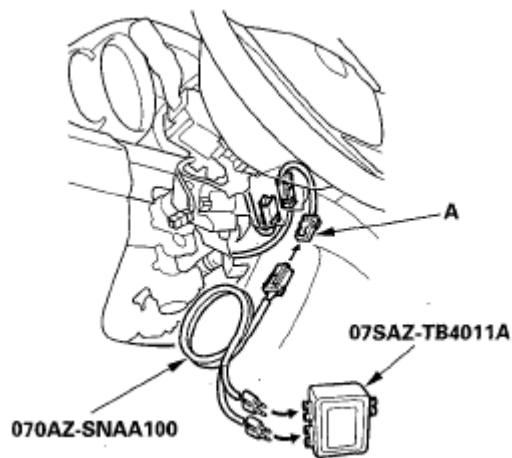


Fig. 49: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
12. Reconnect the negative cable to the battery.
13. Clear the DTC memory.
14. Read the DTC.

Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

YES - Go to step 15.

NO - Open or increased resistance in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**).

15. Turn the ignition switch OFF. Disconnect the negative cable from the battery, and wait for 3 minutes.
16. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
17. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
18. Measure the resistance between the terminals of both SRS simulator leads. There should be 1 Ω , or less.

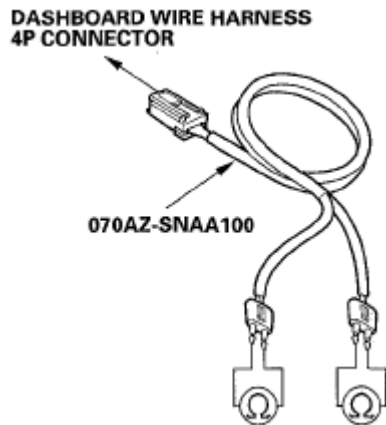


Fig. 50: Identifying Resistance Between Terminals Of Both SRS Simulator Leads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified ?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness.

DTC 11-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-6X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review **SRS Precautions and Procedures** (see **PRECAUTIONS AND PROCEDURES**) and **General Troubleshooting Information** (see **GENERAL TROUBLESHOOTING INFORMATION**).and **Battery Terminal Disconnection and Reconnection** (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 11-3x or 11-6x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the driver's airbag 4P connector (A) from the cable reel.

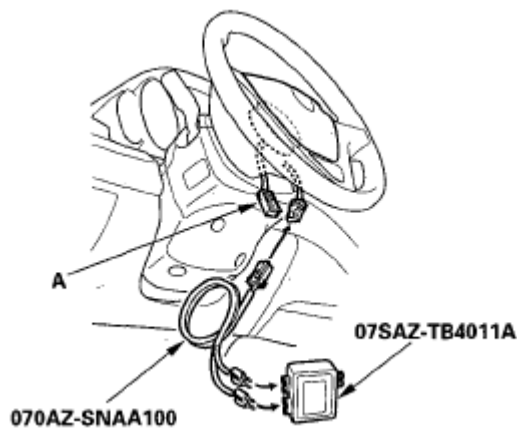


Fig. 51: Identifying Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the cable reel.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 11-3x or 11-6x indicated?

YES - Go to step 9.

NO - Short in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, and wait for 3 minutes.
10. Disconnect the dashboard wire harness 4P connector (A) from the cable reel.

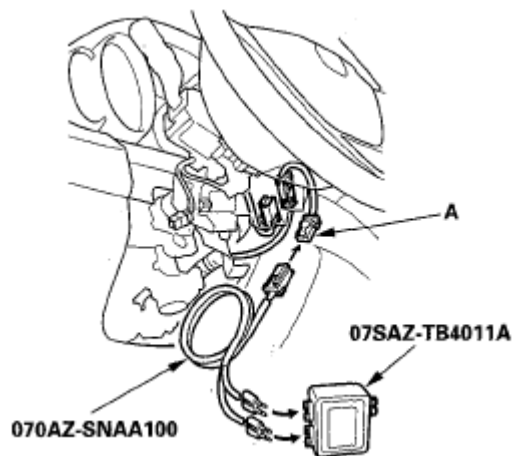


Fig. 52: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
12. Reconnect the negative cable to the battery.
13. Clear the DTC memory.
14. Read the DTC.

Is DTC 11-3x or 11-6x indicated?

YES - Go to step 15.

NO - Short in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**).

15. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
16. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
17. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
18. Connect an SRS short canceller (070AZ-SAA0100) to No. 7 and No. 8 terminals and No. 1 and No. 2 terminals of SRS unit connector A (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
19. Measure the resistance between the terminals of both SRS simulator leads. There should be an open circuit or at least 1 M ohms.

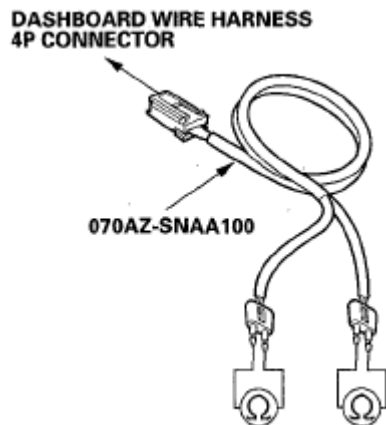


Fig. 53: Identifying Resistance Between Terminals Of Both SRS Simulator Leads
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the dashboard wire harness; replace the dashboard wire harness.

DTC 11-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-AX (11-A0 TO 11-A9,11-AA TO 11-AF): SHORT TO POWER IN DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- RS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 11-8x or 11-Ax indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the driver's airbag 4P connector (A) from the cable reel.

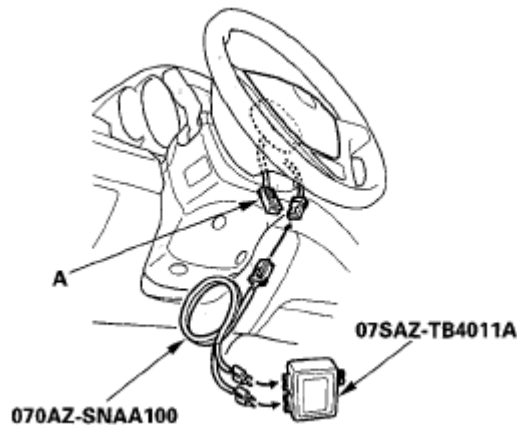


Fig. 54: Identifying Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the cable reel.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 11-8x or 11-Ax indicated?

YES - Go to step 9.

NO - Short to power in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the dashboard wire harness 4P connector (A) from the cable reel.

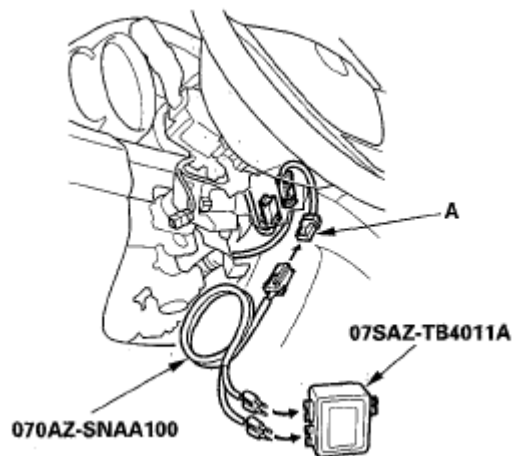


Fig. 55: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
12. Reconnect the negative cable to the battery.
13. Clear the DTC memory.
14. Read the DTC.

Is DTC 11-8x or 11-Ax indicated?

YES - Go to step 15.

NO - Short to power in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**).

15. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
16. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
17. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
18. Reconnect the negative cable to the battery.
19. Turn the ignition switch ON (II).
20. Measure the for voltage between each terminal of the SRS simulator lead and body ground. There should be 0.5 V or less.

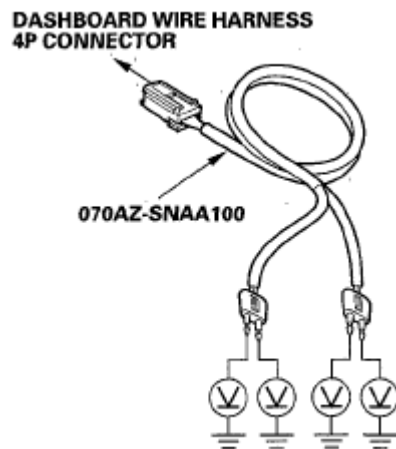


Fig. 56: Measuring For Voltage Between Each Terminal Of SRS Simulator Lead And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness.

DTC 11-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN DRIVER'S AIRBAG FIRST INFLATOR; DTC 11-BX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN DRIVER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 11-9x or 11-Bx indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the driver's airbag 4P connector (A) from the cable reel.

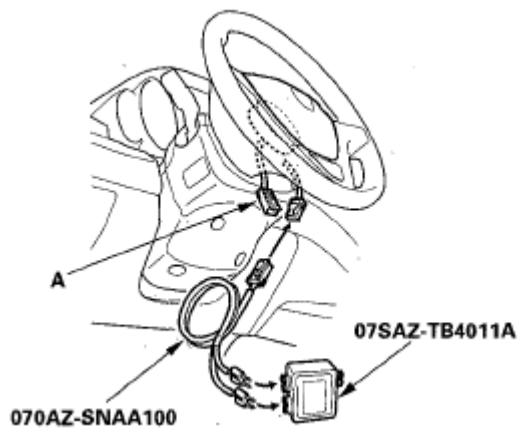


Fig. 57: Identifying Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the cable reel.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 11-9x or 11-Bx indicated?

YES - Go to step 9.

NO - Short to ground in the driver's airbag first or second inflator; replace the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the dashboard wire harness 4P connector (A) from the cable reel.

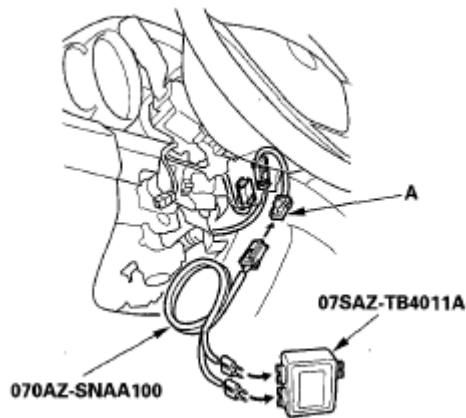


Fig. 58: Identifying Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
12. Reconnect the negative cable to the battery.
13. Clear the DTC memory.
14. Read the DTC.

Is DTC 11-9x or 11-Bx indicated?

YES - Go to step 15.

NO - Short to ground in the cable reel; replace the cable reel (see **CABLE REEL REPLACEMENT**).

15. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
16. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
17. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
18. Measure the resistance between each terminal of the SRS simulator lead and body ground. There should be an open circuit or at least 1Mohms.

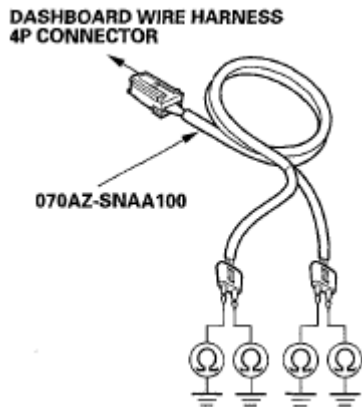


Fig. 59: Identifying Resistance Between Each Terminal Of SRS Simulator Lead And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness.

DTC 12-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN OR INCREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-4X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN OR INCREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG SECOND INFLATOR; DTC 12-5X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

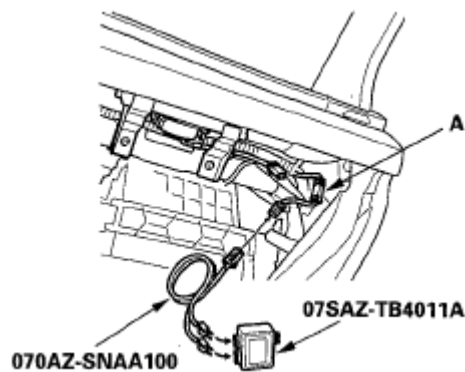


Fig. 60: Identifying Front Passenger's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 0. connectors) and simulator lead J to the dashboard wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
11. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
12. Measure the resistance between the terminals of both SRS simulator leads. There should be 1 ohms or less.

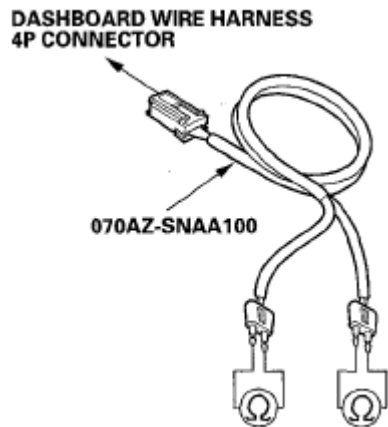


Fig. 61: Identifying Resistance Between Terminals Of Both SRS Simulator Leads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P). Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness.

DTC 12-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-6X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review **SRS Precautions and Procedures** (see **PRECAUTIONS AND PROCEDURES**) and **General Troubleshooting Information** (see **GENERAL TROUBLESHOOTING INFORMATION**).and **Battery Terminal Disconnection and Reconnection** (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 12-3x or 12-6x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

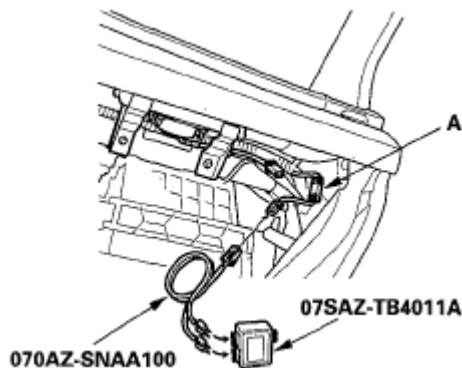


Fig. 62: Identifying Front Passenger's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 12-3x or 12-6x indicated?

YES - Go to step 9.

NO - Short in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8 on).
11. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
12. Connect an SRS short canceller (070AZ-SAA0100) to the No. 9 and No. 10 terminals, and the No. 3 and No. 4 terminals of SRS unit connector A (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
13. Measure the resistance between the terminals of both SRS simulator leads. There should be an open circuit or at least 1Mohms.

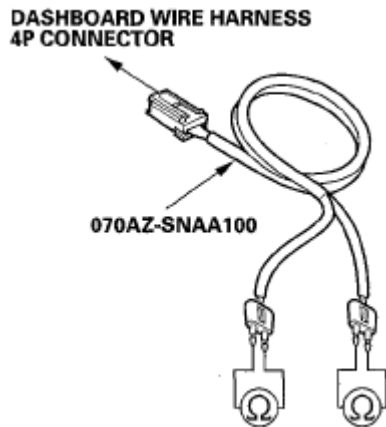


Fig. 63: Identifying Resistance Between Terminals Of Both SRS Simulator Leads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the dashboard wire harness; replace the dashboard wire harness.

DTC 12-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-AX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 12-8x or 12-Ax indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

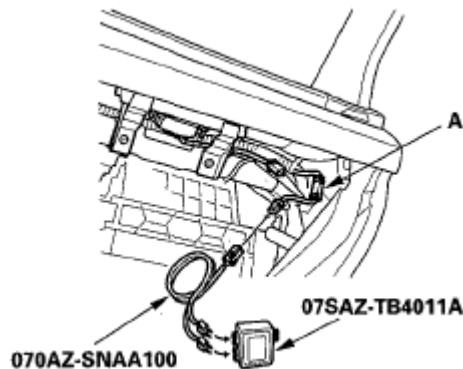


Fig. 64: Identifying Front Passenger's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 12-8x or 12-Ax indicated?

YES - Go to step 9.

NO - Short to power in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
11. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
12. Reconnect the negative cable to the battery.
13. Turn the ignition switch ON (II).
14. Measure the voltage between each terminal of the SRS simulator lead and body ground. There should be 0.5 V or less.

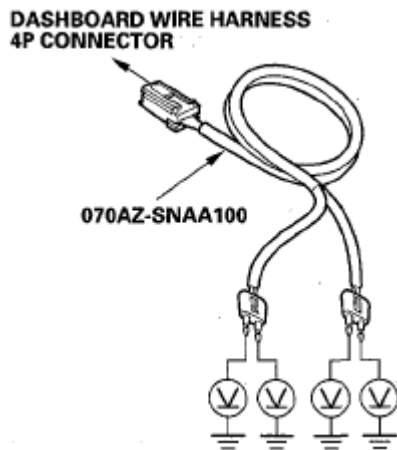


Fig. 65: Identifying Voltage Between Each Terminal Of SRS Simulator Lead And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness.

DTC 12-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN FRONT PASSENGER'S AIRBAG FIRST INFLATOR; DTC 12-BX ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN FRONT PASSENGER'S AIRBAG SECOND INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead J 070AZ-SNAA100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 12-9x or 12-Bx indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

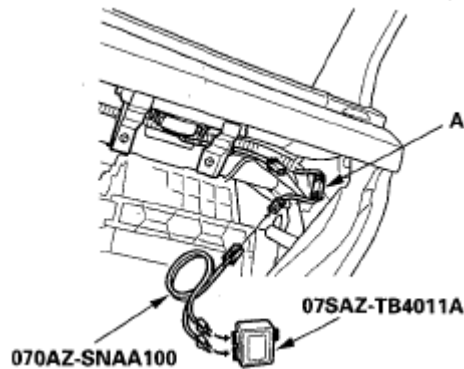


Fig. 66: Identifying Front Passenger's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead J to the dashboard wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 12-9x or 12-Bx indicated?

YES - Go to step 9.

NO - Short to ground in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
11. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the dashboard wire harness 4P connector.
12. Measure the resistance between each terminal of the SRS simulator lead and body ground. There should be an open circuit or at least 1 M ohms.

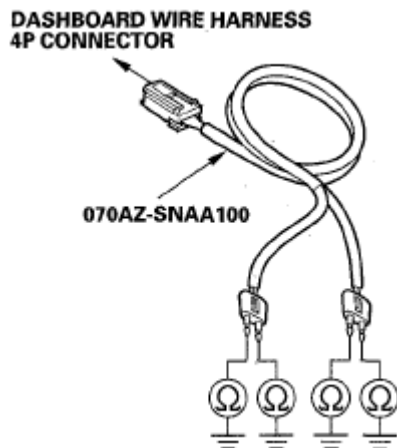


Fig. 67: Identifying Resistance Between Each Terminal Of SRS Simulator Lead And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness.

DTC 21-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S SEAT BELT TENSIONER; DTC 21-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 21-1x or 21-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 4P connector (A) from the driver's seat belt tensioner.

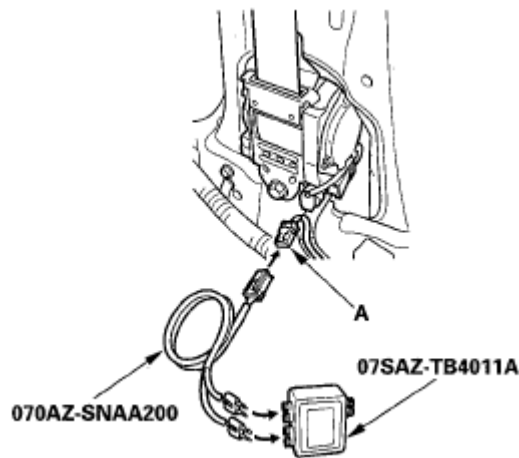


Fig. 68: Identifying Floor Wire Harness 4P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 21-1x or 21-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the front passenger's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Measure the resistance between the No. 1 and the No. 2 terminals of SRS unit connector B (28P). There should be 2.0-3.0 ohms.

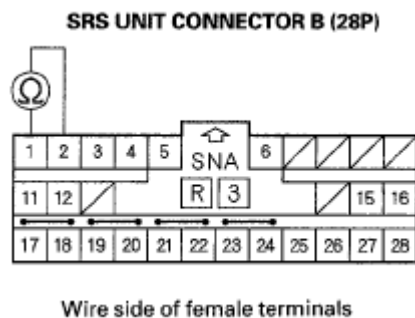


Fig. 69: Identifying Resistance Between No. 1 And No. 2 Terminals Of SRS Unit Connector B (28P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 21-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 21-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.

4. Disconnect the floor wire harness 4P connector (A) from the driver's seat belt tensioner.

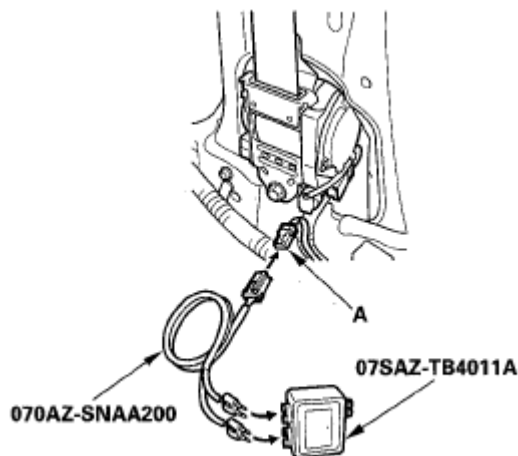


Fig. 70: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 21-3x indicated?

YES - Go to step 9.

NO - Short in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the front passenger's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Measure the resistance between the No. 1 and the No. 2 terminals of SRS unit connector B (28P). There should be an open circuit or at least 1Mohms.

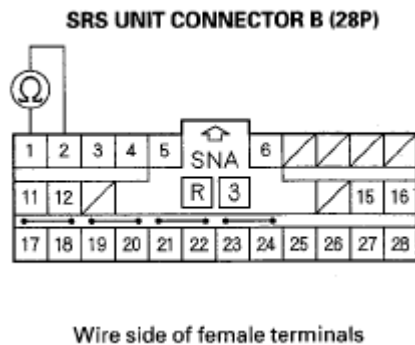


Fig. 71: Identifying Resistance Between No. 1 And No. 2 Terminals Of SRS Unit Connector B (28P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified ?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness; replace the floor wire harness.

DTC 21-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 21-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.

4. Disconnect the floor wire harness 4P connector (A) from the driver's seat belt tensioner.

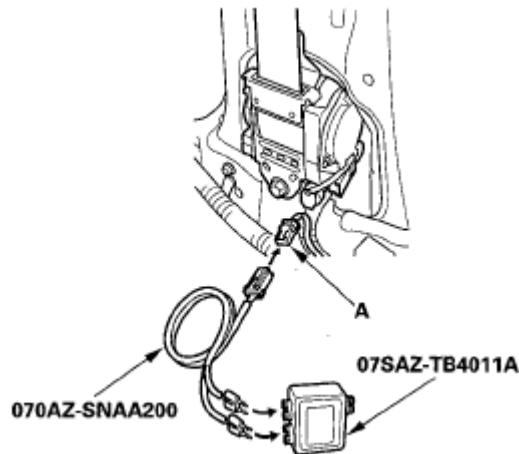


Fig. 72: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 21-8x indicated?

YES - Go to step 9.

NO - Short to power in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the front passenger's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the voltage between the No. 1 terminal of SRS unit connector B (28P) and body ground, and between the No. 2 terminal and body ground. There should be 0.5 V or less.

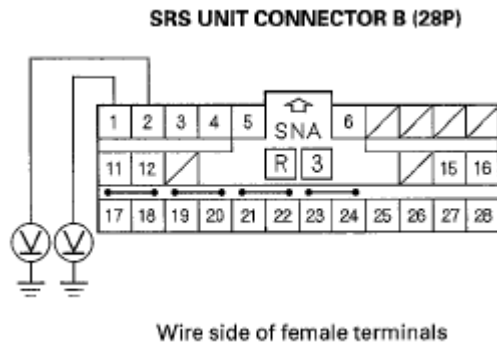


Fig. 73: Identifying Voltage Between No. 1 Terminal Of SRS Unit Connector B (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 21-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN DRIVER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 21-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 4P connector (A) from the driver's seat belt tensioner.

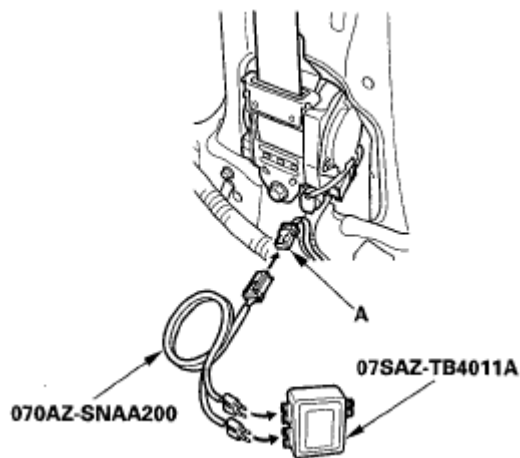


Fig. 74: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 21-9x indicated?

YES - Go to step 9.

NO - Short to ground in the driver's seat belt tensioner; replace the driver's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the front passenger's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Measure the resistance between the No. 1 terminal of SRS unit connector B (28P) and body ground, and between the No. 2 terminal and body ground. There should be an open circuit or at least 1 Mohms.

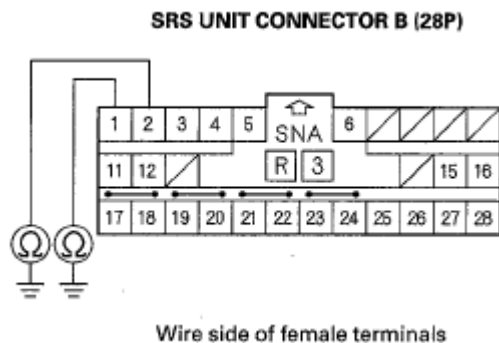


Fig. 75: Identifying Resistance Between No. 1 Terminal Of SRS Unit Connector B (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 22-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN FRONT PASSENGER'S SEAT BELT TENSIONER; DTC 22-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 22-1x or 22-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 4P connector (A) from the front passenger's seat belt tensioner.

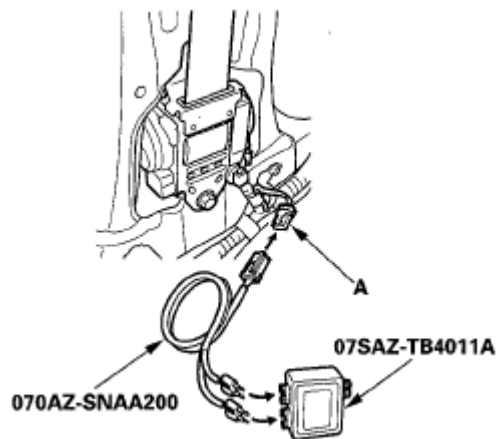


Fig. 76: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

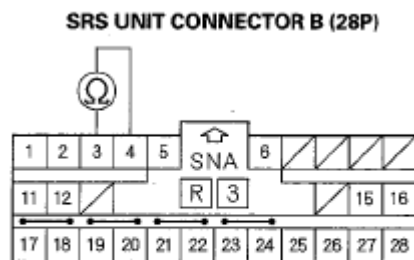
5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 22-1x or 22-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the driver's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Measure the resistance between the No. 3 and the No. 4 terminals of SRS unit connector B (28P). There should be 2.0-3.0 ohms.



Wire side of female terminals

Fig. 77: Identifying Resistance Between No. 3 And No. 4 Terminals Of SRS Unit Connector B (28P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 22-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 22-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.

4. Disconnect the floor wire harness 4P connector (A) from the front passenger's seat belt tensioner.

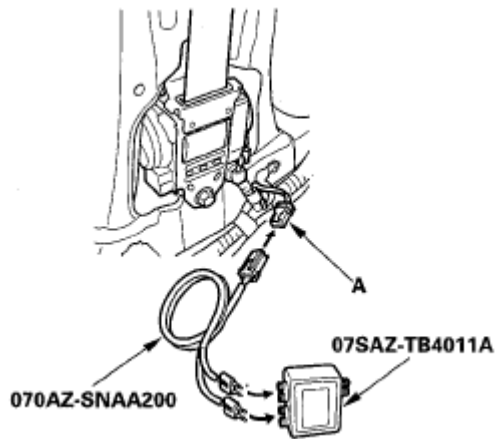


Fig. 78: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 22-3x indicated?

YES - Go to step 9.

NO - Short in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the driver's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Measure the resistance between the No. 3 and the No. 4 terminals of SRS unit connector B (28P). There should be an open circuit or at least 1M ohms.

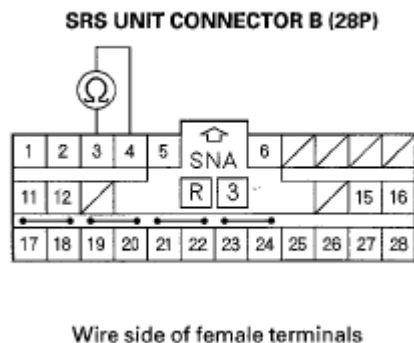


Fig. 79: Identifying Resistance Between No. 3 And No. 4 Terminals Of SRS Unit Connector B (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness; replace the floor wire harness.

DTC 22-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 22-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.

4. Disconnect the floor wire harness 4P connector (A) from the front passenger's seat belt tensioner.

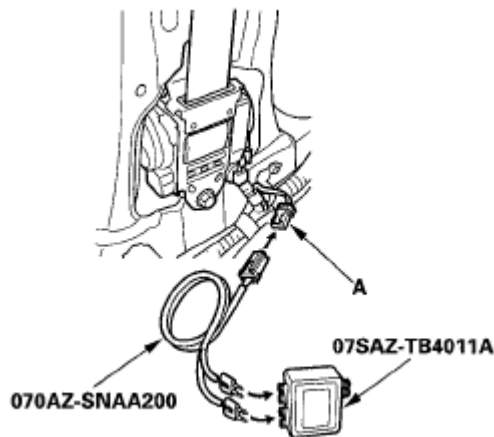


Fig. 80: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 22-8x indicated?

YES - Go to step 9.

NO - Short to power in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the driver's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the voltage between the No. 3 terminal of SRS unit connector B (28P) and body ground, and between the No. 4 terminal and body ground. There should be 0.5 V or less.

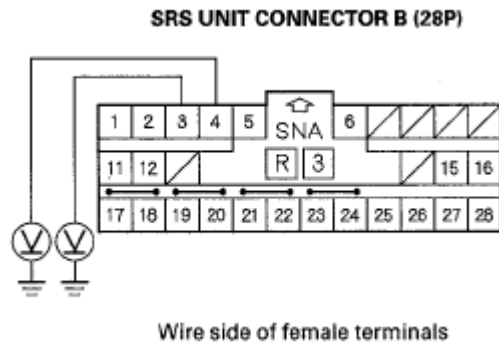


Fig. 81: Identifying Voltage Between No. 3 Terminal Of SRS Unit Connector B (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 22-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN FRONT PASSENGER'S SEAT BELT TENSIONER

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead K 070AZ-SNAA200

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 22-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 4P connector (A) from the front passenger's seat belt tensioner.

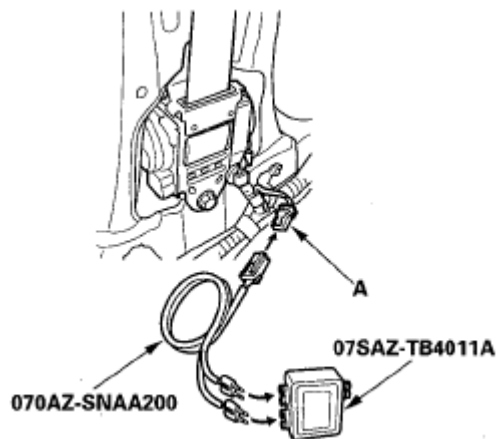


Fig. 82: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead K to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 22-9x indicated?

YES - Go to step 9.

NO - Short to ground in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see **FRONT SEAT BELT REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect the driver's seat belt tensioner 4P connector (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the simulator lead from the floor wire harness.
13. Measure the resistance between the No. 3 terminal of SRS unit connector B (28P) and body ground, and between the No. 4 terminal and body ground. There should be an open circuit or at least 1Mohms.

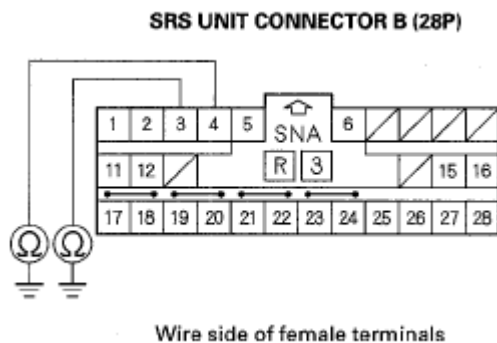


Fig. 83: Identifying Resistance Between No. 3 Terminal Of SRS Unit Connector B (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 31-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S SIDE AIRBAG INFLATOR; DTC 31-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 31-1x or 31-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the driver's side airbag (B).

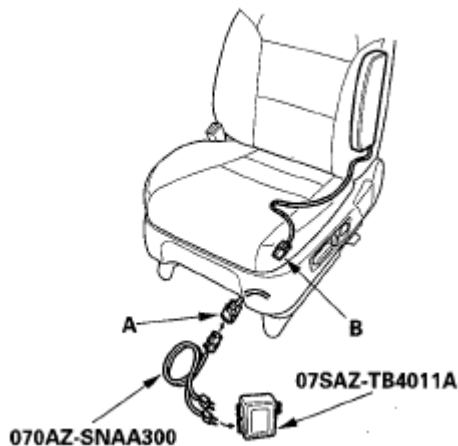


Fig. 84: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 31-1x or 31-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be 1.0 ohms or less.

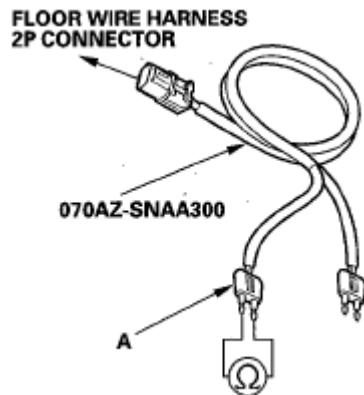


Fig. 85: Identifying Resistance Between Terminals Of Black SRS Simulator Lead (A)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 31-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 31-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING**

INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the driver's side airbag (B).

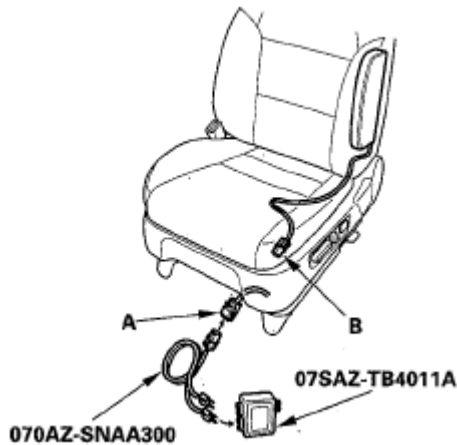


Fig. 86: Identifying Floor Wire Harness 2P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 31-3x indicated?

YES - Go to step 9.

NO - Short to another wire in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Connect the SRS short canceller (070AZ-SAA0100) to the No. 17 and No. 18 terminals of SRS unit connector B (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
14. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be an open circuit or at least 1 Mohms.

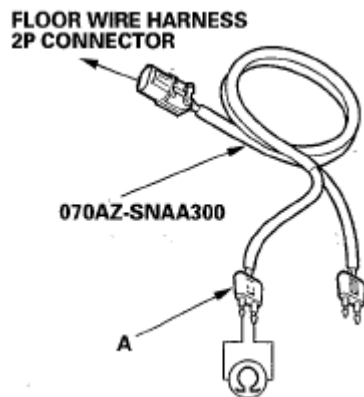


Fig. 87: Identifying Resistance Between Terminals Of Black SRS Simulator Lead (A)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness; replace the floor wire harness.

DTC 31-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 31-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the driver's side airbag (B).

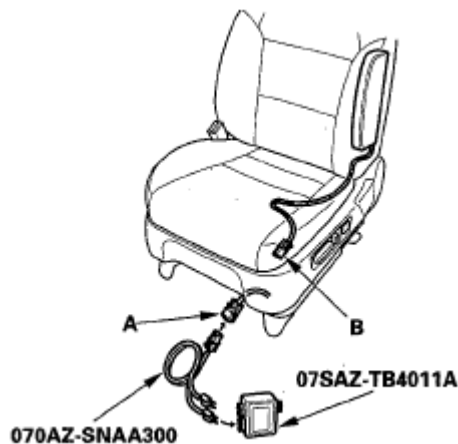


Fig. 88: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 31-8x indicated?

YES - Go to step 9.

NO - Short to power in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the voltage between each terminal of the black SRS simulator lead (A) and body ground. There should be 0.5 V or less.

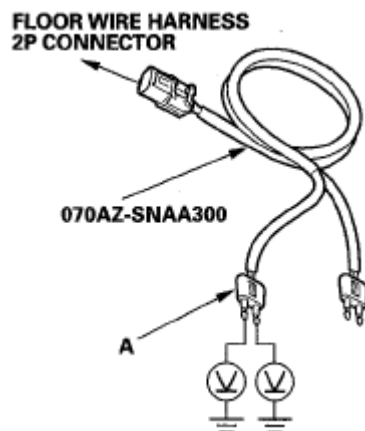


Fig. 89: Identifying Voltage Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 31-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN DRIVER'S SIDE AIRBAG INFLATOR

Special Tools Required

- RS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 31-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the driver's side airbag (B).

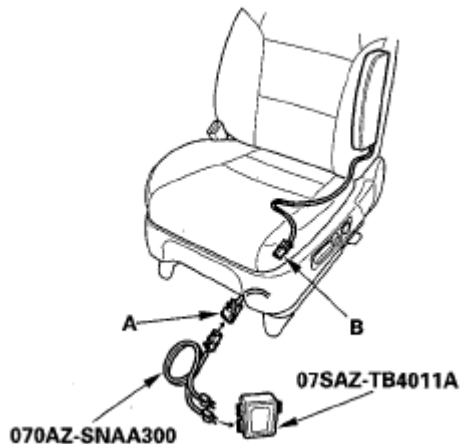


Fig. 90: Identifying Floor Wire Harness 2P Connector And Driver's Side Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 31-9X indicated?

YES - Go to step 9.

NO - Short to ground in the driver's side airbag inflator; replace the driver's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between each terminal of the black SRS simulator lead (A) and body ground. There should be an open circuit or at least 1 Mohms.

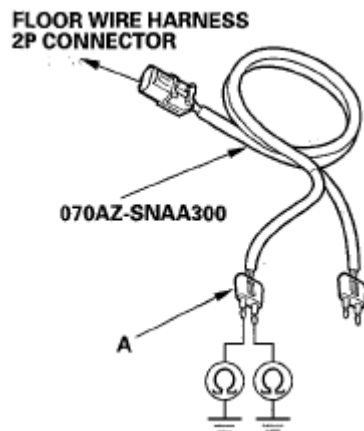


Fig. 91: Identifying Resistance Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 32-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN FRONT PASSENGER'S SIDE AIRBAG INFLATOR; DTC 32-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 32-1x or 32-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the front passenger's side airbag (B).

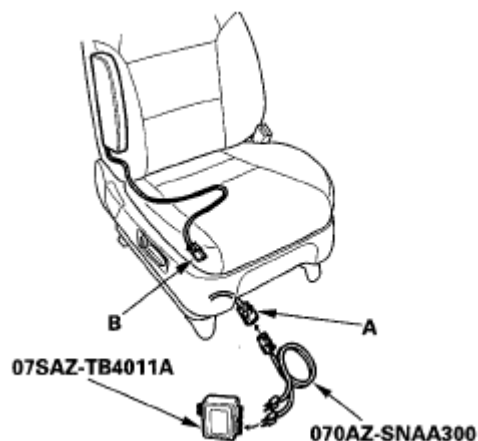


Fig. 92: Identifying Floor Wire Harness 2P Connector And Front Passenger's Side Airbag
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 32-1x or 32-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be 1.0 ohms or less.

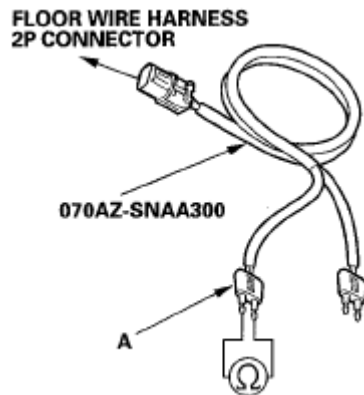


Fig. 93: Identifying Resistance Between Terminals Of Black SRS Simulator Lead
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 32-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 32-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING**

INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the front passenger's side airbag (B).

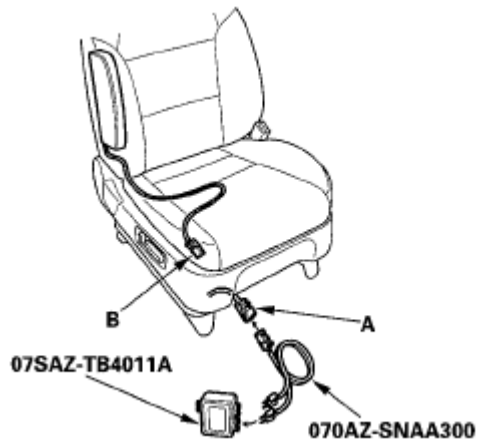


Fig. 94: Identifying Floor Wire Harness 2P Connector And Front Passenger's Side Airbag
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 32-3x indicated?

YES - Go to step 9.

NO - Short to another wire in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Connect the SRS short canceller (070AZ-SAA0100) to the No. 19 and No. 20 terminals of SRS unit connector B (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
14. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be an open circuit or at least 1 Mohms.

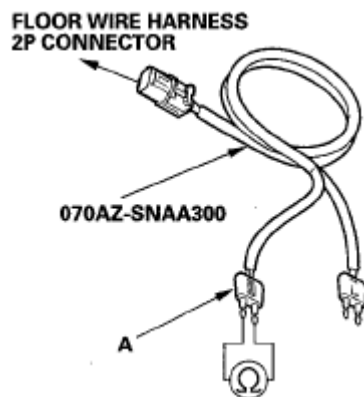


Fig. 95: Identifying Resistance Between Terminals Of Black SRS Simulator Lead
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness; replace the floor wire harness.

DTC 32-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 32-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the front passenger's side airbag (B).



Fig. 96: Identifying Floor Wire Harness 2P Connector And Front Passenger's Side Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 32-8x indicated?

YES - Go to step 9.

NO - Short to power in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the voltage between each terminal of the black SRS simulator lead (A) and body ground. There should be 0.5 V or less.

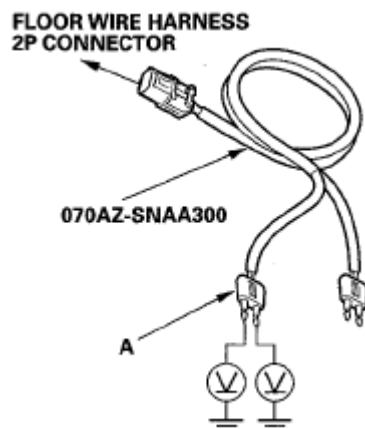


Fig. 97: Identifying Voltage Between Each Terminal Of Black Srs Simulator Lead And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 32-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN FRONT PASSENGER'S SIDE AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 32-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the floor wire harness 2P connector (A) from the front passenger's side airbag (B).

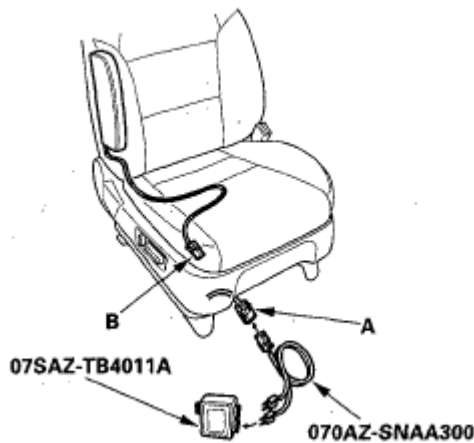


Fig. 98: Identifying Floor Wire Harness 2P Connector And Front Passenger's Side Airbag
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 32-9x indicated?

YES - Go to step 9.

NO - Short to ground in the front passenger's side airbag inflator; replace the front passenger's side airbag (see **SIDE AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between each terminal of the black SRS simulator lead (A) and body ground. There should be an open circuit or at least 1Mohms.

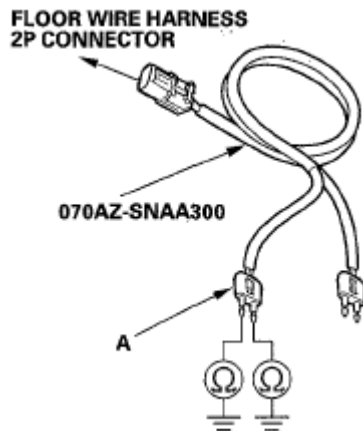


Fig. 99: Identifying Resistance Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 33-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN LEFT SIDE CURTAIN AIRBAG INFLATOR; DTC 33-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 33-1x or 33-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the left side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the left side curtain airbag connector (B).

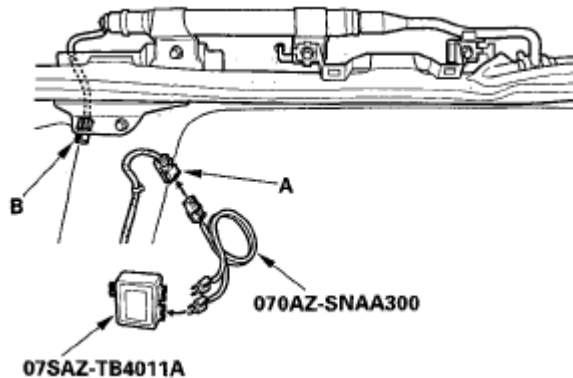


Fig. 100: Identifying Floor Wire Harness 2P Connector And Left Side Curtain Airbag Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 0. connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 33-1x or 33-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the left side curtain airbag; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be 1.0 ohms or less.

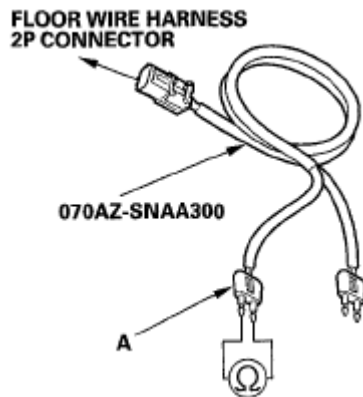


Fig. 101: Identifying Resistance Between Terminals Of Black SRS Simulator Lead (A)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at the SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 33-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 33-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING**

INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the left side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the left side curtain airbag connector (B).

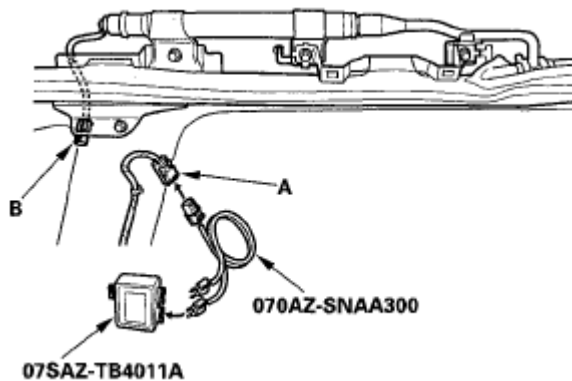


Fig. 102: Identifying Floor Wire Harness 2P Connector And Left Side Curtain Airbag Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 33-3x indicated?

YES - Go to step 9.

NO - Short to another wire in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Connect the SRS short canceller (070AZ-SAA0100) to the No. 21 and No. 22 terminals of SRS unit connector B (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
14. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be an open circuit or at least 1 Mohms.

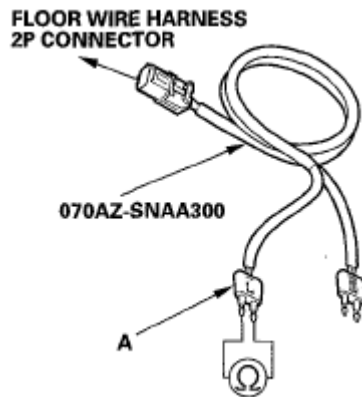


Fig. 103: Identifying Resistance Between Terminals Of Black SRS Simulator Lead (A)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to another wire in the floor wire harness; replace the floor wire harness.

DTC 33-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 33-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the left side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the left side curtain airbag connector (B).

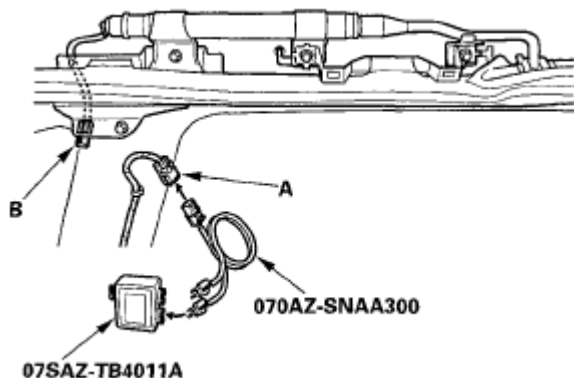


Fig. 104: Identifying Floor Wire Harness 2P Connector And Left Side Curtain Airbag Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 33-8x indicated?

YES - Go to step 9.

NO - Short to power in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect the SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the for voltage between each terminal of the black SRS simulator lead (A) and body ground. There should be 0.5 V or less.

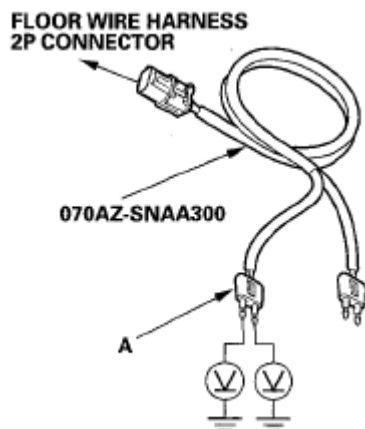


Fig. 105: Identifying For Voltage Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 33-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN LEFT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 33-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the left side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the left side curtain airbag connector (B).

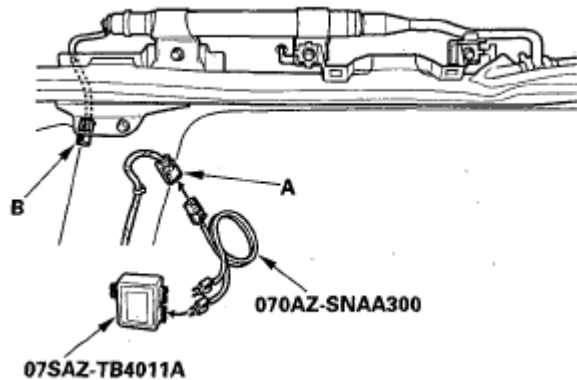


Fig. 106: Identifying Floor Wire Harness 2P Connector And Left Side Curtain Airbag Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 33-9x indicated?

YES - Go to step 9.

NO - Short to ground in the left side curtain airbag inflator; replace the left side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between each terminal of the black SRS simulator lead (A) and body ground. There should be an open circuit or at least 1 Mohms.

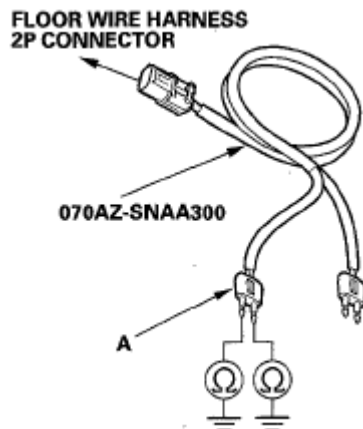


Fig. 107: Identifying Resistance Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 34-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN RIGHT SIDE CURTAIN AIRBAG INFLATOR; DTC 34-2X ("X" CAN BE 0 THRU 9 OR A THRU F): INCREASED RESISTANCE IN RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**). Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 34-1x or 34-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the right side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the right side curtain airbag connector (B).

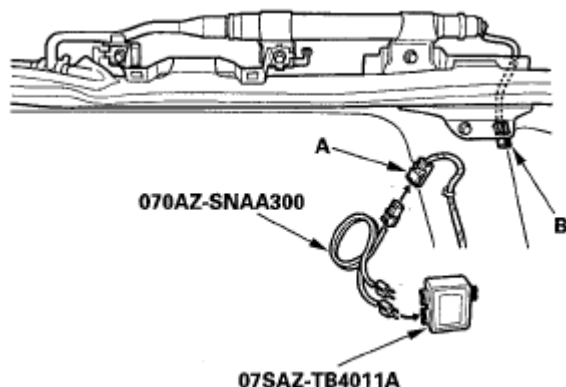


Fig. 108: Identifying Floor Wire Harness 2P Connector And Right Side Curtain Airbag Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 34-1x or 34-2x indicated?

YES - Go to step 9.

NO - Open or increased resistance in the right side curtain airbag inflator, replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be 1.0 ohms or less.

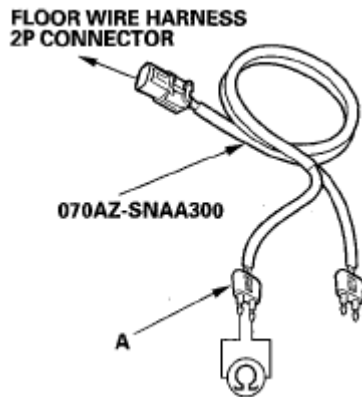


Fig. 109: Identifying Resistance Between Terminals Of Black SRS Simulator Lead
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open or increased resistance in the floor wire harness; replace the floor wire harness.

DTC 34-3X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO ANOTHER WIRE OR DECREASED RESISTANCE IN RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300
- SRS short canceller 070AZ-SAA0100

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**). Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 34-3x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the right side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the right side curtain airbag connector (B).

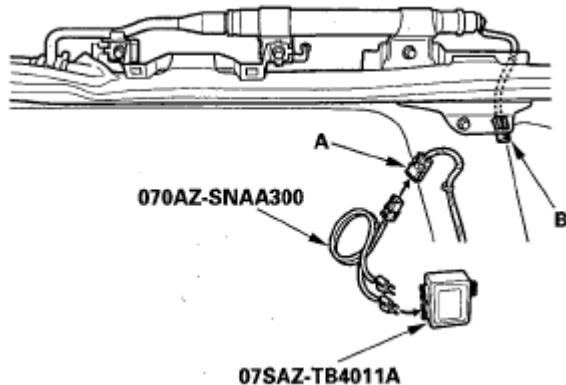


Fig. 110: Identifying Floor Wire Harness 2P Connector And Right Side Curtain Airbag Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 34-3x indicated?

YES - Go to step 9.

NO - Short to another wire in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Connect the SRS short canceller (070AZ-SAA0100) to the No. 23 and No. 24 terminals of SRS unit connector B (28P) (see **OPENING THE SRS UNIT SHORTING CONNECTORS FOR DIAGNOSIS**).
14. Measure the resistance between the terminals of the black SRS simulator lead (A). There should be an open circuit or at least 1 Mohms.

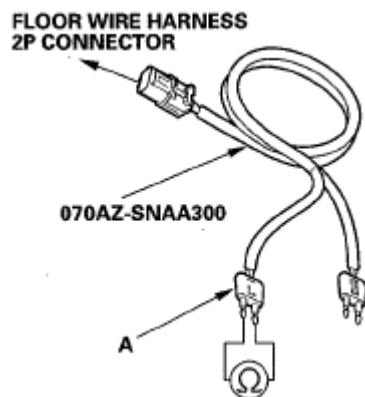


Fig. 111: Identifying Resistance Between Terminals Of Black SRS Simulator Lead
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness; replace the floor wire harness.

DTC 34-8X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO POWER IN RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 34-8x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the right side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the right side curtain airbag connector (B).

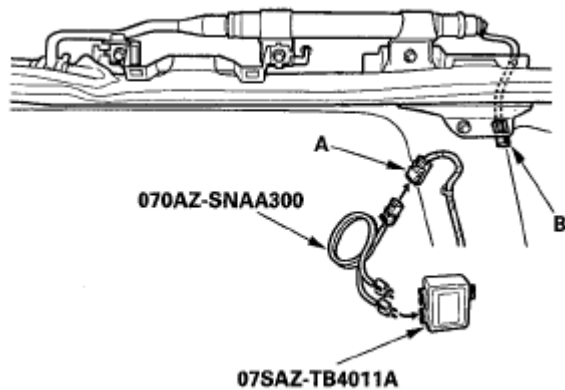


Fig. 112: Identifying Floor Wire Harness 2P Connector And Right Side Curtain Airbag Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 34-8x indicated ?

YES - Go to step 9.

NO - Short to power in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch to LOCK(0). Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Reconnect the negative cable to the battery.
14. Turn the ignition switch ON (II).
15. Measure the voltage between each terminal of the black SRS simulator lead (A) and body ground. There should be 0.5 V or less.

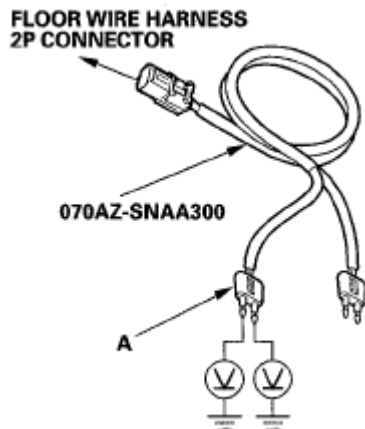


Fig. 113: Identifying Voltage Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to power in the floor wire harness; replace the floor wire harness.

DTC 34-9X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT TO GROUND IN RIGHT SIDE CURTAIN AIRBAG INFLATOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 34-9x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Remove the right side quarter pillar trim (see **QUARTER PILLAR TRIM**), then disconnect the floor wire harness 2P connector (A) from the right side curtain airbag connector (B).

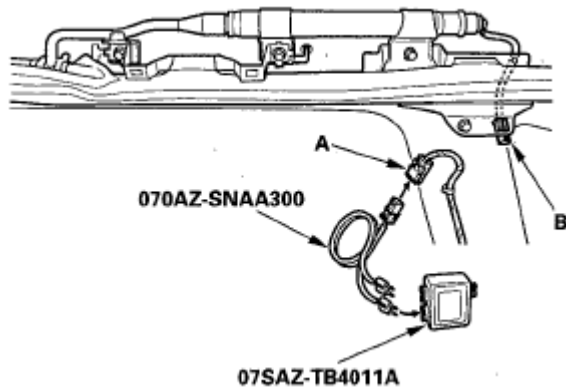


Fig. 114: Identifying Floor Wire Harness 2P Connector And Right Side Curtain Airbag Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the SRS inflator simulator (2 ohms connectors) and simulator lead L to the floor wire harness.
6. Reconnect the negative cable to the battery.
7. Clear the DTC memory.
8. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 34-9x indicated?

YES - Go to step 9.

NO - Short to ground in the right side curtain airbag inflator; replace the right side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**).

9. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
10. Disconnect both seat belt tensioner 4P connectors (see step 7).
11. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
12. Disconnect the SRS inflator simulator from the SRS simulator lead. Do not disconnect the simulator lead from the floor wire harness 2P connector.
13. Measure the resistance between each terminal of the black SRS simulator lead (A) and body ground. There should be an open circuit or at least 1Mohms.

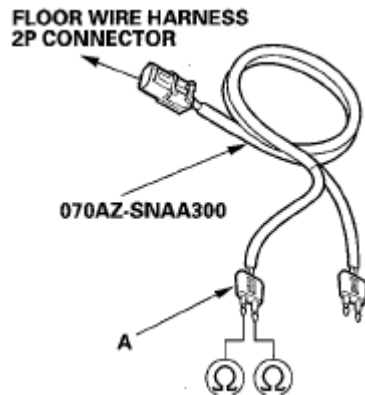


Fig. 115: Identifying Resistance Between Each Terminal Of Black SRS Simulator Lead (A) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty SRS unit or poor connection at SRS unit connector B (28P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the floor wire harness; replace the floor wire harness.

DTC 41-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT FRONT IMPACT SENSOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 41-1x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING**

INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF.
4. Disconnect the negative cable from the battery, and wait for 3 minutes.
5. Check the connections between SRS unit connector A (28P) and the SRS unit, between the left engine compartment wire harness 2P connector and the left front impact sensor (see **COMPONENT LOCATION INDEX**), and at connector C305 (see **LEFT ENGINE COMPARTMENT WIRE HARNESS**).

Are the connections OK?

YES - Go to step 6.

NO - Repair the poor connections and retest. If DTC 41-1x is still present, go to step 6.

6. Disconnect the left engine compartment wire harness 2P connector (A) from the left front impact sensor.

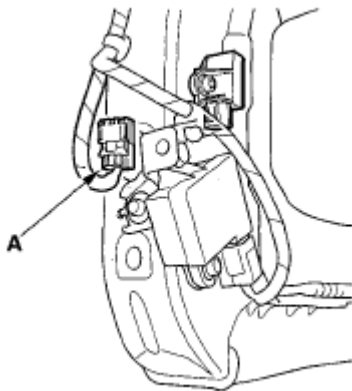
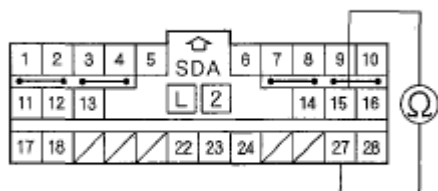


Fig. 116: Identifying Left Engine Compartment Wire Harness 2P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
8. Measure the resistance between the No. 15 and No. 27 terminals of SRS unit connector A (28P). There should be an open circuit or at least 1 M ohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 117: Identifying Resistance Between No. 15 And No. 27 Terminals Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 9.

NO - Short in the left engine compartment wire harness or dashboard wire harness; replace the faulty harness.

9. Measure the resistance between the No. 15 terminal of SRS unit connector A (28P) and body ground, and between the No. 27 terminal and body ground. There should be an open circuit or at least 1 M ohms.

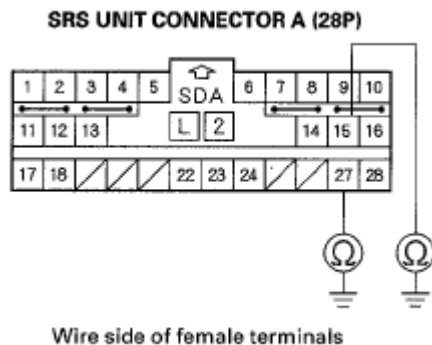


Fig. 118: Identifying Resistance Between No. 15 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the dashboard wire harness or the left engine compartment wire harness; replace the faulty harness.

10. Reconnect the negative cable to the battery.
11. Turn the ignition switch ON (II).
12. Measure the voltage between the No. 15 terminal of SRS unit connector A (28P) and body ground, and between the No. 27 terminal and body ground. There should be 0.5 V or less.

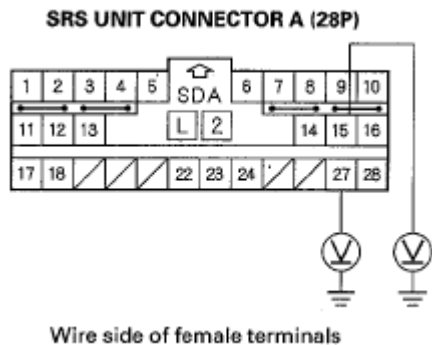


Fig. 119: Identifying Voltage Between No. 15 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness.

13. Turn the ignition switch LOCK(0).
14. Connect the SRS inflator simulator (jumper connector) and the black lead (A) of simulator lead L to the left engine compartment wire harness 2P connector (B).

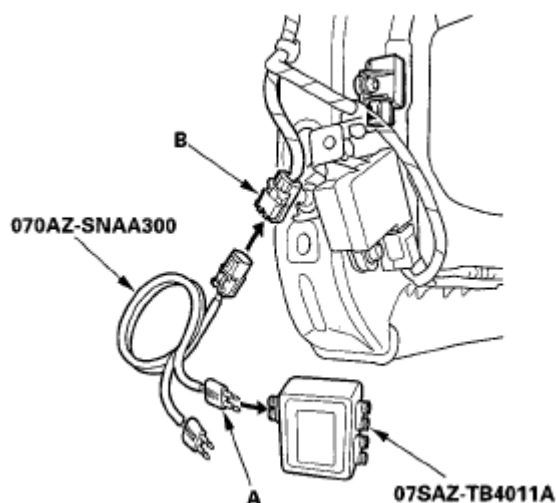
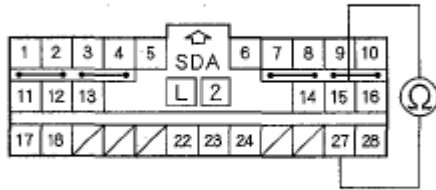


Fig. 120: Identifying Black Lead Of Simulator Lead L And Left Engine Compartment Wire Harness 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between the No. 15 and No. 27 terminals of SRS unit connector A (28P). There should be 0-1.0 ohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 121: Identifying Resistance Between No. 15 And No. 27 Terminals Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty left front impact sensor or SRS unit; replace the left front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**). If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Poor connection at C305, open in left engine compartment wire harness, or open in dashboard wire harness. Inspect C305 (see **LEFT ENGINE COMPARTMENT WIRE HARNESS**). If it is OK, replace the faulty harness.

DTC 42-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT FRONT IMPACT SENSOR

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 42-1x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF.
4. Disconnect the negative cable from the battery, then wait for 3 minutes.
5. Check the connections between SRS unit connector A (28P) and the SRS unit, between the right engine compartment wire harness 2P connector and the right front impact sensor (see **COMPONENT LOCATION INDEX**), and at connector C203 (see **RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)**).

Are the connections OK?

YES - Go to step 6.

NO - Repair the poor connections and retest. If DTC 42-1x is still present, go to step 6.

6. Disconnect the right engine compartment wire harness 2P connector (A) from the right front impact sensor.

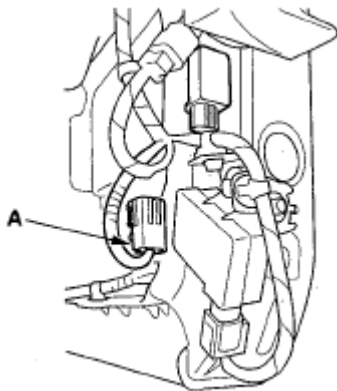
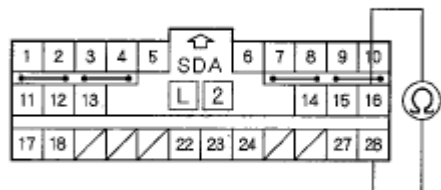


Fig. 122: Identifying Right Engine Compartment Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
8. Measure the resistance between the No. 16 and No. 28 terminals of SRS unit connector A (28P). There should be an open circuit or at least 1Mohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 123: Identifying Resistance Between No. 16 And No. 28 Terminals Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

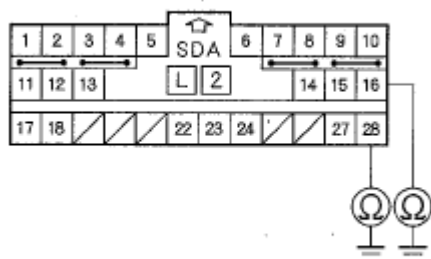
Is the resistance as specified?

YES - Go to step 9.

NO - Short in the right engine compartment wire harness or dashboard wire harness; replace the faulty harness.

9. Measure the resistance between the No. 16 terminal of SRS unit connector A (28P) and body ground, and between the No. 28 terminal and body ground. There should be an open circuit or at least 1 Mohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 124: Identifying Resistance Between No. 16 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 10.

NO - Short to ground in the dashboard wire harness or the right engine compartment wire harness; replace the faulty harness.

10. Reconnect the negative cable to the battery.

11. Turn the ignition switch ON (II).
12. Measure the voltage between the No. 16 terminal of SRS unit connector A (28P) and body ground, and between the No. 28 terminal and body ground. There should be 0.5 V or less.

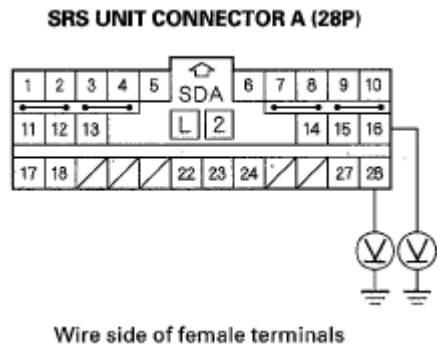


Fig. 125: Identifying Voltage Between No. 16 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 13.

NO - Short to power in the right engine compartment wire harness or dashboard wire harness; replace the faulty harness.

13. Turn the ignition switch OFF.
14. Connect the SRS inflator simulator (jumper connector) and the black lead (A) of simulator lead L to the right engine compartment wire harness 2P connector (B).

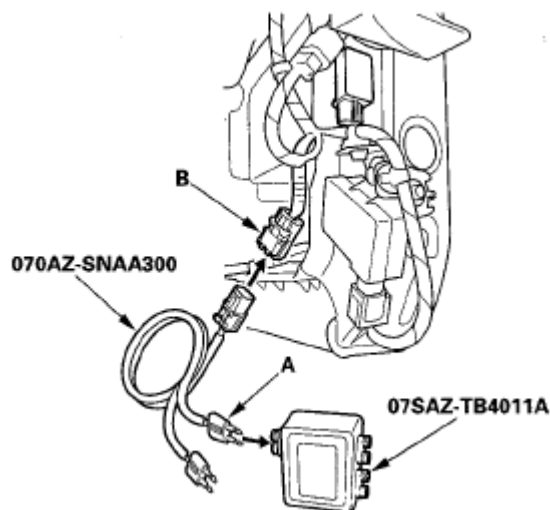
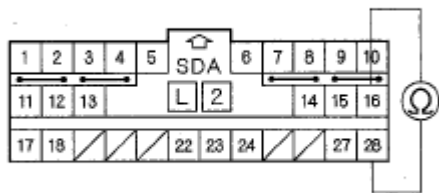


Fig. 126: Identifying Black Lead Of Simulator Lead L And Right Engine Compartment Wire Harness 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Measure the resistance between the No. 16 and No. 28 terminals of SRS unit connector A (28P). There should be 0-1.0 ohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 127: Identifying Resistance Between No. 16 And No. 28 Terminals Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified ?

YES - Faulty right front impact sensor or SRS unit; replace the right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**). If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Poor connection at C203, open in right engine compartment wire harness, or open in dashboard wire harness. Inspect C203 (see **RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)**). If it is OK, replace the faulty harness.

DTC 41-2X, 41-8X, 41-9X, 41-AX, 41-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT FRONT IMPACT SENSOR; DTC 42-2X, 42-8X, 42-9X, 42-AX, 42-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT FRONT IMPACT SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 41-2x, 41-8x, 41-9x, 41-Ax, 41-Bx, 42-2x, 42-8x, 42-9x, 42-Ax, or 42-Bx indicated?

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

YES - Replace the left or right front impact sensor (see **FRONT IMPACT SENSOR REPLACEMENT**). If the DTC returns, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

DTC 43-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT SIDE IMPACT SENSOR (FIRST)); DTC 45-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE LEFT SIDE IMPACT SENSOR (SECOND)

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and wait for 10 seconds.
3. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 45-1x (except 45-11) indicated?

YES - Faulty left side impact sensor (second); replace the left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).

NO - Go to step 4.

4. Read the DTC.

Is DTC 43-1x (except 43-11) indicated?

YES - Faulty left side impact sensor (first); replace the left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).

NO - Go to step 5.

5. Read the DTC.

Is DTC 43-11 indicated?

YES - Go to step 6.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NO - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Check for a damaged floor wire harness between SRS unit and left side impact sensor (first), left side impact sensor (first), and left side impact sensor (second).

Is the floor wire harness OK ?

YES - Go to step 8.

NO - Replace the floor wire harness.

8. Disconnect the negative cable from the battery, then wait for 3 minutes.
9. Replace the left side impact sensor (first) with a known-good part (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
10. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
11. Turn the ignition switch ON (II), and wait for 10 seconds.
12. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 43-11 indicated?

YES - Go to step 13.

NO - Faulty left side impact sensor (first); replace the original left side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).

13. Turn the ignition switch OFF.
14. Disconnect the negative cable from the battery, then wait for 3 minutes.
15. Replace the left side impact sensor (second) with a known-good part (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).
16. Clear the DTC (see **CLEAR THE DTC MEMORY WITH THE HDS**).
17. Turn the ignition switch ON (II), and wait for 10 seconds.
18. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 43-11 indicated?

YES - Go to step 19.

NO - Faulty left side impact sensor (second); replace the original left side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).

19. Turn the ignition switch to LOCK(0).
20. Disconnect the negative cable from the battery, then wait for 3 minutes.
21. Disconnect both seat belt tensioner 4P connectors (see step 7).

22. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
23. Disconnect the floor wire harness 2P connector (A) from the left side impact sensor (second) (see step 4).

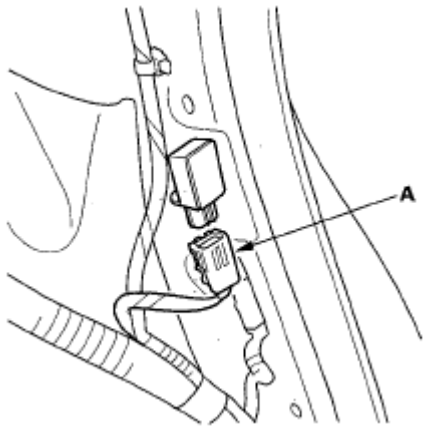


Fig. 128: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Disconnect the floor wire harness 4P connector (A) from the left side impact sensor (first) (see step 5).

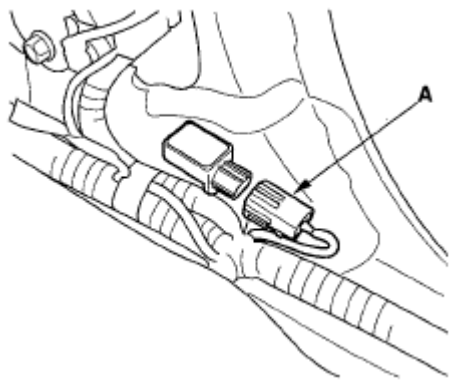
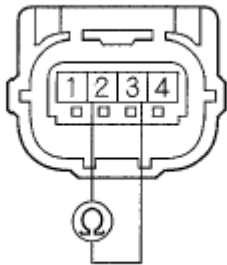


Fig. 129: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be an open circuit or at least 1 M ohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 130: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 26.

NO - Short in the floor wire harness; replace the floor wire harness.

26. Measure the resistance between the No.1 and No. 4 terminal of the floor wire harness 4P connector. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 131: Identifying Resistance Between No.1 And No. 4 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

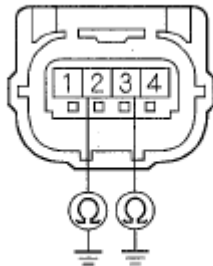
Is the resistance as specified?

YES - Go to step 27.

NO - Short in the floor wire harness; replace the floor wire harness.

27. Measure the resistance between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No. 3 terminal and body ground. There should be an open circuit or at least 1 Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 132: Measuring Resistance Between No. 2 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

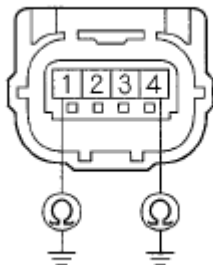
Is the resistance as specified?

YES - Go to step 28.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

28. Measure the resistance between the No. 1 terminal of floor wire harness 4P connector and body ground, and between the No. 4 terminal and body ground. There should be an open circuit or at least 1 Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 133: Identifying Resistance Between No. 1 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

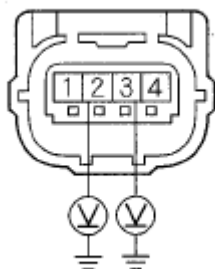
YES - Go to step 29.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

29. Reconnect the negative cable to the battery.
30. Turn the ignition switch ON (II).

31. Measure the voltage between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No.3 terminal and body ground. There should be less than 1 V.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 134: Identifying Voltage Between No. 2 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

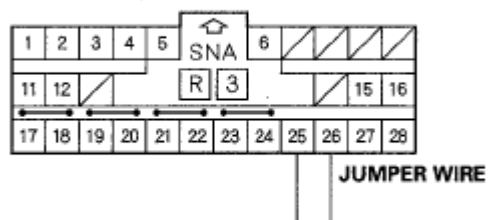
Is the voltage as specified?

YES - Go to step 32.

NO - Short to power in the floor wire harness; replace the floor wire harness.

32. Turn the ignition switch OFF.
33. Install a jumper wire between the No. 25 terminal and No. 26 terminal of the SRS unit connector B (28P).

SRS UNIT CONNECTOR B (28P)



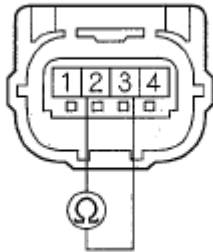
Wire side of female terminals

Fig. 135: Identifying Jumper Wire Between No. 25 Terminal And No. 26 Terminal Of SRS Unit Connector B (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be 0-10 Ω .

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 136: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 35.

NO - Open in the floor wire harness; replace the floor wire harness.

35. Connect the SRS inflator simulator (jumper connector) and the black lead (A) of simulator lead L to the floor wire harness 2P connector (B).

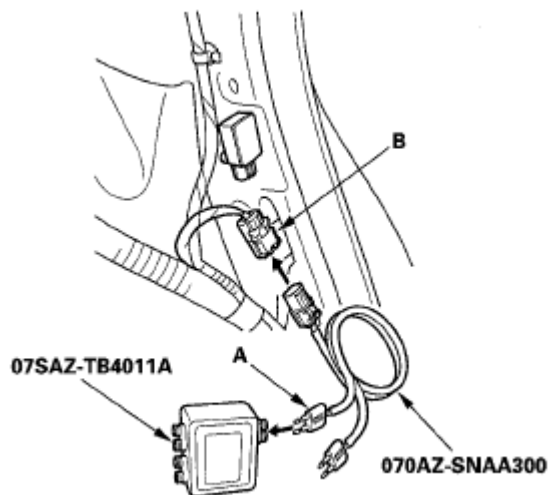
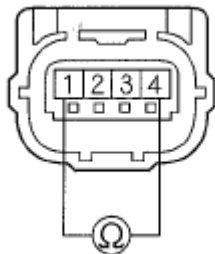


Fig. 137: Identifying Black Lead Of Simulator Lead L And Floor Wire Harness 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Measure the resistance between the No. 1 and No. 4 terminal of the floor wire harness 4P connector. There should be less than 1.0 ohms.

FLOOR WIRE HARNESS 4P CONNECTOR

Terminal side of female terminals

Fig. 138: Identifying Resistance Between No. 1 And No. 4 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Reconnect the floor wire harness 4P connector to the left side impact sensor (first) and left side impact sensor (second). If the DTCs are still indicated, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the floor wire harness; replace the floor wire harness.

DTC 44-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT SIDE IMPACT SENSOR (FIRST); DTC 46-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE RIGHT SIDE IMPACT SENSOR (SECOND)

Special Tools Required

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and wait for 10 seconds.
3. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 46-1x (except 46-11) indicated?

YES - Faulty right side impact sensor (second); replace the right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NO - Go to step 4.

4. Read the DTC.

Is DTC 44-1x (except 44-11) indicated?

YES - Faulty right side impact sensor (first); replace the right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).

NO - Go to step 5.

5. Read the DTC.

Is DTC 44-11 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Check for damage to the floor wire harness between the SRS unit and right side impact sensor (first), right side impact sensor (first), and right side impact sensor (second).

Is the floor wire harness OK?

YES - Go to step 8.

NO - Replace the floor wire harness.

8. Disconnect the negative cable from the battery, then wait for 3 minutes.
9. Replace the right side impact sensor (first) with a known-good part (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).
10. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
11. Turn the ignition switch ON (II), and wait for 10 seconds.
12. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 44-11 indicated?

YES - Go to step 13.

NO - Faulty right side impact sensor (first); replace the original right side impact sensor (first) (see **SIDE IMPACT SENSOR (FIRST) REPLACEMENT**).

13. Turn the ignition switch OFF.
14. Disconnect the negative cable from the battery, then wait for 3 minutes.

15. Replace the right side impact sensor (second) with a known-good part (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).
16. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
17. Turn the ignition switch ON (II), and wait for 10 seconds.
18. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 44-11 indicated?

YES - Go to step 19.

NO - Faulty right side impact sensor (second); replace the original right side impact sensor (second) (see **SIDE IMPACT SENSOR (SECOND) REPLACEMENT**).

19. Turn the ignition switch to LOCK(0).
20. Disconnect the negative cable from the battery, then wait for 3 minutes.
21. Disconnect both seat belt tensioner 4P connectors (see step 7).
22. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
23. Disconnect the floor wire harness 2P connector (A) from the right side impact sensor (second) (see step 4).

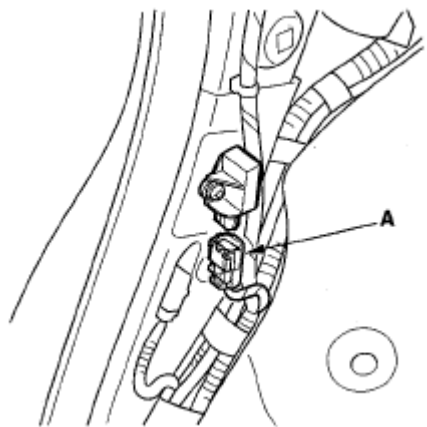


Fig. 139: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Disconnect the floor wire harness 4P connector (A) from the right side impact sensor (first) (see step 5).

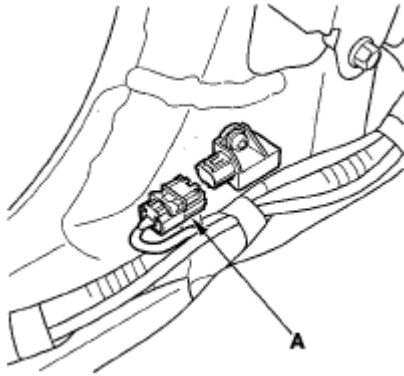
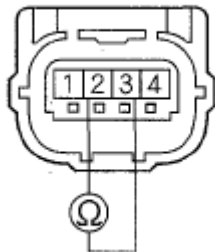


Fig. 140: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be an open circuit or at least 1 Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 141: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

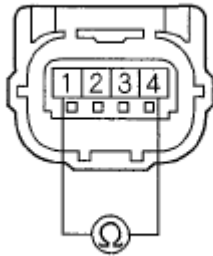
Is the resistance as specified?

YES - Go to step 26.

NO - Short in the floor wire harness; replace the floor wire harness.

26. Measure the resistance between the No.1 and No. 4 terminal of the right side wire harness 4P connector. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 142: Identifying Resistance Between No.1 And No. 4 Terminal Of Right Side Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

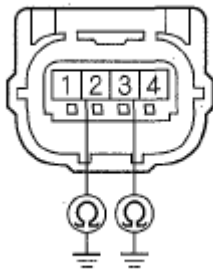
Is the resistance as specified?

YES - Go to step 27.

NO - Short in the floor wire harness; replace the floor wire harness.

27. Measure the resistance between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No. 3 terminal and body ground. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 143: Identifying Resistance Between No. 2 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

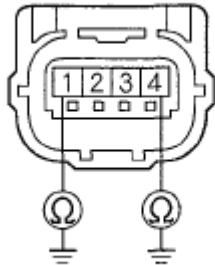
Is the resistance as specified?

YES - Go to step 28.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

28. Measure the resistance between the No. 1 terminal of floor wire harness 4P connector and body ground, and between the No. 4 terminal and body ground. There should be an open circuit or at least 1 Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 144: Identifying Resistance Between No. 1 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

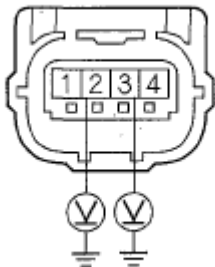
Is the resistance as specified?

YES - Go to step 29.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

29. Reconnect the negative cable to the battery.
30. Turn the ignition switch to ON (II).
31. Measure the voltage between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No. 3 terminal and body ground. There should be less than 0.5 V.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 145: Identifying Voltage Between No. 2 Terminal Of Floor Wire Harness 4P Connector And Body Ground

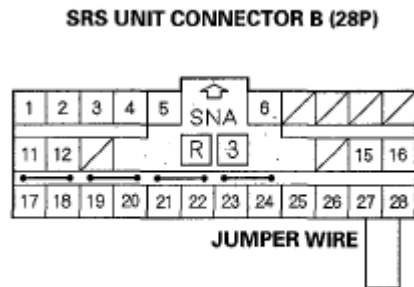
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 32.

NO - Short to power in the floor wire harness; replace the floor wire harness.

32. Turn the ignition switch OFF.
33. Install a jumper wire between the No. 27 terminal and No. 28 terminal of the SRS unit connector B (28P).



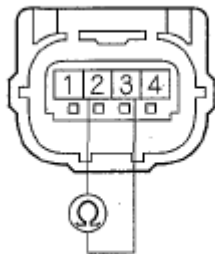
Wire side of female terminals

Fig. 146: Identifying Jumper Wire Between No. 27 Terminal And No. 28 Terminal Of SRS Unit Connector B (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be less than 1.0 ohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 147: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 35.

NO - Open in the floor wire harness; replace the floor wire harness.

35. Connect the SRS inflator simulator (jumper connector) and the black lead (A) of simulator lead L to the floor wire harness 2P connector (B).

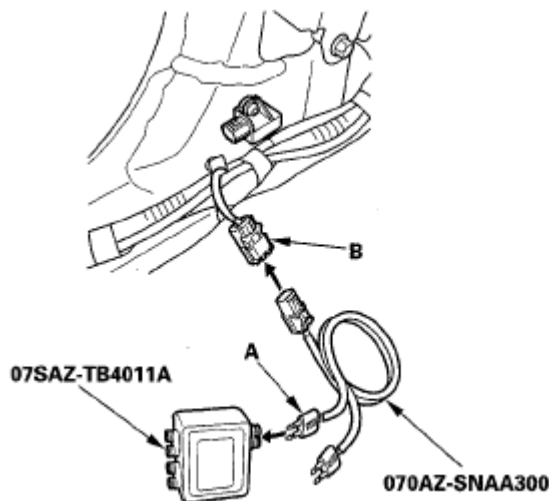


Fig. 148: Identifying Black Lead Of Simulator Lead L And Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Measure the resistance between the No. 1 and No. 4 terminal of the floor wire harness 4P connector. There should be 0-1.0 ohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 149: Identifying Resistance Between No. 1 And No. 4 Terminal Of Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Reconnect the floor wire harness 4P connector to the right side impact sensor (first) and right side impact sensor (second). If the DTCs are still indicated, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the floor wire harness; replace the floor wire harness.

DTC 43-2X, 43-8X, 43-9X, 43-AX, 43-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT SIDE IMPACT SENSOR (FIRST); DTC 44-2X, 44-8X, 44-9X, 44-AX, 44-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT SIDE IMPACT SENSOR (FIRST)

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 43-2x, 43-8x, 43-9x, 43-Ax, 43-Bx, 44-2x, 44-8x, 44-9x, 44-Ax, or 44-Bx indicated?

YES - Replace the left or right side impact sensor (first) (see SIDE IMPACT SENSOR (FIRST) REPLACEMENT). If the DTC returns, replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

DTC 45-2X, 45-8X, 45-9X, 45-AX, 45-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE LEFT SIDE IMPACT SENSOR (SECOND); DTC 46-2X, 46-8X, 46-9X, 46-AX, 46-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE RIGHT SIDE IMPACT SENSOR (SECOND)

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 45-2x, 45-8x, 45-9x, 45-Ax, 45-Bx, 46-2x, 46-8x, 46-9x, 46-Ax, or 46-Bx indicated?

YES - Replace the left or right side impact sensor (second) (see SIDE IMPACT SENSOR (SECOND) REPLACEMENT). If the DTC returns, replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

DTC B1-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE ROLL RATE SENSOR; DTC B2-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE REAR SAFING SENSOR

Special Tools Required

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

- SRS inflator simulator 07SAZ-TB4011A
- SRS simulator lead L 070AZ-SNAA300

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), then wait for 10 seconds.
3. Read the DTC (see GENERAL TROUBLESHOOTING INFORMATION).

Is DTC B1-1x (except B1-11) indicated?

YES - Faulty roll rate sensor; replace the roll rate sensor (see ROLL RATE SENSOR REPLACEMENT).

NO - Go to step 4.

4. Read the DTC.

Is DTC B2-1x (except B2-11) indicated?

YES - Faulty rear safing sensor; replace the rear safing sensor (see REAR SAFING SENSOR REPLACEMENT).

NO - Go to step 5.

5. Read the DTC.

Is DTC B2-11 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Check for damage to the floor wire harness between the SRS unit and rear safing sensor, rear safing sensor, and roll rate sensor.

Is the floor wire harness OK?

YES - Go to step 8.

NO - Replace the floor wire harness.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

8. Disconnect the negative cable from the battery, then wait for 3 minutes.
9. Replace the rear safing sensor with a known-good part (see **REAR SAFING SENSOR REPLACEMENT**).
10. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
11. Turn the ignition switch ON (II), and wait for 10 seconds.
12. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC B2-11 indicated?

YES - Go to step 13.

NO - Faulty rear safing sensor; replace the original rear safing sensor (see **REAR SAFING SENSOR REPLACEMENT**).

13. Turn the ignition switch to LOCK(0).
14. Disconnect the negative cable from the battery, then wait for 3 minutes.
15. Replace the roll rate sensor with a known-good part (see **ROLL RATE SENSOR REPLACEMENT**).
16. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
17. Turn the ignition switch ON (II), and wait for 10 seconds.
18. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC B2-11 indicated?

YES - Go to step 19.

NO - Faulty roll rate sensor; replace the original roll rate sensor (see **ROLL RATE SENSOR REPLACEMENT**).

19. Turn the ignition switch OFF.
20. Disconnect the negative cable from the battery, then wait for 3 minutes.
21. Disconnect SRS unit connector C (16P) from the SRS unit (see step 8).
22. Disconnect the floor wire harness 2P connector (A) from the roll rate sensor (see step 4).

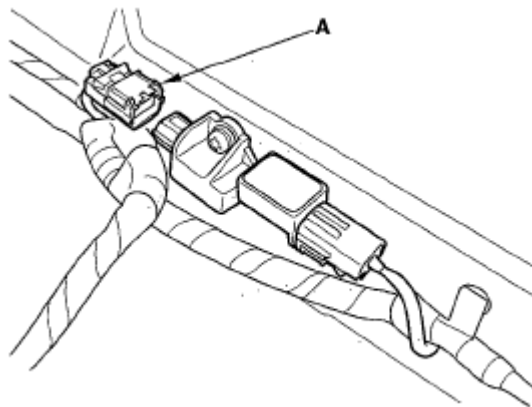


Fig. 150: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Disconnect the floor wire harness 4P connector (A) from the rear safing sensor (see step 4).

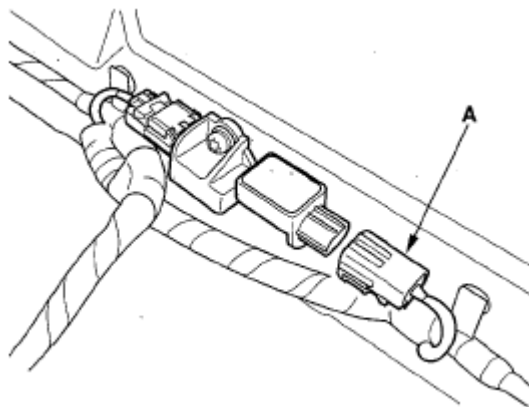
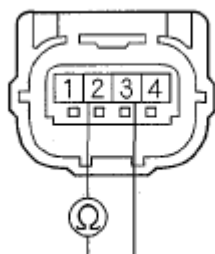


Fig. 151: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 152: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P

Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified ?

YES - Go to step 26.

NO - Short in the floor wire harness; replace the floor wire harness.

25. Measure the resistance between the No.1 and No. 4 terminal of the right side wire harness 4P connector. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 153: Identifying Resistance Between No.1 And No. 4 Terminal Of Right Side Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

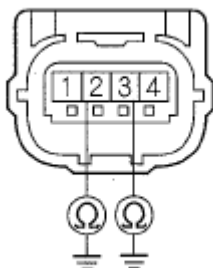
Is the resistance as specified?

YES - Go to step 27.

NO - Short in the floor wire harness; replace the floor wire harness.

26. Measure the resistance between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No. 3 terminal and body ground. There should be an open circuit or at least 1Mohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 154: Identifying Resistance Between No. 2 Terminal Of Floor Wire Harness 4P Connector And

Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

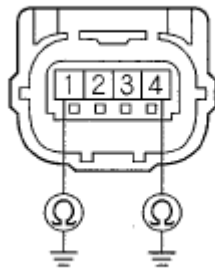
Is the resistance as specified?

YES - Go to step 28.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

27. Measure the resistance between the No. 1 terminal of floor wire harness 4P connector and body ground, and between the No. 4 terminal and body ground. There should be an open circuit or at least 1 M ohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 155: Identifying Resistance Between No. 1 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

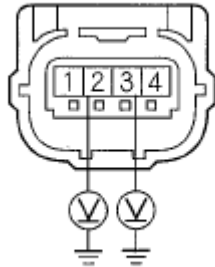
Is the resistance as specified?

YES - Go to step 29.

NO - Short to ground in the floor wire harness; replace the floor wire harness.

28. Reconnect the negative cable to the battery.
29. Turn the ignition switch ON (II).
30. Measure the voltage between the No. 2 terminal of floor wire harness 4P connector and body ground, and between the No.3 terminal and body ground. There should be less than 0.2 V.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 156: Identifying Voltage Between No. 2 Terminal Of Floor Wire Harness 4P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

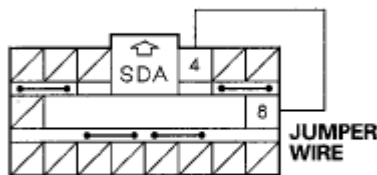
Is the voltage as specified?

YES - Go to step 32.

NO - Short to power in the floor wire harness; replace the floor wire harness.

31. Turn the ignition to LOCK(0).
32. Install a jumper wire between the No. 4 terminal and No. 8 terminal of the SRS unit connector C (16P).

SRS UNIT CONNECTOR C (16P)



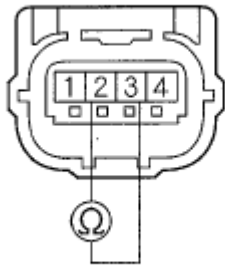
Wire side of female terminals

Fig. 157: Identifying Jumper Wire Between No. 27 Terminal And No. 28 Terminal Of SRS Unit Connector C (16P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Measure the resistance between the No. 2 and No. 3 terminal of the floor wire harness 4P connector. There should be less than 1.0 ohms.

FLOOR WIRE HARNESS 4P CONNECTOR



Terminal side of female terminals

Fig. 158: Identifying Resistance Between No. 2 And No. 3 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 35.

NO - Open in the floor wire harness; replace the floor wire harness.

34. Connect the SRS inflator simulator (jumper connector) and the brack lead (A) of simulator lead L to the floor wire harness 2P connector (B).

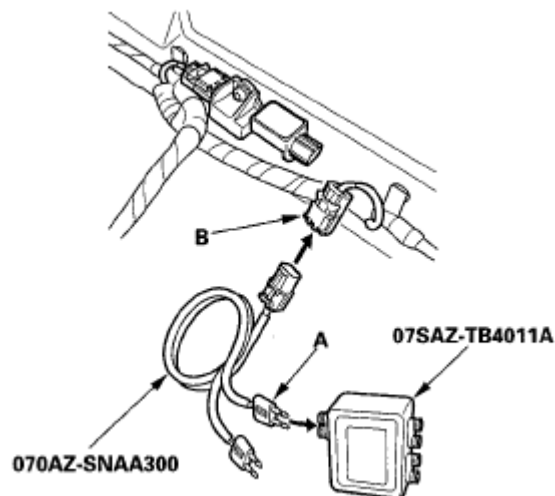
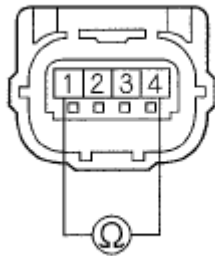


Fig. 159: Identifying Back Lead Of Simulator Lead L And Floor Wire Harness 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Measure the resistance between the No. 1 and No. 4 terminal of the floor wire harness 4P connector. There should be less than 1.0 ohms.

FLOOR WIRE HARNESS 4P CONNECTOR

Terminal side of female terminals

Fig. 160: Identifying Resistance Between No. 1 And No. 4 Terminal Of Floor Wire Harness 4P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Reconnect the floor wire harness 4P connector to the rear safing sensor and roll rate sensor. If the DTCs are still indicated, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the floor wire harness; replace the floor wire harness.

DTC B1-2X, B1-8X, B1-9X, BI-AX, BI-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE ROLL RATE SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC B1-2x, B1-8x, B1-9x, B1-Ax, or B1-Bx indicated?

YES - Replace the roll rate sensor (see **ROLL RATE SENSOR REPLACEMENT**). If the DTC returns, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

DTC B2-2X, B2-8X, B2-9X, B2-AX, B2-BX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE REAR SAFING SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General

Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC B2-2x, B2-8x, B2-9x, B2-Ax, or B2-Bx indicated?

YES - Replace the rear safing sensor (see REAR SAFING SENSOR REPLACEMENT). If the DTC returns, replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

DTC 51-XX, 52-XX, 53-XX, 54-XX, 55-XX, 57-XX ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE SRS UNIT

NOTE:

- Before troubleshooting any of these DTCs, check the battery/system voltage and battery cable corrections. If the voltage is low, repair the charging system or replace the battery before troubleshooting the SRS. If the battery/system voltage is now OK, ask the client if the battery ever went dead or if the engine was started and run with the battery in a low state of charge. A dead battery may trigger one or more of these DTCs.
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 51-xx, 52-xx, 53-xx, 54-xx, 55-xx, or 57-xx indicated?

YES - Replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

DTC EX-XX ("X" CAN BE 0 THRU 9 OR A THRU F): CONTROL OPERATION RECORDED; DTC FX-XX ("X" CAN BE 0 THRU 9 OR A THRU F): AIRBAGS AND/OR TENSIONERS DEPLOYMENT RECORDED

NOTE:

- Before doing this troubleshooting procedure, review SRS Precautions

and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

- DTC E2-11: Front passenger's airbag did not deploy by SWS operation.
- DTC E4-11: Front left side airbag did not deploy by OPDS operation.
- DTC F1-11: Driver's airbag and/or driver's seat belt tensioner deployed.
- DTC F2-11: Front passenger's airbag and/or front passenger's seat belt tensioner deployed.
- DTC F3-11: Driver's side airbag, left side curtain airbag, and/or driver's seat belt tensioner deployed.
- DTC F4-11: Front passenger's side airbag, right side curtain airbag, and/or front passenger's seat belt tensioner deployed.
- DTC F5-11: One or both side curtain airbag, and seat belt tensioner deployed.
- DTC F6-11: Left side curtain airbag or right side curtain airbag deployed.

The SRS unit must be replaced after any airbags and/or tensioners have deployed (see COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT).

NOTE:

- DTC E2-11 is set if the system triggered airbag deployment but the front passenger's airbag was prevented from deploying because of the seat weight sensor.
- DTC E4-11 is set if the system triggered a passenger's side airbag deployment but the airbag was prevented from deploying by the ODS. Replace the right side impact sensor (first) (see SIDE IMPACT SENSOR (FIRST) REPLACEMENT).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

DTC 61-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S SEAT BELT BUCKLE SWITCH

NOTE:

Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), then buckle and unbuckle the driver's seat belt several times.
3. Read the DTC (see GENERAL TROUBLESHOOTING INFORMATION).

Is DTC 61-1x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

4. Disconnect the driver's seat harness 3P connector from the driver's seat belt buckle switch 3P connector (A).

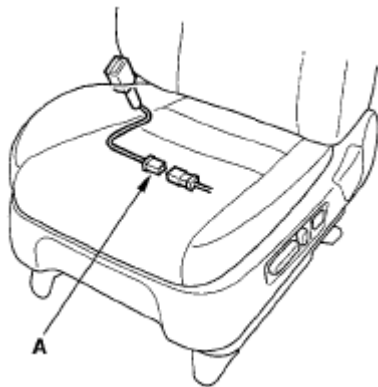
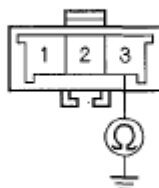


Fig. 161: Identifying Driver's Seat Belt Buckle Switch 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. From the system selection menu on the HDS, select SRS, then select SRS again, then select PARAMETER INFORMATION, then Buckle Switch. Seat Position Sensor, and check the status on the HDS screen for FRONT LEFT SEAT BELT BUCKLE SWITCH when the seat belt is buckled, and unbuckled.
 - If UNBUCKLE, BUCKLE, or SHORT is indicated replace the driver's seat wire harness, or floor wire harness; replace the faulty harness.
 - If OPEN is indicated, go to step 6.
6. Measure the resistance between the No. 3 terminal of the driver's seat wire harness 3P connector and body ground. There should be less than 1 ohms.

DRIVER'S SEAT WIRE HARNESS 3P CONN



Wire side of female terminals

Fig. 162: Identifying Resistance Between No. 3 Terminal Of Driver's Seat Wire Harness 3P

Connector And Body Ground**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

Is the resistance as specified?

YES - Go to step 7.

NO - Open in the driver's seat wire harness or floor wire harness or poor ground connection at G602 (see **FLOOR WIRE HARNESS (LEFT BRANCH)**). If G602 is OK, replace the faulty harness.

7. Alternately connect the No. 2 and No. 3 terminals of the driver's seat wire harness 3P connector to body ground with a jumper wire, and check the status on the HDS screen.

Does the status alternate from UNBUCKLE to BUCKLE?

YES - Replace the driver's seat belt buckle assembly (see **SEAT BELT BUCKLE**), then clear the DTC.

NO - Open in the driver's seat wire harness or floor wire harness; replace the faulty harness.

DTC 61-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN DRIVER'S SEAT BELT BUCKLE SWITCH

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), then buckle and unbuckle the driver's seat belt several times.
3. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 61-2x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK(0).
5. Disconnect the driver's seat wire harness 3P connector from the driver's seat belt buckle switch 3P connector (A).

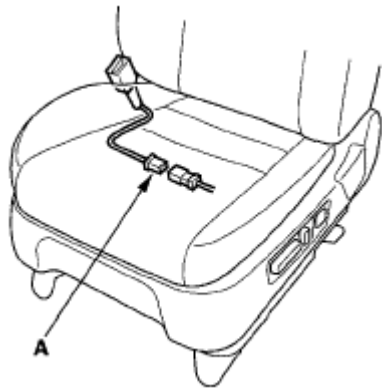


Fig. 163: Identifying Driver's Seat Belt Buckle Switch 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON (II).
7. From the system selection menu on the HDS, select SRS, then select SRS again, then select PARAMETER INFORMATION, then Buckle Switch, Seat Position Sensor, and Check the status on the HDS screen for FRONT LEFT SEAT BELT BUCKLE SWITCH.

Is OPEN indicated on the HDS?

YES - Replace the driver's seat belt buckle assembly (see SEAT BELT BUCKLE), then clear the DTC.

NO - Short to ground in the driver's seat wire harness or floor wire harness; replace the faulty wire harness.

DTC 62-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), then buckle and unbuckle the driver's seat belt several times.
3. Read the DTC (see GENERAL TROUBLESHOOTING INFORMATION).

Is DTC 62-1x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

4. Disconnect the front passenger's seat wire harness 3P connector from the front passenger's seat belt buckle switch 3P connector (A).

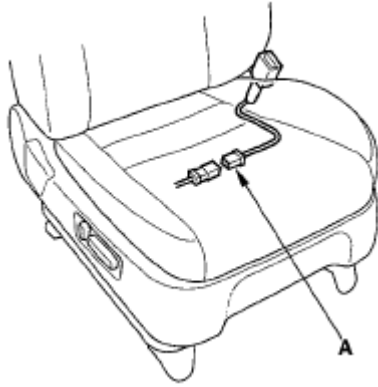
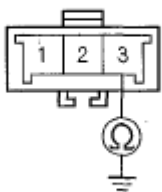


Fig. 164: Identifying Front Passenger's Seat Belt Buckle Switch 3P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. From the system selection menu on the HDS, select SRS, then select SRS again, then select PARAMETER INFORMATION, then Buckle Switch. Seat Position Sensor, and check the status on the HDS screen for FRONT RIGHT SEAT BELT BUCKLE SWITCH when the seat belt is buckled, and unbuckled.
 - If UNBUCKLE, BUCKLE, or SHORT is indicated open in the front passenger's seat wire harness, or floor wire harness; replace the faulty harness.
 - If OPEN is indicated, go to step 6.
6. Measure the resistance between the No. 3 terminal of the front passenger's seat wire harness 3P connector and body ground. There should be 0-1 ohms.

**FRONT PASSENGER'S SEAT WIRE
 HARNESS 3P CONNECTOR**



Wire side of female terminals

Fig. 165: Identifying Resistance Between No. 3 Terminal Of Front Passenger's Seat Wire Harness 3P Connector And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified ?

YES - Go to step 7.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NO - Open in the front passenger's seat wire harness or floor wire harness or poor ground connection at G602 (see **FLOOR WIRE HARNESS (LEFT BRANCH)**). If G602 is OK, replace the faulty harness.

7. Alternately connect the NO; 2 and No. 3 terminals of the front passenger's seat wire harness 3P connector to body ground with a jumper wire, and check the status on the HDS screen.

Does the status alternate from UNBUCKLE to BUCKLE?

YES - Replace the front passenger's seat belt buckle assembly (see **SEAT BELT BUCKLE**), then clear the DTC.

NO - Open in the front passenger's seat wire harness or floor wire harness; replace the faulty harness.

DTC 62-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), then buckle and unbuckle the front passenger's seat belt several times.
3. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 62-2x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch to LOCK(0).
5. Disconnect the front passenger's seat wire harness 3P connector from the front passenger's seat belt buckle switch 3P connector (A).

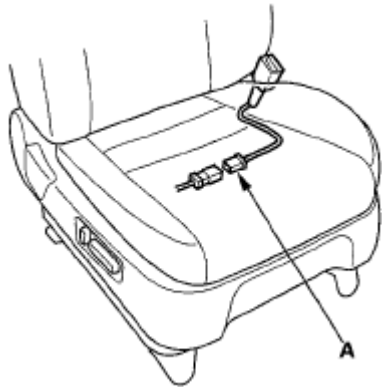


Fig. 166: Identifying Front Passenger's Seat Belt Buckle Switch 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch to ON
7. From the system selection menu on the HDS, select SRS, then select SRS again, then select PARAMETER INFORMATION, then Buckle Switch, Seat Position Sensor, and check the status on the HDS screen for FRONT RIGHT SEAT BELT BUCKLE SWITCH.

Is OPEN indicated on the HDS?

YES - Replace the front passenger's seat belt buckle assembly (see **SEAT BELT BUCKLE**), then clear the DTC.

NO - Short to ground in the front passenger's seat wire harness or floor wire harness; replace the faulty harness.

DTC 71-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN DRIVER'S SEAT POSITION SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 71-1x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING**

INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Check the connection between the driver's seat wire harness 2P connector and the driver's seat position sensor (see **COMPONENT LOCATION INDEX**).
4. Clear the DTC memory.
5. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC 71-1x indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

6. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
7. Disconnect the driver's seat wire harness 2P connector from the driver's seat position sensor (A).

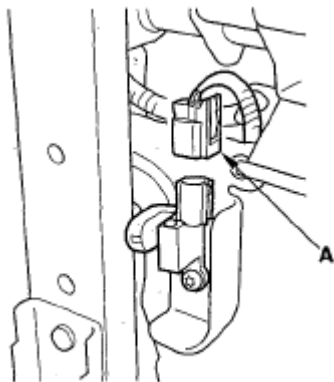
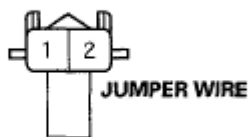


Fig. 167: Identifying Driver's Seat Position Sensor
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the No. 1 and No. 2 terminals of the driver's seat wire harness 2P connector with a jumper wire.

DRIVER'S SEAT WIRE HARNESS 2P CONNECTOR

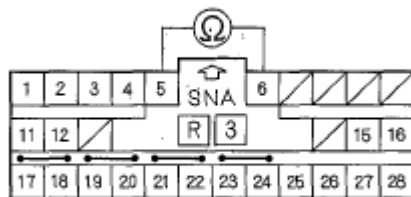


Wire side of female terminals

Fig. 168: Identifying No. 1 And No. 2 Terminals Of Driver's Seat Wire Harness 2P Connector With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect both seat belt tensioner connectors (see step 7).
10. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
11. Measure the resistance between the No. 5 and No. 6 terminals of SRS unit connector B (28P). There should be 0-1.0 ohms.

SRS UNIT CONNECTOR B (28P)

Wire side of female terminals

Fig. 169: Identifying Resistance Between No. 5 And No. 6 Terminals Of SRS Unit Connector B (28P)**Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is the resistance as specified?*

YES - Faulty driver's seat position sensor or SRS unit; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**). If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the floor wire harness or the driver's seat wire harness; replace the faulty harness.

DTC 71-2X ("X" CAN BE 0 THRU 9 OR A THRU F): SHORT IN DRIVER'S SEAT POSITION SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 71-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
4. Disconnect the driver's seat wire harness 2P connector from the driver's seat position sensor (A) (see **COMPONENT LOCATION INDEX**).

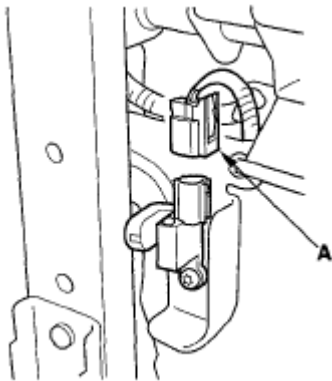


Fig. 170: Identifying Driver's Seat Position Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reconnect the negative cable to the battery.
6. Clear the DTC memory.
7. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

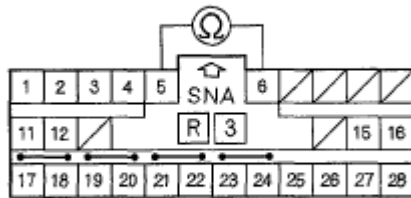
Is DTC 71-2x indicated?

YES - Go to step 8.

NO - Faulty driver's seat position sensor; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**).

8. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
9. Disconnect both seat belt tensioner connectors (see step 7).
10. Disconnect SRS unit connector B (28P) from the SRS unit (see step 8).
11. Measure the resistance between the No. 5 and No. 6 terminals of SRS unit connector B (28P). There should be an open circuit or at least 1M ohms.

SRS UNIT CONNECTOR B (28P)



Wire side of female terminals

Fig. 171: Identifying Resistance Between No. 5 And No. 6 Terminals Of SRS Unit Connector B (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

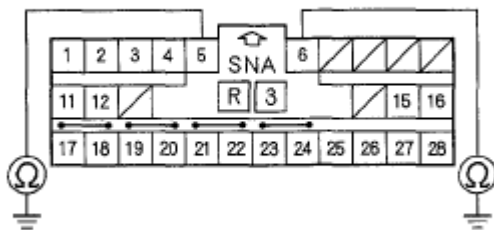
Is the resistance as specified?

YES - Go to step 12.

NO - Short in the floor wire harness or the driver's seat wire harness; replace the faulty harness.

12. Measure the resistance between the No. 5 terminal of SRS unit connector B (28P) and body ground, and between the No. 6 terminal and body ground. There should be an open circuit or at least 1Mohms.

SRS UNIT CONNECTOR B (28P)



Wire side of female terminals

Fig. 172: Identifying Resistance Between No. 5 Terminal Of SRS Unit Connector B (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty driver's seat position sensor or the SRS unit; replace the driver's seat position sensor (see **DRIVER'S SEAT POSITION SENSOR REPLACEMENT**). If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short in the floor wire harness or the driver's seat wire harness; replace the faulty harness.

FROM THE ODS UNIT

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

1. Make sure nothing is on the front passenger's seat.
2. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
3. Read the DTC (see GENERAL TROUBLESHOOTING INFORMATION).

Is DTC 81-61, 85-61, 81-62, or 85-62 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

4. Check the connection between the ODS unit harness 18P connector and the ODS unit.

Is the connection OK?

YES - Go to step 6.

NO - Repair the poor connection and retest. If DTC 85-61 or 85-62 is still present, go to step 5.

5. Turn the ignition switch OFF.
6. Check the No. 20 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 7.

NO - Replace the fuse, then turn the ignition switch ON (II). If the fuse blows again, check for a short in the No. 20 (7.5 A) fuse circuit (floor wire harness or ODS unit harness).

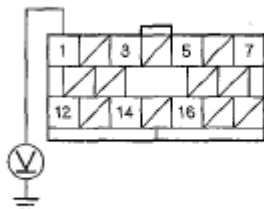
7. Disconnect the ODS unit harness 18P connector (A) from the ODS unit.



Fig. 173: Identifying ODS Unit Harness 18P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch ON (II).
9. Measure the voltage between the No. 1 terminal of the ODS unit harness 18P connector and body ground. There should be battery voltage.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

Fig. 174: Identifying Voltage Between No. 1 Terminal Of ODS Unit Harness 18P Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

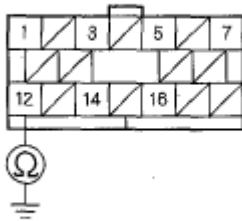
Is there battery voltage?

YES - Go to step 10.

NO - Open in the floor wire harness or ODS unit harness; replace the faulty harness.

10. Turn the ignition switch OFF.
11. Measure the resistance between the No. 12 terminal of the ODS unit harness 18P connector and body ground. There should be 0-1.0 ohms.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

Fig. 175: Identifying Resistance Between No. 12 Terminal Of ODS Unit Harness 18P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

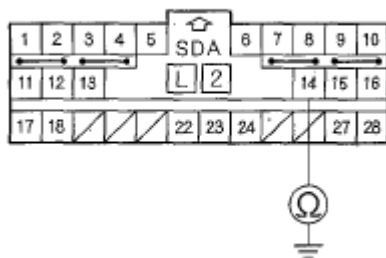
Is the resistance as specified?

YES - Go to step 12.

NO - Open in the ODS unit harness, floor wire harness, or poor ground connection at G605 (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**). If G605 is OK, replace the faulty harness.

12. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
13. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
14. Measure the resistance between the No. 14 terminal of SRS unit connector A (28P) and body ground. There should be an open circuit or at least 1 Mohms.

SRS UNIT CONNECTOR A (28P)



Wire side of female terminals

Fig. 176: Identifying Resistance Between No. 14 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 15.

NO - Short to ground in the dashboard wire harness or floor wire harness; replace the faulty harness.

15. Turn the ignition switch ON (II), and measure the voltage between the No. 14 terminal of SRS unit connector A (28P) and body ground. There should be less than 0.2 V .

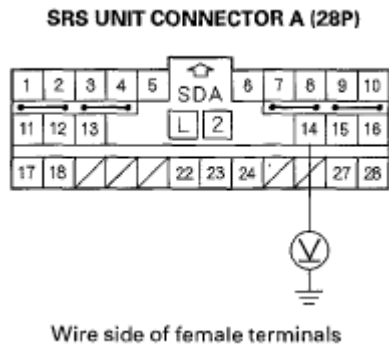


Fig. 177: Identifying Voltage Between No. 14 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Go to step 16.

NO - Short to power in the dashboard wire harness or floor wire harness; replace the faulty harness.

16. Measure the resistance between the No. 14 terminal of SRS unit connector A (28P) and the No. 7 terminal of the ODS unit harness 18P connector. There should be 0-1.0 ohms.

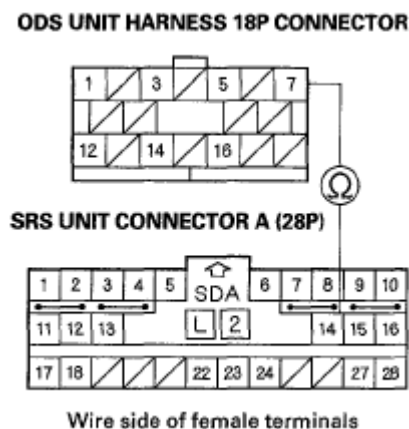


Fig. 178: Identifying Resistance Between No. 14 Terminal Of SRS Unit Connector A (28P) And No. 7 Terminal Of ODS Unit Harness 18P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Faulty ODS unit or SRS unit; replace the ODS unit (see **ODS UNIT REPLACEMENT**). If the

problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Open in the dashboard wire harness or floor wire harness; replace the faulty harness.

DTC 81-71,81-78: ODS UNIT DOES NOT CALIBRATE

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is 81-71 or 81-78 indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Calibrate the ODS unit (see **ODS UNIT CALIBRATION**).
4. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Go to step 5.

5. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
6. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

DTC 85-71,85-78: ODS UNIT NOT INITIALIZED

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and

Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is 85-71 or 85-78 indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Initialize the ODS unit (see ODS UNIT INITIALIZATION).
4. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - GO to step 5.

5. Replace the ODS unit (see ODS UNIT REPLACEMENT).
6. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Replace the SRS unit (see SRS UNIT REPLACEMENT).

DTC 81-4X, 81-63,81-64 ("X" CAN BE 0 THRU 9 OR A THRU F): INTERNAL FAILURE OF THE ODS UNIT

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

goes off.

Does the SRS indicator stay on, and is DTC 81-4x, 81-63, or 81-64 indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Initialize the ODS unit (see **ODS UNIT INITIALIZATION**).
4. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - GO to step 5.

5. Replace the ODS unit (see **ODS UNIT REPLACEMENT**).
6. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

DTC 81-79: FRONT PASSENGER'S WEIGHT SENSORS INITIAL CHECK FAILURE

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 81-79 indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

3. Turn the ignition to LOCK(0).
4. Make sure nothing is on the front passenger's seat.
5. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Remove the front passenger's seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**) and the front passenger's weight sensors (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**), then reinstall them. Calibrate the ODS unit (see **ODS UNIT CALIBRATION**). Retry the troubleshooting. If DTC 81-79 is still present, replace the front passenger's weight sensors.

DTC 82-1X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 82-1x indicated?

YES - Replace the inner side front passenger's weight sensor (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

DTC 83-2X ("X" CAN BE 0 THRU 9 OR A THRU F): NO SIGNAL FROM THE OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

Does the SRS indicator stay on, and is DTC 83-2x indicated?

YES - Replace the outer side front passenger's weight sensor (see **FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

DTC 85-4X ("X" CAN BE 0 THRU 9 OR A THRU F), 85-63,85-64: INTERNAL FAILURE OF THE ODS UNIT

NOTE:

- An incorrect ODS unit can cause DTC 85-63.
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 85-4x, 85-5x, 85-63, or 85-64 indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Initialize the ODS unit (see **ODS UNIT INITIALIZATION**).
4. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Replace the ODS unit (see **ODS UNIT REPLACEMENT**) and retest. If the DTC is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

DTC 85-79: OPDS SENSOR INITIAL CHECK FAILURE

NOTE:

Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 85-79 indicated?

YES - Turn the ignition switch OFF, and go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

3. Make sure nothing is on the front passenger's seat.
4. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Go to step 5.

5. Initialize the ODS unit (see **ODS UNIT INITIALIZATION**).
6. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator go off?

YES - The system is OK.

NO - Replace the ODS unit (see **ODS UNIT REPLACEMENT**) and retest. If the problem is still present, replace the OPDS sensor/seat-back (see **FRONT SEAT-BACK COVER REPLACEMENT**). If the DTC is still present, the SRS unit (see **SRS UNIT REPLACEMENT**).

DTC 86-1 X, 86-2X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY OPDS SENSOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 86-1x or 86-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

NOTE: Aftermarket devices (fluorescent lights, laptop computers, etc.) used near the front passenger's seat-back can interfere with the seat-back sensors and cause a false DTC 86-1x or 86-2x. If one of these devices was used, erase the DTC, operate the device near the seat-back, and recheck for DTCs. If DTC 86-1x or 86-2x is set, erase it, and do not use the device near the seat-back.

3. Check the connection at the OPDS sensor harness connectors (A) and the ODS unit connector (B).

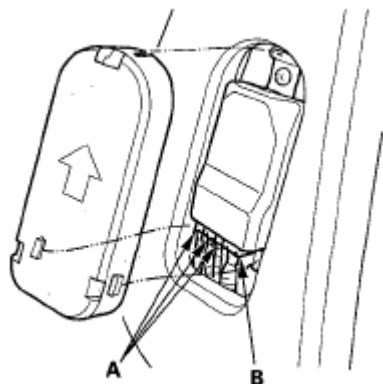


Fig. 179: Identifying OPDS Sensor Harness Connectors And ODS Unit Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Are the connections OK?

YES - Go to step 4.

NO - Repair the poor connections, and clear the DTC.

4. Replace the OPDS sensor/seat-back foam (see **FRONT SEAT-BACK COVER REPLACEMENT**), and initialize the ODS unit (see **ODS UNIT INITIALIZATION**).
5. Erase the DTC memory, then check for DTC 86-1x or 86-2x.

Is DTC 86-1x or 86-2x indicated?

YES - Replace the ODS unit (see **ODS UNIT REPLACEMENT**).

NO - The system is OK.

DTC 92-1X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN IN THE PASSENGER'S AIRBAG CUTOFF INDICATOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and is DTC 92-1x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Disconnect the passenger's airbag cutoff indicator 6P connector (see PASSENGER'S AIRBAG CUTOFF INDICATOR ILLUMINATION BULB TEST).
4. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
5. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
6. Reconnect the negative cable to the battery.
7. Turn the ignition switch ON (II).
8. Measure the voltage between the No. 13 terminal of SRS unit connector A (28P) and body ground. There should be 0.5 V or less.

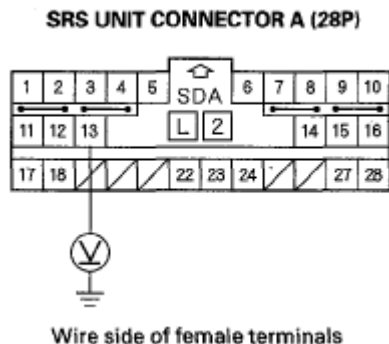


Fig. 180: Identifying Voltage Between No. 13 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage as specified?

YES - Faulty SRS unit or passenger's airbag cutoff indicator; replace the passenger's airbag cutoff indicator. If the problem is still present, replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Short to power in the dashboard wire harness; replace the dashboard wire harness.

DTC 92-2X ("X" CAN BE 0 THRU 9 OR A THRU F): OPEN OR SHORT TO GROUND IN PASSENGER'S AIRBAG CUTOFF INDICATOR

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION), and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

1. Clear the DTC memory (see CLEAR THE DTC MEMORY WITH THE HDS).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Does the SRS indicator stay on, and DTC 92-2x indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Go to TROUBLESHOOTING INTERMITTENT FAILURES (see). If another DTC is indicated, troubleshoot the DTC.

3. Disconnect the passenger's airbag cutoff indicator 6P connector (see PASSENGER'S AIRBAG CUTOFF INDICATOR ILLUMINATION BULB TEST).
4. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
5. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
6. Measure the resistance between the No. 2 terminal of the passenger's airbag cutoff indicator 6P connector and the No. 13 terminal of SRS unit connector A (28P). There should be 0-1.0 ohms.

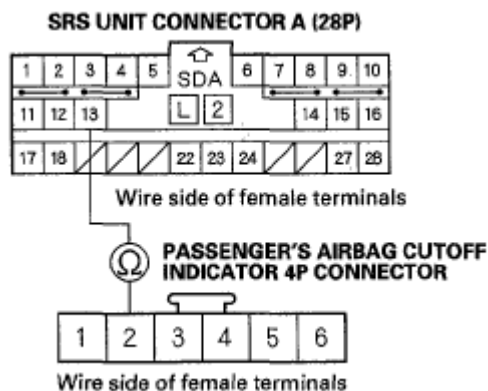


Fig. 181: Identifying Resistance Between No. 2 Terminal Of Passenger's Airbag Cutoff Indicator 6P Connector And No. 13 Terminal Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Go to step 7.

NO - Open in the dashboard wire harness; replace the dashboard wire harness.

7. Measure the resistance between the No. 13 terminal of the SRS unit connector A (28P) and body ground. There should be an open circuit or at least 1 Mohms.

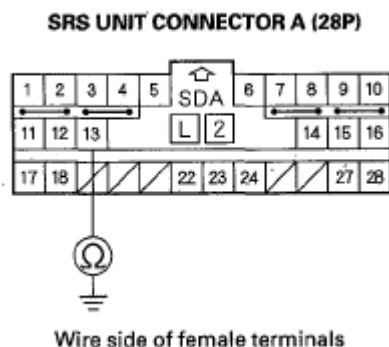


Fig. 182: Identifying Resistance Between No. 13 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Replace the passenger's airbag cutoff indicator. If the problem is still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Short to ground in the dashboard wire harness; replace the dashboard wire harness.

DTC A1-1X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY POWER SUPPLY (VA LINE)

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**) and General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**), and Battery Terminal Disconnection and Reconnection (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

1. Clear the DTC memory (see **CLEAR THE DTC MEMORY WITH THE HDS**).
2. Turn the ignition switch ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
3. Read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**).

Is DTC A1-1x indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Go to **TROUBLESHOOTING INTERMITTENT FAILURES** (see). If another DTC is indicated, troubleshoot the DTC.

4. Turn the ignition switch OFF.
5. Check the No. 20 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 6.

NO - Replace the fuse, then turn the ignition switch ON (II). If the fuse blows again, check for a short in the No. 20 (7.5 A) fuse circuit (dashboard wire harness, floor wire harness, or ODS unit harness).

6. Disconnect the negative cable from the battery, then wait for 3 minutes.
7. Disconnect the SRS unit connector A (28P) from the SRS unit (see step 8).
8. Turn the ignition switch ON (II).
9. Measure the voltage between the No. 17 terminal of SRS unit connector A (28P) and body ground. Turn the ignition switch ON (II), and measure the voltage. There should be battery voltage when the ignition is on.

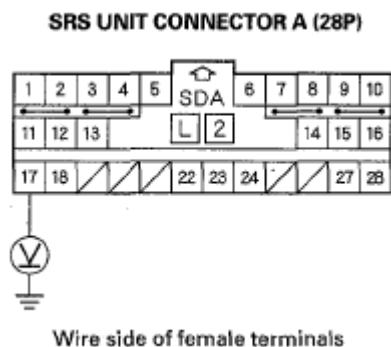


Fig. 183: Identifying Voltage Between No. 17 Terminal Of SRS Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Faulty SRS unit or poor connection at SRS unit connector (A) 28P and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Go to step 10.

10. Turn the ignition switch OFF.
11. Disconnect under-dash fuse/relay box connector X (39P).

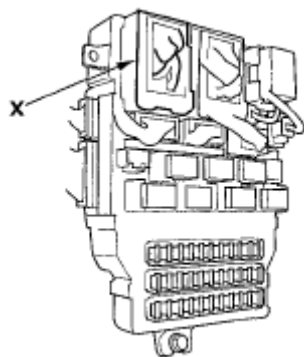


Fig. 184: Identifying Under-Dash Fuse/Relay Box Connector X (39P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Measure the resistance between the No. 36 terminal of under-dash fuse/relay box connector X (39P) and the No. 17 terminal of SRS unit connector A (28P). There should be 0-1.0 ohms.

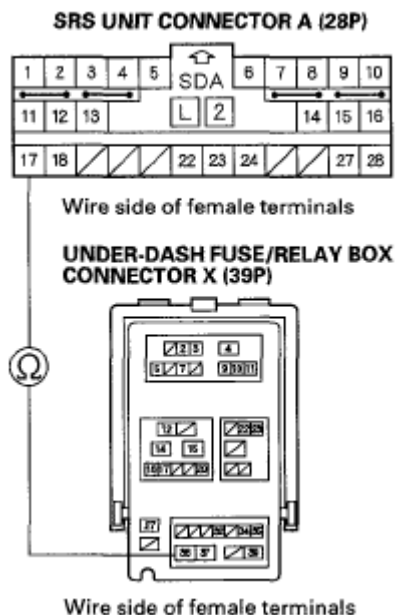


Fig. 185: Identifying Resistance Between No. 36 Terminal Of Under-Dash Fuse/Relay Box Connector X (39P) And No. 17 Terminal Of SRS Unit Connector A (28P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Open in the under-dash fuse/relay box or poor contact between connector X (39P) and the under-dash fuse/relay box; check the connection. If the connection is OK, replace the under-dash fuse/ relay box (see **REMOVAL AND INSTALLATION**).

NO - Open in the dashboard wire harness; replace the dashboard wire harness.

DTC A2-1X ("X" CAN BE 0 THRU 9 OR A THRU F): FAULTY POWER SUPPLY (VB LINE)

NOTE: Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see PRECAUTIONS AND PROCEDURES) and General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).and Battery Terminal Disconnection and Reconnection (see BATTERY TERMINAL DISCONNECTION AND RECONNECTION).

1. Check the No. 22 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES - Go to step 11.

NO - Go to step 2.

2. Replace the No. 22 (10 A) fuse.
3. Turn the ignition switch ON (II) and wait for 30 seconds. Then turn the ignition switch OFF.
4. Check the No. 22 (10 A) fuse.

Is the fuse OK?

YES - The system is OK at this time.

NO - Go to step 5.

5. Replace the No. 22 (10 A) fuse.
6. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
7. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
8. Reconnect the negative cable to the battery.
9. Turn the ignition switch ON (II), and wait for 30 seconds. Then turn the ignition switch OFF.
10. Check the No. 22 (10 A) fuse.

Is the fuse OK?

YES - Short to ground in the SRS unit; replace the SRS unit (see SRS UNIT REPLACEMENT).

NO - Short to ground in the dashboard wire harness or in the under-dash fuse/relay box No. 22 (10 A) fuse line; replace the dashboard wire harness. If the problem is still there, replace the under-dash fuse/relay box (see REMOVAL AND INSTALLATION).

11. Turn the ignition switch OFF. Disconnect the negative cable from the battery, then wait for 3 minutes.
12. Disconnect SRS unit connector A (28P) from the SRS unit (see step 8).
13. Reconnect the negative cable to the battery.

14. Measure the voltage between the No. 18 terminal of SRS unit connector A (28P) and body ground. Turn the ignition switch ON (II), and measure the voltage. There should be battery voltage with the ignition on.

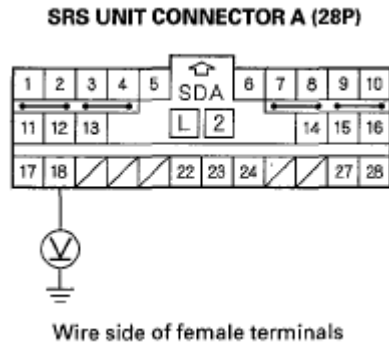


Fig. 186: Identifying Voltage Between No. 18 Terminal Of Srs Unit Connector A (28P) And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Faulty SRS unit or poor connection at SRS unit connector A (28P) and the SRS unit; check the connection. If the connection is OK, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Go to step 15.

15. Turn the ignition switch OFF.
16. Disconnect under-dash fuse/relay box connector S (2P).

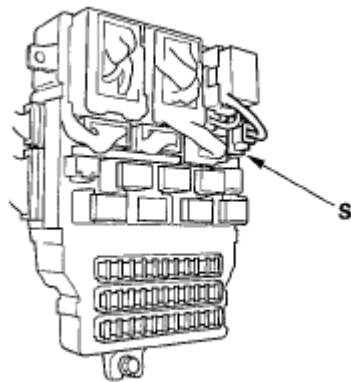


Fig. 187: Identifying Under-Dash Fuse/Relay Box Connector S (2P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure the resistance between the No. 1 terminal of the under-dash fuse/relay box connector S (2P) and the No. 18 terminal of SRS unit connector A (28P). There should be 0-1.0 ohms.

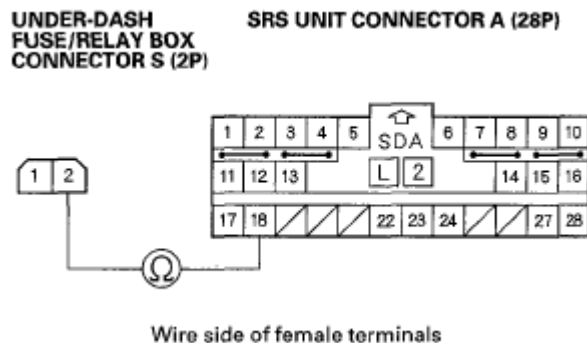


Fig. 188: Identifying Resistance Between No. 1 Terminal Of Under-Dash Fuse/Relay Box Connector S (2P) And No. 18 Terminal Of SRS Unit Connector A (28P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance as specified?

YES - Open in the under-dash fuse/relay box or poor connection between connector S (2P) and the under-dash fuse/relay box; check the connection. If the connection is OK, replace the under-dash fuse/ relay box (see **REMOVAL AND INSTALLATION**).

NO - Open in the dashboard wire harness; replace the dashboard wire harness.

SYMPTOM TROUBLESHOOTING

SRS INDICATOR DOES NOT COME ON

1. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for PGM-FI, Body Electrical, and SRS DTCs with the HDS.

Are there any PGM-FI, Body Electrical, or SRS DTCs?

YES - Go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - Go to step 5.

5. Do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

Does the SRS indicator come on?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO -Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL**).

MODULE REPLACEMENT).**SRS INDICATOR STAYS ON, BUT NO DTCS ARE STORED**

1. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select Body Electrical status with the HDS.
5. Check for DTCs in the Gauge Menu with the HDS.

Is DTC B1187 indicated?

YES - Go to the DTC B1187 troubleshooting.

NO - Go to step 6.

6. Check that the HDS communicate with the SRS unit.

Does the HDS communicate with the SRS unit?

YES - Go to step 7.

NO - If the HDS does not communicate with the SRS unit, check for power and ground at SRS unit connector A (28P). If power and ground are still present, replace the SRS unit (see **SRS UNIT REPLACEMENT**).

7. From the HDS System Menu, select SRS, then SRS in Mode Menu, PARAMETER INFORMATION, then SCS, MES, Indicator. Read the current status of the SRS indicator.

Is the status ON?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

SIDE AIRBAG CUTOFF INDICATOR STAYS ON

1. Make sure nothing is on the front passenger's seat.
2. Make sure the seat-back is dry.
3. Turn the ignition switch ON (II), and see if the SRS indicator comes on.

Does the SRS indicator come on?

YES - Go to the **SYMPTOM TROUBLESHOOTING "SRS INDICATOR STAY ON"**.

NO - Go to step 4.

4. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
6. From the Main Menu on the HDS, select SRS, then PARAMETER INFORMATION. In the PARAMETER INFORMATION Menu, select "SCS, MES, Indicator," and read the HDS screen.

Is OFF indicated on the HDS?

YES - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

SIDE AIRBAG CUTOFF INDICATOR DOES NOT COME ON

NOTE: If the SRS indicator also stays on, go to SRS indicator stays on, but no DTCs are stored (see **SRS indicator does not come on**).

1. Turn the ignition switch ON (II), and check that the side airbag cutoff indicator comes on for about 6 seconds.

Does the side airbag cutoff indicator come on?

YES - Go to the **SYMPTOM TROUBLESHOOTING "SRS INDICATOR STAY ON"**.

NO - Go to step 2.

2. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
3. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Do the gauge control module self diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

Does the side airbag cutoff indicator come on?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Faulty gauge control module; replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

PASSENGER'S AIRBAG CUTOFF INDICATOR STAYS ON OR COMES ON SUDDENLY

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

NOTE: Under the following conditions, the passenger's airbag cutoff indicator stays on or comes on suddenly.

- No one is sitting the front passenger's seat, but there is an object on the seat more than 5 kg (11 lbs).
 - The seat belt is buckled, but no one is sitting on the front passenger's seat.
 - Someone who is less than 30 kg (66 lbs) is sitting on the front passenger's seat.
1. Check for these items, then recheck the passenger's airbag cutoff indicator.
 - The front passenger's seat is installed correctly.
 - Nothing is/was on the front passenger's seat.
 - Nothing is/was under the front passenger's seat.
 - Nothing is/was in the front passenger's seat-back pocket.
 - Whoever was sitting on the front passenger's seat was sitting in the proper sitting position.
 - Someone who is more than 30 kg (66 lbs) but is supporting some of their body weight on their legs, feet, arms, or hands.

Does the passenger's airbag cutoff indicator stay on?

YES - Go to step 2.

NO - Troubleshooting is complete.

2. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select the INSPECTION menu on the HDS, then select AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S), and follows the problems.

Does the passenger's airbag cutoff indicator stay on?

YES - Go to step 6.

NO - Troubleshooting is complete.

6. Select the INSPECTION menu on the HDS, then select AFTER A VEHICLE COLLISION, and follow the prompts.

Does the passenger's airbag cutoff indicator stay on?

YES - Faulty SRS unit; replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Troubleshooting is complete.

COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT

NOTE:

- Before doing any SRS repairs, use the HDS SRS menu method to check for DTCs; refer to the DTC TROUBLESHOOTING INDEX for the less obvious deployed parts (seat belt tensioners, front impact sensors, side airbag sensors, etc.)
- Do not replace the ODS unit unless it is physically damaged or a specific fault was found during DTC troubleshooting.
- After a vehicle collision, do the ODS unit operation check (see ODS UNIT OPERATION CHECK).

After a collision where the seat belt tensioners deployed, replace these items:

- SRS unit
- Seat belt tensioners
- Front impact sensors

After a collision where the front airbag(s) deployed, replace these items:

- SRS unit
- Deployed airbag(s)
- Seat belt tensioners
- Front impact sensors

After a collision where the side airbag(s) deployed, replace these items:

- SRS unit
- Deployed side airbag(s)
- Reinforcing cloth rear hooks
- Side impact sensor(s) (first) for the side(s) that deployed
- Side impact sensor(s) (second) for the side(s) that deployed
- B-pillar lower trim
- Complete seat frame

After a collision where a side curtain airbag has deployed, replace the items for the side(s) that deployed:

- SRS unit
- Deployed side curtain airbag(s)
- Seat belt tensioner(s) for the side(s) that deployed
- Side impact sensor(s) (first) for the side(s) that deployed
- Side impact sensor(s) (second) for the side(s) that deployed

- Rear safing sensor
- Roll rate sensor
- Roof trim
- A-pillar trim
- B-pillar upper trim
- Quarter pillar trim
- Front grab handle
- Rear grab handle
- All related trim clips
- Sunvisor

After a moderate to severe side or rear collision, inspect for any damage on the side curtain airbag or other related components. Replace the components as needed.

A-pillar trim

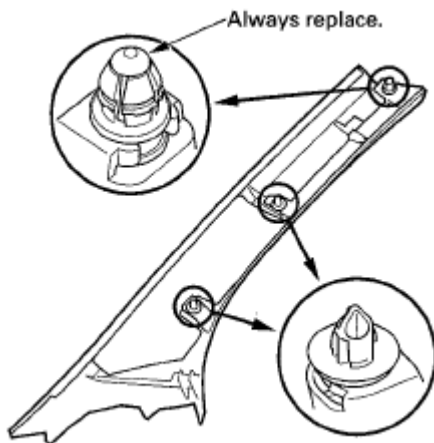


Fig. 189: Identifying A-Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

B-pillar trim

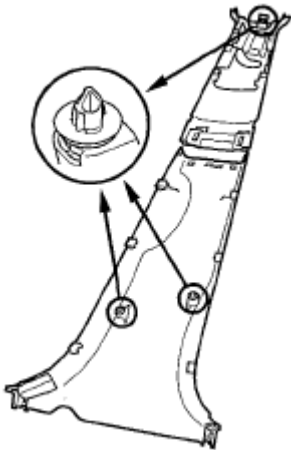


Fig. 190: Identifying B-Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

C-Pillar trim

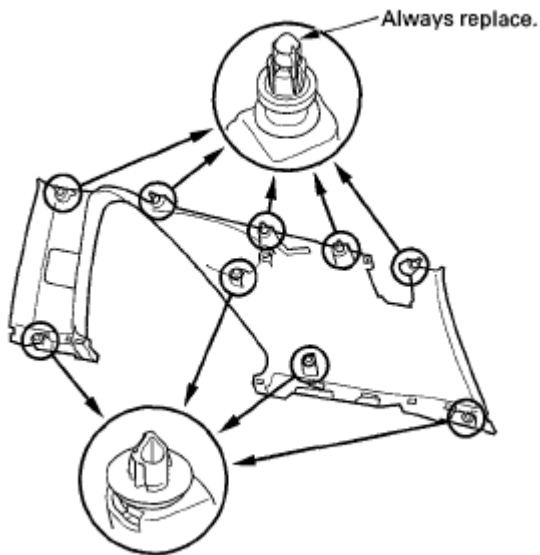


Fig. 191: Identifying C-Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

During the repair process, inspect these areas:

- Inspect all the SRS wire harnesses. Replace, do not repair, any damaged harnesses.
- Inspect the cable reel for heat damage. If there is any damage, replace the cable reel.

After the vehicle is completely repaired, turn the ignition switch ON (II). If the SRS indicator comes on for about 6 seconds and then goes off, the SRS is OK. If the indicator does not function properly, use the HDS SRS Menu Method to read the DTC (see **GENERAL TROUBLESHOOTING INFORMATION**). If you cannot retrieve a code, do the SRS Symptom Troubleshooting.

CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP

To prevent the side curtain airbag from deploying and damaging the pillar trim, the overlap between the headliner and pillar trim must be less than 0.3 in. (8 mm). To check the overlap, do this:

1. Install the headliner (A) and the pillar trim (B).

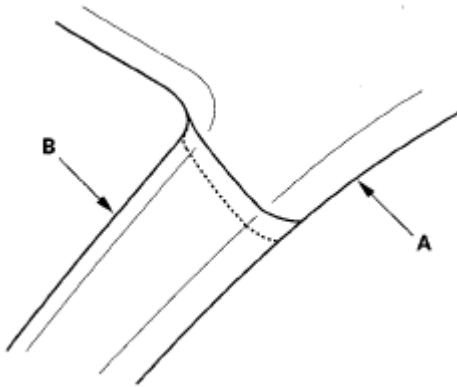


Fig. 192: Identifying Headliner And Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Using masking tape on the headliner, mark the upper edge of each pillar trim.

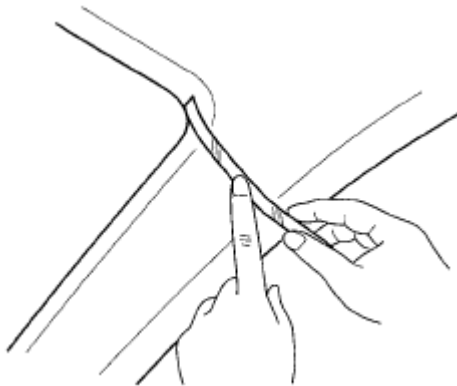


Fig. 193: Identifying Upper Edge Of Pillar Trim Using Masking Tape On Headliner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the pillar trim, and measure the headliner overlap.
 - If the overlap is less than 0.3 in. (8 mm), remove the tape, and install the pillar trim.
 - If the overlap is more than 0.3 in. (8 mm), go to step 4.

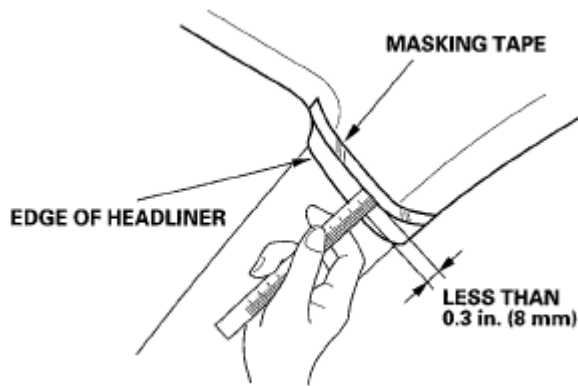


Fig. 194: Identifying Headliner Overlap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully trim the headliner with a utility knife, reducing the overlap to less than 0.3 in. (8 mm).

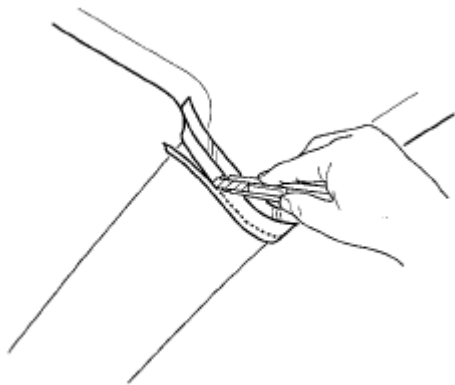


Fig. 195: Identifying Headliner With Utility Knife, Reducing Overlap To Less Than 0.3 in. (8 mm)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the tape, and install the pillar trim.

DRIVER'S AIRBAG REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Remove the access panel (A) from the steering wheel, then disconnect the driver's airbag 4P connector (B) and horn switch IP connector (C) from the cable reel.

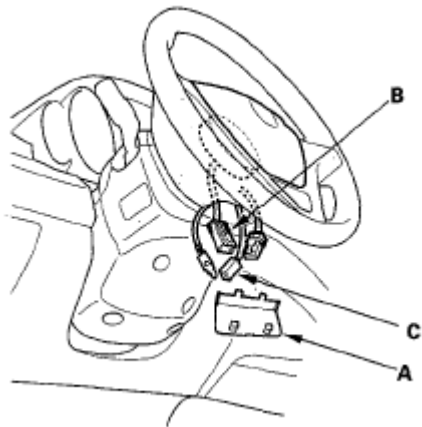


Fig. 196: Identifying Access Panel, Driver's Airbag 4P Connector And Horn Switch IP Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a TORX T30 bit, remove the two TORX bolts (A).

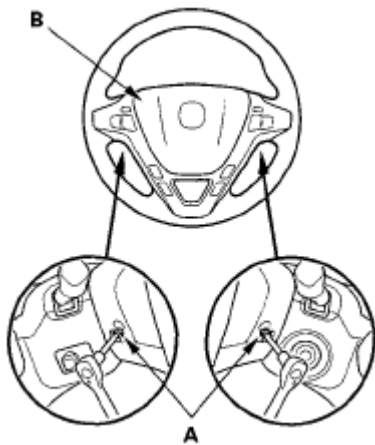


Fig. 197: Identifying TORX Bolts Using TORX T30 Bit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the driver's airbag (B).

INSTALLATION

1. Connect the horn switch connector (1P) (A) to the driver's airbag (B).

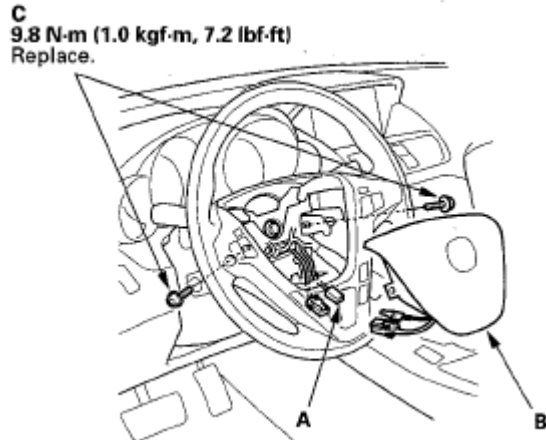


Fig. 198: Identifying Horn Switch Connector (1P) And Driver's Airbag With torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place the driver's airbag in the steering wheel, and secure it with new TORX bolts (C).
3. Connect the cable reel 4P connector (A) to the driver's airbag 4P connector and horn switch 1P connector (B), then install the access panel (C) on the steering wheel.

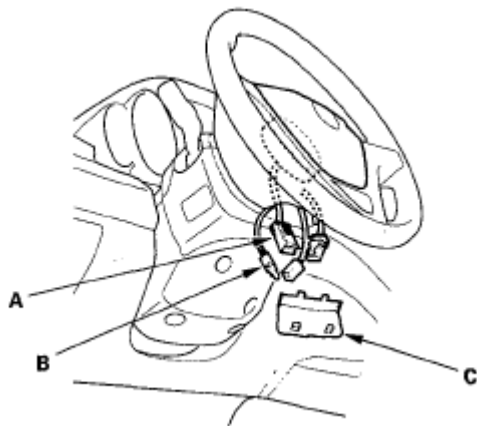


Fig. 199: Identifying Cable Reel 4P Connector, Horn Switch 1P Connector And Access Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reconnect the negative cable to the battery.
5. After installing the airbag, confirm proper system operation:
 - Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
 - Make sure the horn works.

FRONT PASSENGER'S AIRBAG REPLACEMENT

REMOVAL

NOTE: If the front passenger's airbag has been deployed, refer to the install for after a collision where the front passenger's airbag deployed.

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
3. Disconnect the front passenger's airbag 4P connector (A) from dashboard wire harness.

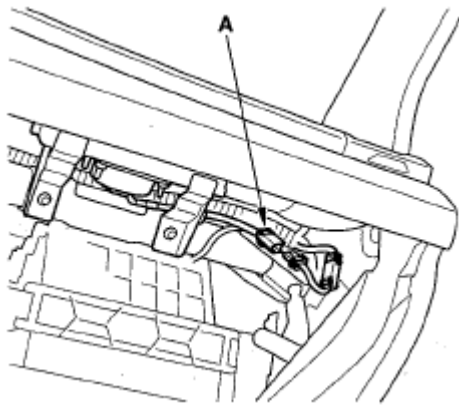


Fig. 200: Identifying Front Passenger'S Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bracket (A).

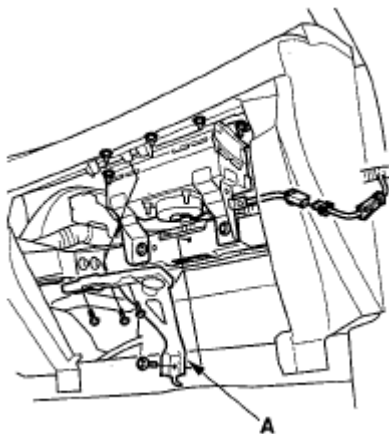


Fig. 201: Identifying Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the mounting nuts (A) and mounting bolts (B) from the bracket. Remove the front passenger's airbag (C).

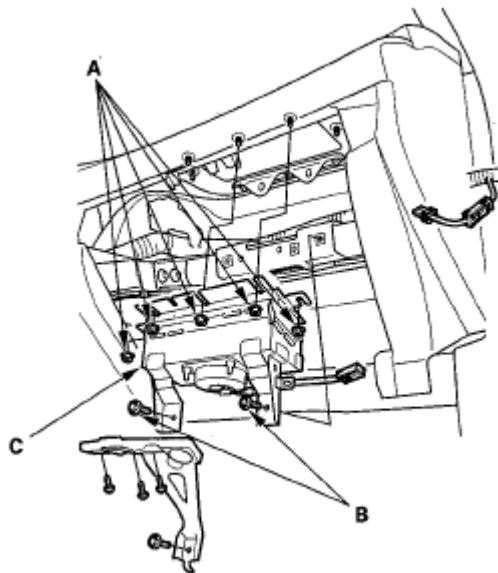


Fig. 202: Identifying Bracket Mounting Nuts, Bolts And Front Passenger's Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Place the new front passenger's airbag (A) into the bracket. Torque the front passenger's airbag mounting nuts (B) and mounting bolts (C).

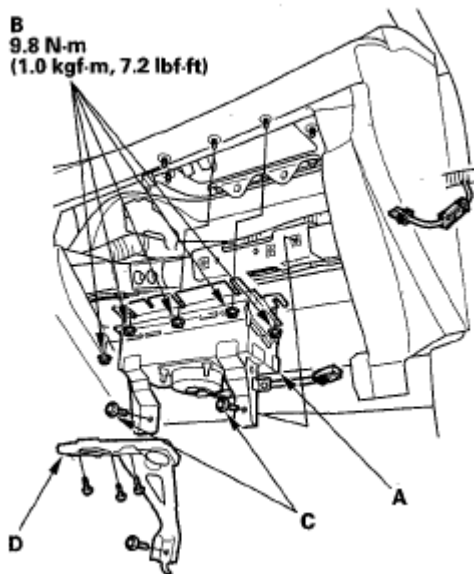


Fig. 203: Identifying Bracket Mounting Nuts, Bolts And Front Passenger's Airbag With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reinstall the bracket (D).

3. Connect the front passenger's airbag 4P connector (A) to dashboard wire harness, then reinstall the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).

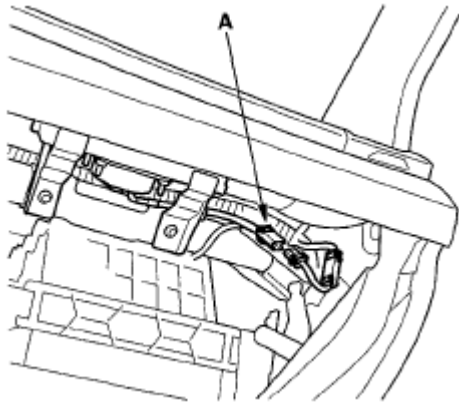


Fig. 204: Identifying Front Passenger'S Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reconnect the negative cable to the battery.
5. Connect the HDS and clear the DTCs.
6. After installing the airbag, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.

SIDE AIRBAG REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the side airbag harness 2P connector (A).



Fig. 205: Identifying Side Airbag Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**) and seat-back cover (see **FRONT SEAT-BACK COVER REPLACEMENT**).

NOTE: If you are replacing a deployed airbag, replace the reinforcing cloth rear hooks (A).

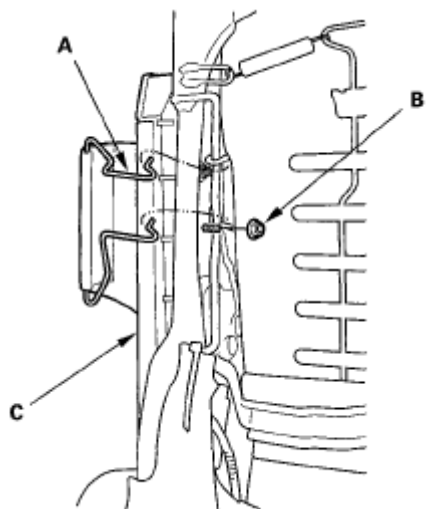


Fig. 206: Identifying Reinforcing Cloth Rear Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the mounting nut (B) and the side airbag (C).

INSTALLATION

NOTE:

- If the side airbag lid is secured with tape, remove the tape. :
- Do not open the lid on the side airbag cover.
- Use new mounting nuts tightened to the specified torque.
- Make sure that the seat-back cover is installed properly. Improper installation may prevent proper deployment.
- Be sure to install the harness wires so that they are not pinched or interfering with other parts.

1. Place the new side airbag on the seat-back frame (A). Torque the new side airbag mounting nut (B).

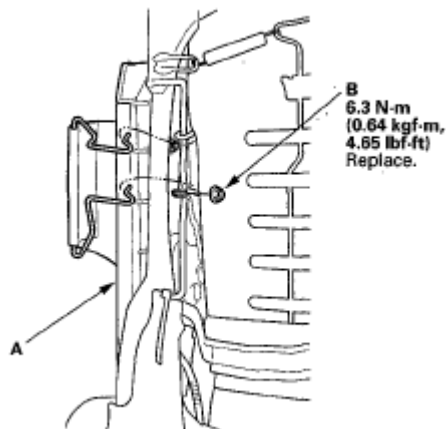


Fig. 207: Identifying Seat-Back Frame And Side Airbag Mounting Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the seat-back cover in the reverse order of removal (see **FRONT SEAT-BACK COVER REPLACEMENT**).

NOTE: If you are replacing a deployed airbag, replace the reinforcing cloth rear hooks.

3. Install the seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**), then connect the side airbag harness 2P connector.
4. Move the front seat and the seat-back through their full ranges of movement, making sure the harness wires are not pinched or interfering with other parts.
5. Reconnect the negative cable to the battery.
6. Connect the HDS, and clear the DTCs (see **CLEAR THE DTC MEMORY WITH THE HDS**).
7. After installing the side airbag, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.

SIDE CURTAIN AIRBAG REPLACEMENT

REMOVAL

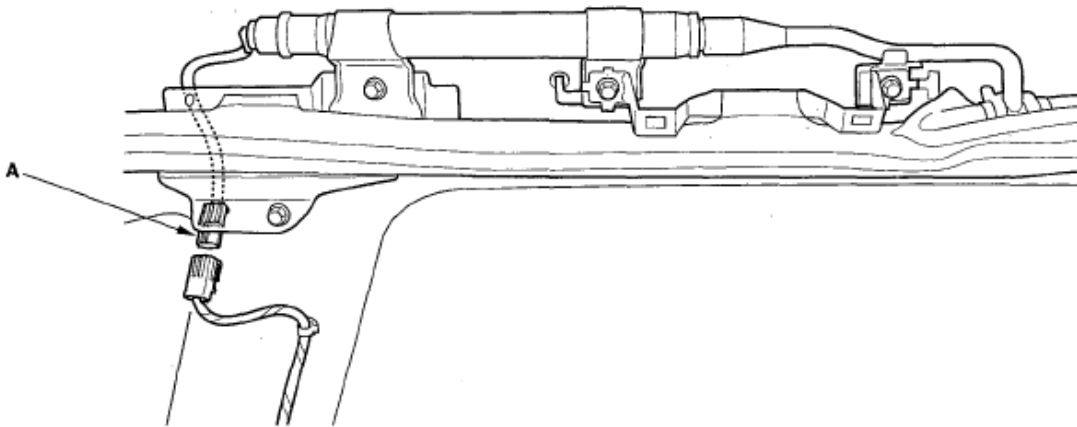
NOTE:

- Review the interior trim replacement procedure before doing repair or service (see **QUARTER PILLAR TRIM**).
- Removal of the side curtain airbag must be done according to Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**).
- The side curtain airbag system consists of many components. After the side curtain airbag has been deployed, go to **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**, and replace all of the parts listed (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
3. Disconnect the side curtain airbag 2P connector (A) from the floor wire harness.



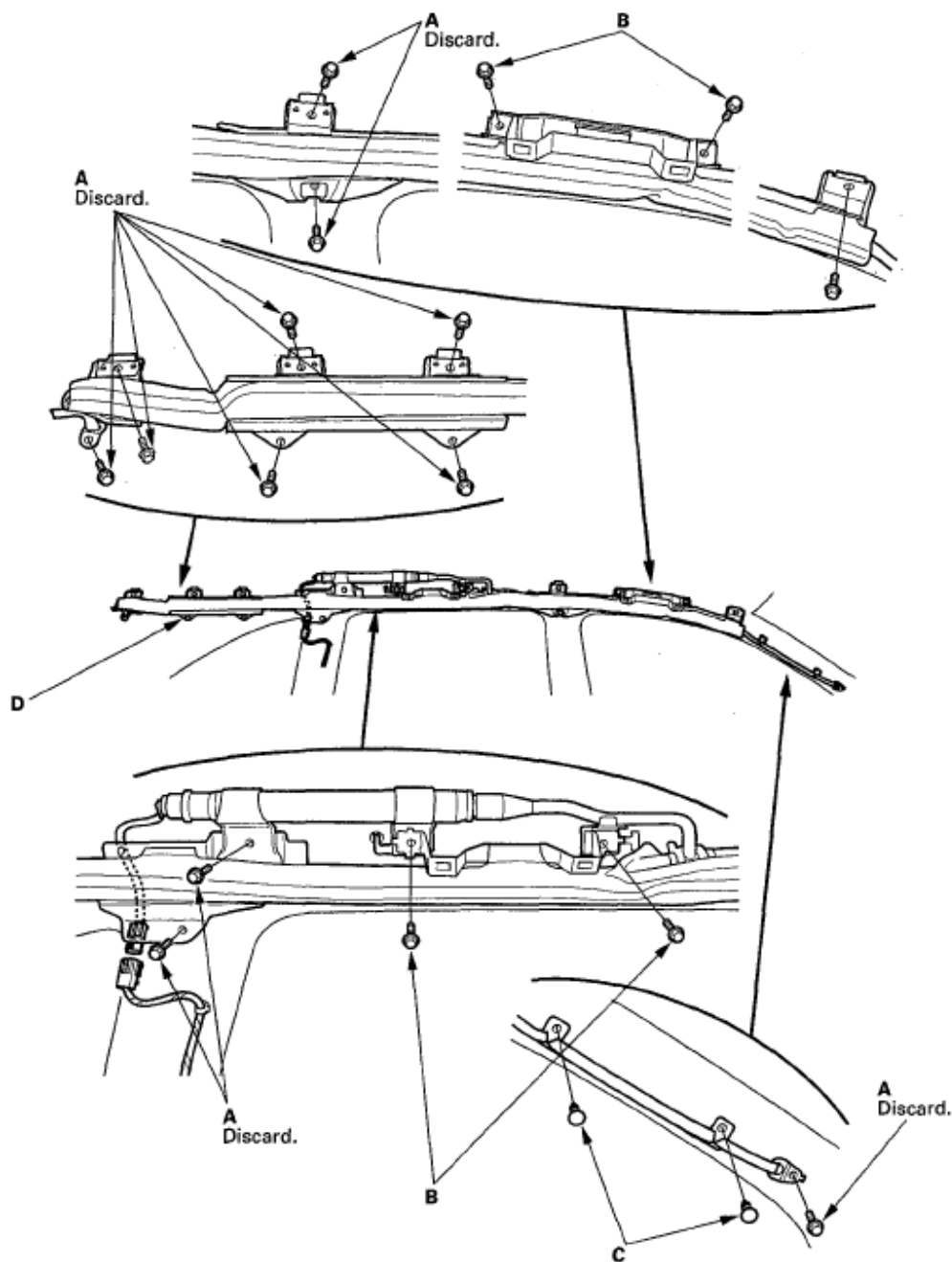
Left side shown; right side is similar.

Fig. 208: Identifying Side Curtain Airbag 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the mounting bolts (A) and mounting bolts (B) from the bracket. Detach the clips (C), then remove the side curtain airbag (D).

2008 Acura MDX

2007-09 RESTRAINTS SRS (Supplemental Restraint System) - MDX



Left side shown; right side similar.

Fig. 209: Identifying Mounting Bolts, Bracket And Side Curtain Airbag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

NOTE:

- Installation of the side curtain airbag must be done according to Precautions and Procedures (see PRECAUTIONS AND PROCEDURES).
- If the airbag is frayed, or has any other visible damage, replace it. Do not

attempt to repair an airbag.

- When you install the airbag, make sure it is not twisted, and that it is not caught between the inflator bracket by the bracket bolts.
- Make sure that the side curtain airbag inflator retainer is installed properly. Otherwise the airbag could incorrectly deploy and cause damage or injuries.

1. Place the new side curtain airbag assembly on the side of the roof. Tighten the side curtain airbag mounting bolts (A) and mounting bolts (B).

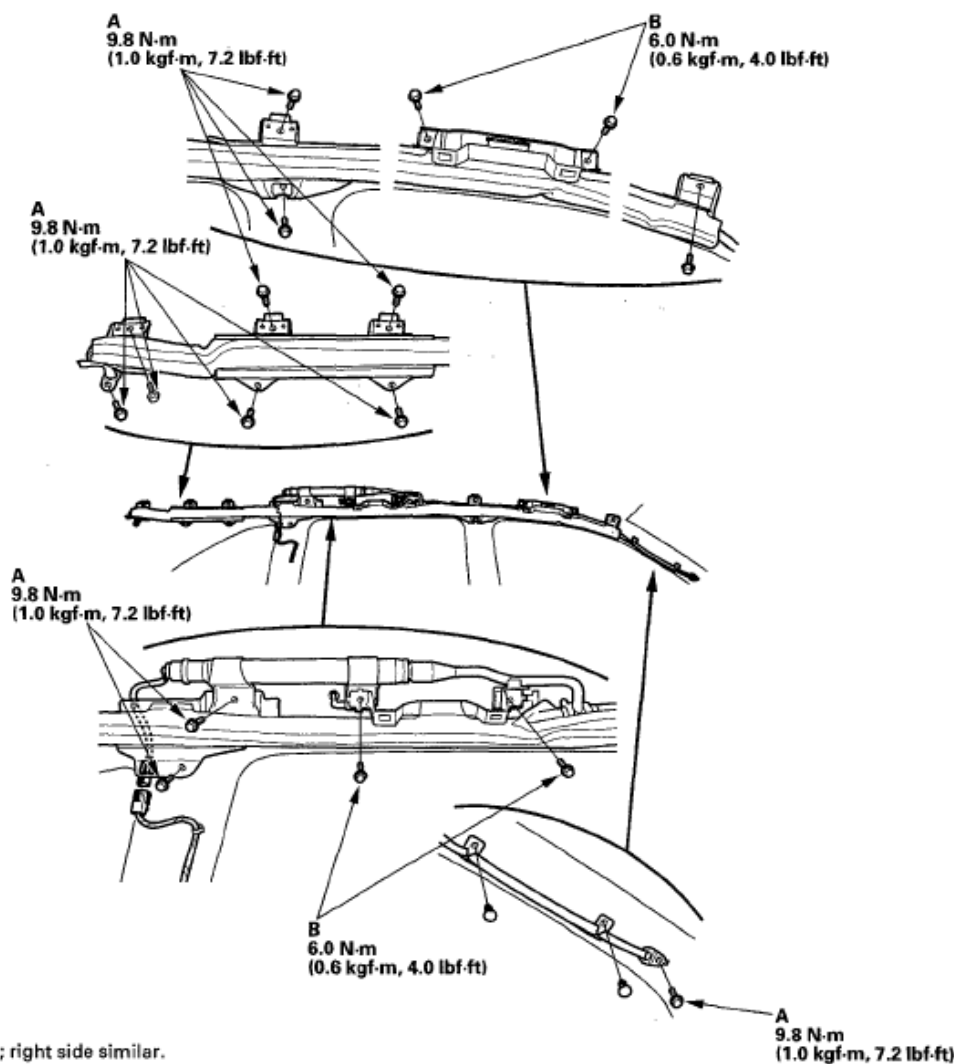


Fig. 210: Identifying Side Curtain Airbag Mounting Bolts And Mounting Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Route the side curtain airbag tab (A) through the rear grab handle bracket (B) and over the top, and hook the tab onto the bracket's arrow tab (C).

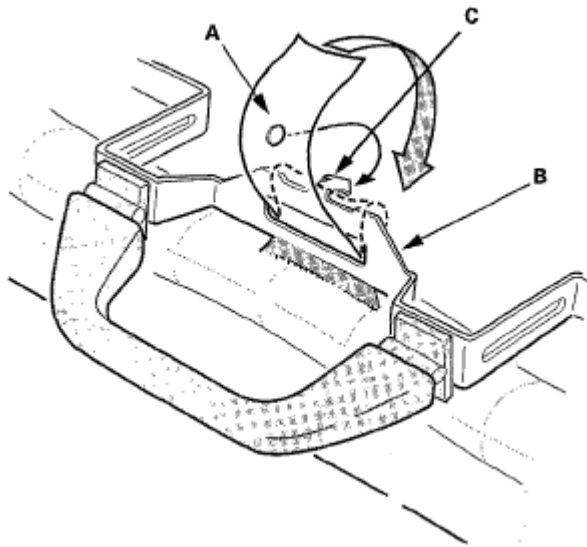
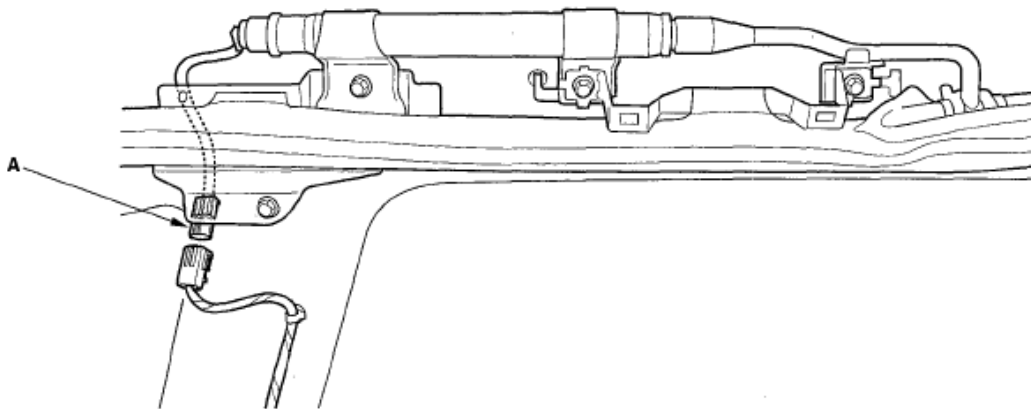


Fig. 211: Identifying Side Curtain Airbag Tab And Rear Grab Handle Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the side curtain airbag 2P connector (A) to the floor wire harness.



Left side shown; right side is similar.

Fig. 212: Identifying Side Curtain Airbag 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Left side shown; right side is similar.

4. Reconnect the negative cable to the battery.
5. Connect the HDS, and clear the DTCs (see **CLEAR THE DTC MEMORY WITH THE HDS**).
6. After installing the side curtain airbag, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
7. Install all removed parts.

8. Confirm proper headliner/pillar trim overlap (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).

AIRBAG AND TENSIONER DISPOSAL

Special Tools Required

Deployment tool 07HAZ-SG00500

Before scrapping any airbags, side airbags, side curtain airbags, seat belt tensioners, or lap belt tensioner (including those in a whole vehicle to be scrapped), the part(s) must be deployed. If the vehicle is still within the warranty period, the Acura District Parts and Service Manager must give approval and/or special instruction before deploying the part(s). Only after the part(s) have been deployed (as the result of vehicle collision, for example), can they be scrapped.

If the parts appear intact (not deployed), treat them with extreme caution. Follow this procedure.

DEPLOYING AIRBAGS IN THE VEHICLE

If an SRS equipped vehicle is to be entirely scrapped, its airbags, side airbags, side curtain airbags, and seat belt tensioners should be deployed while still in the vehicle. These parts should not be considered as salvageable parts and should never be installed in another vehicle.

1. Turn the ignition switch OFF, then disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Confirm that each airbag, side airbag, side curtain airbag, or seat belt tensioner is securely mounted.
3. Confirm that the deployment tool is functioning properly by following the check procedure on the tool label.

Driver's Airbag

4. Remove the access panel (A) from the steering wheel then disconnect the driver's airbag 4P connector (B) from the cable reel.

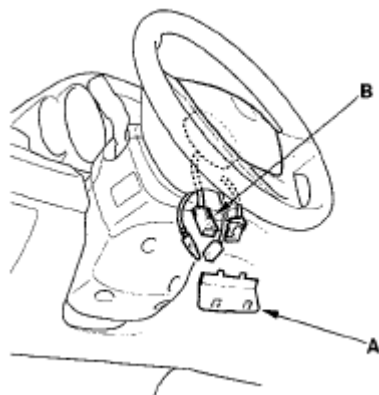


Fig. 213: Identifying Access Panel And Driver's Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front Passenger's Airbag

5. Remove the glove box, then disconnect the front passenger's airbag 4P connector (A) from the dashboard wire harness.

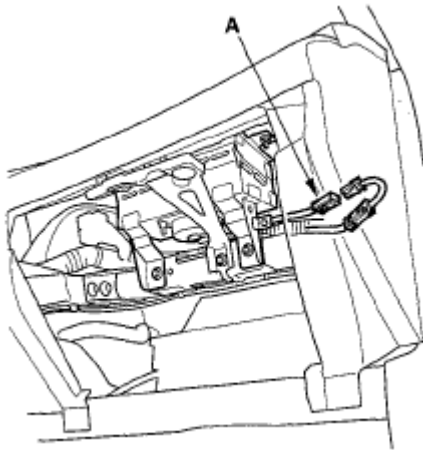


Fig. 214: Identifying Front Passenger'S Airbag 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Airbag

6. Disconnect the side airbag 2P connector (A) from the floor wire harness.



Fig. 215: Identifying Side Airbag 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Side Curtain Airbag

7. Disconnect the floor wire harness 2P connector (A) from the side curtain airbag.

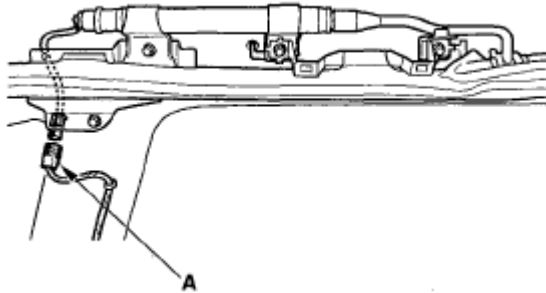


Fig. 216: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Seat Belt Tensioner

8. Disconnect the floor wire harness 4P connector (A) from the seat belt tensioner. Pull the seat belt out all the way and cut it.

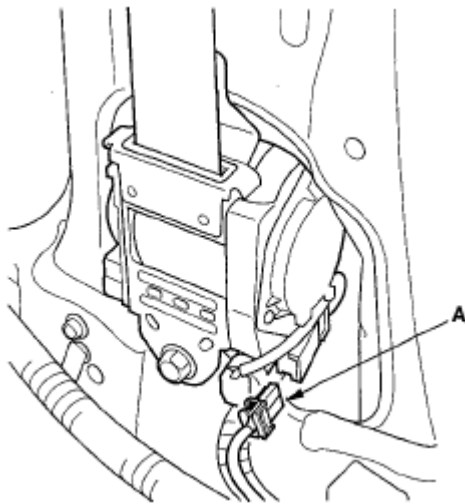


Fig. 217: Identifying Floor Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Cut off each connector, and strip the ends of the wires. Twist each pair of unlike colored wires together, and clip an alligator clip (A) from the deployment tool to each pair. Place the deployment tool at least 30 feet (10 meters) away from the vehicle.

NOTE: The driver's and front passenger's airbags have dual inflators. Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

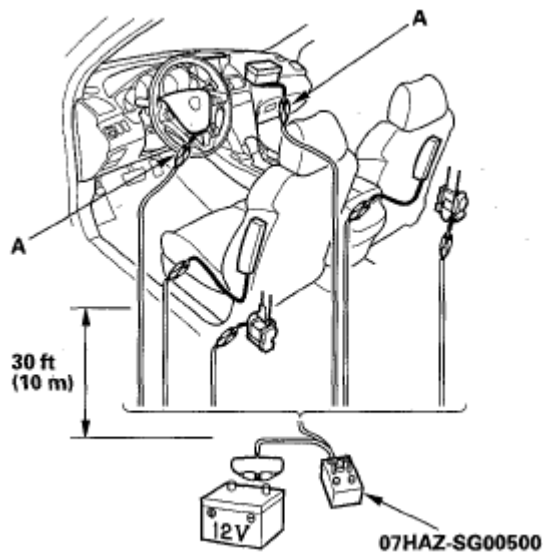


Fig. 218: Identifying Alligator Clip (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

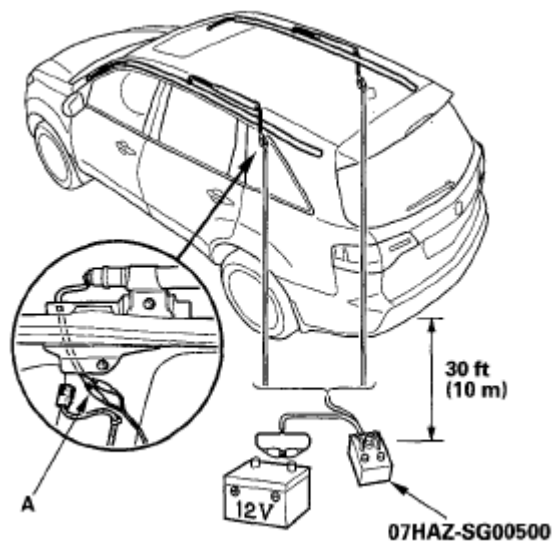


Fig. 219: Identifying Alligator Clip (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connects 12 volt battery to the tool.
 - If the green light on the tool comes on, the igniter circuit is defective and cannot deploy the component. Go to **DISPOSAL OF DAMAGED COMPONENTS**.
 - If the red light on the tool comes on, the component is ready to be deployed.
11. Push the tool's deployment switch. The airbags and tensioners should deploy (deployment is both highly audible and visible: A loud noise and rapid inflation of the bag, followed by slow deflation).
 - If the components deploy and the green light on the tool comes on, continue with this procedure.
 - If a component does not deploy, and the green light comes ON, its igniter is defective. Go to

DISPOSAL OF DAMAGED COMPONENTS.

- During deployment, the airbags can become hot enough to burn you. Wait 30 minutes after deployment before touching the airbags.
12. Dispose of the complete airbag. No part of it can be reused. Place it in a sturdy plastic bag (A), and seal it securely. Dispose of the deployed airbag according to your local regulations.



Fig. 220: Identifying Airbag In Sturdy Plastic Bag
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DEPLOYING COMPONENTS OUT OF THE VEHICLE

If an intact airbag or tensioner has been removed from a scrapped vehicle, or has been found defective or damaged during transit, storage, or service, it should be deployed as follows:

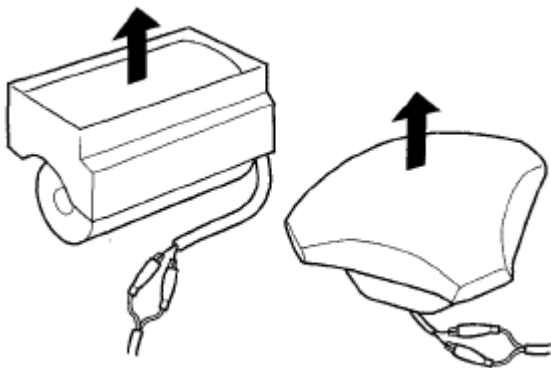


Fig. 221: Identifying Airbag Or Tensioner Deploying
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Confirm that the deployment tool is functioning properly by following the check procedure Deploying Airbags in the Vehicle on the tool label.
2. Position the airbag face up, outdoors, on flat ground, at least 30 feet (10 meters) from any obstacles or people.
3. Follow steps 9 through 12 of the in-vehicle deployment procedure.

NOTE: The driver's and front passenger's airbags have dual inflators. Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

DISPOSAL OF DAMAGED COMPONENTS

1. If installed in a vehicle, follow the removal procedure for the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**), front passenger's airbag (see **FRONT PASSENGER'S AIRBAG REPLACEMENT**), side airbag (see **SIDE AIRBAG REPLACEMENT**), side curtain airbag (see **SIDE CURTAIN AIRBAG REPLACEMENT**), and seat belt tensioner (see **FRONT SEAT BELT REPLACEMENT**).
2. In all cases, make a short circuit by cutting, stripping, and twisting together the two inflator wires.

NOTE: The driver's and front passenger's airbags have dual inflators. The like color wires go to the individual inflators. Twist the like colored wires together.

3. Package the component in exactly the same packaging that the new replacement part came in.
4. Mark the outside of the box "DAMAGED AIRBAG NOT DEPLOYED," "DAMAGED SIDE AIRBAG NOT DEPLOYED," "DAMAGED SIDE CURTAIN AIRBAG NOT DEPLOYED," "DAMAGED SEAT BELT TENSIONER NOT DEPLOYED" so it does not get confused with your parts stock.
5. Contact your Acura District Parts and Service Manager for instructions on how and where to return it for disposal.

DEPLOYMENT TOOL CHECK

1. Connect the yellow clips to both switch protector handles on the tool.
2. Then connect the red lead to the positive battery post and the black lead to the negative battery post.
3. Push the operation switch: The green light should come on, indicating that the tool is operating properly and is ready for use. If the red light stays on, the tool is faulty, and another one must be used for the procedure.
4. Disconnect the tool clips and connectors from the protector handles and the battery.

CABLE REEL REPLACEMENT

REMOVAL

1. Make sure the front wheels are aligned straight ahead.
2. Disconnect the negative cable from the battery, then wait for 3 minutes.
3. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
4. Disconnect the connector (A) from the cable reel, then remove the steering wheel bolt (B).

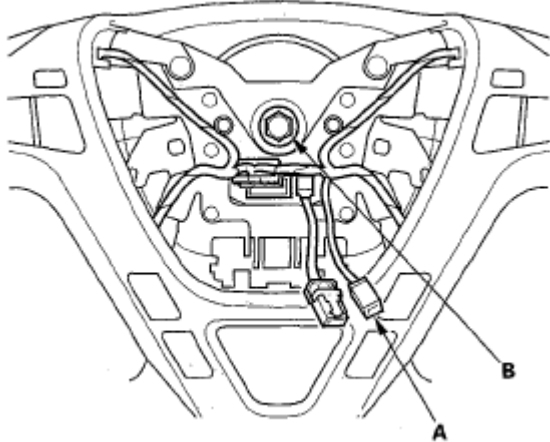


Fig. 222: Identifying Connector And Steering Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Confirm that the front wheels point straight ahead, then remove the steering wheel with a steering wheel puller (see step 6 **STEERING WHEEL REMOVAL**). Do not tap on the steering wheel or steering column shaft when removing the steering wheel.
6. Remove the column cover screws (A), then remove the column covers (B, C).

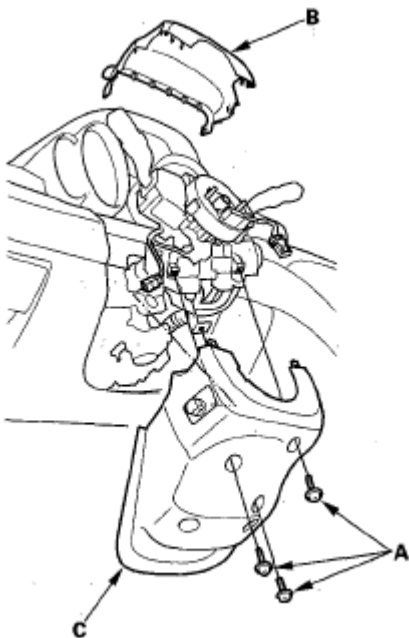


Fig. 223: Identifying Column Cover Screws And Column Covers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the dashboard wire harness 4P connector (A) from the cable reel 4P connector (B), then disconnect the dashboard wire harness 20P connector (C) from the cable reel (D).

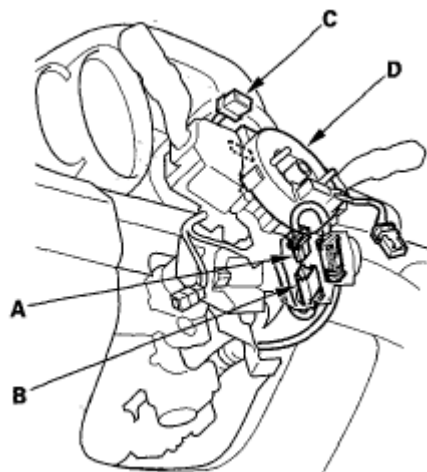


Fig. 224: Identifying Dashboard Wire Harness 4P Connector, Cable Reel 4P Connector And Dashboard Wire Harness 20P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Release the lock tab (A) under the cable reel connector with a 90° hook shaped tool (B). Slide the tool below the cable reel connector just above the lock tab. Release the lower lock tab (C), and slide the cable reel off the column.

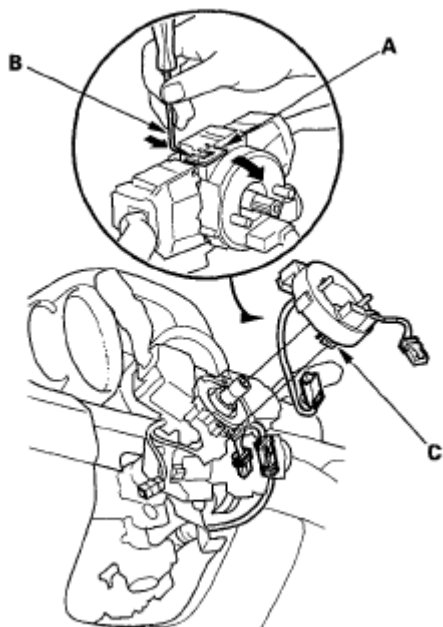


Fig. 225: Identifying Lock Tab Under Cable Reel Connector With 90° Hook Shaped Tool

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Before installing the steering wheel, align the front wheels straight ahead.

2. If not already done, disconnect the negative cable from the battery, then wait for 3 minutes.
3. Set the turn signal canceling sleeve (A) so that the projections (B) are aligned vertically.

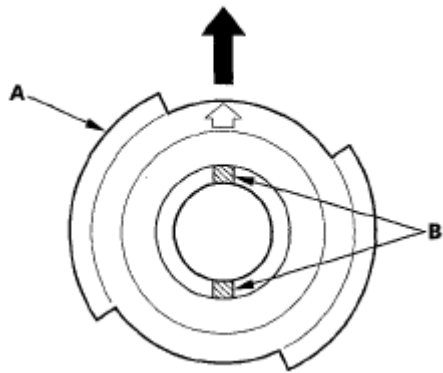


Fig. 226: Identifying Turn Signal Canceling Sleeve So That Projections Are Aligned Vertically
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully install the cable reel (A) on the steering column shaft. Then connect 13P or 5P connector (B) to the cable reel, and connect the 4P connector (C) to the dashboard wire harness 4P connector (D).

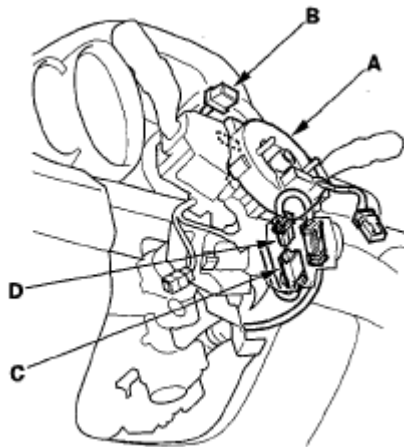


Fig. 227: Identifying Cable Reel, 13P Or 5P Connector, 4P Connector And Dashboard Wire Harness 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the steering column covers.
6. If necessary, center the cable reel (New replacement cable reels come centered.). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise (about three turns) until the arrow mark (A) on the cable reel label points straight up.

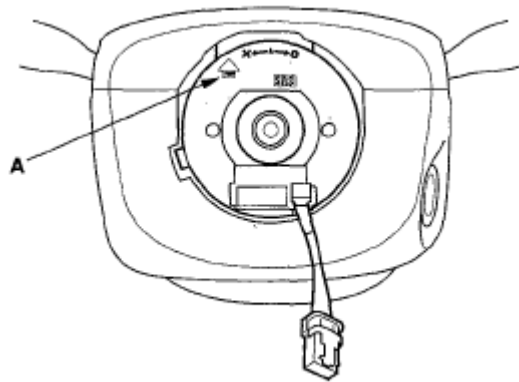


Fig. 228: Identifying Arrow Mark On Cable Reel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Position the two tabs (A) of the turn signal canceling sleeve (B) as shown, and install the steering wheel on to the steering column shaft, making sure the steering wheel hub (C) engages the pins (D) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.

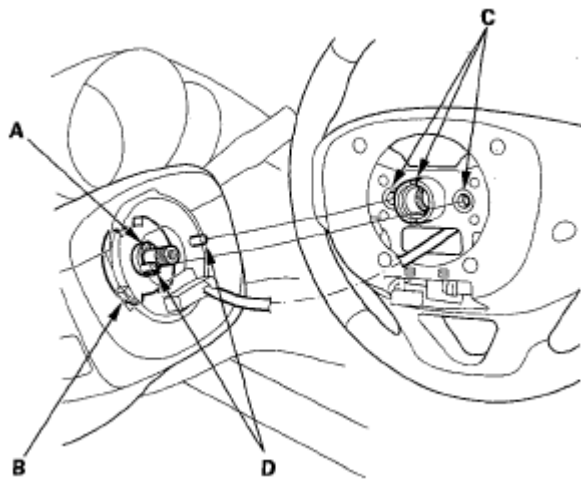


Fig. 229: Identifying Tabs And Turn Signal Canceling Sleeve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install and torque a new steering wheel bolt (A), then reconnect the connectors.

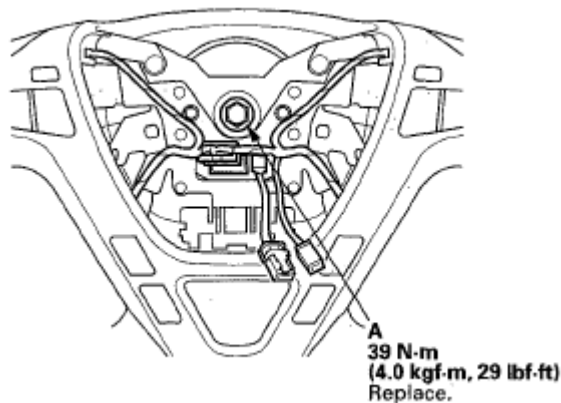


Fig. 230: Identifying Steering Wheel Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
10. Reconnect the negative cable to the battery.
11. After installing the cable reel, confirm proper system operation:
 - Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
 - After the SRS indicator has turned off, turn the steering wheel fully left and right to confirm the SRS indicator does not come on.
 - Make sure the horn works.
 - Make sure the cruise control buttons work.
 - Make sure the steering wheel audio controls work.
 - Make sure the INFO/SEL buttons works.

SRS UNIT REPLACEMENT

REMOVAL

NOTE: If you are only disconnecting SRS unit connector A, skip step 2.

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect both seat belt tensioner connectors (see step 7).
3. Remove the driver's center console trim (see step 5 on **CENTER CONSOLE REMOVAL/INSTALLATION**) and passenger's center console trim (see step 6 on **CENTER CONSOLE REMOVAL/INSTALLATION**).
4. Disconnect SRS unit connector A, connector B, connector C, and remove the TORX bolts (D), then pull out the SRS unit.

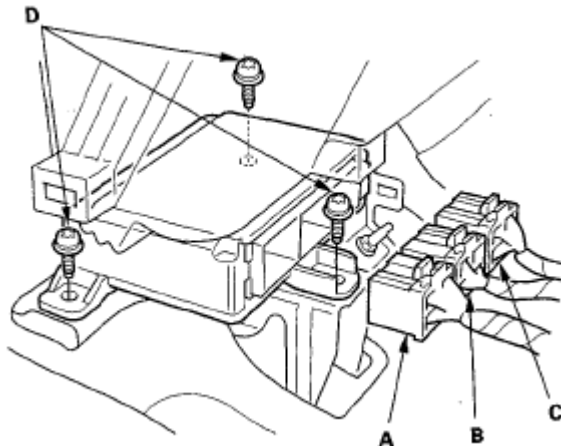


Fig. 231: Identifying SRS Unit Connector A, Connector B, Connector C, And TORX Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the new SRS unit (A) with new TORX bolts (B), then connect the connectors (C) to the SRS unit; push them into position until they click.

NOTE: Be sure the SRS unit is sitting squarely against its bracket before torquing the TORX bolt.

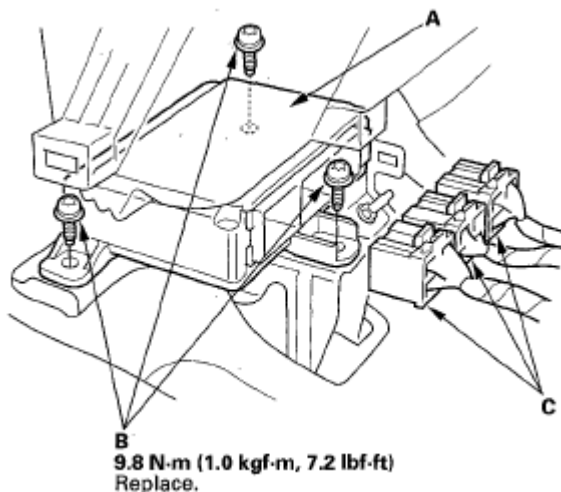


Fig. 232: Identifying SRS Unit, Torx Bolts And Connectors With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect both seat belt tensioner connectors (see step 8).
3. Reconnect the negative cable to the battery.
4. Calibrate the ODS unit (see **ODS UNIT CALIBRATION**).
5. Do the ODS unit operation check (see **ODS UNIT OPERATION CHECK**).

6. After installing the SRS unit, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
7. Reinstall all removed parts.

SIDE IMPACT SENSOR (FIRST) REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the appropriate side airbag 2P connector (see step 4).
3. Remove the front seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**).
4. Remove the lower B-pillar lower trim panel (see **B-PILLAR UPPER/LOWER TRIM**).
5. Disconnect the floor wire harness 2P connector from the side impact sensor (first).
6. Using a TORX T30 bit, remove the TORX bolt (A), then remove the side impact sensor (first) (B).

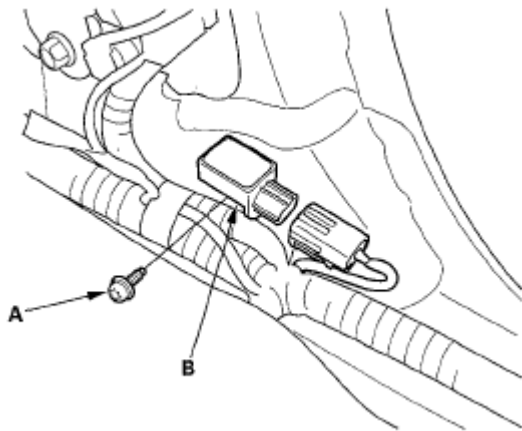


Fig. 233: Identifying TORX Bolt And Side Impact Sensor (First)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the new side impact sensor (first) with the TORX bolt (A), then connect the floor wire harness 2P connector (B) to the side impact sensor (first).

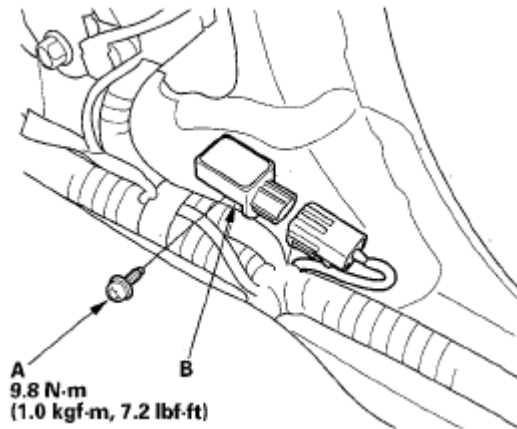


Fig. 234: Identifying TORX Bolt And Floor Wire Harness 2P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the negative cable to the battery.
3. After installing the side impact sensor (first) confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
4. Reinstall all removed parts.

SIDE IMPACT SENSOR (SECOND) REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the appropriate side curtain airbag 2P connector (see step 5).
3. Remove the rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
4. Disconnect the floor wire harness 2P connector from the side impact sensor (second).
5. Using a TORX f 30 bit, remove the TORX bolt (A) then remove the side impact sensor (second) (B).

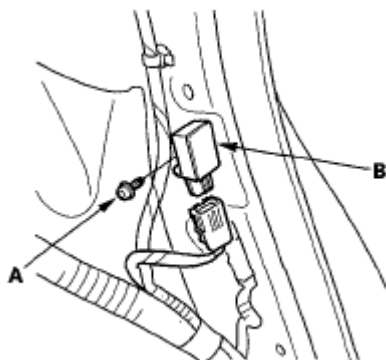


Fig. 235: Identifying TORX Bolt And Side Impact Sensor (Second)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the new side impact sensor (second) with the TORX bolt (A) then connect floor wire harness 2P connector (B) to the side impact sensor (second).

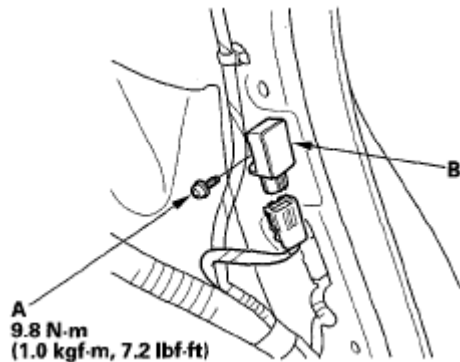


Fig. 236: Identifying TORX Bolt And Floor Wire Harness 2P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the negative cable to the battery.
3. After installing the side impact sensor (second), confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
4. Reinstall all removed parts.

ROLL RATE SENSOR REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect both side curtain airbag 2P connectors (see step 6).
3. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
4. Disconnect the floor wire harness 2P connector (A) from the roll rate sensor.

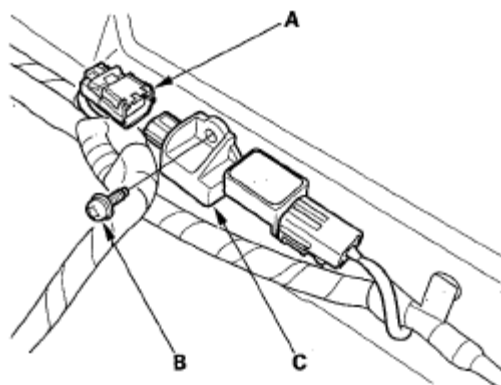


Fig. 237: Identifying Floor Wire Harness 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using a TORX T30 bit, remove the TORX bolt (B) then remove the roll rate sensor (C).

INSTALLATION

1. Install the new roll rate sensor with the TORX bolts (A) then connect the floor wire harness 2P connector (B) to the roll rate sensor (C).

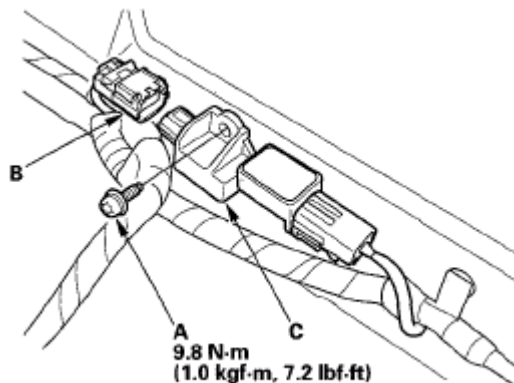


Fig. 238: Identifying Floor Wire Harness 2P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the negative cable to the battery.
3. Reinstall all removed parts.
4. After installing the roll rate sensor, confirm proper system operation: Turn the ignition switch to ON (II); the SRS indicator should come on for about 6 seconds and then go off.

REAR SAFING SENSOR REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect both side curtain airbag 2P connectors (see step 5).
3. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
4. Disconnect the floor wire harness 4P connector (A) from the rear safing sensor.

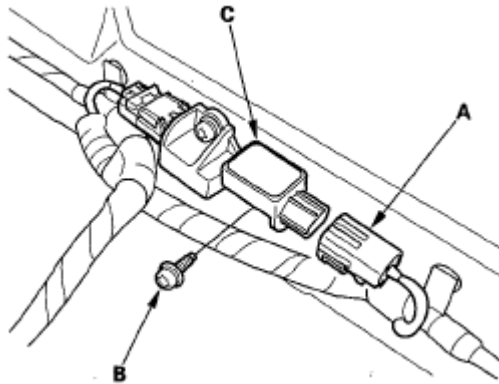


Fig. 239: Identifying Floor Wire Harness 4P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the TORX bolt (B) using a TORX T30 bit, then remove the rear safing sensor (C).

INSTALLATION

1. Install the new rear safing sensor with the TORX bolt (A) then connect the floor wire harness 4P connector (B) to the rear safing sensor (C).

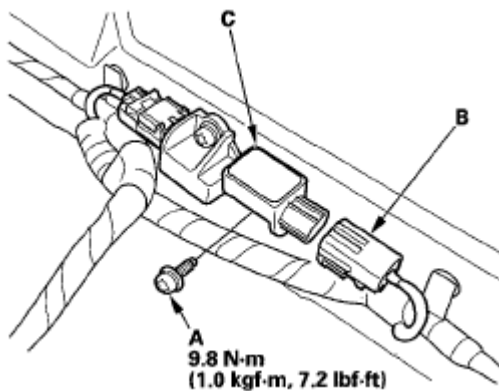


Fig. 240: Identifying Floor Wire Harness 4P Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the negative cable to the battery.
3. After installing the rear safing sensor, confirm proper system operation: Turn the ignition switch ON (II): the SRS indicator should come on for about 6 seconds and then go off.
4. Install all removed parts.

FRONT PASSENGER'S WEIGHT SENSOR REPLACEMENT

REMOVAL

NOTE:

- Removal of the front passenger's weight sensors must be done according to Precautions and Procedures (see PRECAUTIONS AND PROCEDURES).
- The front passenger's weight sensors are part of the slide/up-down adjuster and must be replaced as an assembly.

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Remove the front passenger's seat assembly (see FRONT SEAT REMOVAL/INSTALLATION).
3. Remove the front cover, recline cover, and center cover (see FRONT SEAT DISASSEMBLY/REASSEMBLY).
4. Disconnect the sensor connector's (A) from the ODS unit harness, then remove the mounting nuts (B) and mounting bolts (C) from weight sensors (D).

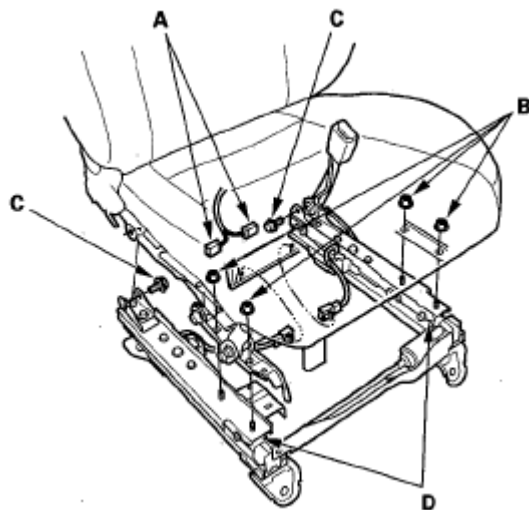


Fig. 241: Identifying Sensor Connector's, Mounting Nuts And Weight Sensors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the sensor connectors (D) from the ODS unit harness, then remove the front passenger's weight sensors.

INSTALLATION**NOTE:**

Be sure to install the harness wires so they are not pinched or interfere with other parts.

1. Install and torque the new front passenger's weight sensors with mounting nuts (A) and new mounting bolts (B) under the seat cushion.

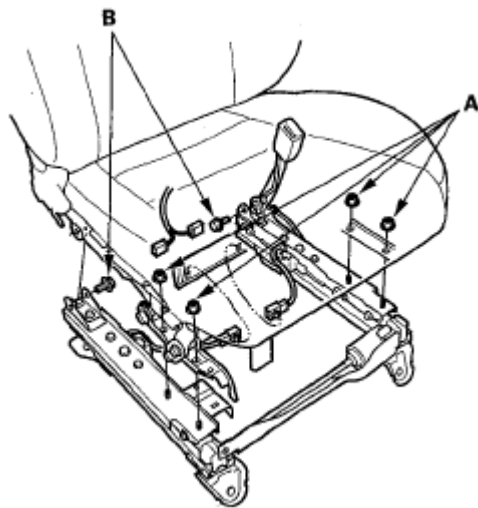


Fig. 242: Identifying Front Passenger's Weight Sensors Mounting Nuts And Mounting Bolts Under Seat Cushion

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reinstall the front passenger's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Reconnect the negative cable to the battery.
4. Calibrate the ODS unit (see **ODS UNIT CALIBRATION**).
5. After installing the front passenger's weight sensors, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come ON for about 6 seconds and then go off.

ODS UNIT REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the passenger's side airbag harness 2P connector (see step 4).
3. Remove the passenger's seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**) and seat-back cover (see **FRONT SEAT-BACK COVER REPLACEMENT**).
4. Remove the cover (A), then disconnect the ODS unit 18P connector (B) and sensor connectors (C) from the ODS unit (D).

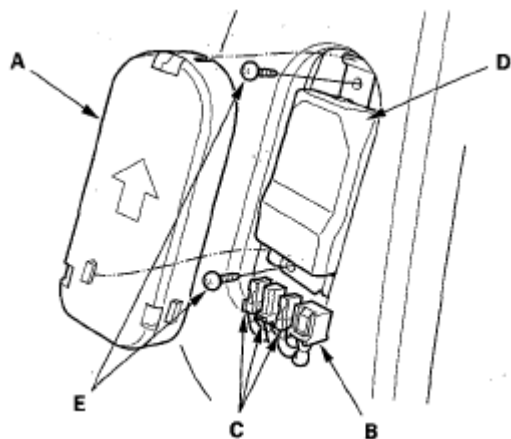


Fig. 243: Identifying Cover, ODS Unit 18P Connector And Sensor Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the two screws (E) and the ODS unit.

INSTALLATION

1. Place the new ODS unit (A) on the seat-back frame. Tighten the two screws (B), and connect the ODS unit harness 18P connector (C) and sensor connectors (D) to the ODS unit. Reinstall the cover (E).

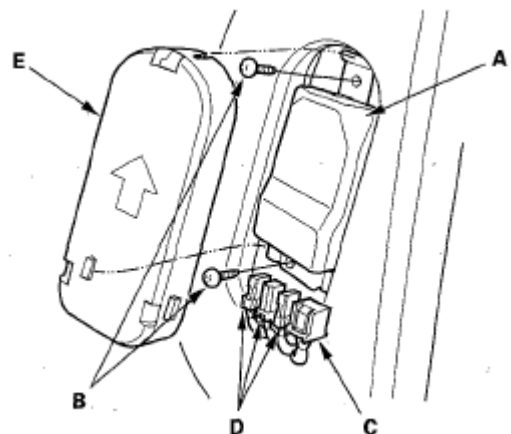


Fig. 244: Identifying ODS Unit Harness 18P Connector And Sensor Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the seat-back cover in the reverse order of removal (see **FRONT SEAT-BACK COVER REPLACEMENT**).
3. Install the seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**), then connect the side airbag harness 2P connector.
4. Reconnect the negative cable to the battery.
5. Set the seat-back in the normal position, and make sure there is nothing on the front passenger's seat.
6. Initialize the ODS unit (see **ODS UNIT INITIALIZATION**).

7. After installing the ODS unit, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.

FRONT IMPACT SENSOR REPLACEMENT

REMOVAL

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the driver's airbag 4P connector (see step 2), the front passenger's airbag 4P connector (see step 3), and both seat belt tensioner 4P connectors (see step 7).
3. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
4. Disconnect the left or right engine compartment wire harness 2P connector (A). Using a TORX T30 bit, remove the TORX bolts (B), then remove the front impact sensor (C).

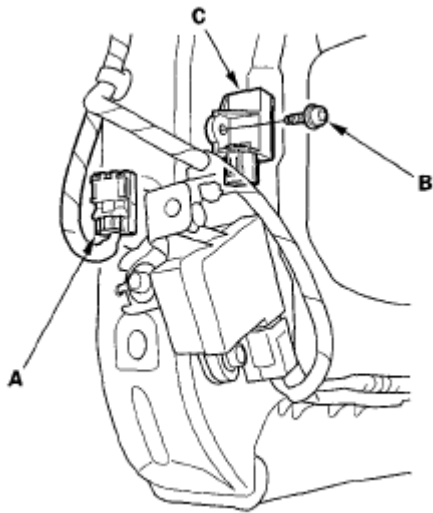


Fig. 245: Identifying Engine Compartment Wire Harness 2P Connector, TORX Bolts And Front Impact Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the new front impact sensor with a new TORX bolts (A), then connect the left or right engine compartment wire harness 2P connector (B) to the front impact sensor (C).

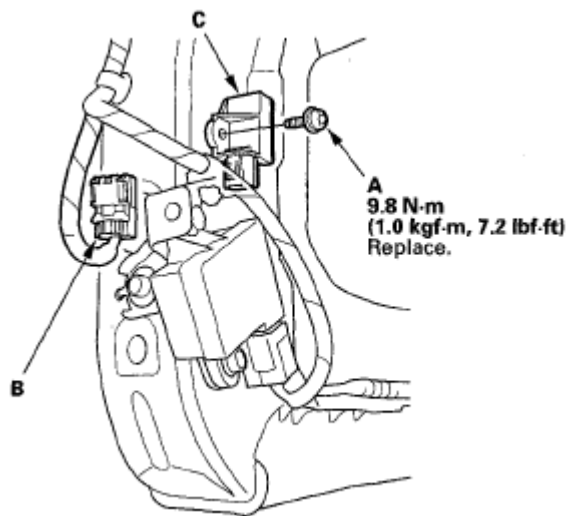


Fig. 246: Identifying Engine Compartment Wire Harness 2P Connector,TORX Bolts And Front Impact Sensor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the negative cable to the battery.
3. After installing the front impact sensor, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
4. Reinstall all removed parts.

DRIVER'S SEAT POSITION SENSOR REPLACEMENT

REMOVAL

NOTE:

- Removal of the driver's seat position sensor must be done according to Precautions and Procedures (see **PRECAUTIONS AND PROCEDURES**).
- Do not turn the ignition switch ON (II), and do not connect the battery cable while removing the driver's seat position sensor.

1. Disconnect the negative cable from the battery, then wait for 3 minutes before starting work.
2. Disconnect the driver's airbag 4P connector (see step 2).
3. Remove the driver's seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**).
4. Disconnect the driver's seat wire harness 2P connector (A) from the driver's seat position sensor.

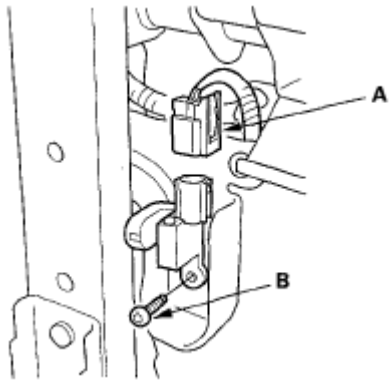


Fig. 247: Identifying Driver's Seat Wire Harness 2P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Using a TORX T30 bit, remove the TORX bolt (B), then remove the driver's seat position sensor.

INSTALLATION

NOTE:

- Be sure to install the harness so it does not pinched or interfere with other parts.
- Do not turn the ignition switch ON (II), and do not connect the battery cable while installing the driver's seat position sensor.
- After installing the driver's seat position sensor, make sure it is clean. Keep it away from dust.

1. Install the new driver's seat position sensor with a TORX bolt (A), then connect the driver's seat wire harness 2P connector to the driver's seat position sensor (B).

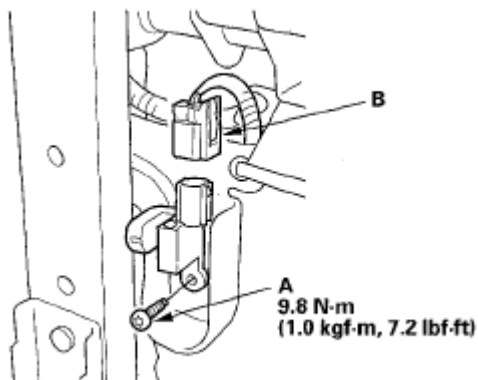


Fig. 248: Identifying Driver's Seat Wire Harness 2P Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reconnect the driver's airbag 4P connector (see step 2).
3. Install the driver's seat assembly (see **FRONT SEAT REMOVAL/INSTALLATION**).

4. Reconnect the negative cable to the battery.
5. Check the operation of the driver's seat position sensor with the HDS (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**).

PASSENGER'S AIRBAG CUTOFF INDICATOR ILLUMINATION BULB TEST/REPLACEMENT

1. Remove the dashboard center panel (see **DASHBOARD CENTER PANEL REMOVAL/ INSTALLATION**).
2. Disconnect the 6P connector (A) from the passenger's airbag cutoff indicator (B).

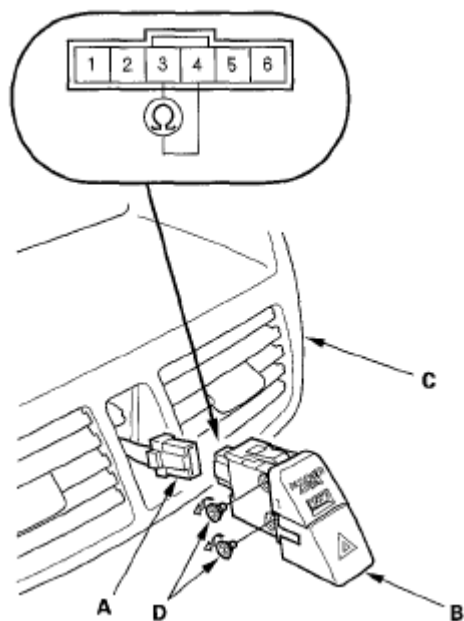


Fig. 249: Identifying 6P Connector And Passenger's Airbag Cutoff Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Push out the passenger's airbag cutoff indicator from behind the center panel (C).
4. Check for continuity between the No. 3 and No. 4 terminals of the indicator. If there is no continuity, replace the bulbs (D).

NOTE: Both illumination bulbs are connected in parallel. If there is continuity, remove the lower, hazard switch illumination bulb, and recheck for continuity. If there is no continuity, replace the upper, passenger's airbag cutoff indicator illumination bulb.

5. Reinstall the parts in the reverse order of removal.

2007-09 BRAKES

VSA (Vehicle Stability Assist) System Components - MDX

COMPONENT LOCATION INDEX

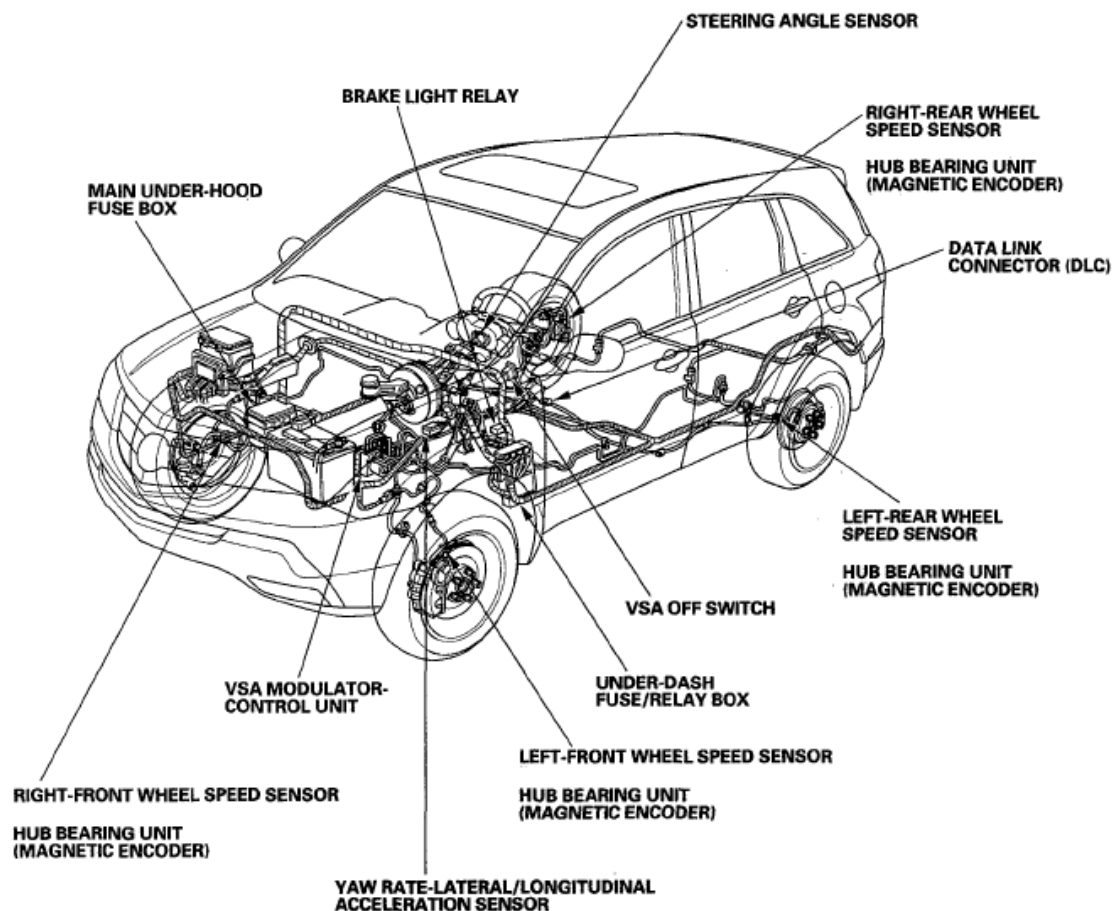


Fig. 1: Identifying VSA Components Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SYSTEM INDICATOR

This system has four indicators and one warning:

- ABS indicator (A)
- Brake system indicator (B)
- VSA indicator (C)
- VSA activation indicator (D)

lost.

ABS, VSA Indicators, and Trailer Stability Assist Warning go off

Each indicator or warning will go off after a problem goes away, but the timing which the VSA modulator-control unit turns off the indicators or warning varies between DTCs.

- DTC 61,62:

The indicators go off automatically when the system returns to normal.

- DTC 11, 13, 15, 17, 21*, 22, 25, 26, 27, 31, 32, 33, 34, 35, 36, 37, 38, 45, 46, 47, 48, 54, 59, 65, 66, 67, 68, 69, 72, 73, 74, 75, 76, 81, 84, 91, 92, or 97* *:

The indicators stay on until the ignition switch is turned to LOCK (0) whether or not the system returns to normal.

* : There are some cases that the indicators stay on until the vehicle is driven after the system returns to normal.

* * : There are some cases that the indicators go off automatically when the system returns to normal.

- DTC 12, 14, 16, 18, 51, 52, or 53:

The indicators stay on until the vehicle is driven after the system returns to normal.

DIAGNOSTIC TROUBLE CODE (DTC)

- The memory can hold up to 10 DTCs. However, when the same DTC is detected more than once, the more recent DTC is written over the earlier one. Therefore, when the same problem is detected repeatedly, it is memorized as a single DTC.
- The DTCs are indicated in the order they occur.
- The DTCs are memorized in the EEPROM. Therefore, the memorized DTCs cannot be erased by disconnecting the battery. Do the specified procedures to clear the DTCs.

Self-diagnosis

- Self-diagnosis can be classified into two categories:
 - Initial diagnosis: Done right after the ignition switch is turned to ON (II) and until the ABS and VSA indicators go off.
 - Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned to LOCK (0).
- When the system detects a problem, the VSA modulator-control unit shifts to the fail-safe mode.

Kickback

The pump motor operates When the VSA modulator-control unit is functioning, and the fluid in the reservoir is forced out to the master cylinder, causing a kickback at the brake pedal.

Pump Motor

- The pump motor operates when the VSA modulator-control unit is functioning.
- The VSA modulator-control unit checks the pump motor operation one time after completing initial diagnosis during regular when the vehicle is driven over 10 mph (15 km/h) and at 19 mph (30 km/h).

Brake Fluid Replacement/Air Bleeding

Brake fluid replacement and air bleeding procedures are identical to the procedures used on vehicles without the VSA system (see **BRAKE SYSTEM BLEEDING**).

How to Troubleshoot DTCs

The troubleshooting procedures assume that the cause of the problem is still present and the ABS, VSA indicators, and/or trailer stability assist warning are still on. Following a troubleshooting procedure for a code that has been cleared but does not reset can result in incorrect diagnosis.

1. Question the client about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting. Find out when the ABS, VSA indicators, and/or trailer stability assist warning came on, such as during activation, after activation, when the vehicle was traveling at a certain speed, etc. If necessary, have the client demonstrate the concern.
2. When the ABS, VSA indicators, or trailer stability assist warning does not come on during the test-drive, but troubleshooting is done based on the DTC, check for loose connectors, poor contact of the terminals, etc. before you start troubleshooting.
3. After troubleshooting, or the repairs are done, clear the DTCs, and test-drive the vehicle under the same conditions that originally set the DTCs. Make sure the ABS, VSA indicators, and trailer stability assist warning do not come on.
4. Check for DTCs from other systems which connected via F-CAN. If there are DTCs that are related to F-CAN, the most likely cause was that the ignition switch was turned to ON (II) with the VSA modulator-control unit connector disconnected. Clear the DTCs. Check for fuel and emissions codes, first. Be sure to troubleshoot those first.

Intermittent Failures

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the indicator(s) of the system does not come on, check for loose connectors or poor contacts in the terminals related to the circuit that you are troubleshooting.

How to Use the HDS (Honda Diagnostic System)

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

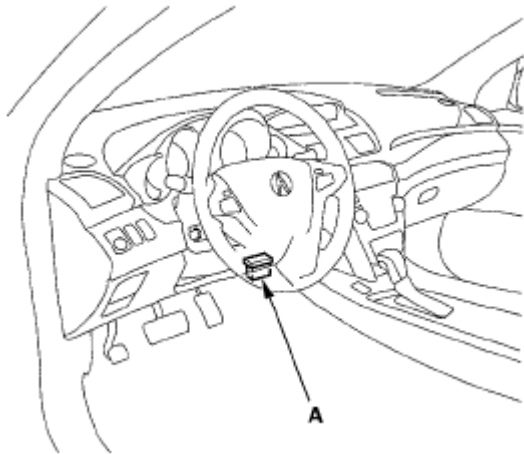


Fig. 3: Identifying Data Link Connector (DLC)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check the diagnostic trouble code (DTC) and note it. Then refer to the indicated **DTC'S TROUBLESHOOTING**, and do the appropriate troubleshooting procedure.

NOTE:

- The HDS can read the DTC, the current data, and other system data.
- For specific operations, refer to the Help menu that came with the HDS.

How to Retrieve DTCs

1. With the ignition switch at LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the **DTCS TROUBLESHOOTING**.
5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

1. With the ignition switch at LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0).

DTC TROUBLESHOOTING INDEX**DTC TROUBLESHOOTING INDEX**

DTC	Detection Item	ABS Indicator	Brake System Indicator	VSA Indicator	VSA Activation Indicator	Trailer Stability Assist Warning
<u>11</u>	Right-front Wheel Speed Sensor (Open/Short to Body Ground/Short to Power)	ON	ON or OFF (1)	ON	ON	ON
<u>12</u>	Right-front Wheel Speed Sensor (Electrical Noise/Intermittent Interruption)	ON	ON or OFF (1)	ON	ON	ON
<u>13</u>	Left-front Wheel Speed Sensor (Open/Short to Body Ground/Short to Power)	ON	ON or OFF (1)	ON	ON	ON
<u>14</u>	Left-front Wheel Speed Sensor (Electrical Noise/Intermittent Interruption)	ON	ON or OFF (1)	ON	ON	ON
<u>15</u>	Right-rear Wheel Speed Sensor (Open/Short to Body Ground/Short to Power)	ON	ON or OFF (1)	ON	ON	ON
<u>16</u>	Right-rear Wheel Speed Sensor (Electrical Noise/Intermittent Interruption)	ON	ON or OFF (1)	ON	ON	ON
<u>17</u>	Left-rear Wheel Speed Sensor (Open/Short to Body Ground/Short to Power)	ON	ON or OFF (1)	ON	ON	ON
<u>18</u>	Left-rear Wheel Speed Sensor (Electrical Noise/Intermittent Interruption)	ON	ON or OFF (1)	ON	ON	ON
<u>21</u>	Difference in Wheel Speed	ON	ON or OFF	ON	ON	ON
<u>22</u>	Current Flow Into Wheel	ON	OFF	ON	ON	ON

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

	Speed Sensor Input Amplifier					
<u>25</u>	Yaw Rate Sensor (Sensor Unit)	OFF	OFF	ON	ON	ON
<u>26</u>	Lateral/Longitudinal Acceleration Sensor (Sensor Unit)	OFF	OFF	ON	ON	ON
<u>27</u>	Steering Angle Sensor (Hardware)	OFF	OFF	ON	ON	ON
<u>31</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>32</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>33</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>34</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>35</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>36</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>37</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>38</u>	ABS Solenoid	ON	ON	ON	ON	ON
<u>45</u>	VSA Solenoid	ON	ON	ON	ON	ON
<u>46</u>	VSA Solenoid	ON	ON	ON	ON	ON
<u>47</u>	VSA Solenoid	ON	ON	ON	ON	ON
<u>48</u>	VSA Solenoid	ON	ON	ON	ON	ON
<u>51</u>	Motor Locked	ON	ON	ON	ON	ON
<u>52</u>	Motor Stuck OFF	ON	ON	ON	ON	ON
<u>53</u>	Motor Stuck ON	ON	ON	ON	ON	ON
<u>54</u>	Valve Relay	ON	ON or OFF	ON	ON	ON
<u>59</u>	BRKDIAG High	OFF	OFF	OFF	OFF	ON
<u>61</u>	IG1 Voltage Low	ON	ON or OFF	ON	ON	ON
<u>62</u>	IG1 Voltage High	ON	ON	ON	ON	ON
<u>65</u>	VSA Pressure Sensor (Hardware)	ON	OFF	ON	ON	ON
<u>66</u>	VSA Pressure Sensor (Software)	ON	OFF	ON	ON	ON
<u>67</u>	Brake Pedal Position Switch Stuck ON (Hardware)	OFF	OFF	ON	ON	ON
<u>68</u>	Brake Pedal Position Switch Stuck OFF (Software)	ON	OFF	ON	ON	ON
<u>69</u>	BRKDIAG Low	OFF	OFF	OFF	OFF	ON
<u>72</u>	Steering Angle Sensor (Software)	OFF	OFF	ON	ON	ON
<u>73</u>	Yaw Rate Sensor (Power	OFF	OFF	ON	ON	ON

2008 Acura MDX**2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX**

	Supply)					
74	Yaw Rate Sensor (Software)	OFF	OFF	ON	ON	ON
75	Lateral/Longitudinal Acceleration Sensor (Joint Failure)	OFF	OFF	ON	ON	ON
76	Lateral/Longitudinal Acceleration Sensor (Software)	OFF	OFF	ON	ON	ON
81	Central Processing Unit (CPU)	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF
84	Steering Angle Sensor No Center Point Writing	OFF	OFF	ON or OFF	ON	ON
91	F-CAN Communication	OFF	OFF	ON	ON	ON or OFF
92	F-CAN System (Bus-off)	ON or OFF	ON or OFF	ON or OFF	ON or OFF	ON or OFF
97	VSA System	ON	OFF	ON	ON	ON
(1) Brake system indicator turns ON when three or more wheel speed sensors fail.						

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

DTC TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure
HDS does not communicate with the VSA modulator-control unit or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>).
VSA activation indicator does not come on at start-up (bulb check)	1. Do the gauge control module troubleshooting (see <u>SELF-DIAGNOSTIC FUNCTION</u>). 2. Substitute a known-good VSA modulator-control unit, then retest. If it is OK, replace the original VSA modulator-control unit (see <u>VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION</u>).
VSA activation indicator does not go off, and no DTCs are stored	1. Do the steering angle sensor center point writing (see <u>STEERING ANGLE SENSOR CENTER POINT WRITING</u>). 2. Symptom troubleshooting (see <u>SYMPTOM TROUBLESHOOTING</u>). 3. Substitute a known-good VSA modulator-control unit, then retest. If it is OK, replace the original VSA modulator-control unit (see <u>VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION</u>).

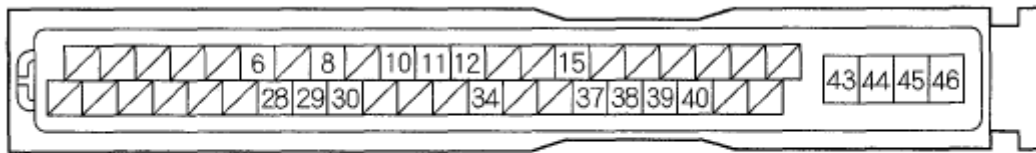
2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

ABS indicator, brake system indicator, and VSA indicator do not come on at the same time	1. Do the gauge control module troubleshooting (see <u>SELF-DIAGNOSTIC FUNCTION</u>). 2. Substitute a known-good VSA modulator-control unit, then retest. If it is OK, replace the original VSA modulator-control unit (see <u>VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION</u>).
ABS indicator, brake system indicator, VSA indicator, and trailer stability assist warning do not go off at the same time	1. Do the gauge control module troubleshooting (see <u>SELF-DIAGNOSTIC FUNCTION</u>). 2. Check for F-CAN DTCs, and troubleshoot and repair those first. 3. Symptom troubleshooting (see <u>SYMPTOM TROUBLESHOOTING</u>).

SYSTEM DESCRIPTION

VSA MODULATOR-CONTROL UNIT INPUTS AND OUTPUTS FOR 46P CONNECTOR



Wire side of female terminals

Fig. 4: Identifying VSA Modulator-Control Unit Inputs And Outputs For 46P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

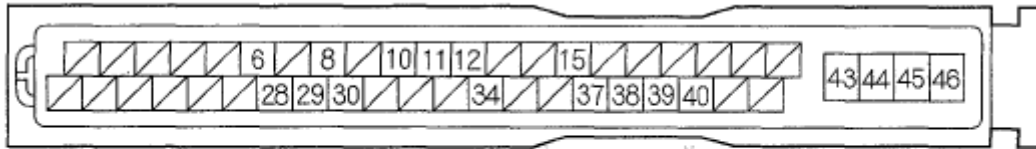
CONNECTOR TERMINAL RESULT REFERENCE

Terminal number	Wire color	Terminal sign	Description	Measurement (Disconnect the VSA modulator-control unit 46P connector)		
				Terminals	Conditions	Results
6	ORN	BRKDIAG	Detects brake light relay	6-GND	Trailer stability assist brake operated or brake pedal pressed	Battery voltage
8	GRY	RR-GND	Detects right-rear wheel speed sensor signal	-	-	-
10	RED	RL-GND	Detects left-rear wheel speed sensor signal	-	-	-
11	YEL	RL+B	Detects left-rear wheel speed sensor signal	-	-	-
12	ORN	FL+B	Detects left-front wheel speed sensor	-	-	-

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

			signal			
15	LT BLU	K-LINE	Communicates with HDS	-	-	-



Wire side of female terminals

Fig. 5: Identifying VSA Modulator-Control Unit Inputs And Outputs For 46P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR TERMINAL RESULT REFERENCE

Terminal number	Wire color	Terminal sign	Description	Measurement (Disconnect the VSA modulator-control unit 46P connector)		
				Terminals	Conditions	Results
28	PNK	FR-GND	Detects right-front wheel speed sensor signal	-	-	-
29	GRN	FR+B	Detects right-front wheel speed sensor signal	-	-	-
30	LT BLU	RR+B	Detects right-rear wheel speed sensor signal	-	-	-
34	GRY	FL-GND	Detects left-front wheel speed sensor signal	-	-	-
37	YEL	BRK LAMP	Drives the brake light relay	37-GND	Ignition switch to ON (II)	Battery voltage
38	RED	CAN-L	F-CAN communication circuit	-	-	-
39	WHT	CAN-H	F-CAN communication circuit	-	-	-
40	ORN	IG1	Power source for activating the system	40-GND	Ignition switch to ON (II)	Battery voltage
43	BRN	GND2	Ground for the VSA modulator-control unit	43-GND	At all times	Continuity to ground
44	LT GRN	+BSOL	Power source for the valve relay	44-GND	At all times	Battery voltage
45	RED	+BMOT	Power source for the motor relay	45-GND	At all times	Battery voltage
			Ground for the pump			Continuity to

46	BLK	GND1	motor	46-GND	At all times	ground
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System Outline

This system is composed of the VSA modulator-control unit, the wheel speed sensors, the steering angle sensor, and the yaw rate-lateral/longitudinal acceleration sensor, and the system indicators in the gauge control module. The VSA modulator-control unit controls the ABS, EBD, TCS, VSA, trailer stability assist, and brake assist with the brake pressure of each wheel and the engine torque.

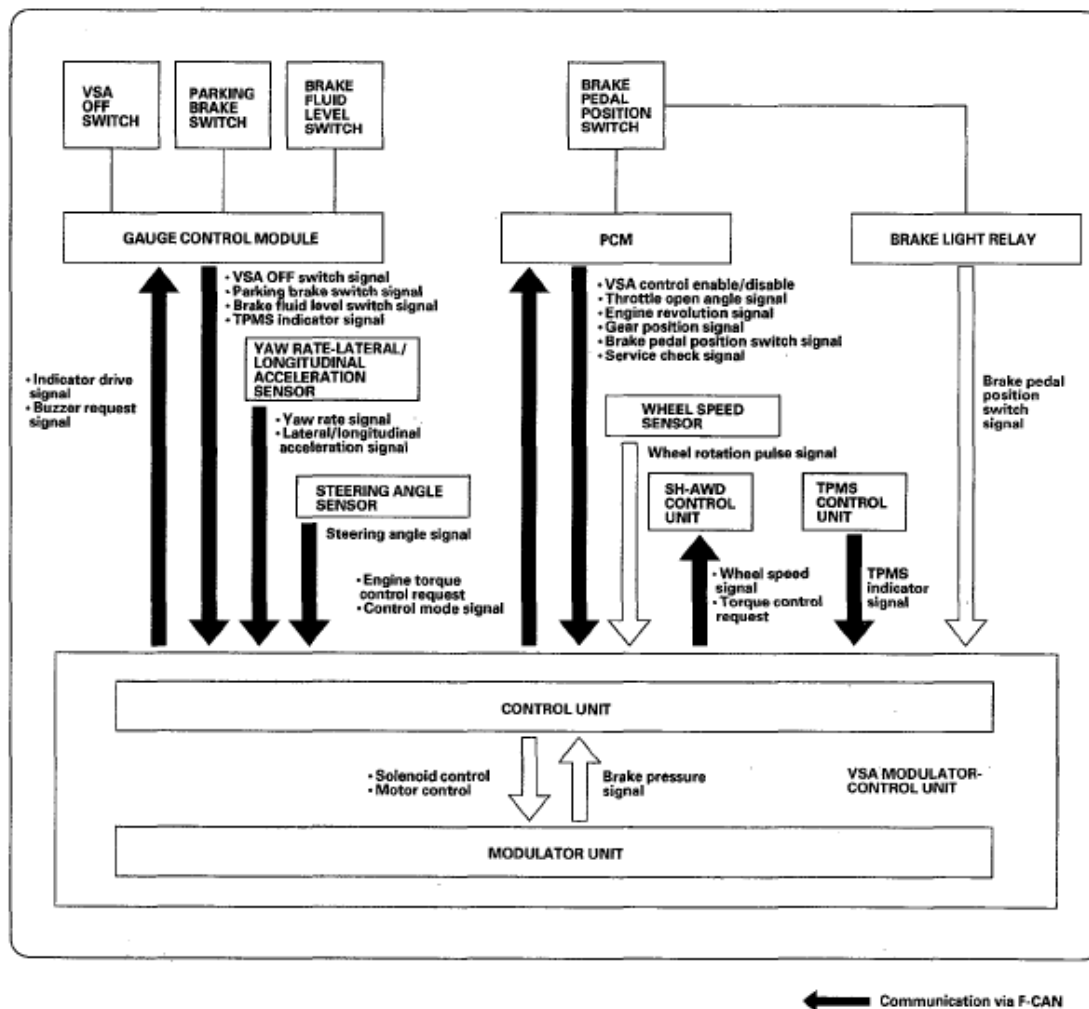


Fig. 6: Control Unit And Modulator Unit System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ABS Features

Anti-lock control

Without ABS, when the brake pedal is pressed while driving, the wheels sometimes lock before the vehicle comes to a stop. In such an event, the maneuverability of the vehicle is reduced if the front wheels are locked,

and the stability of the vehicle is reduced if the rear wheels are locked, creating an extremely unstable condition. With ABS, the system precisely controls the slip rate of the wheels to ensure maximum grip force from the tires, and it thereby ensures maneuverability and stability of the vehicle. The ABS calculates the slip rate of the wheels based on the four wheel speeds, and then it controls the brake fluid pressure to reach the target slip rate.

Grip force of tire and road surface

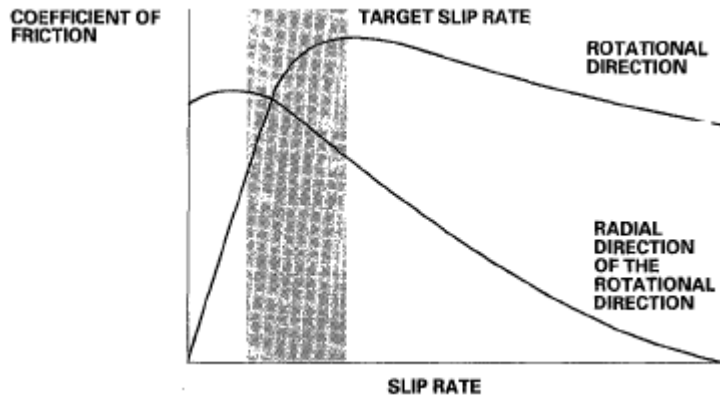


Fig. 7: Friction And Slip Rate Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Control

The control unit detects the wheel speed based on the wheel speed sensor signals it receives, then it calculates the vehicle speed based on the detected wheel speed. The control unit detects the vehicle speed during deceleration based on the wheel speeds.

The control unit calculates the slip rate of each wheel, and transmits the control signal to the modulator unit solenoid valve when the slip rate is high.

The hydraulic control has three modes: Pressure intensifying, pressure reducing, and pressure retaining.

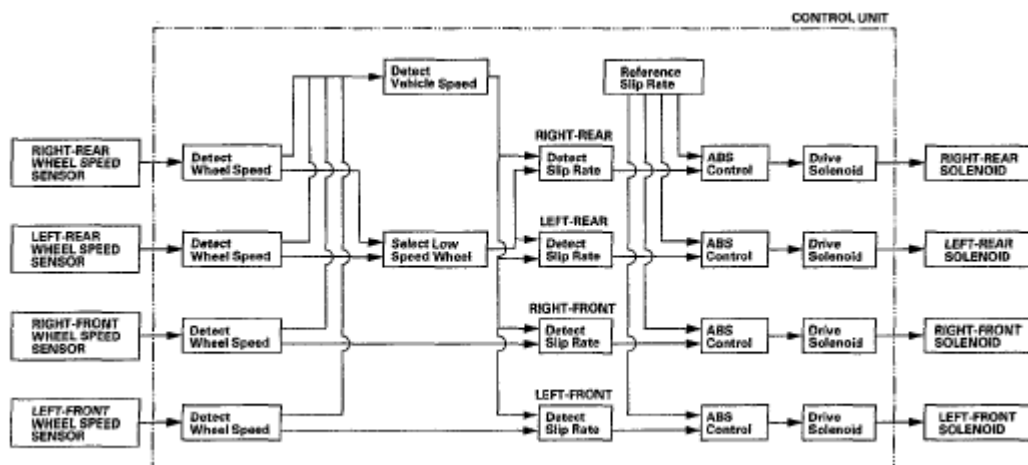
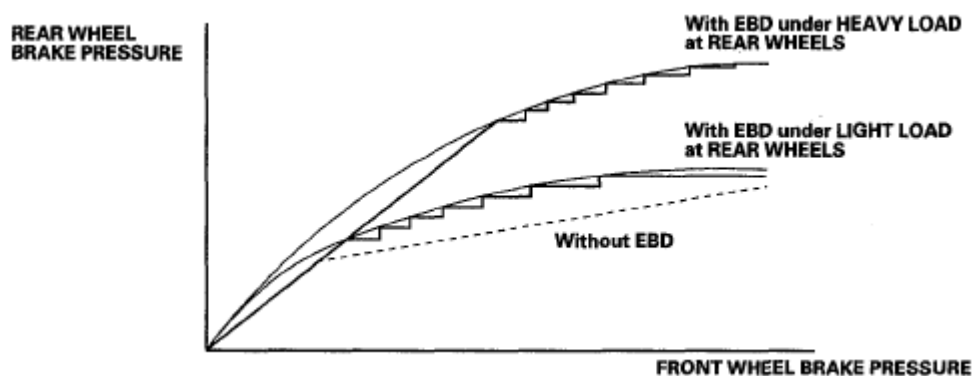


Fig. 8: Control Unit Flow Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

EBD Features

The electronic brake distribution (EBD) feature helps control vehicle braking by adjusting the rear brake force in accordance with the rear wheel load before the ABS operates. Based on the wheel speed sensor signals, the control unit uses the modulator to control the rear brakes individually. When the rear wheel speed is less than the front wheel speed, the VSA modulator-control unit retains the current rear brake fluid pressure by closing the inlet valve in the modulator. As the rear wheel speed increases and approaches the front wheel speed, the VSA modulator-control unit increases the rear brake fluid pressure by momentarily opening the inlet valve. This whole process is repeated very rapidly. While this is happening, kickback may be felt at the brake pedal.

**Fig. 9: Brake Pressure And Wheel Pressure Graph**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TCS Features

When a drive wheel loses traction on a slippery road surface and starts to spin, the VSA modulator-control unit applies brake pressure to the spinning wheel and sends an engine torque control request to the PCM to slow the spinning wheel and keep traction.

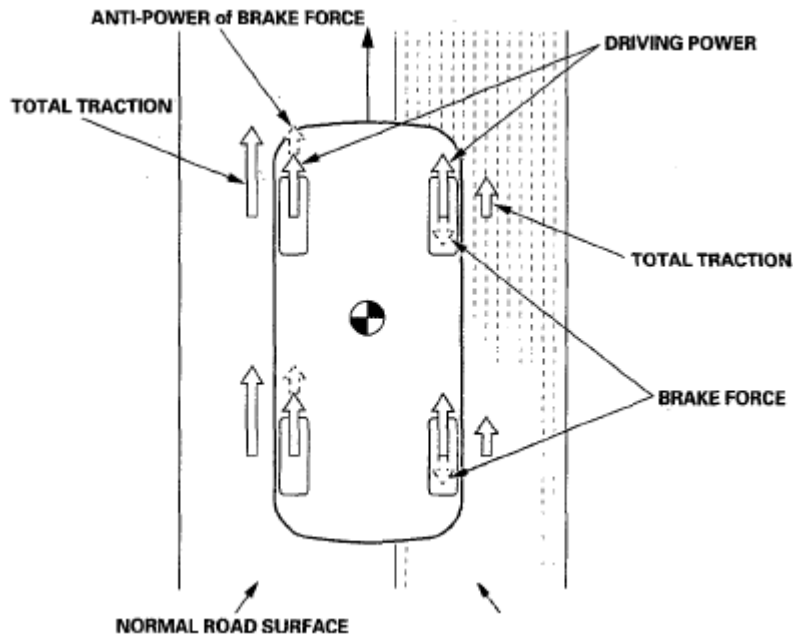


Fig. 10: TCS Features Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

VSA System Features

Oversteer control

Applies the brake to the front and rear outside wheels

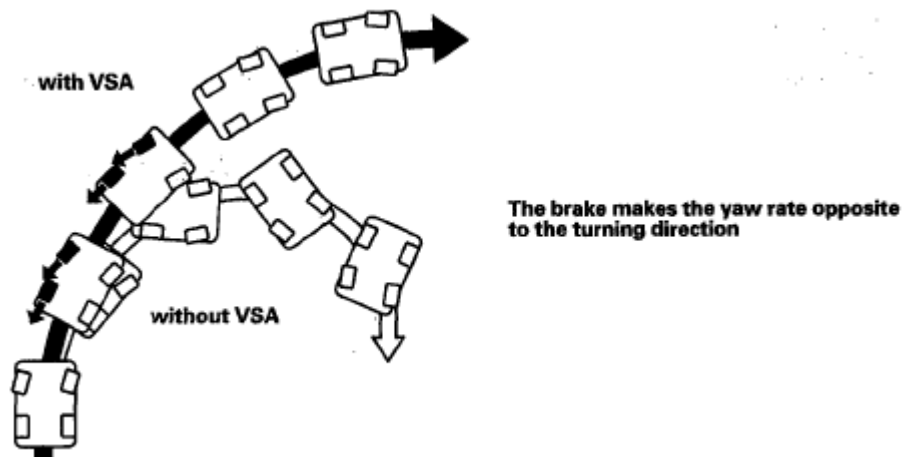


Fig. 11: Identifying Yaw Rate Turning Direction (Oversteer Control)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Understeer control

- Applies the brake to the rear inside wheel

- Controls the engine torque when accelerating

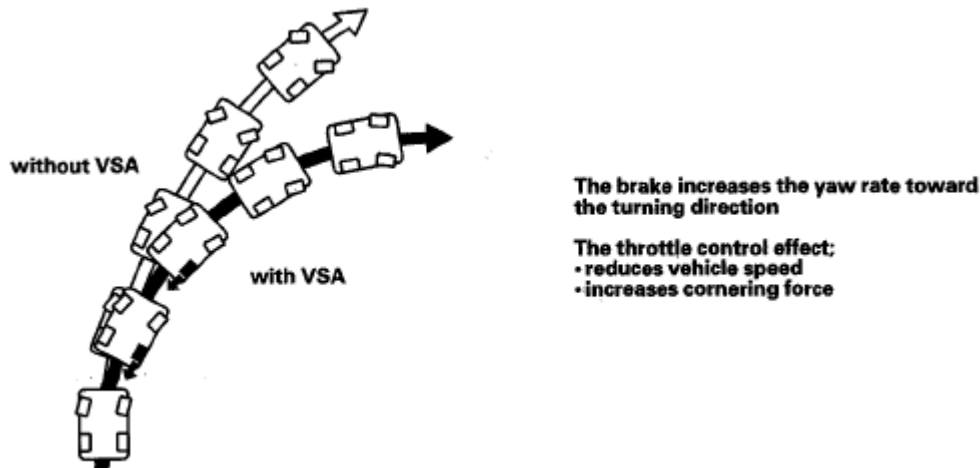


Fig. 12: Identifying Yaw Rate Turning Direction (Understeer Control)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Brake Assist Features

Brake assist helps ensure that any driver can achieve the full braking potential of the vehicle by increasing brake system pressure in a panic situation, bringing the vehicle into a full ABS stop.

If during a panic stop the VSA modulator-control unit determines that the brake system pressure increases above a threshold in less than a certain amount of time, the VSA modulator-control unit engages brake assist.

Because the brake system pressure crossed the pressure threshold before the time threshold had expired, the VSA modulator-control unit goes into brake assist mode.

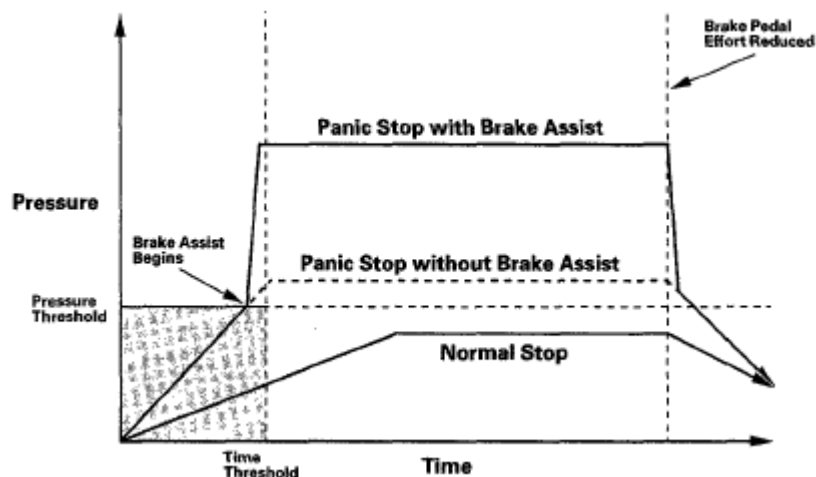


Fig. 13: Time And Pressure Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Modulator Unit

The modulator unit consists of the inlet solenoid valve, the outlet solenoid valve, the VSA NO (normally open) solenoid valve, the VSA NC (normally closed) solenoid valve, the reservoir, the pump, the pump motor, and the damping chamber.

The hydraulic control has three modes of ABS action; pressure intensifying, pressure retaining, and pressure reducing.

Pressure intensifying mode (VSA) is a combination of the TCS, VSA, and brake assist action.

The hydraulic circuit is an independent four channel type; one channel for each wheel.

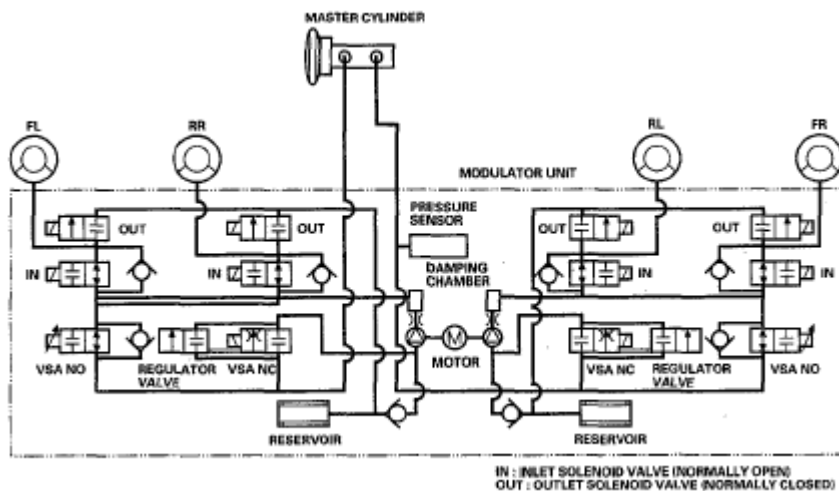


Fig. 14: Modulator Unit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE FLUID SPECIFICATION

Mode	VSA NO Valve	VSA NC Valve	Inlet Solenoid Valve	Outlet Solenoid Valve	Brake Fluid
Pressure intensifying mode	open	closed	open	closed	Master cylinder fluid is pumped out to the caliper.
Pressure retaining mode	open	closed	closed	closed	Caliper fluid is retained by the inlet and outlet valves.
Pressure reducing mode	open	closed	closed	open	- Caliper fluid flows through the outlet valve to the reservoir. - The motor pumps the reservoir fluid through the damping chamber to the master cylinder (1).
					Master cylinder fluid is pumped

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

Pressure intensifying mode (VSA)	closed	open	open	closed	out by pump with motor through VSA NC valve to the caliper. • Caliper fluid pressure exceeds master cylinder pressure.
(1) The motor will continue running until the operation of the one anti-lock brake control is finished with the first pressure reducing mode.					

Trailer Stability Assist Features

While towing a trailer, factors, such as a lane change, inappropriate tongue weight, and crosswind, can cause trailer sway. This may also cause the vehicle to sway. The trailer stability assist helps stabilize the vehicle, using the same system as VSA (VSA modulator-control unit and sensors). With signals from each sensor, the trailer stability assist detects when trailer sway affects the vehicle, and then reduces vehicle speed while stabilizing the vehicle. The rear brake lights automatically turn on when the trailer stability assist activates.

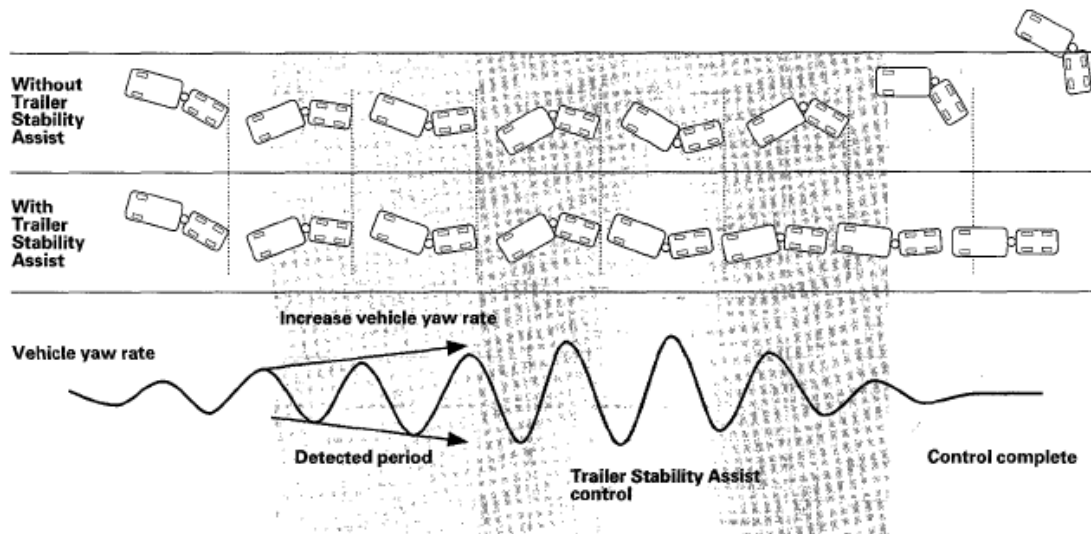


Fig. 15: Trailer Stability Assist Features Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

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2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

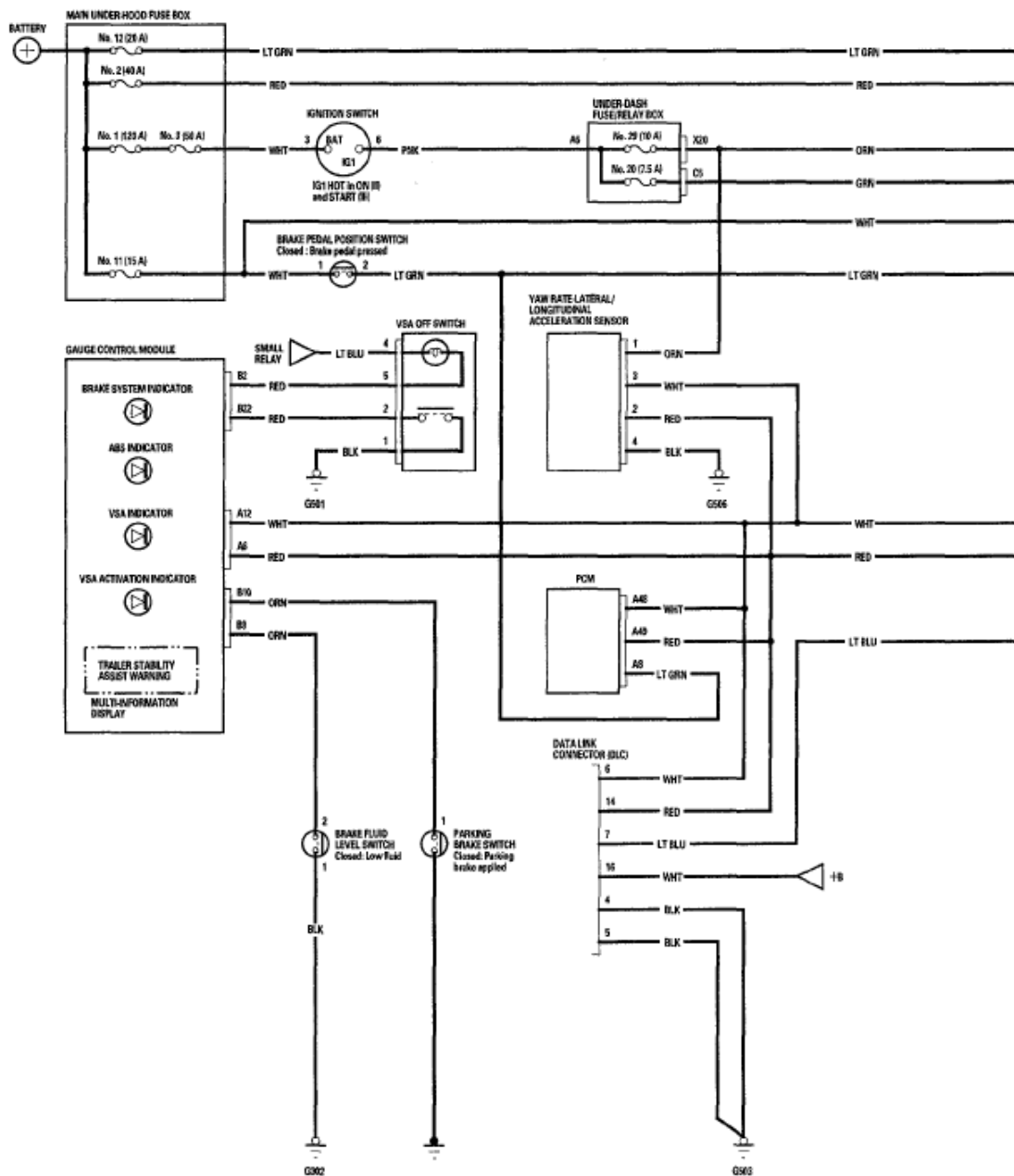


Fig. 16: VSA Circuit Diagram (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

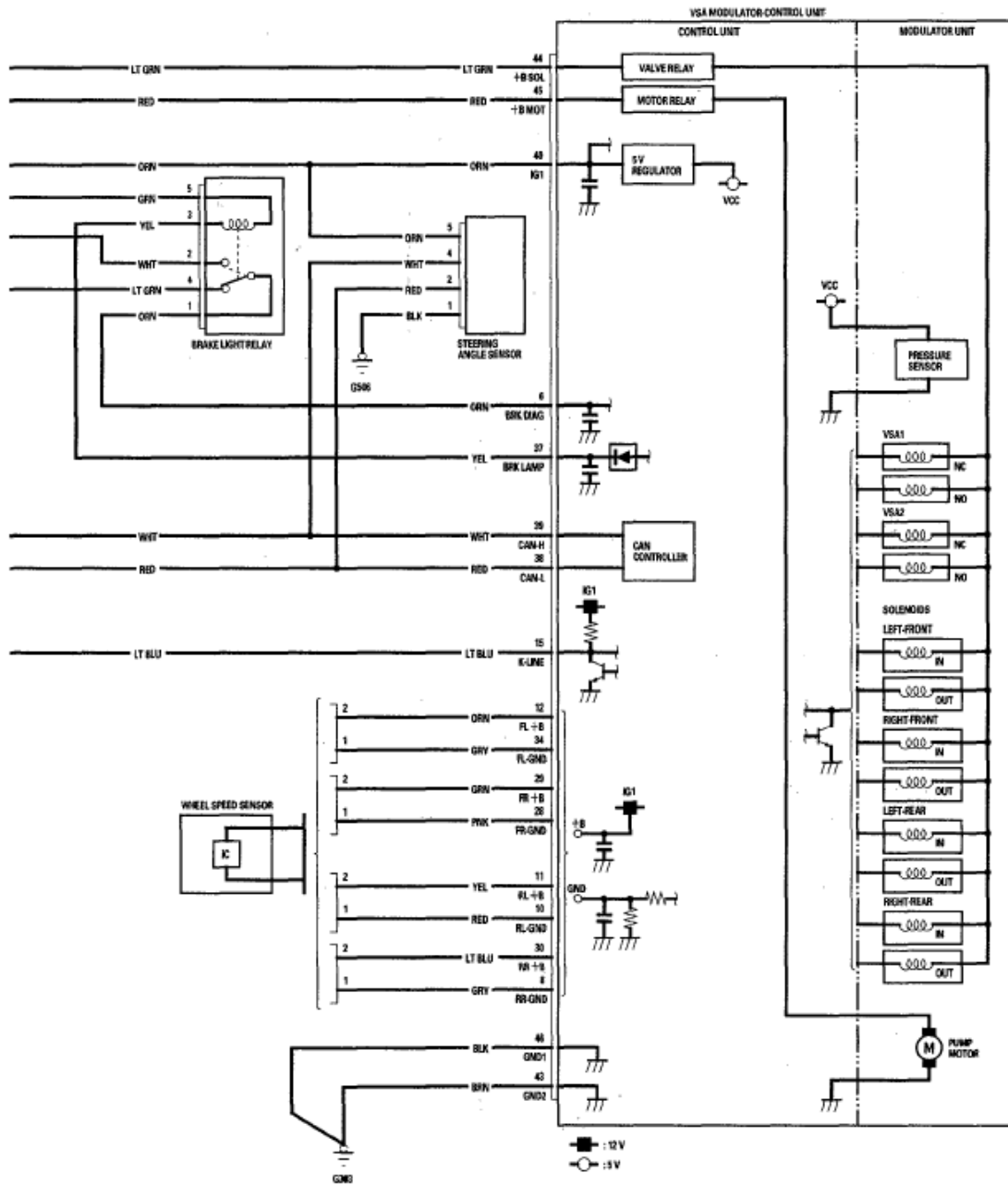


Fig. 17: VSA Circuit Diagram (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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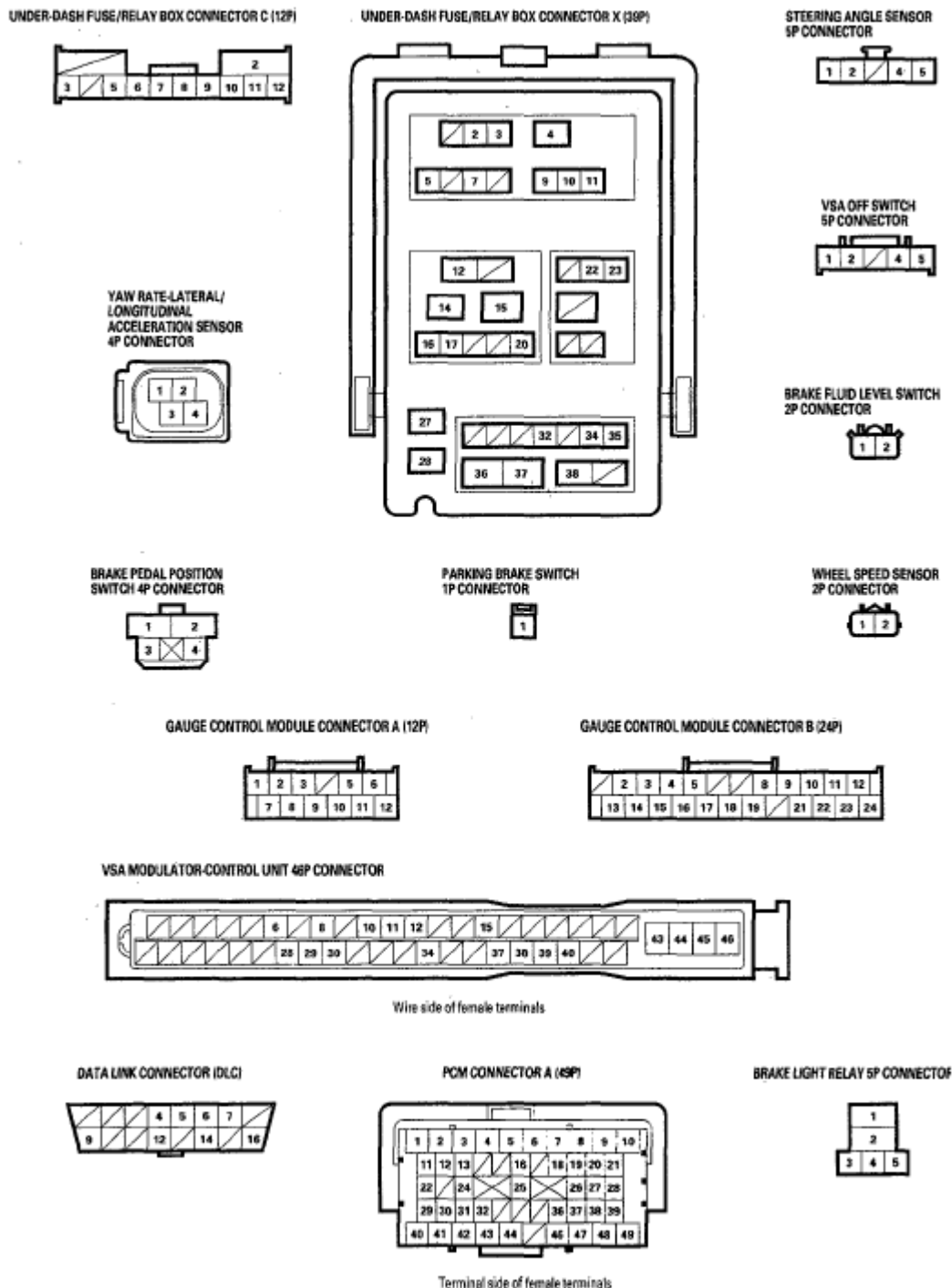


Fig. 18: Identifying VSA Connector Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11, 13, 15, 17: WHEEL SPEED SENSOR (OPEN/SHORT TO BODY GROUND/SHORT TO

POWER)

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 22 indicated with DTC 11, 13, 15, and/or 17 at the same time?

YES -Go to step 9.

NO -Go to step 3.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
5. Check for DTCs with the HDS.

Is DTC 11, 13, 15, and/or 17 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals between the wheel speed sensor 2P connector and the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

6. Turn the ignition switch to LOCK (0).
7. Check for loose terminals between the wheel speed sensor 2P connector and the VSA modulator-control unit 46P connector.

Are their connections OK?

YES -Go to step 8.

NO -Reconnect the connector and retest.

8. Check that the appropriate wheel speed sensor is properly mounted (see **WHEEL SPEED SENSOR REPLACEMENT**).

DTC REFERENCE

DTC	Appropriate Wheel Speed Sensor
11	Right-front
13	Left-front
15	Right-rear
17	Left-rear

Is the wheel speed sensor installation OK?

YES -Go to step 10.

NO -Reinstall the wheel speed sensor, and check the mounting position (see **WHEEL SPEED SENSOR REPLACEMENT**).

9. Turn the ignition switch to LOCK (0).
10. Disconnect the VSA modulator-control unit 46P connector.
11. Start the engine.
12. Measure the voltage between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 46P connector individually (see table **TERMINAL REFERENCE**).

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28
13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8
17 (Left-rear)	RL +B: No. 11	RL-GND: No. 10

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR

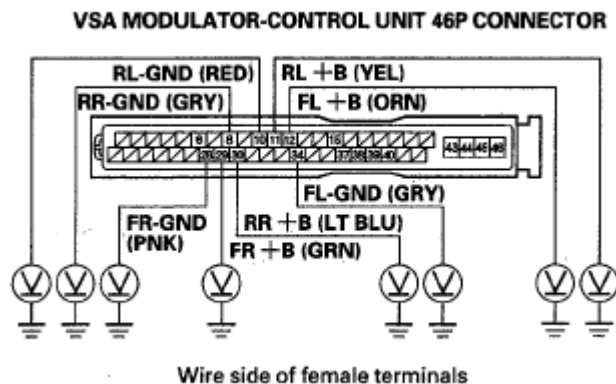


Fig. 19: Measuring Voltage Between Body Ground And VSA Modulator-Control Unit 46P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES -Repair short to power in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.

NO -Go to step 13.

13. Turn the ignition switch to LOCK (0).
14. Check for continuity between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 46P connector individually (see table **TERMINAL REFERENCE**).

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28
13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8
17 (Left-rear)	RL+B: No. 11	RL-GND: No. 10

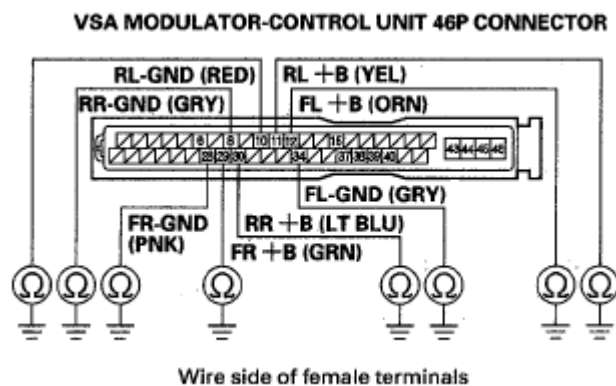
VSA MODULATOR-CONTROL UNIT 46P CONNECTOR

Fig. 20: Identifying Continuity Between Body Ground And Modulator-Control Unit 46P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Go to step 17.

15. Disconnect the appropriate wheel speed sensor 2P connector.
16. Check for continuity between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 46P connector individually (see table **TERMINAL REFERENCE**).

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8
17 (Left-rear)	RL+B: No. 11	RL-GND: No. 10

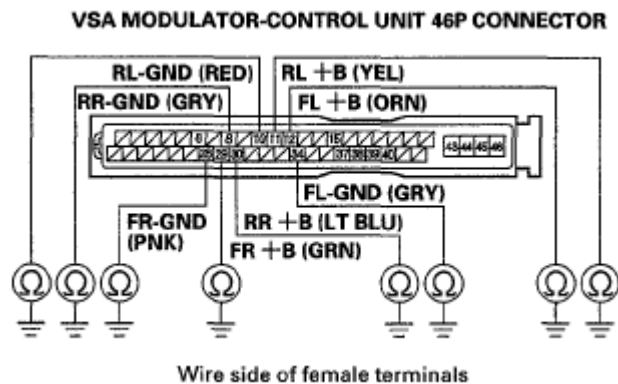


Fig. 21: Identifying Continuity Between Body Ground And VSA Modulator-Control Unit 46P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.

NO -Replace the appropriate wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

- Measure the resistance between the appropriate VSA modulator-control unit 46P connector wheel speed sensor +B and GND terminals (see table **TERMINAL REFERENCE**), then measure the resistance between the same terminals and reverse the positive and negative tester probes.

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28
13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8
17 (Left-rear)	RL+B: No. 11	RL-GND: No. 10

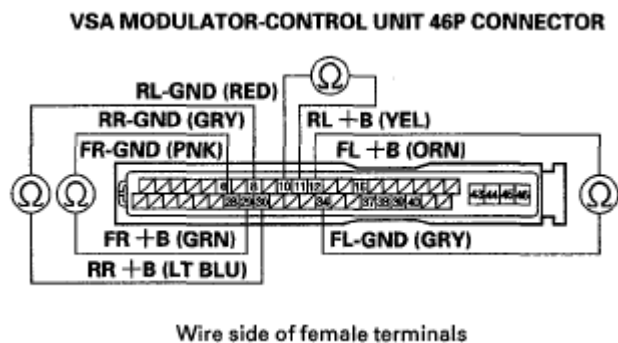


Fig. 22: Measuring Resistance Between VSA Modulator-Control Unit 46P Connector Wheel Speed Sensor +B And GND Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

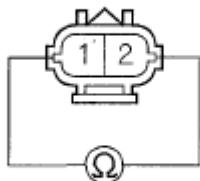
Is the resistance infinity (ohmmeter may read OL) in both directions?

YES -Go to step 18.

NO -Go to step 20.

18. Disconnect the appropriate wheel speed sensor 2P connector.
19. On the sensor side, measure the resistance between appropriate wheel speed sensor 2P connector terminals No. 1 and No. 2, then measure resistance between the same terminals and reverse the positive and negative tester probes.

WHEEL SPEED SENSOR 2P CONNECTOR



Terminal side of male terminals

Fig. 23: Measuring Resistance Between Wheel Speed Sensor 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance infinity (ohmmeter may read OL) in both directions?

YES -Replace the appropriate wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

NO -Repair open in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.

20. Check for continuity between the appropriate VSA modulator-control unit 46P connector wheel speed sensor +B and GND terminals (see **TERMINAL REFERENCE**), then check for continuity between the same terminals and reverse the positive and negative tester probes.

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28
13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8
17 (Left-rear)	RL+B: No. 11	RL-GND: No. 10

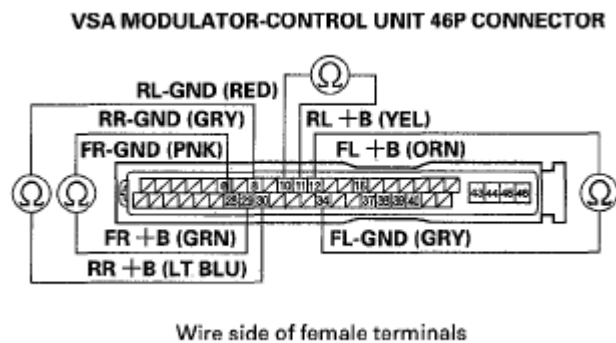


Fig. 24: Identifying Continuity Between Positive And Negative Tester Probes
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity in both directions?

YES -Go to step 21.

NO -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

21. Disconnect the appropriate wheel speed sensor 2P connector.
22. Check for continuity between the appropriate VSA modulator-control unit 46P connector wheel speed sensor +B and GND terminals (see table **TERMINAL REFERENCE**), then check for continuity between the same terminals and reverse the positive and negative tester probes.

TERMINAL REFERENCE

DTC	Appropriate Terminal	
	+B	GND
11 (Right-front)	FR+B: No. 29	FR-GND: No. 28
13 (Left-front)	FL+B: No. 12	FL-GND: No. 34
15 (Right-rear)	RR+B: No. 30	RR-GND: No. 8

17 (Left-rear)	RL+B: No. 11	RL-GND: No. 10
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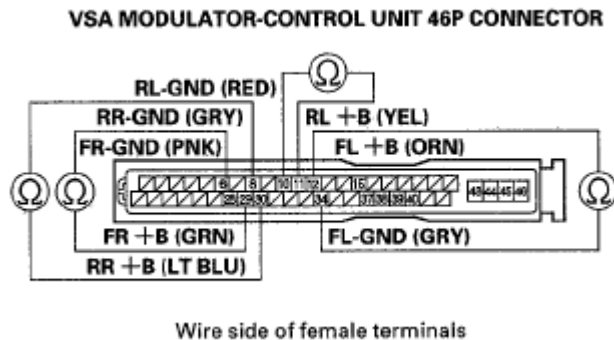


Fig. 25: Identifying Continuity Between Positive And Negative Tester Probes
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity in both directions?

YES -Repair short in the wires between the VSA modulator-control unit and the appropriate wheel speed sensor.

NO -Replace the appropriate wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

DTC 12,14,16,18: WHEEL SPEED SENSOR (ELECTRICAL NOISE/INTERMITTENT INTERRUPTION)

NOTE:

- If the ABS and other indicators come on because of electrical noise, the indicators will go off when you test-drive the vehicle speed at 10 mph (15 km/h) or more and the noise is gone.
- An incorrectly installed wheel bearing can cause one of these DTCs.

1. Turn the ignition switch to LOCK (0).
2. Check the appropriate wheel speed sensor and inspect the magnetic encoder on the appropriate hub bearing for debris: Front (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**), rear (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).

TERMINAL REFERENCE

DTC	Appropriate Wheel Speed Sensor and Magnetic Encoder
12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

Are they installed correctly in good condition, and free of debris?

YES -Go to step 3.

NO -Reinstall or replace the appropriate wheel speed sensor, hub bearing unit, and retest by test-driving.

3. Substitute an appropriate known-good wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).
4. Turn the ignition switch to ON (II).
5. Clear the DTC with the HDS.
6. Test-drive the vehicle at 10 mph (15 km/h) or more.
7. Check for DTCs with the HDS.

Is DTC 12, 14, 16, and/or 18 indicated?

YES -Go to step 8.

NO -Replace the original wheel speed sensor (see **WHEEL SPEED SENSOR REPLACEMENT**).

8. Turn the ignition switch to LOCK (0).
9. Substitute an appropriate known-good hub bearing unit: Front (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**), rear (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS.
12. Test-drive the vehicle at 10 mph (15 km/h) or more.
13. Check for DTCs with the HDS.

Is DTC 12, 14, 16, and/or 18 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original hub bearing unit:

- Front: Replace the original front hub bearing unit (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
- Rear: Replace the original rear hub bearing unit (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).

DTC 21: DIFFERENCE IN WHEEL SPEED

NOTE: **A wheel bearing that is installed backwards can cause this DTC.**

1. Check all four tires for size, inflation, and wear.

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

Are all four tires the correct size, properly inflated, and worn evenly?

YES -Go to step 2.

NO -Install the correct tires, a known-good set of tires, or set the tires to the correct pressure, and retest by test-driving.

2. Test-drive the vehicle.
3. Check the RF, LF, RR, LR WHEEL SPD in the VSA DATA LIST with the HDS.

Are all four the same indicated value?

YES -Go to step 4.

NO -Reinstall or replace the wheel speed sensor(s) (see **WHEEL SPEED SENSOR REPLACEMENT**), and retest by test-driving.

4. Check all magnetic encoders on the hub bearing units: Front (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**), rear (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).

Are they installed correctly and in good condition?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Reinstall or replace the hub bearing unit(s), and retest by test-driving:

- Front: Reinstall or replace the front hub bearing unit (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
- Rear: Reinstall or replace the rear hub bearing unit (see **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).

DTC 22: CURRENT FLOW INTO WHEEL SPEED SENSOR INPUT AMPLIFIER

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 22 indicated?

YES -Do the DTC 11, 13, 15, and/or 17 troubleshooting (see **DTC 11, 13, 15, 17: Wheel Speed Sensor (Open/Short to Body Ground/Short to Power)**).

NO -Intermittent failure, the system is OK at this time. Check for loose terminals between the wheel speed sensor 2P connector and the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** (see).

DTC 25: YAW RATE SENSOR (SENSOR UNIT); DTC 26: LATERAL/LONGITUDINAL ACCELERATION SENSOR (SENSOR UNIT)

NOTE: **These code(s) will set after a test drive if the sensor is installed incorrectly.**

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 91 or 92 indicated with DTC 25 or 26 at the same time?

YES -Do the DTC 91 or 92 troubleshooting: DTC 91 (see **DTC 91: F-CAN COMMUNICATION**), DTC 92 (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Substitute a known-good yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).
5. Turn the ignition switch to ON (II).
6. Clear the DTC with the HDS.
7. Test-drive the vehicle. Drive the vehicle at 19 mph (30 km/h) or more, and go a distance of 985 ft (300 m) or more.
8. Check for DTCs with the HDS.

Is DTC 25 or 26 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

DTC 27: STEERING ANGLE SENSOR (HARDWARE)

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 91 or 92 indicated with DTC 27 at the same time?

YES -Do the DTC 91 or 92 troubleshooting: DTC 91 (see **DTC 91: F-CAN COMMUNICATION**),

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

DTC 92 (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -Go to step 3.

3. Check the steering angle sensor installation (see **STEERING ANGLE SENSOR REPLACEMENT**).

Is the steering angle sensor installed correctly?

YES -Replace the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**), then do the steering angle sensor center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

NO -Reinstall the steering angle sensor correctly (see **STEERING ANGLE SENSOR REPLACEMENT**), then do the steering angle sensor center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS SOLENOID

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 31, 32, 33, 34, 35, 36, 37, and/or 38 indicated?

YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Intermittent failure, the system is OK at this time. Check for a loose connection at G303.

DTC 45, 46, 47, 48: VSA SOLENOID

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 45, 46, 47, and/or 48 indicated?

YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Intermittent failure, the system is OK at this time. Check for a loose connection at G303.

DTC 51: MOTOR LOCKED

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle. Drive the vehicle at 10 mph (15 km/h) or more, with the engine speed at 2,500 rpm or higher.
4. Check for DTCs with the HDS.

Is DTC 51 indicated?

YES -Inspect G303 for loose or poor connection, then replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Intermittent failure, the system is OK at this time. Check for a loose connection at G303.

DTC 52: MOTOR STUCK OFF

1. Turn the ignition switch to LOCK (0).
2. Check the No. 2 (40 A) fuse in the main under-hood fuse box.

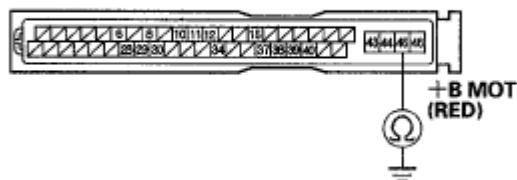
Is the fuse blown?

YES -Go to step 3.

NO -Reinstall the checked fuse, then go to step 5.

3. Disconnect the VSA modulator-control unit 46P connector.
4. Check for continuity between VSA modulator-control unit 46P connector terminal No. 45 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 26: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal No. 45 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

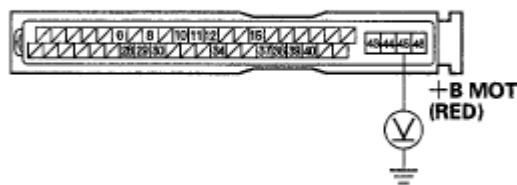
YES -Repair short to body ground in the wire between the No. 2 (40 A) fuse in the main under-hood fuse

box and the VSA modulator-control unit.

NO -Install a new No. 2 (40 A) fuse, then go to step 7.

5. Disconnect the VSA modulator-control unit 46P connector.
6. Measure the voltage between VSA modulator-control unit 46P connector terminal No. 45 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 27: Measuring Voltage Between VSA Modulator-Control Unit 46P Connector Terminal 45 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 7.

NO -Repair open in the wire between the No. 2 (40 A) fuse in the main under-hood fuse box and the VSA modulator-control unit.

7. Reconnect the VSA modulator-control unit 46P connector.
8. Turn the ignition switch to ON (II).
9. Clear the DTC with the HDS.
10. Test-drive the vehicle. Drive the vehicle at 10 mph (15 km/h) or more, with the engine speed at 2,500 rpm or higher.
11. Check for DTCs with the HDS.

Is DTC 52 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

DTC 53: MOTOR STUCK ON

1. Turn the ignition switch to ON (II).

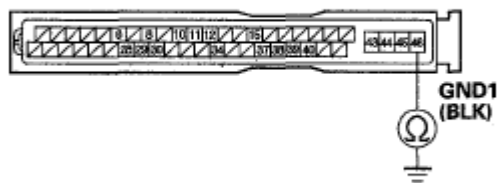
Is the pump motor running?

YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Disconnect the VSA modulator-control unit 46P connector.
4. Check for continuity between VSA modulator-control unit 46P connector terminal No. 46 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 28: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 46 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 5.

NO -Repair open in the wire between the VSA modulator-control unit and body ground (G303).

5. Reconnect the VSA modulator-control unit 46P connector.
6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS.
8. Test-drive the vehicle. Drive the vehicle at 10 mph (15 km/h) or more, with the engine speed at 2,500 rpm or higher.
9. Check for DTCs with the HDS.

Is DTC 53 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

DTC 54: VALVE RELAY

1. Turn the ignition switch to LOCK (0).
2. Check the No. 12 (20 A) fuse in the main under-hood fuse box.

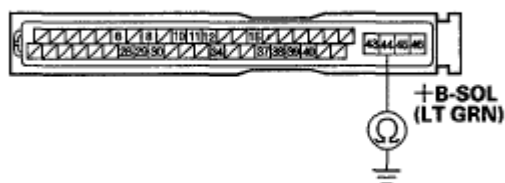
Is the fuse blown?

YES -Go to step 3.

NO -Reinstall the checked fuse, then go to step 5.

3. Disconnect the VSA modulator-control unit 46P connector.
4. Check for continuity between VSA modulator-control unit 46P connector terminal No. 44 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 29: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 44 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

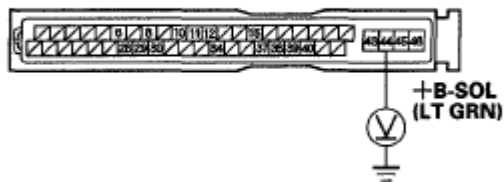
YES -Repair short to body ground in the wire between the No. 12 (20 A) fuse in the main under-hood fuse box and the VSA modulator-control unit.

NO -Install a new No. 12 (20 A) fuse, then go to step 7.

5. Disconnect the VSA modulator-control unit 46P connector.
6. Measure the voltage between VSA modulator-control unit 46P connector terminal No. 44 and body

ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 30: Identifying Voltage Between VSA Modulator-Control Unit 46P Connector Terminal 44 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 7.

NO -Repair open in the wire between the No. 12 (20 A) fuse in the main under-hood fuse box and the VSA modulator-control unit.

7. Reconnect the VSA modulator-control unit 46P connector.
8. Turn the ignition switch to ON (II).
9. Clear the DTC with the HDS.
10. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
11. Check for DTCs with the HDS.

Is DTC 54 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

DTC 59: BRKDIAG HIGH

1. Turn the ignition switch to LOCK (0).
2. Check the brake lights without pressing the brake pedal.

Are the brake lights on?

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

YES -Repair short to power in the brake light circuit.

NO -Go to step 3.

3. Turn the ignition switch to ON (II).
4. Check the brake lights without pressing the brake pedal.

Are the brake lights on?

YES -Go to step 5.

NO -Go to step 9.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the VSA modulator-control unit 46P connector.
7. Turn the ignition switch to ON (II).
8. Check the brake lights without pressing the brake pedal.

Are the brake lights on?

YES -Go to step 9.

NO -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

9. Clear the DTC with the HDS.
10. Press the brake pedal for 3 seconds or more.
11. Check for DTCs with the HDS.

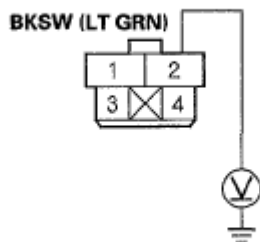
Is DTC 59 indicated

YES -Go to step 12.

NO -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the brake pedal position switch 4P connector.
14. Turn the ignition switch to ON (II).
15. Measure the voltage between the brake pedal position switch 4P connector terminal No. 2 and body ground with the headlights OFF and ON.

BRAKE PEDAL POSITION SWITCH 4P CONNECTOR



Wire side of female terminals

Fig. 31: Identifying Voltage Between Brake Pedal Position Switch 4P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

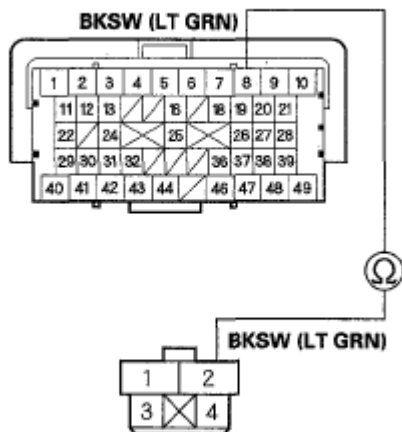
Is there less than 0.5 V?

YES -Go to step 16.

NO -Disconnect the taillight assemblies one at a time and retest. If the voltage is OK, check the taillight ground connection and then replace the faulty taillight.

16. Turn the ignition switch to LOCK (0).
17. Short the SCS line with the HDS.
18. Disconnect the PCM connector A (49P).
19. Check for continuity between brake pedal position switch 4P connector terminal No. 2 and PCM connector A (49P) terminal No. 8.

PCM CONNECTOR A (49P)
Terminal side of female terminals



BRAKE PEDAL POSITION SWITCH 4P CONNECTOR
Wire side of female terminals

Fig. 32: Identifying Continuity Between Brake Pedal Position Switch 4P Connector Terminal 2 And PCM Connector Terminal 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the PCM (see **PCM REPLACEMENT**).

NO -Repair open in the wire between the PCM and the brake pedal position switch.

DTC 61: IG1 VOLTAGE LOW

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at 2 mph (3 km/h) or more.
4. Check for DTCs with the HDS.

Is DTC 61 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** (see).

5. Test the battery and connections.

Are the battery and battery connections OK?

YES -Check for a poor connection at all IG1 circuit connections between the VSA modulator-control unit 46P connector terminal No. 40 and the under-dash fuse/relay box No. 29 (10A) fuse. If the connections are good, go to the Alternator and Regulator Circuit Troubleshooting (see **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING**).

NO -Replace or charge the battery (see **BATTERY TEST**), or repair the connections.

DTC 62: IG1 VOLTAGE HIGH

NOTE: **An overcharging alternator can cause this DTC.**

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at 2 mph (3 km/h) or more.
4. Check for DTCs with the HDS.

Is DTC 62 indicated?

YES -Check for a poor connection at the battery terminals. Check for a loose connection at G303. If the connections are good, go to the Alternator and Regulator Circuit Troubleshooting (see **ALTERNATOR**

AND REGULATOR CIRCUIT TROUBLESHOOTING).

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

DTC 65: VSA PRESSURE SENSOR (HARDWARE)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 65 indicated?

YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Intermittent failure, the system is OK at this time. Check for a loose connection at G303.

DTC 66: VSA PRESSURE SENSOR (SOFTWARE)

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 91 or 92 indicated with DTC 66 at the same time?

YES -Do the DTC 91 or 92 troubleshooting: DTC 91 (see **DTC 91: F-CAN COMMUNICATION**), DTC 92 (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Disconnect the brake pedal position switch 4P connector.
5. Do the brake pedal position switch test (see **BRAKE PEDAL POSITION SWITCH TEST**).

Is the switch OK?

YES -Go to step 6.

NO -Replace the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

6. Short the SCS line with the HDS.
7. Disconnect the PCM connector A (49P).

8. Turn the ignition switch to ON (II).
9. Measure the voltage between PCM connector A (49P) terminal No. 8 and body ground.

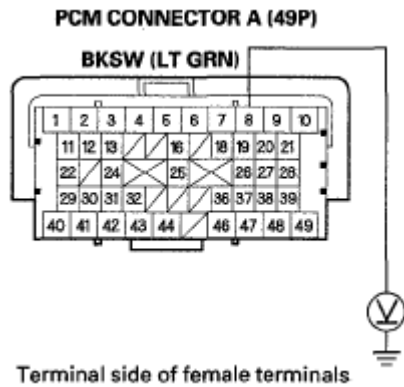


Fig. 33: Identifying Voltage Between PCM Connector A (49P) Terminal No. 8 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more when the brake pedal is released?

YES -Repair short to power in the wire between the brake pedal position switch and the PCM.

NO -Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
12. Turn the ignition switch to ON (II).
13. Clear the DTC with the HDS.
14. Test-drive the vehicle at 8 mph (12 km/h) for 60 seconds or more.
15. Check for DTCs with the HDS.

Is DTC 66 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), and retest.

NO -Replace the original PCM (see **PCM REPLACEMENT**).

DTC 67: BRAKE PEDAL POSITION SWITCH STUCK ON (HARDWARE)

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 91 or 92 indicated with DTC 67 at the same time?

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

YES -Do the DTC 91 or 92 troubleshooting: DTC 91 (see **DTC 91: F-CAN COMMUNICATION**), DTC 92 (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -Go to step 3.

3. Check the BRAKE SWITCH in the VSA DATA LIST with the HDS while moving the brake pedal.

Does it indicate ON when the pedal is pressed, and OFF when the pedal is released?

YES -Go to step 4.

NO -Go to step 7.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle at 10 mph (15 km/h) for 60 seconds or more.
6. Check for DTCs with the HDS.

Is DTC 67 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

7. Turn the ignition switch to LOCK (0).
8. Disconnect the brake pedal position switch 4P connector.
9. Do the brake pedal position switch test (see **BRAKE PEDAL POSITION SWITCH TEST**).

Is the switch OK?

YES -Check for fuel and emissions systems DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**), and troubleshoot those DTCs first, if no fuel and emissions systems DTCs are found troubleshoot the brake pedal position switch signal circuit (see **BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING**).

NO -Replace the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

DTC 68: BRAKE PEDAL POSITION SWITCH STUCK OFF (SOFTWARE)

1. Turn the ignition switch to LOCK (0).
2. Check the No. 11 (15 A) fuse in the main under-hood fuse box.

Is the fuse blown?

YES -Go to step 3.

NO -Reinstall the checked fuse, then go to step 14.

3. Short the SCS line with the HDS.
4. Disconnect the PCM connector A (49P).
5. Disconnect the brake pedal position switch 4P connector.
6. Remove the brake light relay.
7. Check for continuity between PCM connector A (49P) terminal No. 8 and body ground.

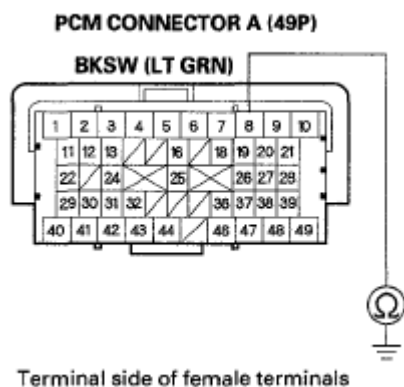


Fig. 34: Identifying Continuity Between PCM Connector A (49P) Terminal No. 8 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

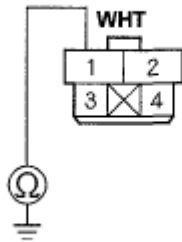
Is there continuity?

YES -Repair short to body ground in the wire between the PCM and the brake pedal position switch or the brake light relay.

NO -Go to step 8.

8. Check for continuity between brake pedal position switch 4P connector terminal No. 1 and body ground.

BRAKE PEDAL POSITION SWITCH 4P CONNECTOR



Wire side of female terminals

Fig. 35: Identifying Continuity Between Brake Pedal Position Switch 4P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between the No. 11 (15 A) fuse in the main under-hood fuse box and the brake pedal position switch or the brake light relay.

NO -Go to step 9.

9. Reconnect all connectors, and install the brake light relay.
10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS.
12. Start the engine, then press the brake pedal slowly and hard.
13. Check for DTCs with the HDS.

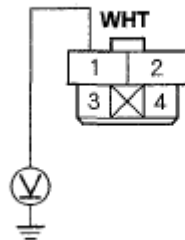
Is DTC 68 indicated?

YES -Turn the ignition switch to LOCK (0), then go to step 20.

NO -The system is OK at this time.

14. Disconnect the brake pedal position switch 4P connector.
15. Measure the voltage between brake pedal position switch 4P connector terminal No. 1 and body ground.

BRAKE PEDAL POSITION SWITCH 4P CONNECTOR



Wire side of female terminals

Fig. 36: Identifying Voltage Between Brake Pedal Position Switch 4P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

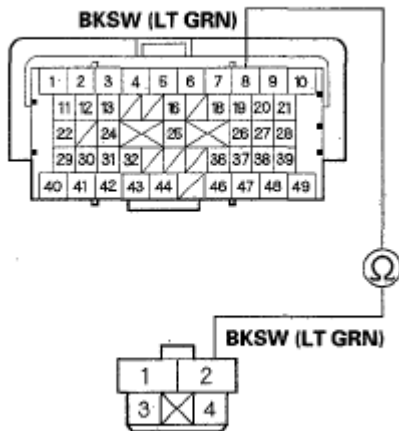
Is there battery voltage?

YES -Go to step 16.

NO -Repair open in the wire between the No. 11 (15 A) fuse in the main under-hood fuse box and the brake pedal position switch.

16. Short the SCS line with the HDS.
17. Disconnect the PCM connector A (49P).
18. Check for continuity between brake pedal position switch 4P connector terminal No. 2 and PCM connector A (49P) terminal No. 8.

PCM CONNECTOR A (49P)
Terminal side of female terminals



BRAKE PEDAL POSITION SWITCH 4P CONNECTOR
Wire side of female terminals

Fig. 37: Identifying Continuity Between Brake Pedal Position Switch 4P Connector Terminal 2 And PCM Connector Terminal 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

Is there continuity?

YES -Go to step 19.

NO -Repair open in the wire between the PCM and the brake pedal position switch.

19. Reconnect all connectors.

20. Do the brake pedal position switch test (see **BRAKE PEDAL POSITION SWITCH TEST**).

Is the switch OK?

YES -Go to step 21.

NO -Replace the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

21. Substitute a known-good PCM (see **SUBSTITUTING THE PCM**).

22. Turn the ignition switch to ON (II).

23. Clear the DTC with the HDS.

24. Start the engine, then press the brake pedal slowly and hard.

25. Check for DTCs with the HDS.

Is DTC 68 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original PCM (see **PCM REPLACEMENT**).

DTC 69: BRKDIAG LOW

1. Turn the ignition switch to ON (II).

2. Clear the DTC with the HDS.

3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.

4. After the VSA indicator goes off, press the brake pedal for 3 seconds or more.

5. Check for DTCs with the HDS.

Is DTC 69 indicated?

YES -Go to step 6.

NO -Go to step 19.

6. Turn the ignition switch to LOCK (0).
7. Remove the brake light relay.
8. Disconnect the brake pedal position switch 4P connector.
9. Check for continuity between the brake pedal position switch 4P connector terminal No. 2 and the brake light relay 5P connector terminal No. 4.

BRAKE PEDAL POSITION SWITCH 4P CONNECTOR

Wire side of female terminals

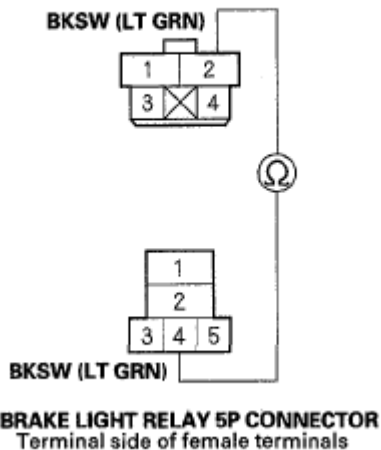


Fig. 38: Identifying Continuity Between Brake Pedal Position Switch 4P Connector Terminal And Brake Light Relay 5P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 10.

NO -Repair open in the wire between the brake pedal position switch and the brake light relay.

10. Disconnect the VSA modulator-control unit 46P connector.
11. Check for continuity between the VSA modulator-control unit 46P connector terminal No. 6 and the brake light relay 5P connector terminal No. 1.

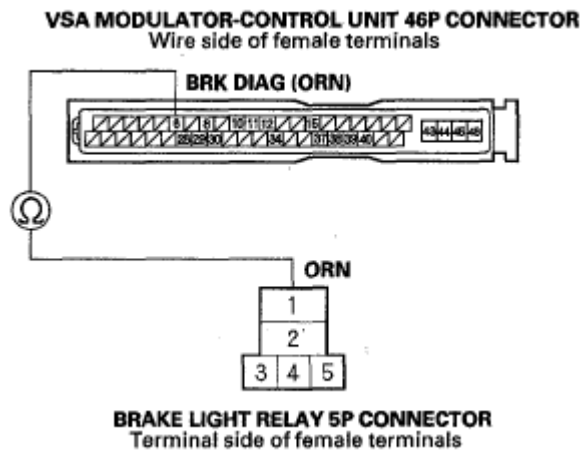


Fig. 39: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 6 And Brake Light Relay 5P Connector Terminal 1
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 12.

NO -Repair open in the wire between the VSA modulator-control unit and the brake light relay.

12. Substitute a known-good brake light relay.
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Clear the DTC with the HDS.
16. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
17. After the VSA indicator goes off, press the brake pedal for 3 seconds or more.
18. Check for DTCs with the HDS.

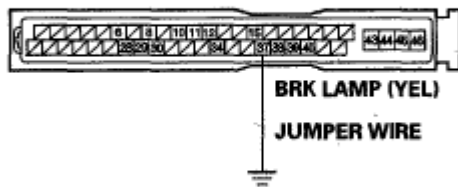
Is DTC 69 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original brake light relay.

19. Turn the ignition switch to LOCK (0).
20. Disconnect the VSA modulator-control unit 46P connector.
21. Turn the ignition switch to ON (II).
22. Connect the VSA modulator-control unit 46P connector terminal Mo. 37 to body ground with a jumper wire.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



JUMPER WIRE

Wire side of female terminals

Fig. 40: Identifying VSA Modulator-Control Unit 46P Connector Terminal 37 To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check the brake lights without pressing the brake pedal.

Are the brake lights on?

YES -Go to step 29.

NO -Go to step 24.

24. Turn the ignition switch to LOCK (0).

25. Remove the brake light relay.

26. Check for continuity between the VSA modulator-control unit 46P connector terminal No. 37 and the brake light relay 5P connector terminal No. 3.

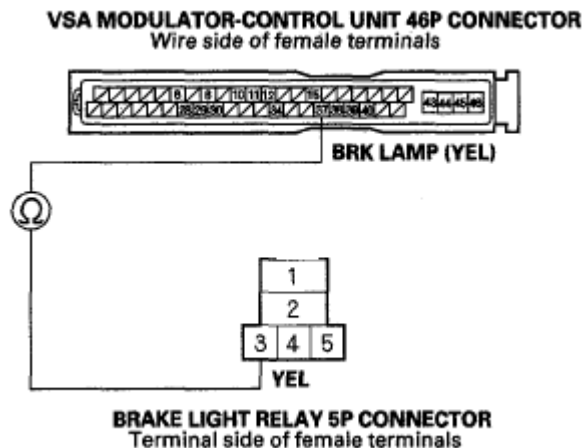


Fig. 41: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 37 And Connector Terminal 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

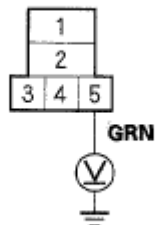
Is there continuity?

YES -Go to step 27.

NO -Repair open in the wire between the VSA modulator-control unit and the brake light relay.

27. Turn the ignition switch to ON (II).
28. Measure the voltage between brake light relay 5P connector terminal No. 5 and body ground.

BRAKE LIGHT RELAY 5P CONNECTOR



Terminal side of female terminals

Fig. 42: Identifying Voltage Between Brake Light Relay 5P Connector Terminal No. 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the brake light relay.

NO -Repair open in the wire between the No. 20 (7.5 A) fuse in the under-dash fuse/relay box and the brake light relay.

29. Turn the ignition switch to LOCK (0).
30. Check for continuity between VSA modulator-control unit 46P connector terminal No. 6 and brake light relay 5P connector terminal No. 1.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR
Wire side of female terminals

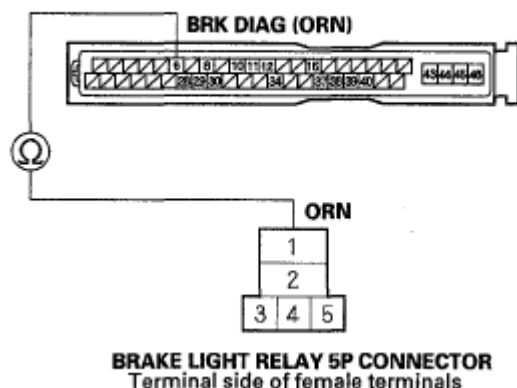


Fig. 43: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 6 And Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

Is there continuity?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary/ substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Repair open in the wire between the VSA modulator-control unit and the brake light relay.

DTC 72: STEERING ANGLE SENSOR (SOFTWARE)

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 91 or 92 indicated with DTC 72 at the same time?

YES -Do the DTC 91 or 92 troubleshooting: DTC 91 (see **DTC 91: F-CAN COMMUNICATION**), DTC 92 (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -Go to step 3.

3. Put the vehicle on a level surface, and center the steering wheel spokes.
4. Check STEERING ANGLE in the VSA DATA LIST with the HDS.

With the front wheels in the straight ahead position, is STEERING ANGLE $0^{\circ} \pm 5^{\circ}$?

YES -Go to step 5.

NO -Check the installation of the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**). If installation is good, do the steering angle sensor center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

5. Check the wheel alignment (see **WHEEL ALIGNMENT**).

Is the wheel alignment within the specification?

YES -Go to step 6.

NO -Make sure the suspension is not modified, adjust the wheel alignment correctly, then go to step 6.

6. Turn the ignition switch to ON (II).
7. Clear the DTCs with the HDS.
8. Test-drive the vehicle around a number of corners.
9. Check for DTCs with the HDS.

Is DTC 72 indicated?

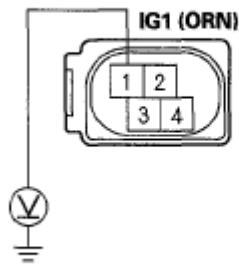
YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -The system is OK at this time.

DTC 73: YAW RATE SENSOR (POWER SUPPLY)

1. Turn the ignition switch to LOCK (0).
2. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
3. Turn the ignition switch to ON (II).
4. Measure the voltage between body ground and yaw rate-lateral/longitudinal acceleration sensor 4P connector terminal No. 1.

**YAW RATE-LATERAL/LONGITUDINAL
ACCELERATION SENSOR 4P CONNECTOR**



Wire side of female terminals

Fig. 44: Identifying Voltage Between Body Ground And Yaw Rate-Lateral/Longitudinal Acceleration Sensor 4P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

NO -Repair open in the wire between the No. 29 (10 A) fuse in the under-dash fuse/relay box and the yaw rate-lateral/longitudinal acceleration sensor.

DTC 74: YAW RATE SENSOR (SOFTWARE)

NOTE: Driving on an extremely angled road can cause this DTC.

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 97 indicated with DTC 74 at the same time?

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

YES -Do the DTC 97 troubleshooting (see **DTC 97: VSA SYSTEM**).

NO -Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Check that the yaw rate-lateral/longitudinal acceleration sensor is properly mounted (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

Is the yaw rate-lateral/longitudinal acceleration sensor installation OK?

YES -Go to step 5.

NO -Reinstall the yaw rate-lateral/longitudinal acceleration sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**), and retest by test-driving.

5. Put the vehicle on a level surface.
6. Turn the ignition switch to ON (II).
7. Check the YAW RATE S in the VSA DATA LIST with the HDS.

Is the YAW RATE $0^{\circ} \pm 5^{\circ}/s$?

YES -Go to step 8.

NO -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

8. Clear the DTC with the HDS.
9. Test-drive the vehicle around a number of corners.
10. Check for DTCs with the HDS.

Is DTC 74 indicated?

YES -Go to step 11.

NO -Intermittent failure; the most probable cause is the vehicle has been driven on an extremely angled road. The system is OK at this time.

11. Turn the ignition switch to LOCK (0).
12. Substitute a known-good yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).
13. Turn the ignition switch to ON (II).
14. Clear the DTC with the HDS.
15. Test-drive the vehicle around a number of corners.
16. Check for DTCs with the HDS.

Is DTC 74 indicated?

YES -Check for loose terminal in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

DTC 75: LATERAL/LONGITUDINAL ACCELERATION SENSOR (JOINT FAILURE); DTC 76: LATERAL/LONGITUDINAL ACCELERATION SENSOR (SOFTWARE)

NOTE: Driving on an extremely angled road can cause this DTC.

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Is DTC 97 indicated with DTC 75 or 76 at the same time?

YES -Do the DTC 97 troubleshooting (see **DTC 97: VSA SYSTEM**).

NO -Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Check that the yaw rate-lateral/longitudinal acceleration sensor is properly mounted (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

Is the yaw rate-lateral/longitudinal acceleration sensor installation OK?

YES -Go to step 5.

NO -Reinstall the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**), and retest by test-driving.

5. Put the vehicle on a level surface.
6. Turn the ignition switch to ON (II).
7. Check the LATERAL ACCELERATION SENSOR in the VSA DATA LIST with the HDS.

Is LATERAL ACCELERATION 0 ± 1 m/s?

YES -Go to step 8.

NO -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

8. Clear the DTC with the HDS.
9. Test-drive the vehicle around a number of corners.
10. Check for DTCs with the HDS.

Is DTC 75 or 76 indicated?

YES -Go to step 11.

NO -Intermittent failure; the most probable cause is the vehicle has been driven on an extremely angled road. The system is OK at this time.

11. Turn the ignition switch to LOCK (0).
12. Substitute a known-good yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).
13. Turn the ignition switch to ON (II).
14. Clear the DTC with the HDS.
15. Test-drive the vehicle around a number of corners.
16. Check for DTCs with the HDS.

Is DTC 75 or 76 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Replace the original yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

DTC 81: CENTRAL PROCESSING UNIT (CPU)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 81 indicated?

YES -Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO -Intermittent failure, the system is OK at this time. Check for a loose connection at G303.

DTC 84: STEERING ANGLE SENSOR NO CENTER POINT WRITING

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

Are any DTCs indicated with DTC 84 at the same time?

YES -Troubleshoot any other DTCs first.

NO -Go to step 3.

3. Do the steering angle sensor center point writing with the HDS (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).
4. Clear the DTC with the HDS.
5. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
6. Check for DTCs with the HDS.

Is DTC 84 indicated?

YES -Replace the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**), then do the steering angle sensor center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

NO -Intermittent failure, the system is OK at this time. Check for loose terminals between the steering angle sensor 5P connector and the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

DTC 91: F-CAN COMMUNICATION

NOTE: Check the fuel and emissions systems DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If there are DTCs present, troubleshoot them first.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 92 indicated with DTC 91 at the same time?

YES -Do the DTC 92 troubleshooting (see **DTC 92: F-CAN SYSTEM (BUS-OFF)**).

NO -If only DTC 91 is indicated, go to step 5. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose terminals between the yaw rate-lateral/longitudinal acceleration sensor 4P connector, the PCM connector A (49P), and the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

5. Turn the ignition switch to LOCK (0).
6. Short the SCS line with the HDS.
7. Disconnect the PCM connector A (49P).
8. Disconnect the VSA modulator-control unit 46P connector.
9. Check for continuity between VSA modulator-control unit 46P connector terminals No. 38, and No. 39 and PCM connector A (49P) terminals No. 49, and No. 48 individually.

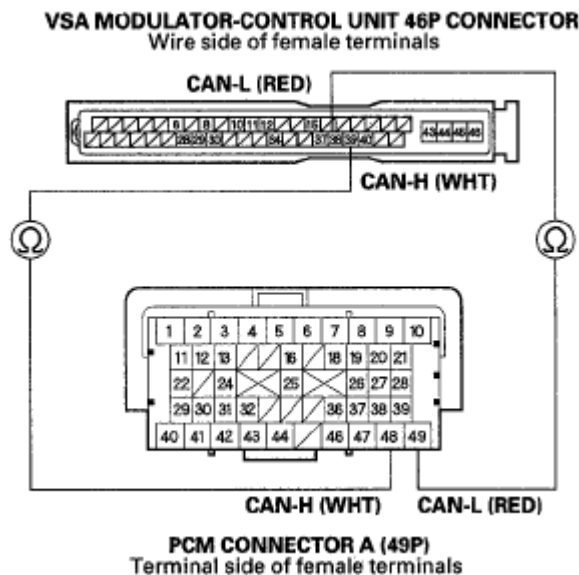


Fig. 45: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminals 38, And 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

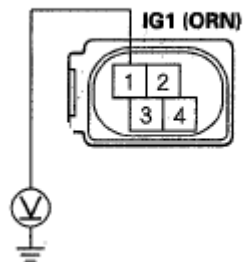
Is there continuity?

YES -Go to step 10.

NO -Repair open in the wire between the PCM and the VSA modulator-control unit.

10. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
11. Turn the ignition switch to ON (II).
12. Measure the voltage between yaw rate-lateral/ longitudinal acceleration sensor 4P connector terminal No. 1 and body ground.

**YAW RATE-LATERAL/LONGITUDINAL
ACCELERATION SENSOR 4P CONNECTOR**



Wire side of female terminals

Fig. 46: Identifying Voltage Between Yaw Rate-Lateral/ Longitudinal Acceleration Sensor 4P Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

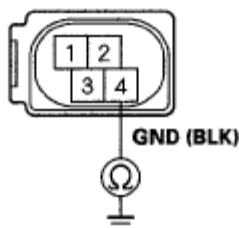
Is there battery voltage?

YES -Go to step 13.

NO -Repair open in the wire between the No. 29 (10 A) fuse in the under-dash fuse/relay box and the yaw rate-lateral/longitudinal acceleration sensor.

13. Turn the ignition switch to LOCK (0).
14. Check for continuity between yaw rate-lateral/ longitudinal acceleration sensor 4P connector terminal No. 4 and body ground.

**YAW RATE-LATERAL/LONGITUDINAL
ACCELERATION SENSOR 4P CONNECTOR**



Wire side of female terminals

Fig. 47: Identifying Continuity Between Yaw Rate-Lateral/ Longitudinal Acceleration Sensor 4P Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 15.

NO -Repair open in the wire between the yaw rate-lateral/longitudinal acceleration sensor and body

ground (G506).

15. Reconnect all connectors.
16. Test-drive the vehicle. Check the YAW RATE S in the VSA DATA LIST with the HDS while driving in corners.

Is there 0°/s indicated?

YES -Go to step 17.

NO -Check for fuel and emissions systems DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**), and troubleshoot the indicated DTC.

17. Check for continuity between VSA modulator-control unit 46P connector terminals No. 38, and No. 39 and yaw rate-lateral/longitudinal acceleration sensor 4P connector terminals No. 2, and No. 3 individually.

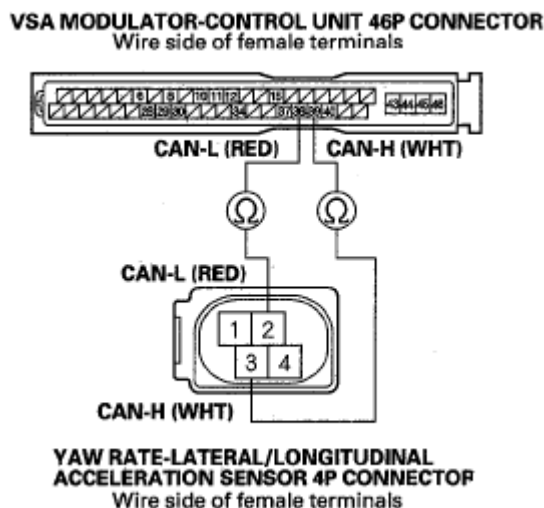


Fig. 48: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminals No. 38, And No. 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

NO -Repair open in the wire between the yaw rate-lateral/longitudinal acceleration sensor and the VSA modulator-control unit.

NOTE: Check the fuel and emissions systems DTCs (see GENERAL TROUBLESHOOTING INFORMATION). If there are DTCs present, troubleshoot them first.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 92 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time. Check for loose terminals between the PCM connector A (49P), and the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to INTERMITTENT FAILURES TROUBLESHOOTING .

5. Turn the ignition switch to LOCK (0).
6. Short the SCS line with the HDS.
7. Disconnect the PCM connector A (44P).
8. Disconnect the VSA modulator-control unit 46P connector.
9. Check for continuity between VSA modulator-control unit 46P connector terminals No. 38, and No. 39 and PCM connector A (49P) terminals No. 49, and No. 48 individually.

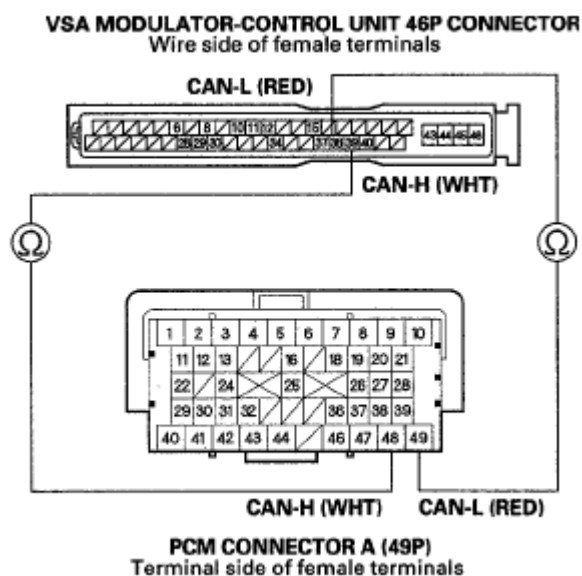


Fig. 49: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminals No. 38, And No. 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Repair open in the wire between the PCM and the VSA modulator-control unit.

DTC 97: VSA SYSTEM

1. Check the brake system for leaks or mechanical problems.

Is the brake system OK? (No brake fluid leakage, no air trapped in the brake system, no brake pads worn out.)

YES -Go to step 2.

NO -Repair the brake system, then recheck.

2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Test-drive the vehicle in a straight line. Accelerate the vehicle up to 6 mph (10 km/h), and stop, then accelerate up to 6 mph (10 km/h).
5. Check for DTCs with the HDS.

Is DTC 97 indicated?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -If any DTCs are indicated, go to the indicated **DTCS TROUBLESHOOTING**. If DTCs are not indicated, intermittent failure, the system is OK at this time. Check for loose terminals at the VSA modulator-control unit 46P connector. Check for a loose connection at G303. Refer to **INTERMITTENT FAILURES TROUBLESHOOTING** .

SYMPTOM TROUBLESHOOTING

VSA ACTIVATION INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

1. Turn the ignition switch to ON (II), and watch the VSA activation indicator.

Does VSA activation indicator go off within 2 seconds?

YES -The system is OK at this time.

NO -Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Disconnect the VSA OFF switch 5P connector.
4. Check the VSA OFF switch (see **VSA OFF SWITCH TEST**).

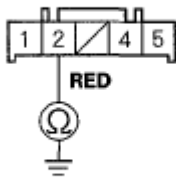
Is the VSA OFF switch OK?

YES -Go to step 5.

NO -Replace the VSA OFF switch (see **VSA OFF SWITCH TEST**).

5. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
6. Disconnect gauge control module connector B (24P).
7. Check for continuity between VSA OFF switch 5P connector terminal No. 2 and body ground.

VSA OFF SWITCH 5P CONNECTOR



Wire side of female terminals

Fig. 50: Identifying Continuity Between VSA OFF Switch 5P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground between the gauge control module and the VSA OFF switch.

NO -Substitute a known-good gauge control module, then go to step 1 and recheck. If it is OK, replace the original gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

ABS INDICATOR, BRAKE SYSTEM INDICATOR, VSA INDICATOR, AND TRAILER STABILITY ASSIST WARNING DO NOT GO OFF AT THE SAME TIME

1. Turn the ignition switch to LOCK (0).
2. Check the No. 29 (10 A) fuse in the under-dash fuse/ relay box.

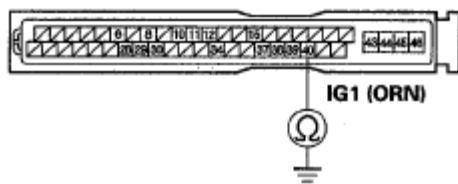
Is the fuse blown?

YES -Go to step 3.

NO -Reinstall the checked fuse, then go to step 9.

3. Disconnect the VSA modulator-control unit 46P connector.
4. Disconnect the steering angle sensor 5P connector.
5. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
6. Check for continuity between VSA modulator-control unit 46P connector terminal No. 40 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 51: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal No. 40 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between the No. 29 (10 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit or the steering angle sensor or the yaw rate-lateral/longitudinal acceleration sensor.

NO -Go to step 7.

7. Reconnect all connectors.
8. Check the ABS indicator, brake system indicator, VSA indicator, and the trailer stability assist warning for several seconds when the ignition switch is turned to ON (II).

Do the indicators and warning come on then go off?

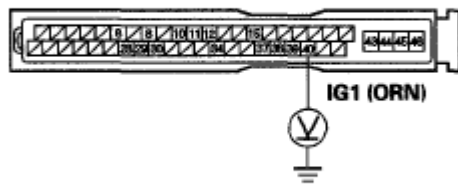
YES -The system is OK at this time.

NO -Go to step 14.

9. Disconnect the VSA modulator-control unit 46P connector.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between VSA modulator-control unit 46P connector terminal No. 40 and body

ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 52: Identifying Voltage Between VSA Modulator-Control Unit 46P Connector Terminal No. 40 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

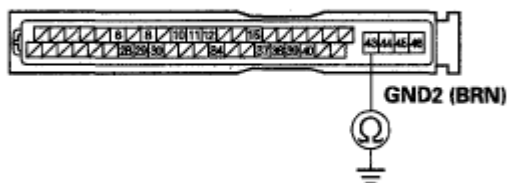
Is there battery voltage?

YES -Go to step 12.

NO -Repair open in the wire between the No. 29 (10 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.

12. Turn the ignition switch to LOCK (0).
13. Check for continuity between VSA modulator-control unit 46P connector terminal No. 43 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 53: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal No. 43 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

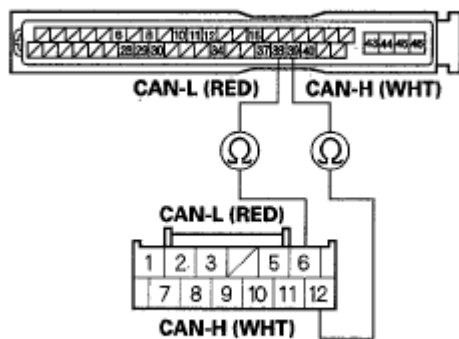
Is there continuity?

YES -Go to step 15.

NO -Repair open in the wire between the VSA modulator-control unit and body ground (G303).

14. Disconnect the VSA modulator-control unit 46P connector.
15. Disconnect gauge control module connector A (12P).
16. Check for continuity between VSA modulator-control unit 46P connector terminals No. 38, and No. 39 and gauge control module connector A (12P) terminals No. 6, and No. 12 individually.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR
Wire side of female terminals



GAUGE CONTROL MODULE CONNECTOR A (12P)
Wire side of female terminals

Fig. 54: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminals No. 38, And No. 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Check for loose terminals in the VSA modulator-control unit 46P connector. Check for a loose connection at G303. If necessary, substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**) and retest.

NO -Repair open in the wire between the gauge control module and the VSA modulator-control unit.

STEERING ANGLE SENSOR REPLACEMENT

NOTE: Do not damage or drop the combination switch as the steering angle sensor is sensitive to shock and vibration.

1. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**) and the cable reel (see **CABLE REEL REPLACEMENT**).
3. Remove the combination switch assembly (see step 9 on **STEERING COLUMN REMOVAL AND INSTALLATION**).
4. Remove the combination light switch (A) and the wiper/washer switch (B).

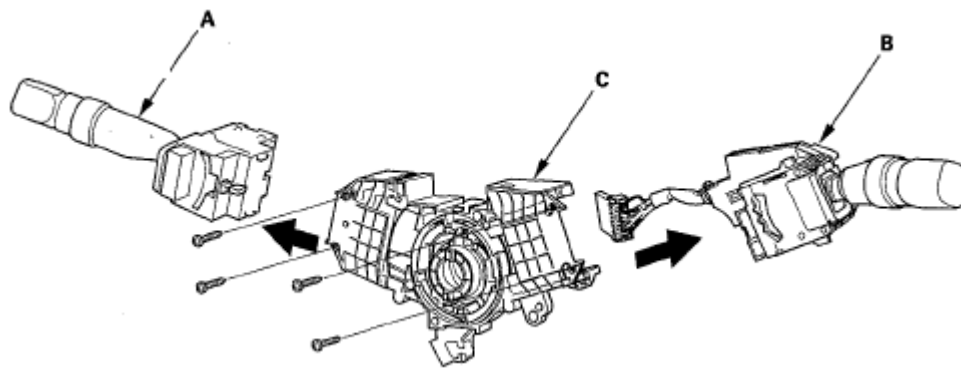


Fig. 55: Identifying Combination Light Switch, Wiper And Washer Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Replace the combination switch body assembly (C).
6. Install the combination switch in the reverse order of removal.

NOTE:

- Do not remove the steering angle sensor from the combination switch body.
- When installing the cable reel, set the turn signal canceling sleeve position (see INSTALLATION).

7. Do the steering angle sensor center point writing (see STEERING ANGLE SENSOR CENTER POINT WRITING).

STEERING ANGLE SENSOR CENTER POINT WRITING

NOTE:

Before doing the steering angle sensor center point writing, place the vehicle on a flat level surface, and turn the steering wheel to the straight ahead position while moving the vehicle.

1. With the ignition switch at LOCK (0), connect the HDS to the data link connector (DLC) (A) under the driver's side of the dashboard.

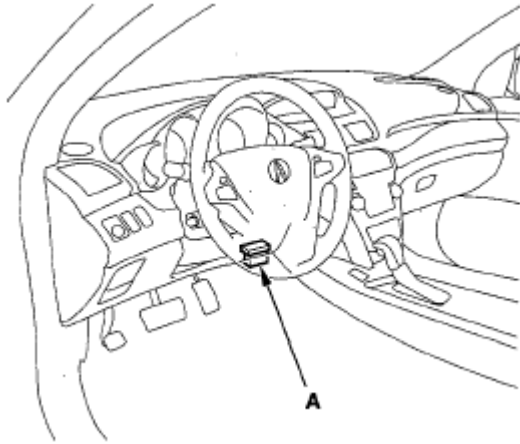


Fig. 56: Identifying HDS To Data Link Connector (DLC)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Do the steering angle sensor center point writing in the VSA ADJUSTMENT menu with the HDS.

NOTE: **See the HDS Help menu for specific instructions.**

5. Turn the ignition switch to LOCK (0).

YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT

NOTE:

- **Do not damage or drop the sensor as it is sensitive.**
- **Do not use power tools.**

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's center console trim (see step 5 on **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector (A).

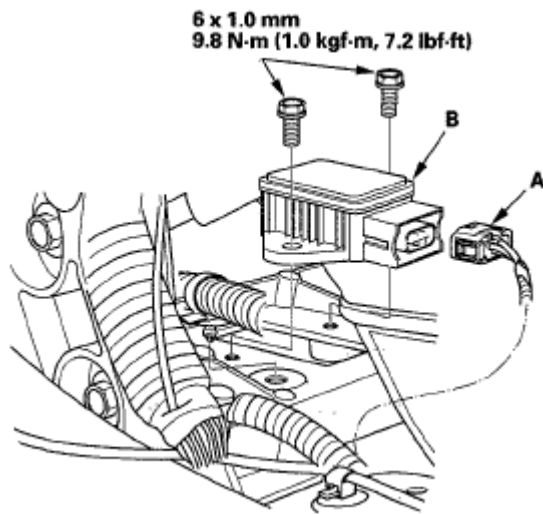


Fig. 57: Identifying Yaw Rate-Lateral/Longitudinal Acceleration Sensor 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the sensor mounting bolts, then remove the yaw rate-lateral/longitudinal acceleration sensor (B).
5. Install in the reverse order of removal.
6. Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION**).

VSA OFF SWITCH TEST

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
3. Push out the VSA OFF switch (A) from the back of the instrument panel.

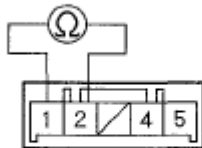


Fig. 58: Identifying VSA OFF Switch And VSA OFF Switch 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the VSA OFF switch 5P connector (B).

5. Check for continuity between the VSA OFF switch 5P connector terminals No. 1 and No. 2. There should be continuity when the switch is pressed, and no continuity when the switch is released.

VSA OFF SWITCH 5P CONNECTOR

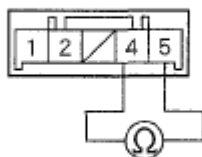


Terminal side of male terminals

Fig. 59: Identifying Continuity Between VSA OFF Switch 5P Connector Terminals No. 1 And No. 2
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Check for continuity between the VSA OFF switch 5P connector terminals No. 4 and No. 5. There should be continuity at all times.

VSA OFF SWITCH 5P CONNECTOR



Terminal side of male terminals

Fig. 60: Identifying Continuity Between VSA OFF Switch 5P Connector Terminals No. 4 And No. 5
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION

NOTE:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- Be careful not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent material.

REMOVAL

1. Turn the ignition switch to LOCK (0).

2. Remove the air cleaner box (see **AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT**).
3. Disconnect the VSA modulator-control unit 46P connector (A) by pulling up the lock (B); the connector disconnects itself.

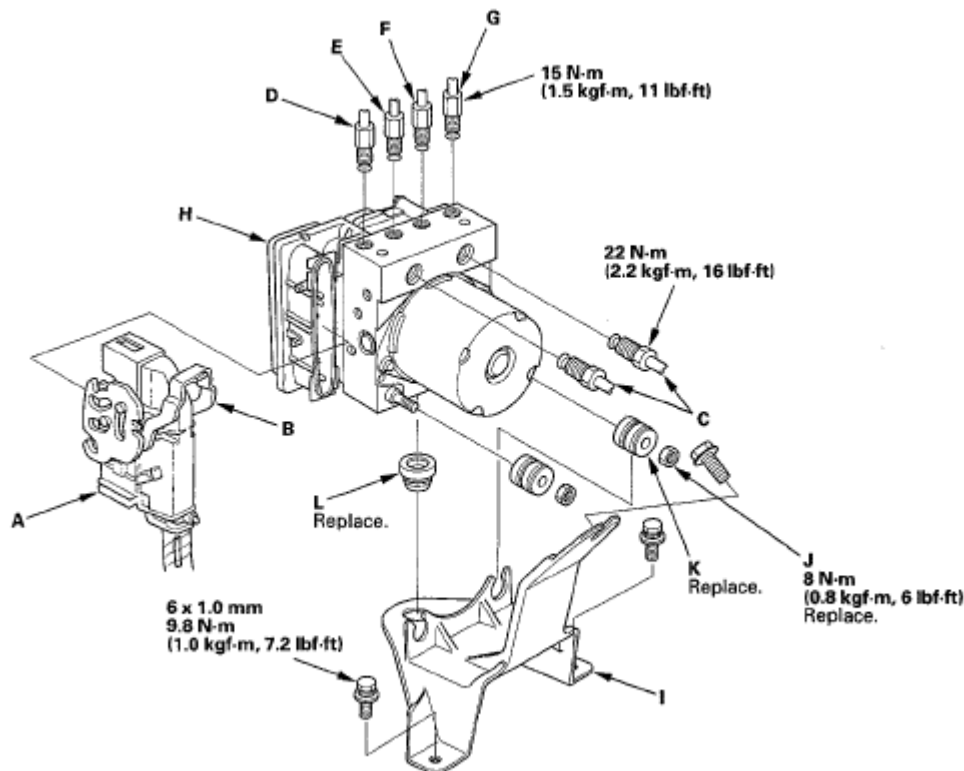


Fig. 61: Identifying VSA Modulator-Control Unit Components With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the six brake lines from the VSA modulator-control unit.

NOTE: Brake lines are connected to the master cylinder (C) and to the right-front (D), the left-rear (E), the right-rear (F), and the left-front (G) brake systems.

5. Remove the VSA modulator-control unit (H) with the bracket (I) from the body.
6. Remove the locknuts (J), then remove the VSA modulator-control unit from the bracket.

NOTE: During installation, install a new bushing (K) and new grommets (L). Otherwise, unwanted noise and vibration may be transmitted to the vehicle.

INSTALLATION

1. Install the new bushing and new grommets (Otherwise, unwanted noise and vibration may be transmitted to the vehicle).

2008 Acura MDX

2007-09 BRAKES VSA (Vehicle Stability Assist) System Components - MDX

2. Install the VSA modulator-control unit on the bracket, then install new locknuts.
3. Install the bracket with the VSA modulator-control unit.
4. Reconnect the six brake lines, then tighten the flare nuts with the specified torque.
5. Align the connecting surface of the VSA modulator-control unit 46P connector to the VSA modulator-control unit.
6. Lower the lock of the VSA modulator-control unit 46P connector, then confirm the connector is fully seated.
7. Reinstall the air cleaner box (see **AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT**).
8. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
9. Do the steering angle center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).
10. Start the engine, and check that the ABS, the VSA indicators, and the trailer stability assist warning goes off.
11. Test-drive the vehicle, and check that the ABS, the VSA indicators, and the trailer stability assist warning do not come on.

NOTE: If the brake pedal is spongy, there may be air trapped in the modulator which could then be induced into the normal brake system during modulation. Bleed the brake system again (see **BRAKE SYSTEM BLEEDING**).

WHEEL SPEED SENSOR REPLACEMENT

FRONT

1. Turn the ignition switch to LOCK (0).
2. Remove the clip (A), then disconnect the wheel speed sensor connector (B).

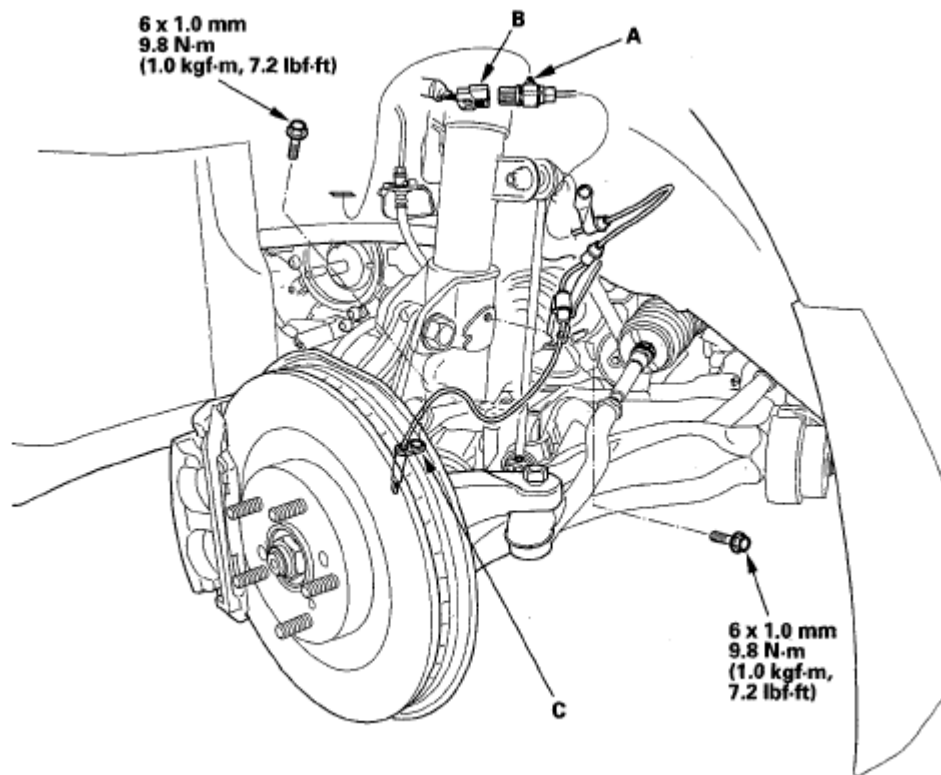


Fig. 62: Identifying Wheel Speed Sensor Connector, Wheel Speed Sensor And Clip With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts and the wheel speed sensor (C).
4. Install the wheel speed sensor in the reverse order of removal, and note these items:
 - Install the sensor carefully to avoid twisting the wires.
 - If the wheel speed sensor comes in contact with the hub bearing unit, it is faulty.
5. Start the engine, and check that the ABS, the VSA indicators, and the trailer stability assist warning goes off.
6. Test-drive the vehicle, and check that the ABS, the VSA indicators, and the trailer stability assist warning do not come on.

REAR

1. Turn the ignition switch to LOCK (0).
2. Disconnect the wheel speed sensor connector (A).

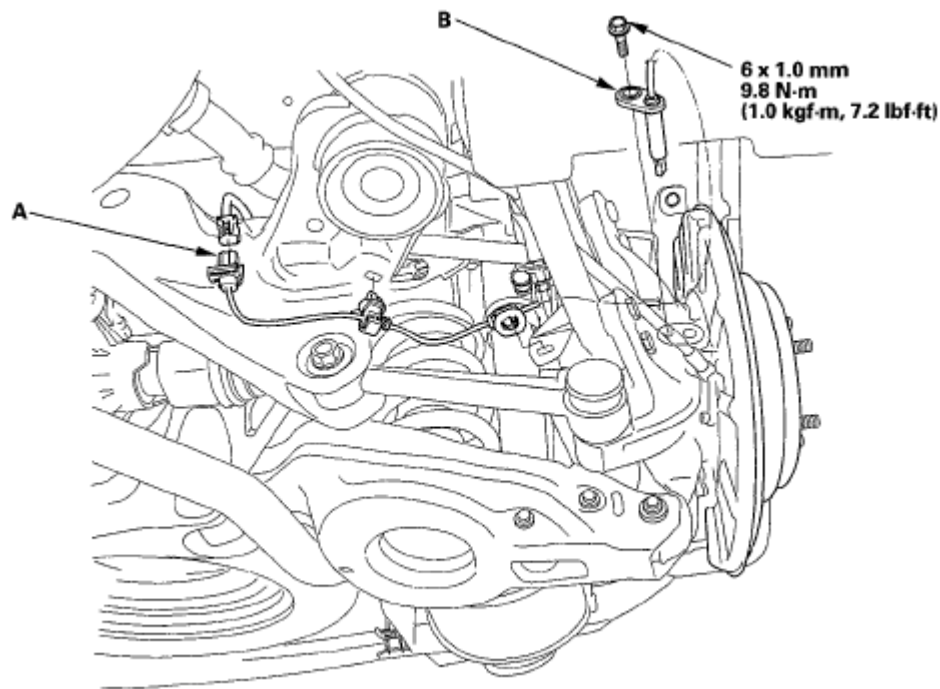


Fig. 63: Identifying Wheel Speed Sensor And Wheel Speed Sensor Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the clips, the bolt, and the wheel speed sensor (B).
4. Install the wheel speed sensor in the reverse order of removal, and note these items:
 - Install the sensor carefully to avoid twisting the wires.
 - If the wheel speed sensor comes in contact with the hub bearing unit, it is faulty.
5. Start the engine, and check that the ABS, the VSA indicators, and the trailer stability assist warning goes off.
6. Test-drive the vehicle, and check that the ABS, the VSA indicators, and the trailer stability assist warning do not come on.

2007-09 ACCESSORIES AND EQUIPMENT

Audio System - MDX

COMPONENT LOCATION INDEX

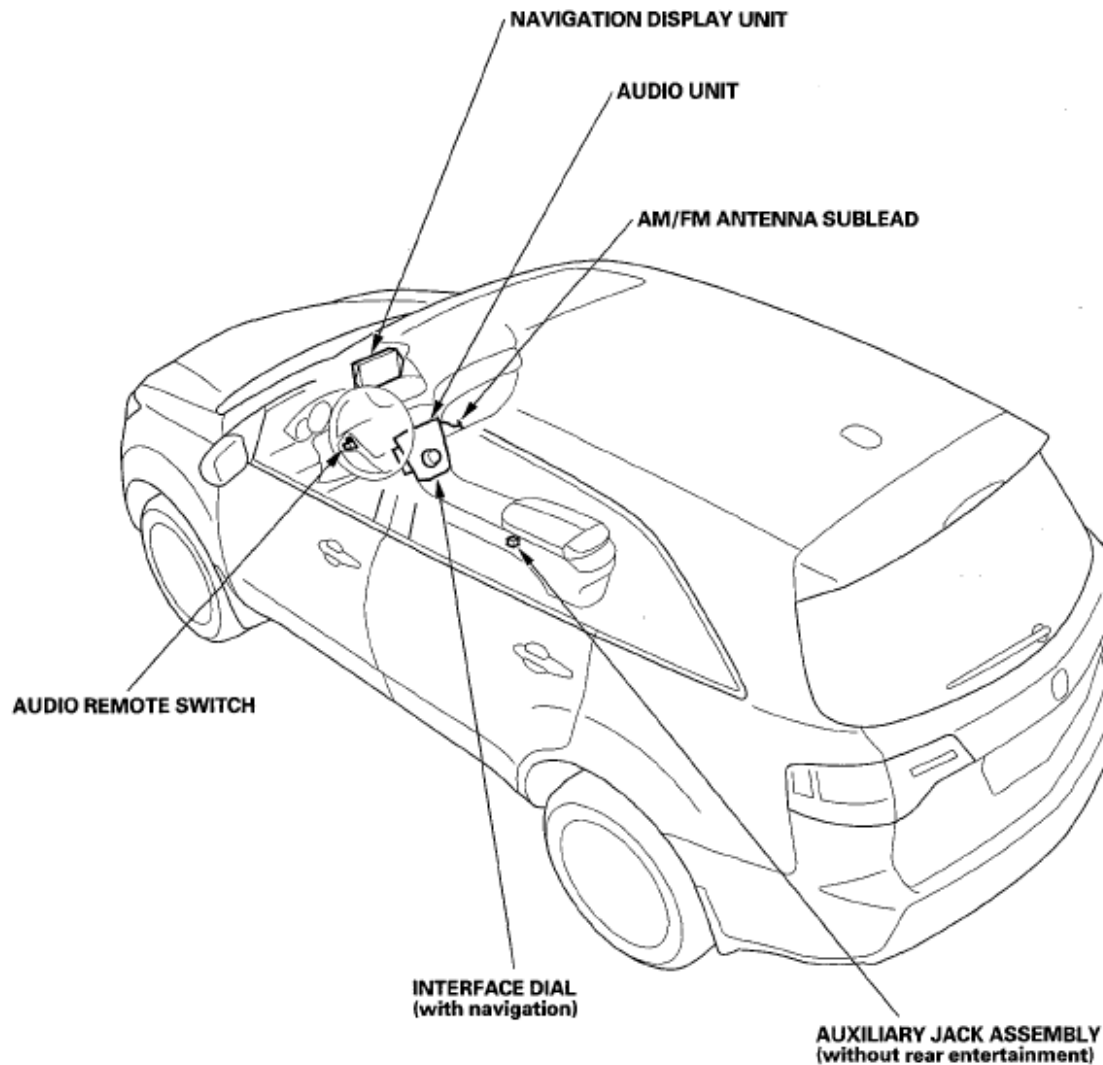


Fig. 1: Identifying Audio System Components (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

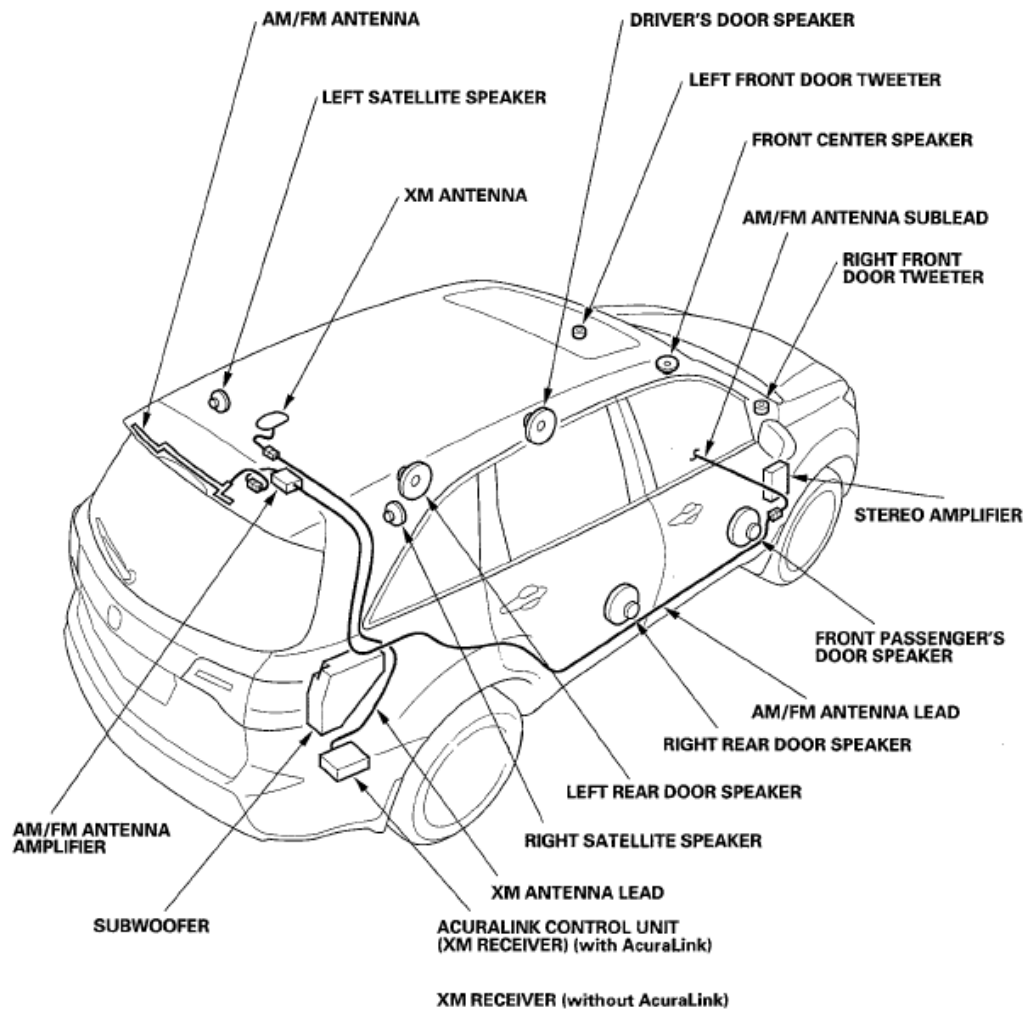


Fig. 2: Identifying Audio System Components (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Poor AM or FM radio reception or interference	Symptom Troubleshooting (see <u>POOR AM OR FM RADIO RECEPTION OR INTERFERENCE</u>)	• AM/FM antenna lead and/or sublead short or open in the wire • AM/FM antenna open
Audio unit power switch will not turn ON (No information display and no	Symptom Troubleshooting (see <u>POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO</u>	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

sound)	<u>SOUND</u>)	
Audio unit power will not turn OFF	Symptom Troubleshooting (see <u>AUDIO UNIT POWER WILL NOT TURN OFF</u>)	
No sound is heard from speaker(s) (display is normal) (with navigation)	Symptom Troubleshooting (see <u>NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)</u>)	
No sound is heard from speaker(s) (display is normal) (without navigation)	Symptom Troubleshooting (see <u>NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)</u>)	
Audio system sound is weak or distorted (display is normal)	Symptom Troubleshooting (see <u>AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL)</u>)	
Radio preset memory is lost	Symptom Troubleshooting (see <u>RADIO PRESET MEMORY IS LOST</u>)	• Battery condition • Battery cable condition
Volume does not change	Symptom Troubleshooting (see <u>VOLUME DOES NOT CHANGE</u>)	
Volume does not increase with speed	Symptom Troubleshooting (see <u>VOLUME DOES NOT INCREASE WITH SPEED</u>)	
Volume is too high or too low when driving at freeway speeds	Symptom Troubleshooting (see <u>VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS</u>)	
Radio tuner does not change stations	Symptom Troubleshooting (see <u>RADIO TUNER DOES NOT CHANGE STATIONS</u>)	
Display does not dim or brighten with dimmer	Symptom Troubleshooting (see <u>DISPLAY DOES NOT DIM OR BRIGHTEN WITH DIMMER</u>)	
Audio unit button illumination does not work	Symptom Troubleshooting (see <u>AUDIO UNIT BUTTON ILLUMINATION DOES NOT WORK</u>)	
Audio disc does not load	Symptom Troubleshooting (see <u>AUDIO DISC DOES NOT LOAD</u>)	
Audio disc does not eject	Symptom Troubleshooting (see <u>AUDIO DISC DOES NOT EJECT</u>)	
Audio disc changer does not load all six discs	Symptom Troubleshooting (see <u>AUDIO DISC CHANGER DOES NOT LOAD ALL SIX DISCS</u>)	Tire pressure (over-inflated), disc smudged, dirty, or scratched
Audio disc changer does not move between discs	Symptom Troubleshooting (see <u>AUDIO DISC CHANGER DOES NOT MOVE BETWEEN DISCS</u>)	
Audio disc does not play	Symptom Troubleshooting (see <u>AUDIO DISC DOES NOT PLAY</u>)	
		Tire pressure (over-

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

Audio disc skips	Symptom Troubleshooting (see <u>AUDIO DISC SKIPS</u>)	inflated), disc smudged, dirty, or scratched
Error code: XM NO SIGNAL or XM ANTENNA is displayed	Symptom Troubleshooting (see <u>ERROR CODE: XM NO SIGNAL OR XM ANTENNA IS DISPLAYED</u>)	
XM radio display is blank and no station information is displayed (with AcuraLink)	Symptom Troubleshooting (see <u>XM radio display is blank and no station information is displayed (with AcuraLink)</u>)	
XM radio display is blank and no station information is displayed (without AcuraLink)	Symptom Troubleshooting (see <u>XM radio display is blank and no station information is displayed (Without AcuraLink)</u>)	
XM radio preset memory is lost (with AcuraLink)	Symptom Troubleshooting (see <u>XM radio preset memory is lost (with AcuraLink)</u>)	
XM radio preset memory is lost (without AcuraLink)	Symptom Troubleshooting (see <u>XM radio preset memory is lost (without AcuraLink)</u>)	
Poor or no sound with XM radio (Audio unit does display XM channels)	Symptom Troubleshooting (see <u>POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS)</u>)	
Audio remote switch does not work properly	Symptom Troubleshooting (see <u>AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY</u>)	
Audio unit button does not work	Symptom Troubleshooting (see <u>AUDIO UNIT BUTTON DOES NOT WORK</u>)	
Audio unit disc indicator does not work	Symptom Troubleshooting (see <u>AUDIO UNIT DISC INDICATOR DOES NOT WORK</u>)	
Security indicator does not work properly	Symptom Troubleshooting (see <u>SECURITY INDICATOR DOES NOT WORK PROPERLY</u>)	

SYSTEM DESCRIPTION

OVERVIEW

The audio unit acts as the processor for all audio functions. You can select the audio functions from the audio panel, the audio remote (on steering wheel), or by using the navigation voice control system. The audio display provides the current front and rear audio status. For vehicles with the navigation option, additional audio information is available by touching the audio button. (See the owner's manual for more details.)

Each audio component passes its audio or audio signal to the audio unit. In addition, it communicates with the audio unit via the GA-Net bus. Any open connection in this circuit will cause audio and navigation functions to appear inoperative.

The audio unit has a built-in EEPROM (electrically erasable programmable read-only memory). This memory holds the audio presets data (AM/FM radio frequency, sound settings, etc.) even when the battery is

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

disconnected.

With the ELS and the premium sound system, an audio amplifier unit powers the speakers.

The 6 DVD (6 CD) changer output can be directed to the audio unit.

The XM can be output to either the front or the RES (rear entertainment system). However, if the XM is playing in the front, the CD changer cannot be used for the RES. The RES (built into the audio unit) can be used to play a CD in the rear.

A security signal is daisy-chained between the audio, RES and navigation components for integration into the vehicle's alarm system.

SPEED-SENSITIVE VOLUME COMPENSATION (SVC)

Some audio systems are equipped with speed-sensitive volume compensation (SVC). The navigation or audio unit receives the vehicle speed pulse (VSP) from the PCM. The system processes the speed input and increases the navigation or audio system volume level as the vehicle speed increases to compensate for the various interior noise that occurs at higher speeds. When the vehicle slows down, the volume returns to its normal level. The SVC has four settings: SVC OFF, LOW, MID, and HIGH that can be adjusted using the navigation or audio unit. The SVC comes from the factory with the MID set as the default.

To change the audio unit SVC setting, press the tune folder sound knob repeatedly until the SVC is displayed, rotate the knob to adjust the SVC to the desired setting (SVC OFF, LOW, MID, or HIGH).

To change the navigation unit SVC setting, press the AUDIO button, and then select the SOUND icon on the navigation display. Press the navigation display to select the desired setting (OFF, LOW, MID, HI).

OVERVIEW

The optional navigation system provides voice control for radio, XM, CD player, and RES functions. The GA-Net (audio unit) communicates the voice control commands. When using the TALK/BACK or route guidance (RG), only the center speaker is muted and you hear the navigation instructions through the front speakers. When using HFL/AcuraLink, the center speaker, the rear speakers, and the subwoofer are muted and the front speakers give the telephone sound. When using HFL/AcuraLink and RG or TALK/BACK, the center speaker, the rear speakers, and the subwoofer are muted and you hear the telephone sound and navigation instructions through the front speakers but not the RES headphones. GA-Net bus passes the muting commands. For more information, see the **NAVIGATION SYSTEM** article. The outline of the audio interruption function is shown in the following table.

CONTENTS CHART

Contents	Audio output					
	Center CH	Left front CH	Right front CH	Right rear CH	Left rear CH	Subwoofer CH
TALK/BACK	MUTE	Navigation sound	Navigation sound	Audio	Audio	Audio

Route guidance	MUTE	Navigation sound	Navigation sound	Audio	Audio	Audio
On Star/HFL/AcuraLink	MUTE	Telephone sound	Telephone sound	MUTE	MUTE	MUTE
On Star/HFL/AcuraLink and RG or TALK/BACK	MUTE	Telephone sound and navigation sound	Telephone sound and navigation sound	MUTE	MUTE	MUTE

SYSTEM DIAGRAM

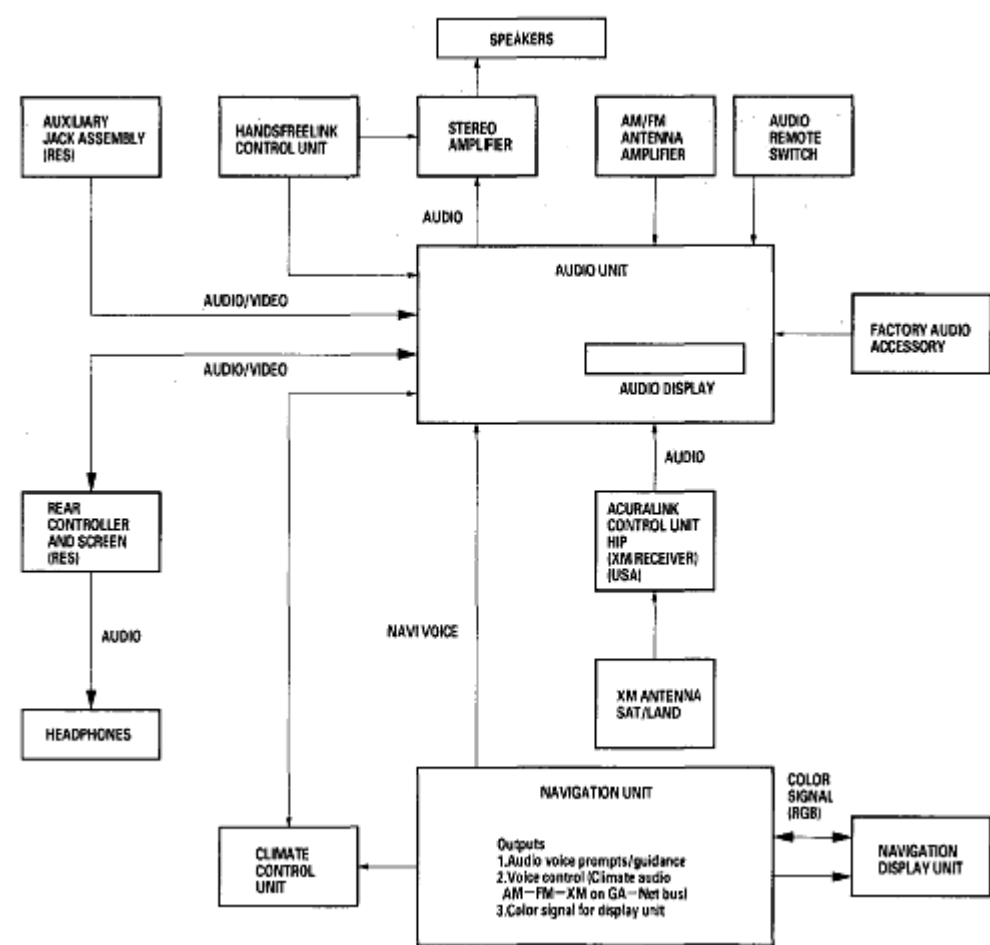


Fig. 3: Audio System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: All items may not apply to this vehicle. See the Owner's Manual for more information.

Audio Glossary

AUDIO GLOSSARY TERMS

Item	Definition

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

Active noise control	The active noise control system cancels some of the vehicle noise. This occurs in the 1,500-2,400 rpm range. Microphones detect the low frequency sound, and the system outputs a canceling sound from the audio speaker.
AM (Amplitude Modulation)	The type of transmission used in the standard radio broadcast band from 530 to 1705 kHz.
Amplifier	A device that increases the level of a signal by increasing the current or voltage.
Antenna	A device used to send or receive electromagnetic waves through the air.
ATA (PC Card)	A type of card that has been tested for use in playing WMA, and MP3 music files in the PC Card slot. Sizes of up to 1 GB have been tested.
Audio remote switch	The switches on the steering wheel that control the audio system.
Auxiliary Jack	Allows the client to use a portable audio device to input music recordings.
Balance	A control that changes the relative volume of the left and right channels.
Band	A range of frequencies between two definite limits. Bands are assigned by the Federal Communications Commission for specific uses.
Bass	An adjustment for the low frequency sounds of around 160 Hz and below.
Byte	A unit of storage for computer files and memory. A CD holds approximately 700 million bytes.
Cassette	Audio or video magnetic tape container having two reels. Client's can insert it for recording or play back.
Compact flash	A standard for small-size (3x4 cm), memory cards used in mobile computers, PDAs, digital cameras. Compact flash memory cards are available in size of 32 MB up to 4 GB or more and can be played in the audio PC slot. Sizes above 1 GB has not been tested.
CD (Compact Disc)	A 4.5-inch plastic disc containing digital audio recording that is played optically on a laser equipped player. Never use discs with a paper label. In a hot car, labels can curl up and jam the unit.
CD (audio disc) changer	CD player that can store and play more than one CD. Two types are available. Some units accept CDs fed into the changer one at a time, and others accept a magazine (with CD's stacked in a container).
CD player	A component designed to play compact disc CD recording using a laser optical pickup. The signal from a CD player usually requires amplification.
Distortion	Inexact reproduction of an audio signal caused by playing music at levels the audio system cannot handle.
Dolby (noise reduction)	A processing system developed by Dolby Laboratories that reduces the background noise on recording media. The result is a cleaner playback from the audio system.
DVD (Digital Versatile Disc)	A 4.5-inch CD-like format used for storing movies with digital audio and video features. The DVD-A format is a DVD format designed for DVD audio systems. Some vehicles can play DVD and DVD-A formats.
Equalizer	A device that changes the relative volume of individual frequency bands to suit personal tastes of the listener.
Fader	The control that adjusts the relative volume levels of front and rear speakers in a four-speaker system.
Format	To prepare a PC Card to receive files this function is performed on a PC. Always choose either FAT or FAT32 as the NTFS format is not accepted by the system.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

	Pick the default sectors for the format method selected.
FM (Frequency Modulation)	The form of modulation used for radio and television sound transmission in most of the world. Less prone to interference than AM. The FM broad cast band covers roughly 87 to 108 MHz.
GA-Net	The GA-Net allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-Net, components or the entire audio and navigation system may appear inoperative.
GB (Gigabyte)	A unit of memory or disk storage equal to billion bytes (1000 million bytes).
HDD	Abbreviation for hard disc drive. They are sensitive to heat and it is not recommended that they be used in the PC card slot for playing audio files.
Hertz (HZ)	The unit of frequency equal to one cycle per second (cps). One kilohertz (kHz) equals 1,000 cps; one megahertz (MHz) equals 1 million cps.
Integrated amplifier	A component that combines a pre amp and a power amp into a single unit. A receiver combines an integrated amp and a tuner into a single unit.
Jewel case	The hard plastic case that contains a compact disc or DVD. Always use a jewel case to prevent scratches on the underside of a CD or DVD.
LCD (Liquid Crystal Display)	A type of digital display that changes reflectance or transmittance when an electrical field is applied to it.
MB (Megabyte)	A unit of memory or disc storage equal to 1 million bytes.
Memory	Circuitry or devices that hold information in electrical or magnetic form, such as the AM/FM radio presets.
MB (Megabyte)	One million bytes. Written as 1 MB. Megabytes are used as a measure of digital storage space. For example, a CD can hold 650 MB.
Mic	An abbreviation for microphone. For vehicles with navigation, the microphone accepts navigation voice commands to control audio and navigation functions.
MP3 music files	MP3 is an audio coding format. MP3 is a poplar audio compression format on the Internet and computers. CDs, and PC Card with these files can be played on some vehicle's audio system.
Mute	When the navigation gives guidance, the front speakers are muted (no music). When you use the voice control system, all of the speakers are muted.
Noise	Unwanted random sounds like buzzing, hiss, pops, static, whine, etc.
PC card	The slot used for playing MP3 and WMA music files. The PC Card is usually a combination of a small flash card in a PCMCIA adaptor that slides into the slot. The ATA, SD, and compact flash types of cards have been tested up to 1 GB.
PCMCIA	A computer standard for the slot that the PC card slides into. Another term for the PC card slot.
Processor	The part of an audio device that performs task/calculations. In the audio unit the processor handles muting to allow the navi to speak voice commands, and the decoding/playback of the sound files etc.
Radio	A head unit that combines a tuner, a preamplifier, and often a power-amplifier.
SCF (Cold Start Fix) screens	These screens are displayed if the system requires a GPS initialization. The vehicle should be moved outside into an open area away from buildings/power lines.
Stereo	A recording of at least two channels where you can hear sound or music from the left or right side.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

SD (Secure Digital) card	This compact type of memory card allows for fast data transfer and has built-in security functions. SD cards have a small write-protection switch on the side.
Shield	A metallic foil or braided wire layer surrounding conductors which are designed to prevent electrostatic or electromagnetic interference (noise) from external sources such as buzzing, or popping sounds heard on the speakers.
Speaker (Loudspeaker)	A device that converts electrical energy into acoustical energy (sound).
Speed-sensitive volume compensation (SVC)	The SVC increases the audio volume to compensate for increased interior noise when the vehicle drivers at freeway speeds.
Subwoofer	A loudspeaker made to reproduce the lowest audio frequencies, approx 25 Hz to 125 Hz.
Track	A sound recording on a CD, tape, or PC Card.
Treble	An adjustment to control the "volume" of the high frequency sounds.
Tuner	A component (or part of a component) that receives radio signals and selects one broadcast from many.
Tweeter	A speaker designed to reproduce the higher frequencies (treble) only.
Voice coil	A coil of wire wrapped around a tube and then attached to the speaker cone or diaphragm. When an audio signal is applied, the coil becomes an electromagnet and interacts with the permanent magnet causing the cone or diaphragm to vibrate. We interpret this vibrations as sound.
Volume control	Allows you to control the loudness of the music.
WMA music file	Windows Media Audio File. This is an accepted format for music files to be played on either a CD-R, a CD-RW, or a PC Card.
Woofer	A speaker that is designed to reproduce bass frequencies only.
XM radio	Satellite based radio transmission, which also uses a ground based repeater network to ensure seamless reception. The channels originate from XM's broadcast center, in Washington, DC, and up link to two satellites. These satellites transmit the signal across the entire continental United States.
XM receiver	The external component that receives and processes the XM signals from the XM satellites, and terrestrial (land) stations. The audio unit communicates to the XM receiver over the GA-Net bus.

AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS

When replacing an audio unit connector, match the wires to the cavities listed in the following tables.

With navigation/With rear entertainment system

2008 Acura MDX

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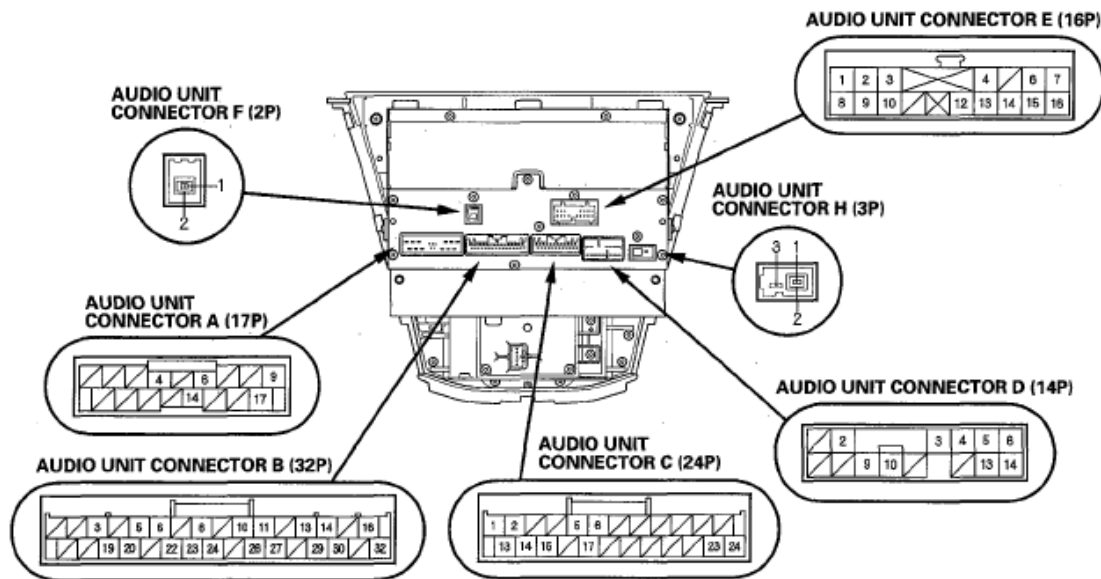


Fig. 4: Identifying Audio Unit Connector Terminals - With Navigation/With Rear Entertainment System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With navigation/Without rear entertainment system

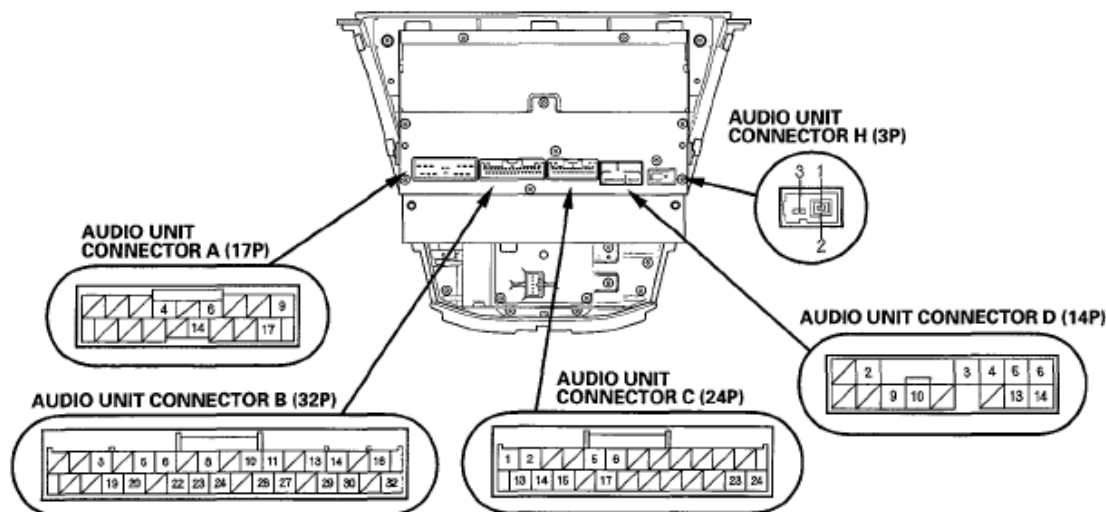


Fig. 5: Identifying Audio Unit Connector Terminals - With Navigation/Without Rear Entertainment System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT CONNECTOR FOR INPUTS AND OUTPUTS

When replacing an audio unit connector, match the wires to the cavities listed in the following tables.

Without navigation/Without rear entertainment system

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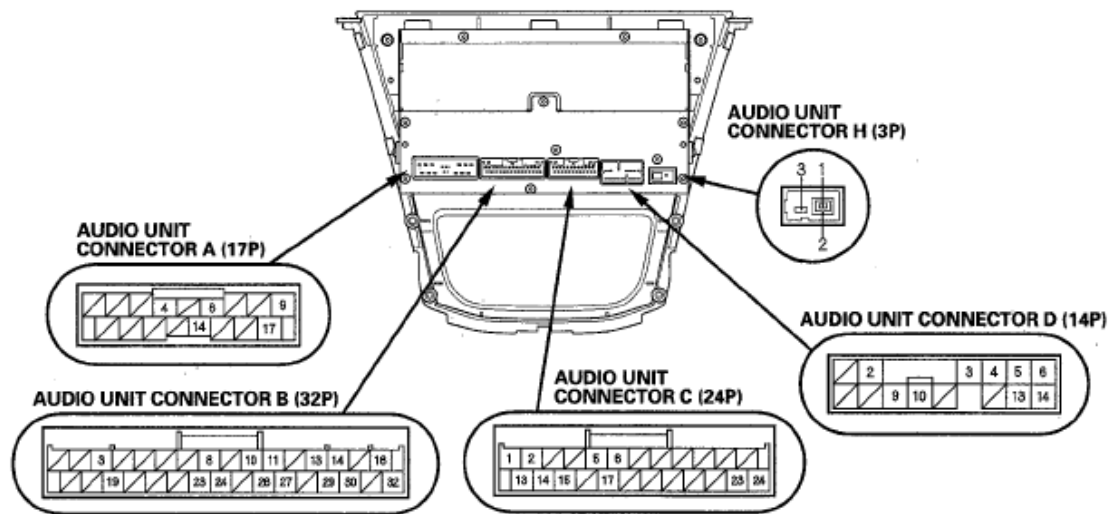
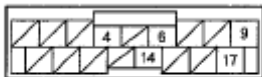


Fig. 6: Identifying Audio Unit Connector Terminals - Without Navigation/Without Rear Entertainment System

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Terminal side of male terminals

Fig. 7: Identifying Audio Unit Connector A (17P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT A (17P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
A4	LT GRN	Rear controller and screen (SCTY4) ⁽³⁾
		Navigation display unit (SCTY4) ⁽¹⁾
	RED ⁽²⁾	MICU (SCTY 1)
A6	LT BLU	MICU (K-LINE)
A9	BLK	Ground (G504)
A14	PUR	ACC (audio power supply)
A17	WHT	Constant power

(1) With navigation

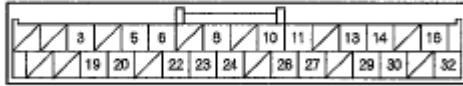
(2) Without navigation

(3) With rear entertainment

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AUDIO UNIT CONNECTOR B (32P)



Terminal side of male terminals

Fig. 8: Identifying Audio Unit Connector B (32P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT B (32P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
B3	BRN	Audio remote ground
B5	GRN	Stereo amplifier (RS485+) ⁽¹⁾
B6	BLU	Stereo amplifier (RS485-) ⁽¹⁾
B8	RED	Stereo amplifier (FL PRE IN-)
B10	PNK	Stereo amplifier (FR PRE IN-)
B11	PUR	Stereo amplifier (RL PRE IN-)
B13	YEL	Stereo amplifier (RR PRE IN-)
B14	RED	Stereo amplifier (SW PRE IN-)
B16	PNK	Stereo amplifier (CTR PRE IN-)
B19	ORN	Audio remote
B20	PNK	Stereo amplifier (RS 485 GND) ⁽¹⁾
B22	BRN ⁽²⁾	Stereo amplifier (RS 485 SH) ⁽¹⁾
B23	LT GRN	Stereo amplifier (+B)
B24	GRN	Stereo amplifier (FL PRE IN+)
B26	BLU	Stereo amplifier (FR PRE IN+)
B27	LT BLU	Stereo amplifier (RL PRE IN+)
B29	BRN	Stereo amplifier (RR PRE IN+)
B30	GRN	Stereo amplifier (SW PRE IN+)
B32	BLU	Stereo amplifier (CTR PRE IN+)

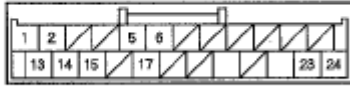
(1) With navigation

(2) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

AUDIO UNIT CONNECTOR C (24P) (With rear entertainment)



Terminal side of male terminals

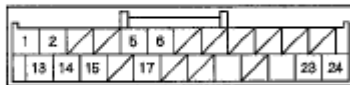
Fig. 9: Identifying Audio Unit Connector C (24P) Terminals - With Rear Entertainment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT C (24P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
C1	PNK	Auxiliary jack assembly (AUX AUDIO R/L GND)
C2	BRN ⁽¹⁾	Auxiliary jack assembly (AUX AUDIO R/L SH)
C5	PUR	XM receiver, HandsFreeLink control unit (LINE OUT-)
C6	BRN ⁽¹⁾	XM receiver, HandsFreeLink control unit (LINE OUT SH)
C13	BLU	Auxiliary jack assembly (AUX AUDIO R)
C14	GRN	Auxiliary jack assembly (AUX AUDIO L)
C15	WHT	Auxiliary jack assembly (CONN CHK)
C17	LT BLU	XM receiver, HandsFreeLink control unit (LINE OUT+)
C23	LT GRN	XM receiver (B-CAN)
C24	BLU	Climate control unit (HVAC BUS)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

AUDIO UNIT CONNECTOR C (24P) (Without rear entertainment)



Terminal side of male terminals

Fig. 10: Identifying Audio Unit Connector C (24P) Terminals - Without Rear Entertainment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT C (24P) CONNECTOR TERMINAL REFERENCE

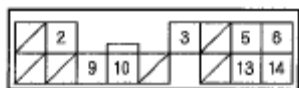
Cavity	Wire	Connects to
C1	RED	Auxiliary jack assembly (AUX SIG GND)
C2	BRN ⁽¹⁾	Auxiliary jack assembly (SH AUX)
C5	PUR	XM receiver, HandsFreeLink control unit (LINE OUT-)
C6	BRN	XM receiver, HandsFreeLink control unit (LINE OUT SH)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

C13	BLK	Auxiliary jack assembly (AUX RCH)
C14	WHT	Auxiliary jack assembly (AUX LCH)
C15	LT BLU	Auxiliary jack assembly (AUX DET)
C17	LT BLU	XM receiver, HandsFreeLink control unit (LINE OUT+)
C23	LT GRN	XM receiver (B-CAN)
C24	BLU	Climate control unit (HVAC BUS)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.



Terminal side of male terminals

Fig. 11: Identifying Audio Unit Connector D (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT D (14P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
D2 ⁽¹⁾	RED	XM receiver (ACC)
D3	BRN ⁽²⁾	XM receiver, Navigation unit, Navigation display unit (GANET BUS SH)
D4	BRN ⁽²⁾	XM receiver (GANET AUDIO SH)
D5	RED	XM receiver (GANET AUDIO R+)
D6	BLK	XM receiver (GANET AUDIO L+)
D9	GRN	XM receiver, Navigation unit, Navigation display unit (GANET BUS+)
D10	RED	XM receiver, Navigation unit, Navigation display unit (GANET BUS -)
D13	WHT	XM receiver (GANET AUDIO R-)
D14	GRN	XM receiver (GANET AUDIO L-)

(1) Without AcuraLink

(2) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

AUDIO UNIT CONNECTOR E (16P)



Terminal side of male terminals

Fig. 12: Identifying Audio Unit Connector E (16P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

AUDIO UNIT E (16P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
E1	BRN ⁽¹⁾	Auxiliary jack assembly (AUX VIDEO IN SH)
E2	LT BLU	Auxiliary jack assembly (AUX VIDEO IN GND)
E3	BRN ⁽¹⁾	Rear controller and screen (RR NTSC SH)
E4	YEL	Rear controller and screen (SYSTEM ACC)
E6	BRN ⁽¹⁾	Rear controller and screen (RR BUS SH)
E7	PUR	Rear controller and screen (RR BUS-)
E8	PUR	Auxiliary jack assembly (AUX VIDEO IN)
E9	PNK	Rear controller and screen (RR NTSC GND)
E10	BLU	Rear controller and screen (RR NTSC)
E12	BLK	Rear controller and screen (RES AUDIO OUT R)
E13	BRN ⁽¹⁾	Rear controller and screen (RES AUDIO OUT SH)
E14	RED	Rear controller and screen (RES AUDIO OUT L)
E15	WHT	Rear controller and screen (RES AUDIO OUT GND)
E16	LT BLU	Rear controller and screen (RR BUS+)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

AUDIO UNIT CONNECTOR F (2P)



Terminal side of male terminals

Fig. 13: Identifying Audio Unit Connector F (2P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT F (2P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
F1	--	Rear controller and screen (DIG AUDIO SIG)
F2	--	Rear controller and screen (DIG AUDIO SH)

AUDIO UNIT CONNECTOR H (3P)



Terminal side of male terminals

Fig. 14: Identifying Audio Unit Connector H (3P) Terminals

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Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO UNIT H (3P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
H1	--	Antenna, module unit (SIG)
H2	--	Antenna module unit (SH (AM/FM))
H3	--	Antenna module unit (ANT+B)

STEREO AMPLIFIER CONNECTOR FOR INPUTS AND OUTPUTS

When replacing a stereo amplifier connector, match the wires to the cavities listed in the following tables.

With navigation

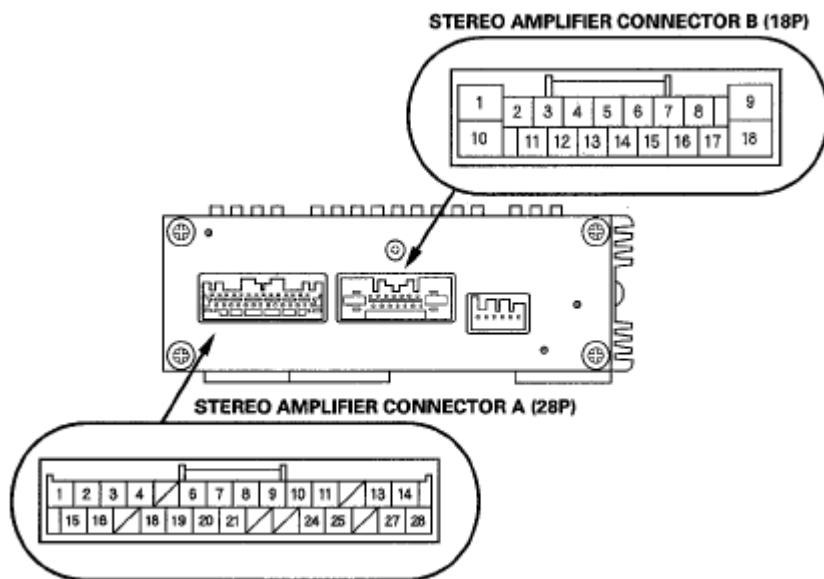


Fig. 15: Identifying Stereo Amplifier Connector Terminals - With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without navigation

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2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

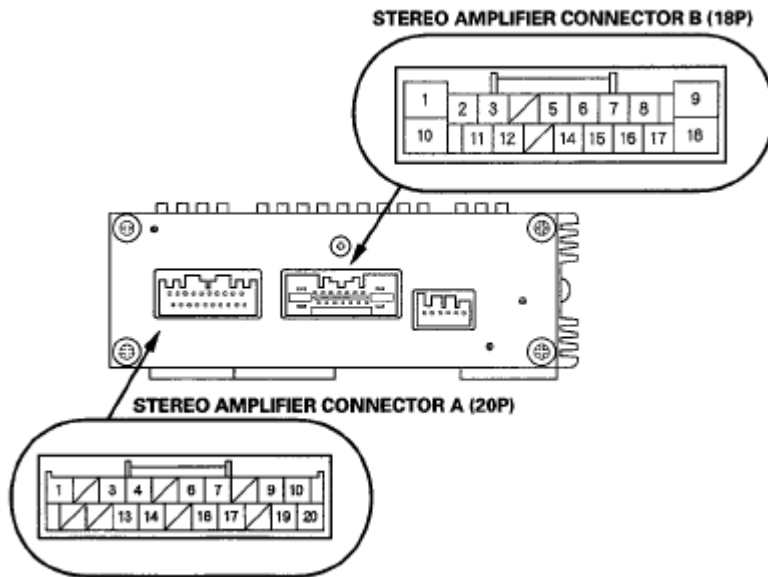


Fig. 16: Identifying Stereo Amplifier Connector Terminals - Without Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER CONNECTOR A (28P) (With navigation)



Terminal side of male terminals

Fig. 17: Identifying Stereo Amplifier Connector A (28P) Terminals - With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER A (28P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
A1	BLU	Audio unit (RS 485-)
A2	PNK	Audio unit (RS 485 GND)
A3	LT GRN	Audio unit (+B)
A4	BLU	Audio unit (CTR PRE IN+)
A6	GRIM	Audio unit (SW PRE IN+)
A8	BRN ⁽¹⁾	Navigation unit (RG SH)
A9	LT BLU	Navigation unit(RG GND)
A10	GRN	Audio unit (FL PRE IN+)
A11	BLU	Audio unit (FR PRE IN+)
A13	LT BLU	Audio unit (RL PRE IN+)
A14	BRN	Audio unit (RR PRE IN+)
A15	GRN	Audio unit (RS 485+)

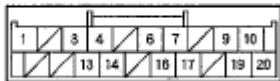
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2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

A16	BRN ⁽¹⁾	Audio unit (RS 485 SH)
A18	PNK	Audio unit (CTR PRE IN-)
A19	RED	Audio unit (SW PRE IN-)
A20	WHT	Subwoofer (SUBW SW+B)
A21	PUR	Navigation unit (RG L+)
A24	RED	Audio unit (FL PRE IN-)
A25	PNK	Audio unit (FR PRE IN-)
A27	PUR	Audio unit (RL PRE IN-)
A28	YEL	Audio unit (RR PRE IN-)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

STEREO AMPLIFIER CONNECTOR A (20P) (Without navigation)



Terminal side of male terminals

Fig. 18: Identifying Stereo Amplifier Connector A (20P) Terminals - Without Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

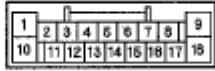
STEREO AMPLIFIER A (20P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
A1	LT GRN	Audio unit (+B)
A3	BLU	Audio unit (CTR PRE IN+)
A4	GRN	Audio unit (SW PRE IN+)
A6	GRN	Audio unit (FL PRE IN+)
A7	BLU	Audio unit (FR PRE IN+)
A9	LT BLU	Audio unit (RL PRE IN+)
A10	BRN	Audio unit (RR PRE IN+)
A13	PNK	Audio unit (CTR PRE IN-)
A14	RED	Audio unit (SW PRE IN-)
A16	RED	Audio unit (FL PRE IN-)
A17	PNK	Audio unit (FR PRE IN-)
A19	PUR	Audio unit (RL PRE IN-)
A20	YEL	Audio unit (RR PRE IN-)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

STEREO AMPLIFIER CONNECTOR B (18P) (With navigation)



Terminal side of male terminals

Fig. 19: Identifying Stereo Amplifier Connector B (18P) Terminals - With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER B (18P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
B1	PNK	Subwoofer (WOOFER PRE-)
B2	PNK	Front center speaker (CTR SPKR-)
B3	ORN	Right rear door speaker (RR R SPKR-)
B4	PUR	Left rear door speaker (RR L SPKR-)
B5	BLK	Right satellite speaker (R D-PLR SPKR-)
B6	BRN	Front passenger's door speaker, Right tweeter (FR R SPKR-)
B7	GRN	Driver's door speaker, Left tweeter (FR L DR SPKR-)
B8	GRY	Left satellite speaker (LD-PLR SPKR-)
B9	BLK	Ground (G504)
B10	BLU	Subwoofer (WOOFER PRE+)
B11	BLK	Front center speaker (CTR SPKR+)
B12	BLU	Right rear door speaker (RR R SPKR+)
B13	PNK	Left rear door speaker (RR L SPKR+)
B14	RED	Right satellite speaker (R D-PLR SPKR+)
B15	RED	Front passenger's door speaker, Right tweeter (FR R SPKR+)
B16	WHT	Driver's door speaker, Left tweeter (FR L DR SPKR+)
B17	BLU	Left satellite speaker (L D-PLR SPKR+)
B18	PUR	Stereo amplifier (+B)

STEREO AMPLIFIER CONNECTOR B (18P) (Without navigation)



Terminal side of male terminals

Fig. 20: Identifying Stereo Amplifier Connector B (18P) Terminals - Without Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEREO AMPLIFIER B (18P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
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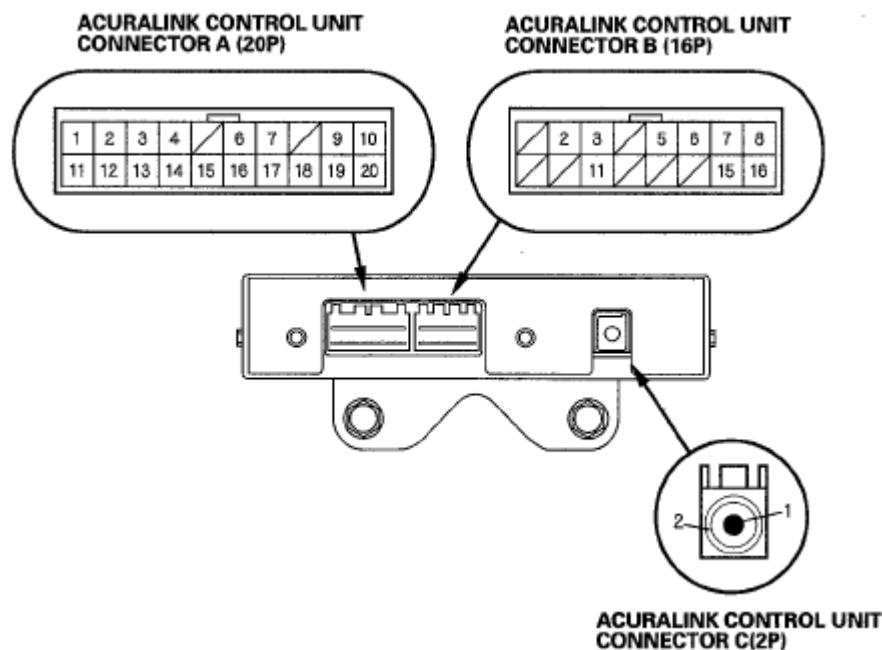
2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

B1	PUR	Left rear door speaker (RR L SPKR-)
B2	GRN	Driver's door speaker, Left tweeter (FR L DR SPKR-)
B3	GRY	Subwoofer (L D-PLR SPKR-)
B5	ORN	Right rear door speaker (RR R SPKR-)
B6	BRN	Front passenger's door speaker, Right tweeter (FR R SPKR-)
B7	PNK	Front center speaker (CTR SPKR-)
B8	BLK	Subwoofer (R D-PLR SPKR-)
B9	BLK	Ground (G504)
B10	PNK	Left rear door speaker (RR L SPKR+)
B11	WHT	Driver's door speaker, Left tweeter (FR L DR SPKR+)
B12	BLU	Subwoofer (L D-PLR SPKR+)
B14	BLU	Right rear door speaker (RR R SPKR+)
B15	RED	Front passenger's door speaker, Right tweeter (FR R SPKR+)
B16	BLK	Front center speaker (CTR SPKR+)
B17	RED	Subwoofer (R D-PLR SPKR+)
B18	PUR	Stereo amplifier (+B)

ACURALINK CONTROL UNIT (XM RECEIVER) CONNECTOR FOR INPUTS AND OUTPUTS (WITH ACURALINK)

When replacing an AcuraLink Control Unit (XM receiver) connector, match the wires to the cavities listed in the following tables.

With AcuraLink

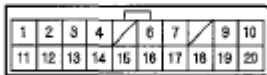


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2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

Fig. 21: Identifying Acuralink Control Unit (XM Receiver) Connector Terminals - With Acuralink
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ACURALINK CONTROL UNIT CONNECTOR A (20P) (With navigation)



Terminal side of male terminals

Fig. 22: Identifying Acuralink Control Unit Connector A (20P) Terminals - With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ACURALINK CONTROL UNIT A (20P) CONNECTOR TERMINAL REFERENCE

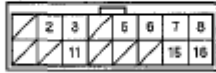
Cavity	Wire	Connects to
A1	WHT	XM receiver (+B)
A2	PUR	XM receiver (ACC)
A3	WHT	Navigation unit (NV RX+)
A4	GRN	Navigation unit (NV TX+)
A6	WHT	Gauge control module (CAN HI)
A7	GRN	Audio unit, Navigation unit, Navigation display unit (GANET BUS+)
A9	BLK	Audio unit (GANET AUDIO L+)
A10	RED	Audio unit (GANET AUDIO R+)
A11	BLK	Ground (G606)
A12	YEL	XM receiver (IG1)
A13	RED	Navigation unit (NV RX-)
A14	BLK	Navigation unit (NV TX-)
A15	BRN ⁽¹⁾	Navigation unit (NV SH)
A16	RED	Gauge control module (CAN LO)
A17	RED	Audio unit, Navigation unit, Navigation display unit (GANET BUS-)
A18	BRN ⁽¹⁾	Audio unit, Navigation unit, Navigation display unit (GANET BUS SH)
A19	GRN	Audio unit (GANET AUDIO L-)
A20	WHT	Audio unit (GANET AUDIO R+)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

ACURALINK CONTROL UNIT CONNECTOR B (16P) (With navigation)



Terminal side of male terminals

Fig. 23: Identifying Acuralink Control Unit Connector B (16P) Terminals - With Navigation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ACURALINK CONTROL UNIT B (16P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
B2	BRN ⁽¹⁾	Audio unit, HandsFreeLink control unit (LINE OUT SH)
B3	LT BLU	Audio unit, HandsFreeLink control unit (LINE OUT+)
B5	LT GRN	Audio unit, HandsFreeLink control unit, Multiplex integrated control unit (B-CAN)
B6	BRN ⁽¹⁾	HandsFreeLink control unit, Navigation unit (HFT COMM SH)
B7	GRN	HandsFreeLink control unit, Navigation unit (HFT COMM 3)
B8	RED	HandsfreeLink control unit, Navigation unit (HFT COMM 1)
B11	PUR	Audio unit, HandsFreeLink control unit (LINE OUT-)
B15	BLK	HandsFreeLink control unit. Navigation unit (HFT COMM 4)
B16	WHT	HandsFreeLink control unit, Navigation unit (HFT COMM 2)
(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.		

XM RECEIVER CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT ACURALINK)

When replacing an XM receiver connector, match the wires to the cavities listed in the following tables.

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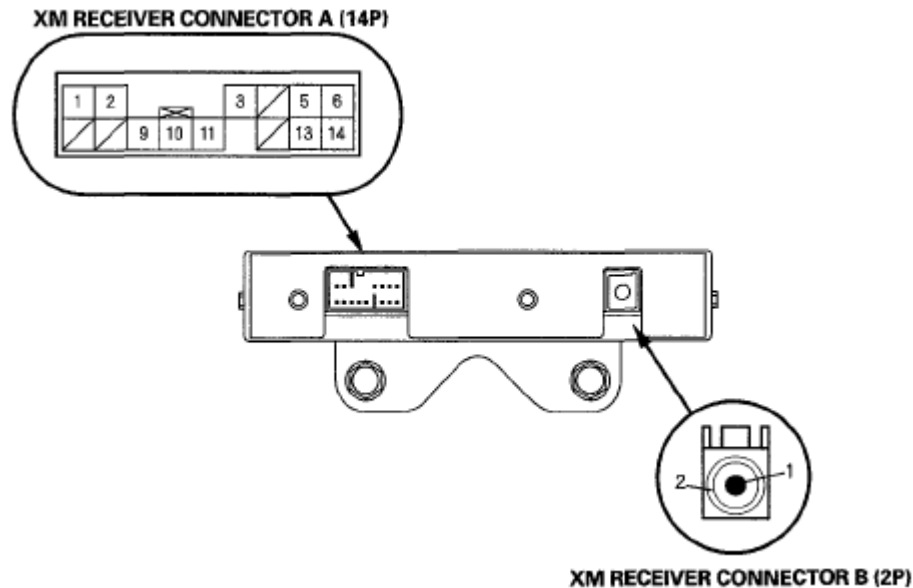


Fig. 24: Identifying XM Receiver Connector Terminals - Without Acuralink
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM RECEIVER CONNECTOR A (14P) (without AcuraLink)

XM RECEIVER A (14P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
A1	WHT	XM receiver (+B)
A2	RED	XM receiver (ACC)
A3	BRN ⁽¹⁾	Audio unit, Navigation unit, Navigation display unit (GANET BUS SH)
A5	RED	Audio unit (GANET AUDIO R+)
A6	BLK	Audio unit (GANET AUDIO L+)
A9	GRN	Audio unit, Navigation unit, Navigation display unit (GANET BUS+)
A10	RED	Audio unit, Navigation unit, Navigation display unit (GANET BUS-)
A11	BLK	Ground (G606)
A13	WHT	Audio unit (GANET AUDIO R-)
A14	GRN	Audio unit (GANET AUDIO L-)
⁽¹⁾ The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.		

INTERFACE DIAL CONNECTOR FOR INPUTS AND OUTPUTS

When replacing an interface dial connector, match the wires to the cavities listed in the following table.

2008 Acura MDX

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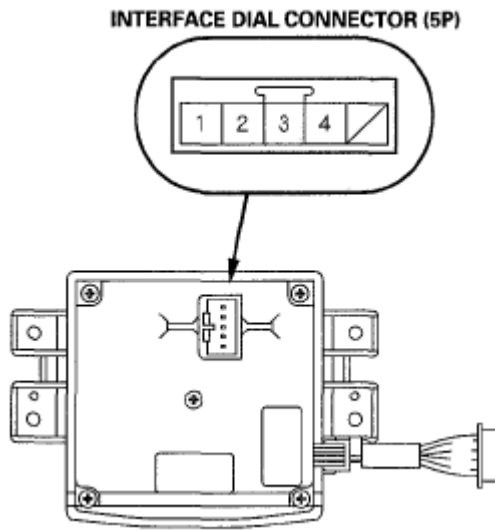


Fig. 25: Identifying Interface Dial Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERFACE DIAL CONNECTOR (5P)

INTERFACE DIAL (5P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
1	WHT	Navigation unit (JOG BUS)
2	BRN ⁽¹⁾	Navigation unit (JOG SH)
3	BLK	Ground (G506)
4	PUR	ACC (interface dial power supply)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

AUXILIARY JACK ASSEMBLY CONNECTOR FOR INPUTS AND OUTPUTS (WITHOUT REAR ENTERTAINMENT)

When replacing an auxiliary jack assembly connector, match the wires to the cavities listed in the following table.

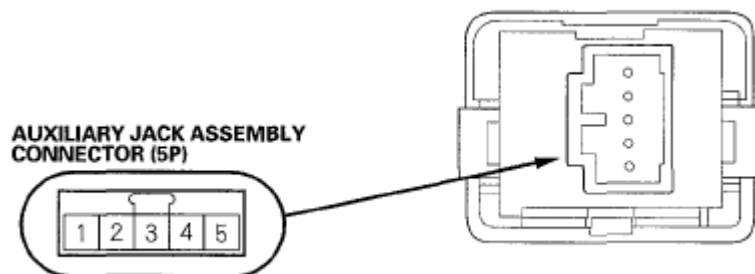


Fig. 26: Identifying Auxiliary Jack Assembly Connector Terminals - Without Rear Entertainment
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY JACK ASSEMBLY CONNECTOR (5P) (Without rear entertainment)

AUXILIARY JACK ASSEMBLY (5P) CONNECTOR TERMINAL REFERENCE

Cavity	Wire	Connects to
1	LT BLU	Audio unit (AUX DET)
2	GRY ⁽¹⁾	Audio unit (SH AUX)
3	RED	Audio unit (AUX SIG GND)
4	WHT	Audio unit (AUX LCH)
5	BLK	Audio unit (AUX RCH)
(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.		

CIRCUIT DIAGRAM

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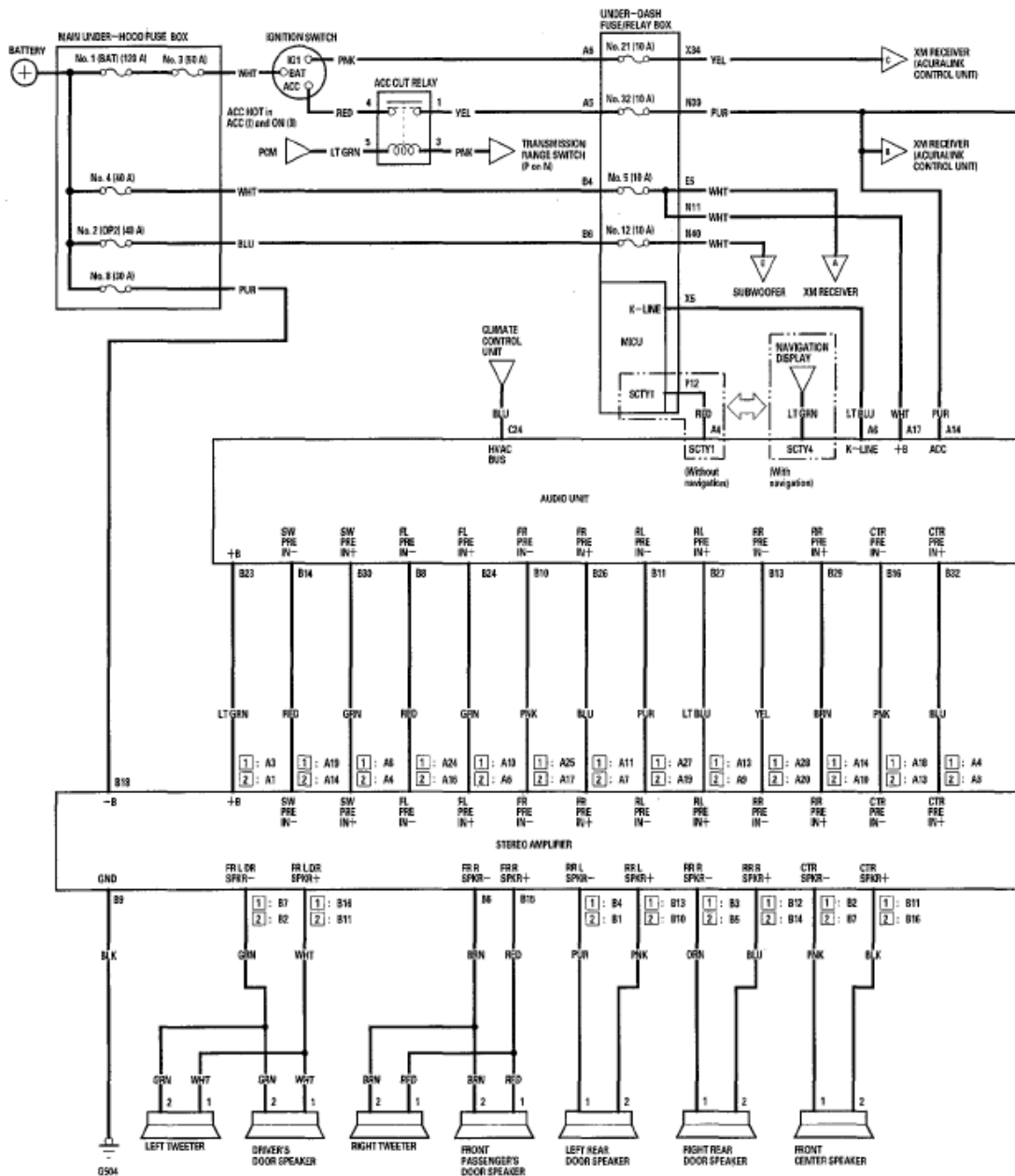
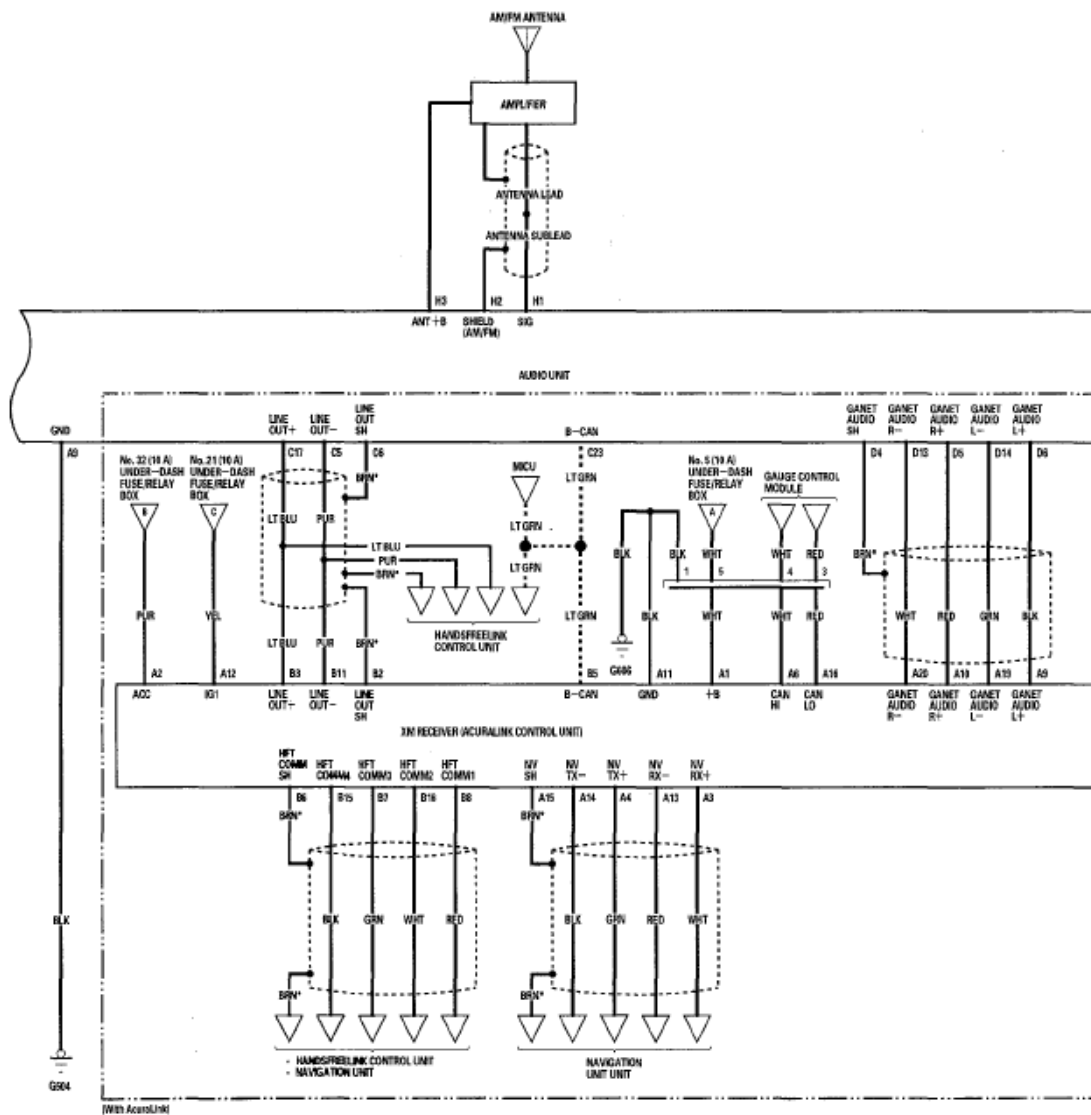


Fig. 27: Audio System Circuit Diagram (1 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX





* : The shielded wires have a heat-shrink tube
insulating the outside of the wires.
The color of the insulating tube,
typically black or dark gray,
may not match the color of the wire
labeled on the schematics.
- - - - - : CAN line
- - - - - : Shielding

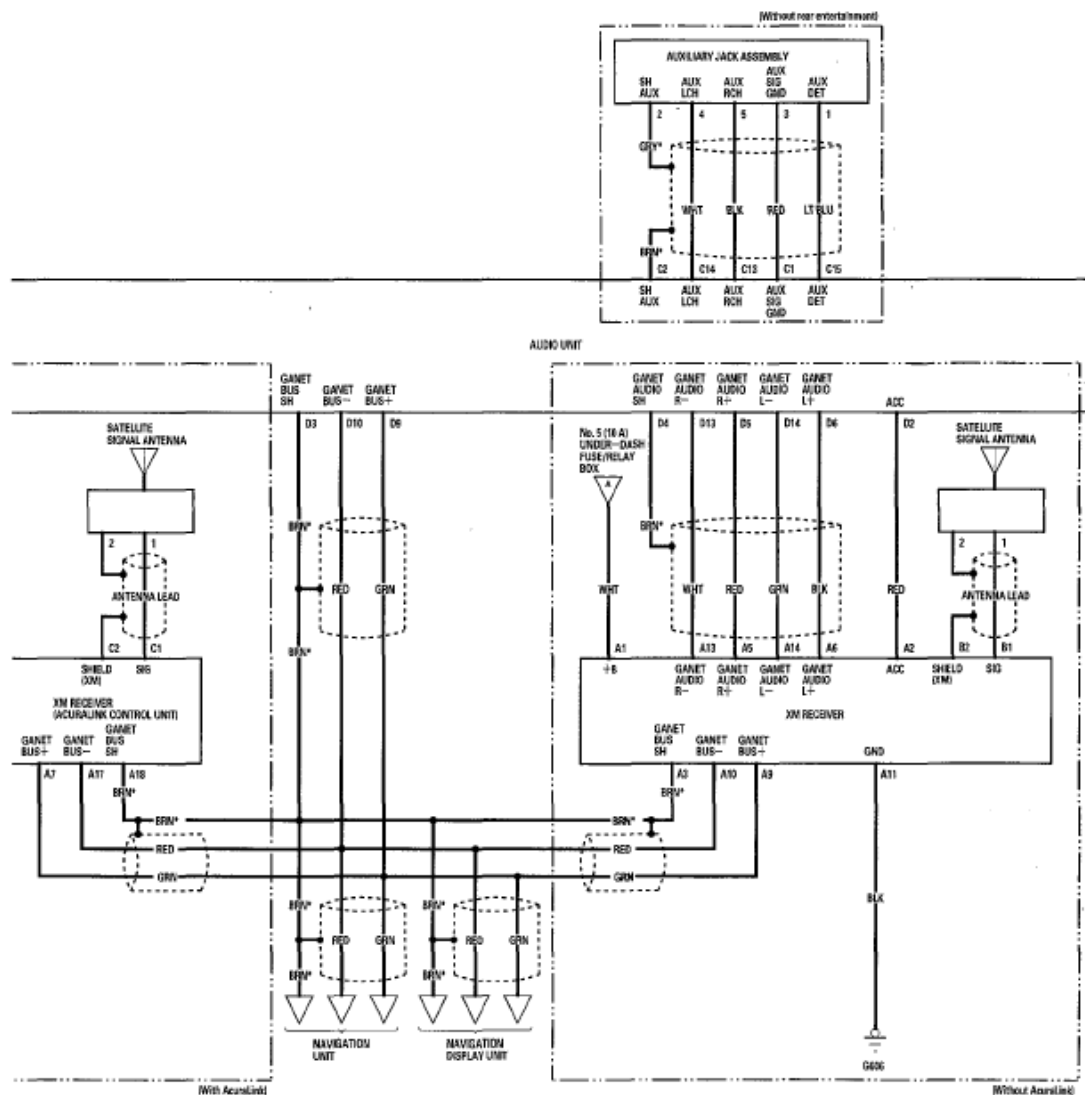


Fig. 30: Audio System Circuit Diagram (4 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

The audio system has a self-diagnostic function. To run the self-diagnostic function, do the following:

HOW TO CHECK FOR AUDIO SYSTEM CONDITION

1. Turn the ignition switch to ON (II).

2. Turn off the audio unit.
3. Push and hold the No. 1 and No. 6 buttons. While holding the buttons, push the VOL PUSH PWR knob to ON. Release the buttons and the self-diagnostic function begins.

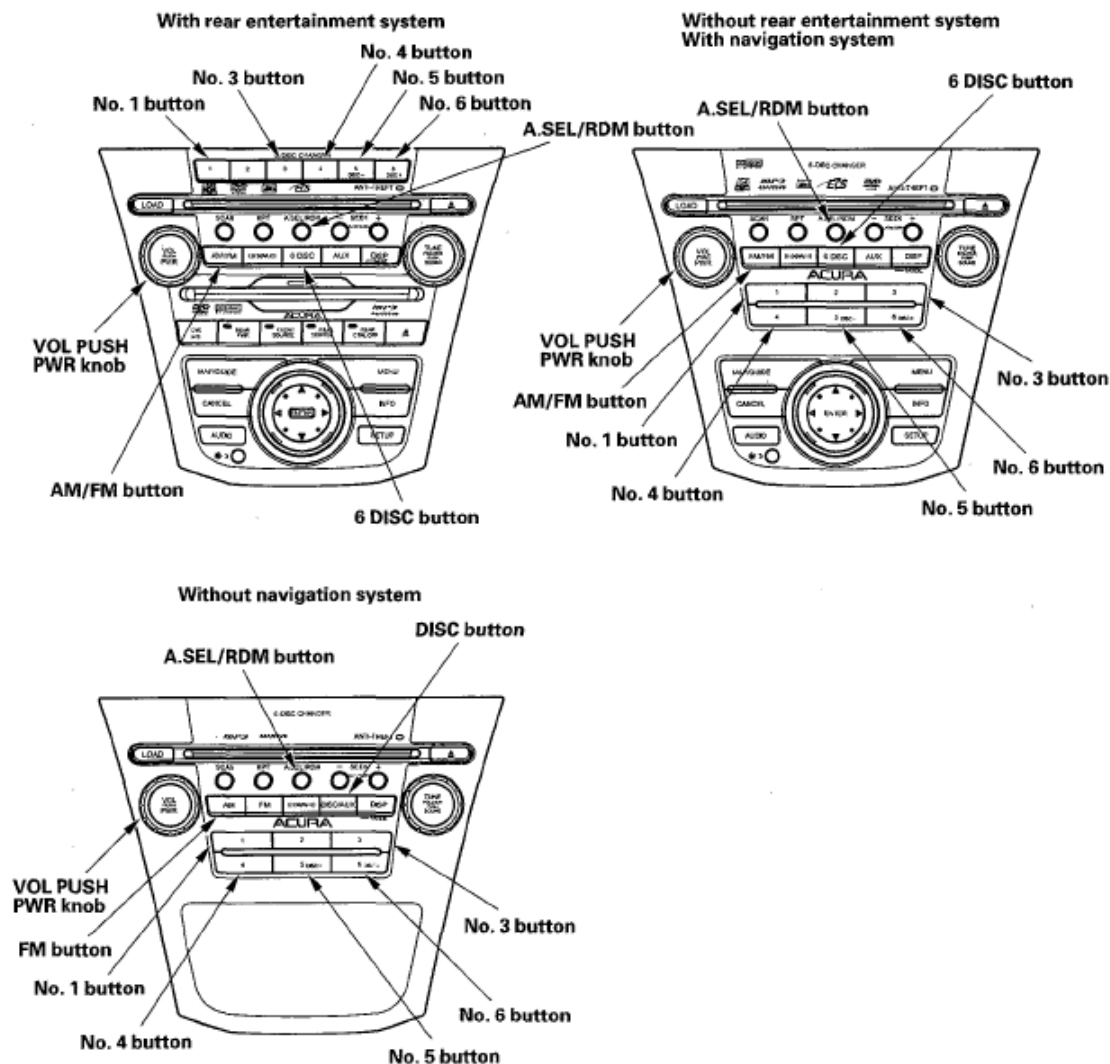


Fig. 31: Identifying Audio System Buttons

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. By pressing a preset button, the input triggers the diagnostic mode that is assigned to that preset switch.

"No. 3" button

Entire LCD lighting/light-out mode: Turns on/off the entire LCD to show the presence or absence of an LCD segment failure.

"No. 4" button

Duty (for the Illumination dim) indication mode: Indicates the duty for the Illumination dim.

"No. 5" button

Vehicle speed pulse indication mode: Indicates the vehicle speed pulse.

"6 Disc" or "DVD" button (Push and hold 5 sec.)

DRAM residual quantity indication mode: Indicates the DRAM residual quantity.

"AM" or "FM" button (Push and hold 5 sec.)

Reception level check mode: Indicates the reception level. When entering the reception level check mode, the AM/FM or FM button is used to change the S-METER, OFFSET, MP and USN (A/I).

"A.SEL/ROM" button

Bus line check mode: The audio communication line is checked between the DSP, EEPROM, and TUNER.

HOW TO OBTAIN THE AUDIO UNIT SERIAL NUMBER

NOTE: **This procedure can only be done when the power has been disconnected from the audio unit, and the audio unit displays CODE.**

With the audio unit switched off, push and hold the preset buttons No. 1, No. 6 and the VOL PUSH PWR knob.

The audio unit will display the letter and the eight digits of the serial number (example 12345678). Use all eight digits as the serial number when using the iN (interactive network) to get the 5 digit anti-theft code.

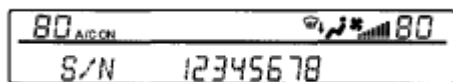


Fig. 32: Audio Unit Screen Display - Serial Number
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DISPLAY SPECIFICATIONS

NOTE: **Any other diagnostic screens shown are for audio manufacturer's use only.**

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

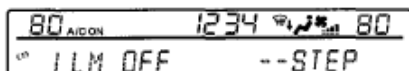
Entry LCD Lighting (No. 3 button)



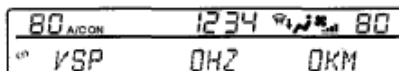
Entry LCD Light-outs (No. 3 button)



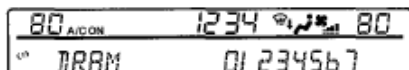
Duty (for the illumination) indication (No. 4 button)



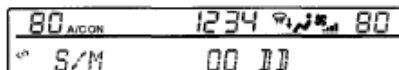
Vehicle speed pulse indication (No. 5 button)



DRAM residual quantity indication (6 DISC or DVD button)

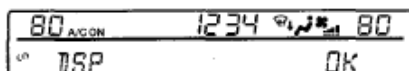


Reception level indication (AM/FM or FM button)

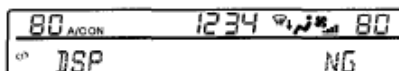


Bus line indication (A.SEL/ROM button)

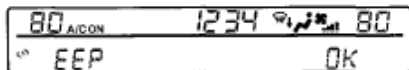
DSP communication OK



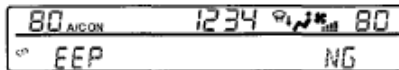
DSP communication NG



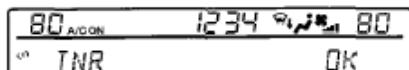
EEPROM communication OK



EEPROM communication NG



TUNNER communication OK



TUNNER communication NG

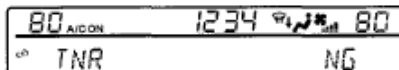


Fig. 33: Audio Unit Screen - Display Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SPEAKER CHECK MODE

1. Turn the ignition switch to ON (II).
2. Push and hold the No. 1 and No. 3 buttons. While holding the buttons, push the VOL PUSH PWR knob to ON. Release the buttons and the speaker check mode begins. A tone or low-frequency hum should sound from one speaker.
3. Each time you press the SEEK or CH button, the speaker outputs a beep sound in the listed order.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

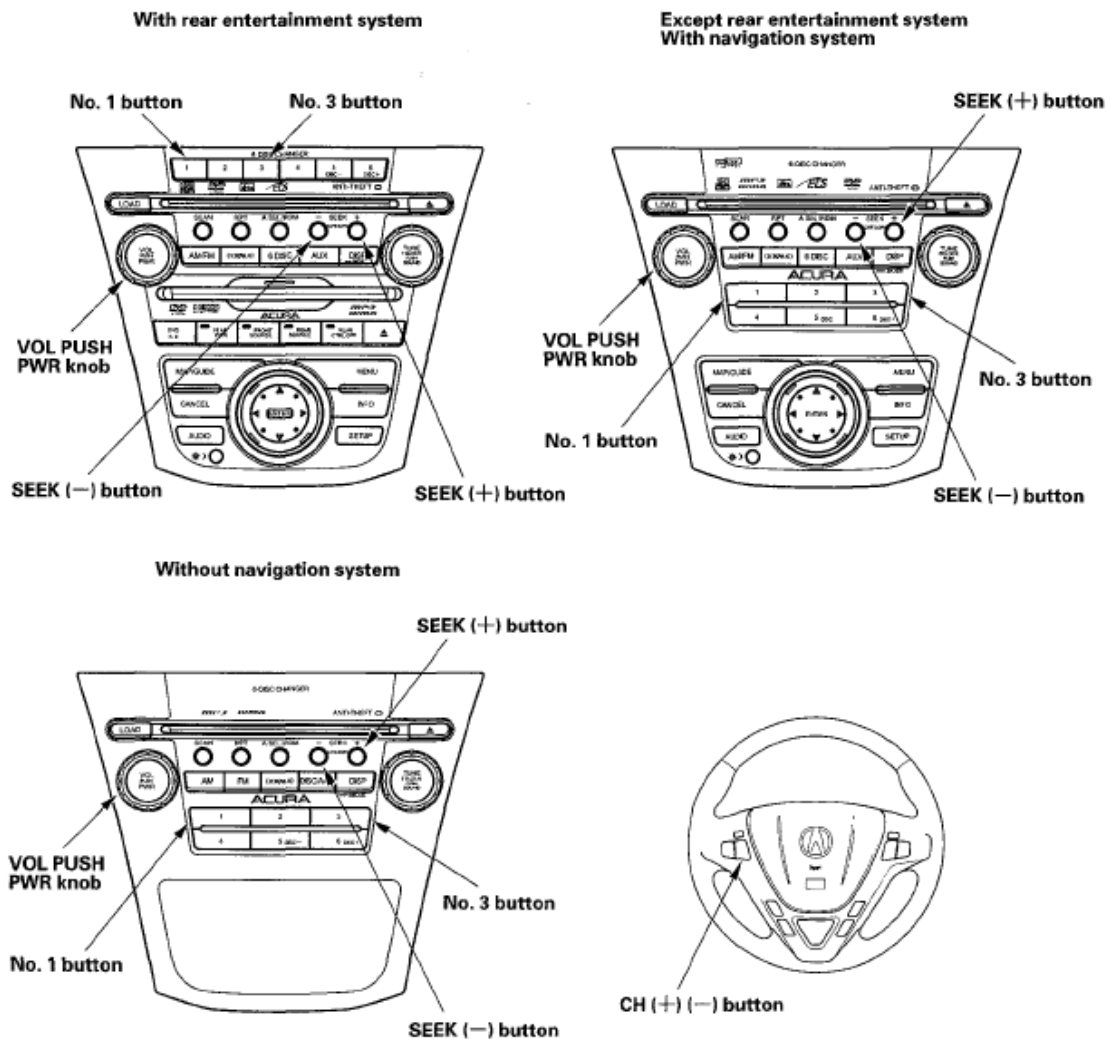


Fig. 34: Identifying Audio System Buttons

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Display Specifications

(+) is pressed: ①→②→③→④→⑤→⑥→⑦→⑧→⑨
 (-) is pressed: ①→⑨→⑧→⑦→⑥→⑤→④→③→②

	Speaker	Displayed Segments	Remarks
①	Driver's door speaker and left tweeter	LEFT FRONT	
②	Center speaker	CENTER	
③	Front Passenger's door speaker and left tweeter	RIGHT FRONT	
④	Right rear door speaker	RIGHT REAR	
⑤	Right satellite speaker	RIGHT SURROUND	
⑥	Subwoofer	SUBWOOFER	
⑦	Left rear door speaker	LEFT SURROUND	
⑧	Left satellite speaker	LEFT REAR	
⑨	All Speakers	ALL SPEAKERS	

Fig. 35: Audio Unit Screen - Display Specifications

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Any other diagnostic screens shown are for the audio manufactures purpose only.

4. The speaker check mode ends when you turn the audio unit off, or turn the ignition switch to LOCK (0).

ERROR CODES

The audio system displays error codes when a problem is detected with the CD disc changer, the audio disc, the XM radio, or the anti-theft code.

CD Error Codes

CD ERROR CODES CHART

Error Code Displayed	Possible Cause	Solution
DISC READ	Cannot read disc.	Eject the disc and try another one, or the disc is installed up side down.
DISC ERROR	There is a problem with the disc player. A common problem is disc labels coming off the disc while in the player.	Try to eject the disc and try another one. If there is still a problem, replace the navigation unit or audio unit.
HEAT ERROR	Disc player is hot. This can happen if the vehicle is parked out in the hot sun all day.	Park the vehicle in a cooler place for a while and try the disc player again. If the error code is still present, try another disc. If the error code is still present, replace the navigation unit or audio unit.
Focus Error	Possibly DVD inserted in unit, or CD installed up side down.	Eject CD and try a known-good CD.
File Error	Audio unit cannot read the files on the CD or CD-R.	• Verify that CD/CD-R file names end in "CDA" or "WMA." • Verify that CD-R discs with compressed music formats end in "MP3" or "WMA." • Other file formats like l-tunes or "Ogg" are not recognized. • WMA files may have (DRM) copy protection and cannot be read.
Mech Error	• CD label jammed in the mechanism. • CD eject mechanism or motor is inoperative. • CD spindle motor won't spin up the CD.	Press the EJECT button and hold it for 5 seconds. If the CD does not eject, try again. If the CD still won't eject, replace the unit.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

XM Error Codes

XM ERROR CODES CHART

Error Code Displayed	Possible Cause	Solution
LOADING	XM radio is acquiring audio or program information.	Wait until the radio receives the information.
OFF AIR	XM channel not in service.	Try another XM channel.
NO SIGNAL	Loss of signal.	Both terrestrial and satellite antennas have lost signal. Park the vehicle outside with a clear view of the southern horizon.
UPDATING	XM radio is receiving information update from the network.	This message will disappear once the update finishes.
CHECK ANTENNA	XM antenna error.	Repair open or short in the satellite antenna. Substitute the XM antenna with a known-good one, and recheck. If the error is gone, replace the original XM antenna. If the error is still present, replace the antenna lead.
ANTENNA ERROR		
--	No signal from XM.	Check a known-good vehicle with XM radio. If the known-good vehicle has the same symptoms, contact XM satellite radio at (800) 852-9696.

Audio Unit Error Codes

AUDIO UNIT ERROR CODES CHART

Error Code Displayed	Possible Cause	Solution
CODE ERROR E	Anti-theft code mismatch (1st try).	Enter the correct anti-theft code.
CODE ERROR 1	Anti-theft code mismatch (10th try).	Remove fuse No. 5 (10 A) in the under-dash fuse/ relay box, then reinsert it. You will have 10 more tries to enter the correct anti-theft code.

SYMPTOM TROUBLESHOOTING

POOR AM OR FM RADIO RECEPTION OR INTERFERENCE

NOTE:

- Check the radio reception in an open area. Poor reception/interference can be caused by any of these conditions.
- The radio station is far away.
- A tall buildings, mountains, or a high-voltage power lines are nearby.
- Check the connectors for poor connections or loose terminals.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

- **After market window tint.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Do the seek stop test (see **SEEK STOP TEST**).and the reception level indication in the Self-diagnostic Function (See **SELF-DIAGNOSTIC FUNCTION**).

Is the test vehicle within 10 % of the known-good vehicle?

YES - Multipath interference or weak station. Operation is normal.

NO - Go to step 3.

3. Check if the radio reception/interference is the same in several locations.

Is the reception/interference the same?

YES - Go to step 4.

NO - Multipath interference or weak station. Operation is normal.

4. Check the reception/interference while the engine is running.

Is there noise (static or whine) only with the engine running?

YES - Check the antenna and radio grounds. If OK, check the charging system and the ignition system.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Remove the tailgate spoiler trim (see **TAILGATE SPOILER TRIM REPLACEMENT**).
7. Touch one tester probe to the antenna element 1P connector No. 1 terminal, and the other tester probe at the antenna element to check for continuity.

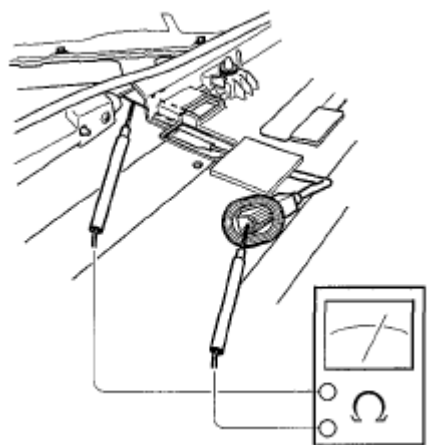


Fig. 36: Identifying Continuity Between Antenna Element 1P Connector Terminal 1 And Antenna Element

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - Replace rear spoiler trim.

8. Go into the self-diagnostic mode and use the Tuner communication check mode (see **SELF-DIAGNOSTIC FUNCTION**).

Is the tuner communication OK?

YES - Go to step 9.

NO - Audio unit is faulty, replace the audio unit.

9. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). Check that the AM/FM antenna lead and sub-lead are properly connected.

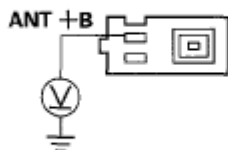
Are they connected properly?

YES - Go to step 10.

NO - Reconnect the connector, and recheck the function.

10. Disconnect the AM/FM antenna amplifier 3P connector.
11. Turn the ignition switch to ON (II).
12. Turn on the audio unit and select AM or FM.
13. Measure the voltage between AM/FM antenna amplifier 3P connector No. 3 terminal and body ground.

AM/FM ANTENNA AMPLIFIER 3P CONNECTOR



Terminal side of female terminals

Fig. 37: Identifying Voltage Between AM/FM Antenna Amplifier 3P Connector Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

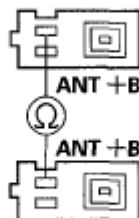
Is there battery voltage?

YES - Go to step 20.

NO - Go to step 15.

14. Turn the ignition switch to LOCK (0).
15. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
16. Disconnect audio unit connector H (3P).
17. Check for continuity between the audio unit connector H (3P) No. 3 terminal and AM/FM antenna amplifier 3P connector No. 3 terminal.

AUDIO UNIT CONNECTOR H (3P)
Terminal side of female terminals



AM/FM ANTENNA AMPLIFIER 3P CONNECTOR
Terminal side of female terminals

Fig. 38: Identifying Continuity Between Audio Unit H (3P) And AM/FM Antenna Amplifier 3P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

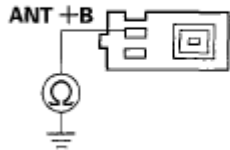
YES - Go to step 18.

NO - Repair open in the wire between audio unit and the AM/FM antenna amplifier. Also check the

antenna lead/sublead connector.

18. Check for continuity between the audio unit connector H (3P) No. 3 terminal and body ground.

AUDIO UNIT CONNECTOR H (3P)



Terminal side of female terminals

Fig. 39: Identifying Continuity Between Audio Unit Connector H (3P) Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

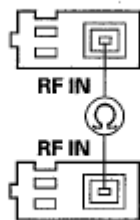
Is there continuity?

YES - Repair short to body ground in the wire between audio unit and the AM/FM antenna amplifier.

NO - Audio unit is faulty, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

19. Turn the ignition switch to LOCK (0).
20. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
21. Disconnect audio unit connector H (3P).
22. Check for continuity between the audio unit connector H (3P) No. 1 terminal and AM/FM antenna amplifier 3P connector No. 1 terminal.

AUDIO UNIT CONNECTOR H (3P)
Terminal side of female terminals



AM/FM ANTENNA AMPLIFIER 3P CONNECTOR
Terminal side of female terminals

Fig. 40: Identifying Continuity Between Audio Unit H (3P) And AM/FM Antenna Amplifier 3P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

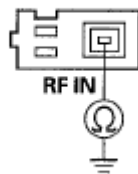
Is there continuity?

YES - Go to step 23.

NO - AM/FM antenna lead and/or sublead is faulty, replace the AM/FM antenna lead and/or sublead.

23. Check for continuity between the audio unit connector H (3P) No. 1 terminal and body ground.

AUDIO UNIT CONNECTOR H (3P)



Terminal side of female terminals

Fig. 41: Identifying Continuity Between Audio Unit Connector H (3P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

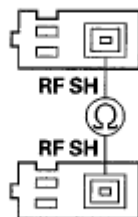
YES - AM/FM antenna lead and/or sublead is faulty, replace the AM/FM antenna lead and/or sublead.

NO - Go to step 24.

24. Check for continuity between the audio unit connector H (3P) No. 2 terminal and AM/FM antenna amplifier 3P connector No. 2 terminal.

AUDIO UNIT CONNECTOR H (3P)

Terminal side of female terminals



AM/FM ANTENNA AMPLIFIER 3P CONNECTOR

Terminal side of female terminals

Fig. 42: Identifying Continuity Between Audio Unit H (3P) And AM/FM Antenna Amplifier 3P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

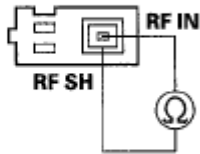
Is there continuity?

YES - Go to step 25.

NO - AM/FM antenna lead and/or sublead is faulty, replace the AM/FM antenna lead and/or sublead.

25. Check for continuity between the audio unit connector H (3P) No. 1 and No. 2 terminals.

AUDIO UNIT CONNECTOR H (3P)



Terminal side of female terminals

Fig. 43: Identifying Continuity Between Audio Unit Connector H (3P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the AM/FM antenna and recheck. If the reception is still poor, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - AM/FM antenna lead and/or sublead is faulty, replace the AM/FM antenna lead and/or sublead.

POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND)

NOTE:

- Check the vehicle battery condition first.
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Push the power switch ON to see if audio unit turns ON.

Does the audio unit display operate properly, and the audio unit sound normal?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Check the No. 5(10 A) fuse and No. 32 (10 A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 5.

NO - Replace the fuse, and recheck.

5. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). Check that the audio unit connectors are properly connected.

Is it connected properly?

YES - Go to step 6.

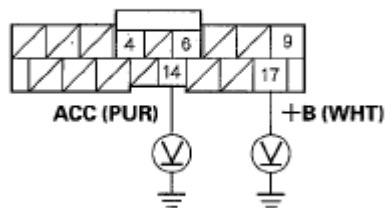
NO - Repair poor connections and reconnect the connector, and recheck the function.

6. Disconnect the audio unit connector A (17P).

NOTE: Eject all the CDs before disconnecting the audio unit and CD changer to prevent damaging the CD player's load mechanism.

7. Turn the ignition switch to ON (II).
8. Measure the voltage between No. 14 and No. 17 terminals of audio unit connector A (17P) and body ground.

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

Fig. 44: Identifying Voltage Between Audio Unit Connector A (17P) Terminals And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

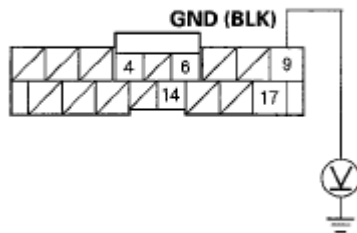
Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire(s) between the No. 5 (10 A) and No. 32(10 A) fuses in the under-dash fuse/relay box and the audio unit.

9. Reconnect the audio unit connector A (17P).
10. Measure the voltage between audio unit connector A (17P) No. 9 terminal and body ground.

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

Fig. 45: Identifying Voltage Between Audio Unit Connector A (17P) Terminal 9 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Audio unit is faulty, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Repair open in the wire between the audio unit connector A (17P) No. 9 terminal and body ground (G504) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

AUDIO UNIT POWER WILL NOT TURN OFF

NOTE:

- Check for aftermarket accessories plugged into the vehicle accessory power sockets.
- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. With the ignition switch ON (II), push the power switch OFF or turn the ignition switch to LOCK (0) to see if the audio unit turns OFF.

Does the audio unit turn OFF?

YES - Operation is normal.

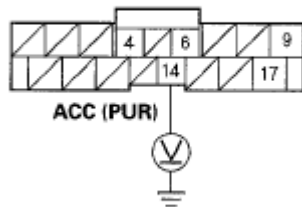
NO - Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). Disconnect the audio unit connector A (17P).

NOTE: Eject all the CDs before disconnecting the audio unit and CD changer to prevent damaging the CD player's load mechanism.

5. Measure the voltage between the No. 14 terminal of audio unit connector A (17P) and body ground.

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

Fig. 46: Identifying Voltage Between Audio Unit Connector A (17P) Terminal 14 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Check for short to power on the PUR wire.

NO - Audio unit is faulty, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)

NOTE:

- Set the fader and balance positions to the center.
- On vehicles equipped with navigation and HandsFreeLink verify the voice systems are not activated. Press each system's back button to return the audio unit to the normal operating mode.
- Check the vehicle battery condition first.
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and make sure the volume button is not set to the MIN level.

Is it at the MIN level?

YES - Raise the volume level, and recheck the function.

NO - Go to step 3.

3. On the steering wheel, check the navigation talk command, and/or the HandsFreeLink talk command functions.

Are the navigation talk command and/or the HFL talk command functions set?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

YES - Cancel the navigation talk command by pressing the navigation BACK button, and for the HFL talk command, press the HFL BACK button, then recheck the function.

NO - Go to step 4.

4. Do the speaker(s) check mode with the self-diagnostic function (see **SPEAKER CHECK MODE**).

Did all speakers produce a tone?

YES - Go to step 11.

NO - Go to step 5.

5. Check the subwoofer for tone.

Did the subwoofer make a tone?

YES - Go to step 6.

NO - Go to step 29.

6. Turn the ignition switch to LOCK (0).
7. Check the faulty speaker(s) for damage.

Is there any damage?

YES - Replace the speaker and recheck.

NO - Go to step 8.

8. Remove the faulty speaker(s) that has no sound (see **SPEAKER TEST/REPLACEMENT**), and disconnect its connector.
9. Check the speaker(s) connector for a loose or poor connection.

Reconnect the speaker connector, and recheck the symptom; is the condition still present?

YES - Go to step 10.

NO - Intermittent failure. Operation is normal.

10. Test the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

Is the speaker OK?

YES - Go to step 11.

NO - Replace the speaker(s).

11. Do the audio unit self-diagnostic function DSP unit communication check (see **SELF-DIAGNOSTIC FUNCTION**).

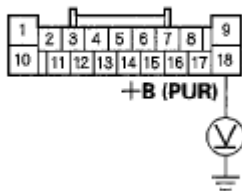
Is the DSP communication OK?

YES - Go to step 12.

NO - Audio unit is faulty, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

12. Disconnect stereo amplifier connector B (18P).
13. Turn the ignition switch to ON (II).
14. Measure the voltage between stereo amplifier connector B (18P) No. 18 terminal and body ground.

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 47: Identifying Voltage Between Stereo Amplifier Connector B (18P) Terminal 18 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 15.

NO - Repair open in the wire between the No. 8 (30 A) fuse in the under-dash fuse/relay box and stereo amplifier connector B (18P) No. 18 terminal.

15. Disconnect stereo amplifier connector A (28P).
16. Measure the voltage between stereo amplifier connector A (28P) No. 3 terminal and body ground.

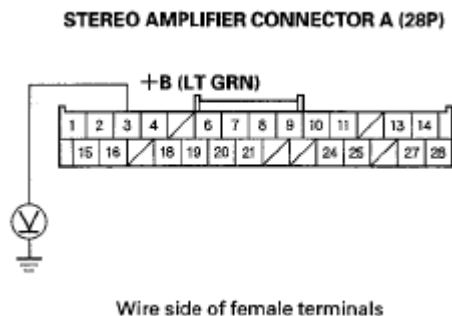


Fig. 48: Identifying Voltage Between Stereo Amplifier Connector A (28P) Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 17.

NO - Repair open in the wire between the stereo amplifier connector A (28P) No. 3 terminal and audio unit connector B (32P) No. 23 terminal.

17. Reconnect the stereo amplifier connector B (18P).
18. Measure the voltage between stereo amplifier connector B (18P) No. 9 terminal and body ground.

STEREO AMPLIFIER CONNECTOR B (18P)

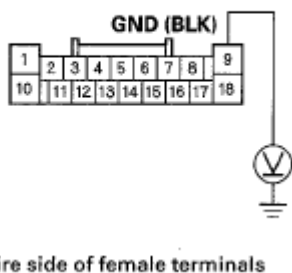


Fig. 49: Identifying Voltage Between Stereo Amplifier Connector B (18P) Terminal 9 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Less than 0.1 V?

YES - Go to step 19.

NO - Repair open to the body ground in the wire between the stereo amplifier connector B (18P) No. 9 terminal and body ground (G504) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

19. Disconnect stereo amplifier connector B (18P) and speaker connector.

2008 Acura MDX

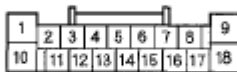
2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

20. Check for continuity between body ground and stereo amplifier connector B (18P) according to the table.

CONNECTOR TERMINAL REFERENCE

Speaker	Stereo amplifier connector	Wire color
Front center speaker	B11 (+)	BLK
	B2 (-)	PNK
Driver's door speaker, Left tweeter	B16 (+)	WHT
	B7 (-)	GRN
Front passenger's door speaker, Right tweeter	B15 (+)	RED
	B6 (-)	BRN
Left rear door speaker	B13 (+)	PNK
	B4 (-)	PUR
Right rear door speaker	B12 (+)	BLU
	B3 (-)	ORN
Left satellite speaker	B17 (+)	BLU
	B8 (-)	GRY
Right satellite speaker	B14 (+)	RED
	B5 (-)	BLK
Subwoofer	B10 (+)	BLU
	B1 (-)	PNK

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 50: Identifying Stereo Amplifier Connector B (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire(s) between the stereo amplifier and the speaker(s).

NO - Go to step 21.

21. Measure the resistance between stereo amplifier connector B (18P) according to the table.

CONNECTOR TERMINAL REFERENCE

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2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

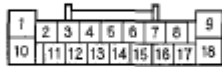
Speaker	Stereo amplifier connector	Wire color
Front center speaker	B11 (+)	BLK
	B2 (-)	PNK
Driver's door speaker, Left tweeter	B16 (+)	WHT
	B7 (-)	GRN
Front passenger's door speaker, Right tweeter	B15 (+)	RED
	B6 (-)	BRN
Left rear door speaker	B13 (+)	PNK
	B4 (-)	PUR
Right rear door speaker	B12 (+)	BLU
	B3 (-)	ORN
Left satellite speaker	B17 (+)	BLU
	B8 (-)	GRY
Right satellite speaker	B14 (+)	RED
	B5 (-)	BLK
Subwoofer	B10 (+)	BLU
	B1 (-)	PNK

Resistance**Front center speaker: 4 ohms****Driver's door speaker, Left tweeter: 2 ohms****Front passenger's door speaker, Right tweeter: 2 ohms****Left rear door speaker: 2 ohms****Right rear door speaker: 2 ohms****Left satellite speaker: 4 ohms****Right satellite speaker: 4 ohms****Subwoofer: 2 ohms**

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 51: Identifying Stereo Amplifier Connector B (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance the same as indicated?

YES - Go to step 22.

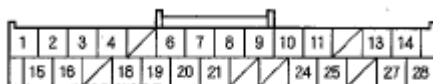
NO - Repair open in the wire between the stereo amplifier and the speaker(s).

22. Disconnect audio unit connector B (32P).
23. Check for continuity between the following terminals of the stereo amplifier connector A (28P) and audio unit connector B (32P).

CONNECTOR TERMINAL REFERENCE

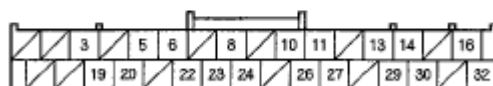
Stereo amplifier connector	Audio unit connector	Wire color
A1	B6	BLU
A2	B20	PNK
A15	B5	GRN

STEREO AMPLIFIER CONNECTOR A (28P)



Wire side of female terminals

AUDIO UNIT CONNECTOR B (32P)



Wire side of female terminals

Fig. 52: Identifying Stereo Amplifier Connector A (28P) And Audio Unit Connector B (32P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

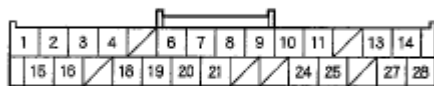
NO - Repair open in the wire between the stereo amplifier and audio unit.

24. Check for continuity between the terminals of stereo amplifier connector A (28P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminal
A2	A1, A15
A16	A1, A15

STEREO AMPLIFIER CONNECTOR A (28P)



Wire side of female terminals

Fig. 53: Identifying Stereo Amplifier Connector A (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between audio unit and stereo amplifier (replace appropriate shield harness).

NO - Go to step 25.

25. Check for continuity between body ground and stereo amplifier connector A (28P) terminal No. 1, 2, and 15 individually.

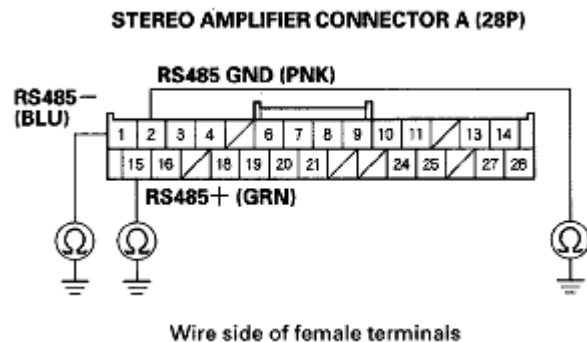


Fig. 54: Identifying Continuity Between Body Ground And Stereo Amplifier Connector A (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between stereo amplifier and audio unit (replace the appropriate shielded harness).

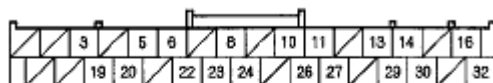
NO - Go to step 26.

26. Check for continuity between audio unit connector B (32P) and stereo amplifier connector A (28P) according to the table.

CONNECTOR TERMINAL REFERENCE

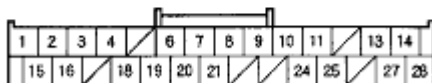
Audio unit connector	Stereo amplifier connector	Wire color
B32	A4	BLU
B16	A18	PNK
B24	A10	GRN
B8	A24	RED
B26	A11	BLU
B10	A25	PNK
B27	A13	LT BLU
B11	A27	PUR
B29	A14	BRN
B13	A28	YEL
B14	A19	RED
B30	A6	GRN

AUDIO UNIT CONNECTOR B (32P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR A (28P)



Wire side of female terminals

Fig. 55: Identifying Audio Unit Connector B (32P) And Stereo Amplifier Connector A (28P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the appropriate wire(s) between the audio unit and stereo amplifier.

2008 Acura MDX

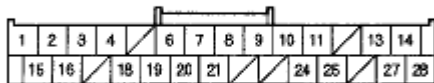
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27. Check for continuity between stereo amplifier connector A (28P) and body ground according to the table.

CONNECTOR TERMINAL REFERENCE

stereo amplifier connector	Wire color
A4	BLU
A18	PNK
A10	GRN
A24	RED
A11	BLU
A25	PNK
A13	LT BLU
A27	PUR
A14	BRN
A28	YEL
A19	RED
A6	GRN

STEREO AMPLIFIER CONNECTOR A (28P)



Wire side of female terminals

Fig. 56: Identifying Stereo Amplifier Connector A (28P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short body ground in the wire(s) between the audio unit and stereo amplifier.

NO - Go to step 28.

28. Check for continuity between the terminals of stereo amplifier connector A (28P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A4	A18, A10, A24, A11, A25, A13, A27, A14, A28, A6, A19
A18	A10, A24, A11, A25, A19, A13, A27, A14, A28, A6
A10	A24, A11, A25, A13, A6, A27, A14, A28, A19

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

A24	A11, A25, A13, A27, A6, A14, A28, A19
A11	A25, A13, A27, A14, A6, A28, A19
A25	A13, A17, A14, A28, A6, A19
A13	A27, A14, A28, A6, A19
A27	A14, A28, A6, A19
A14	A28, A6, A19
A6	A28, A19
A19	A28

STEREO AMPLIFIER CONNECTOR A (28P)



Wire side of female terminals

Fig. 57: Identifying Stereo Amplifier Connector A (28P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

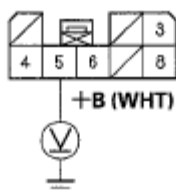
Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between audio unit and stereo amplifier (replace appropriate shield harness).

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good stereo amplifier and recheck. If the symptom indicated goes away, replace the original stereo amplifier (see **STEREO AMPLIFIER REMOVAL/ INSTALLATION**).

29. Disconnect the subwoofer 8P connector.
30. Measure the voltage between subwoofer 8P connector No. 5 terminal and body ground.

SUBWOOFER 8P CONNECTOR



Wire side of female terminals

Fig. 58: Identifying Voltage Between Subwoofer 8P Connector Terminal 5 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

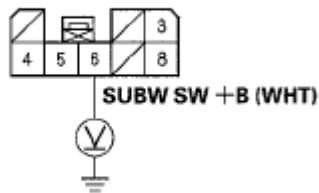
Is there battery voltage?

YES - Go to step 31.

NO - Repair open in the between the subwoofer 8P connector No. 5 terminal and No. 12 (10 A) fuse in the under-dash fuse/relay box.

31. Turn the ignition switch to ON (II).
32. Measure the voltage between subwoofer 8P connector No. 6 terminal and body ground.

SUBWOOFER 8P CONNECTOR



Wire side of female terminals

Fig. 59: Identifying Voltage Between Subwoofer 8P Connector Terminal 6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

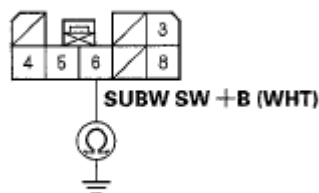
Is there battery voltage?

YES - Go to step 33.

NO - Repair open in the between the stereo amplifier connector A (28P) No. 20 terminal and subwoofer 8P connector No. 6 terminal.

33. Check for continuity between body ground and subwoofer 8P connector No. 6 terminal.

SUBWOOFER 8P CONNECTOR



Wire side of female terminals

Fig. 60: Identifying Continuity Between Body Ground And Subwoofer 8P Connector Terminal 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

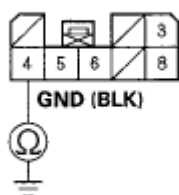
YES - Repair short to body ground in the wire(s) between the stereo amplifier and subwoofer.

NO - Go to step 34.

34. Turn the ignition switch to LOCK (0).

35. Check for continuity between subwoofer 8P connector No. 4 terminal and body ground.

SUBWOOFER 8P CONNECTOR



Wire side of female terminals

Fig. 61: Identifying Continuity Between Subwoofer 8P Connector Terminal 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - Repair open to the body ground in the wire between the subwoofer 8P connector No. 4 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITHOUT NAVIGATION)

NOTE:

- Set the fader and balance positions to the center.
- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).

2. Turn on the audio unit and make sure the volume button is not set to the MIN level.

Is it at the MIN level?

YES - Raise the volume level, and recheck the function.

NO - Go to step 3.

3. Do the speaker check mode with the self-diagnostic function (see **SPEAKER CHECK MODE**).

Did all speakers produce a tone?

YES - Go to step 9.

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Check the faulty speaker(s) for damage.

Is there any damage?

YES - Replace the speaker and recheck.

NO - Go to step 6.

6. Remove the speaker(s) that has no sound (see **SPEAKER TEST/REPLACEMENT**), and disconnect its connector.
7. Check the speaker connector for a loose or poor connection.

Reconnect the speaker connector, and recheck the symptom; is the condition still present?

YES - Go to step 8.

NO - Intermittent failure. Operation is normal.

8. Test the speaker(s) (see **SPEAKER TEST/REPLACEMENT**).

Is the speaker OK?

YES - Go to step 9.

NO - Replace the speaker(s).

9. Do the audio unit self-diagnostic function DSP unit communication check (see **SELF-DIAGNOSTIC FUNCTION**).

Is the DSP communication OK?

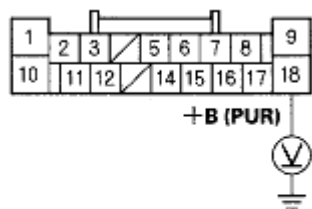
YES - Go to step 10.

NO - Audio unit is faulty, replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

10. Disconnect stereo amplifier connector B (18P).

NOTE: Eject all the CDs before disconnecting the audio unit and CD changer to prevent damaging the CD player's load mechanism.

11. Turn the ignition switch to ON (II).
12. Measure the voltage between stereo amplifier connector B (18P) No. 18 terminal and body ground.



Wire side of female terminals

Fig. 62: Identifying Voltage Between Stereo Amplifier Connector B (18P) Terminal 18 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

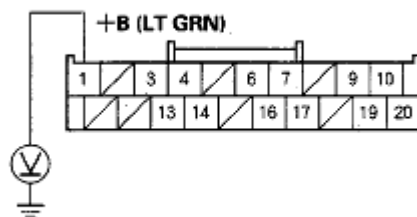
Is there battery voltage?

YES - Go to step 13.

NO - Repair open in the between No. 8 (30 A) fuse in the under-dash fuse/relay box and stereo amplifier connector B (18P) No. 18 terminal.

13. Disconnect stereo amplifier connector A(20P).;
14. Measure the voltage between stereo amplifier connector A (20P) No. 1 terminal and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Fig. 63: Identifying Voltage Between Stereo Amplifier Connector A (20P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 15.

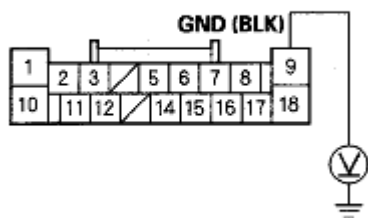
2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

NO - Repair open in the between the stereo amplifier connector A (20P) No. 1 terminal and audio unit connector B (32P) No. 23 terminal.

15. Reconnect the stereo amplifier connector B (18P).
16. Measure the voltage between stereo amplifier connector B (18P) No. 9 terminal and body ground.

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 64: Identifying Voltage Between Stereo Amplifier Connector B (18P) Terminal 9 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Go to step 17.

NO - Repair open to the body ground in the wire between the stereo amplifier connector B (18P) No. 9 terminal and body ground (G504) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

17. Check for continuity between audio unit connector B (32P) and stereo amplifier connector A (20P) according to the table.

CONNECTOR TERMINAL REFERENCE

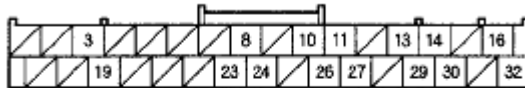
Audio unit connector	Stereo amplifier connector	Wire color
B32	A3	BLU
B16	A13	PNK
B24	A6	GRN
B8	A16	RED
B26	A7	BLU
B10	A17	PNK
B27	A9	LT BLU
B11	A19	PUR
B29	A10	BRN
B13	A20	YEL
B30	A4	GRN

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

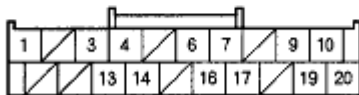
B14	A14	RED
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AUDIO UNIT CONNECTOR B (32P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Fig. 65: Identifying Audio Unit Connector B (32P) And Stereo Amplifier Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the appropriate wire(s) between the audio unit and stereo amplifier.

18. Disconnect stereo amplifier connector B (18P) and speaker connector.
19. Check for continuity between body ground and stereo amplifier connector B (18P) according to the table.

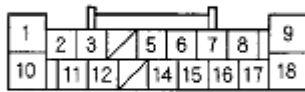
CONNECTOR TERMINAL REFERENCE

Speaker	Stereo amplifier connector	Wire color
Front center speaker	B16 (+)	BLK
	B7 (-)	PNK
Driver's door speaker. Left tweeter	B11 (+)	WHT
	B2 (-)	GRN
Front passenger's door speaker, Right tweeter	B15 (+)	RED
	B6 (-)	BRN
Left rear door speaker	B10 (+)	PNK
	B1 (-)	PUR
Right rear door speaker	B14 (+)	BLU
	B5 (-)	ORN
Subwoofer	B12 (+)	BLU
	B3 (-)	GRY
	B17 (+)	RED
	B8 (-)	BLK

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 66: Identifying Stereo Amplifier Connector B (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire(s) between the stereo amplifier and the speaker(s).

NO - Go to step 20.

20. Measure the resistance between stereo amplifier connector B (18P) according to the table.

CONNECTOR TERMINAL REFERENCE

Speaker	Stereo amplifier connector	Wire color
Front center speaker	B16 (+)	BLK
	B7 (-)	PNK
Driver's door speaker, Left tweeter	B11 (+)	WHT
	B2 (-)	GRN
Front passenger's door speaker, Right tweeter	B15 (+)	RED
	B6 (-)	BRN
Left rear door speaker	B10 (+)	PNK
	B1 (-)	PUR
Right rear door speaker	B14 (+)	BLU
	B5 (-)	ORN
Subwoofer	B12 (+)	BLU
	B3 (-)	GRY
	B17 (+)	RED
	B8 (-)	BLK

Resistance

Front center speaker: 4 ohms

Driver's door speaker. Left tweeter: 2 ohms

Front passenger's door speaker, Right tweeter: 2 ohms

2008 Acura MDX

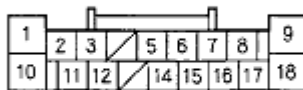
2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

Left rear door speaker: 2 ohms

Right rear door speaker: 2 ohms

Subwoofer: 2 ohms

STEREO AMPLIFIER CONNECTOR B (18P)



Wire side of female terminals

Fig. 67: Identifying Stereo Amplifier Connector B (18P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the resistance the same as indicated?

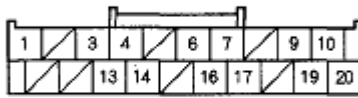
YES - Go to step 21.

NO - Repair open in the wire between the stereo amplifier and the speaker(s).

21. Check for continuity between stereo amplifier connector A (20P) and body ground according to the table.

CONNECTOR TERMINAL REFERENCE

stereo amplifier connector	Wire color
A3	BLU
A13	PNK
A6	GRN
A16	RED
A7	BLU
A17	PNK
A9	LT BLU
A19	PUR
A10	BRN
A20	YEL
A14	RED
A4	GRN

STEREO AMPLIFIER CONNECTOR A (20P)

Wire side of female terminals

Fig. 68: Identifying Stereo Amplifier Connector A (20P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

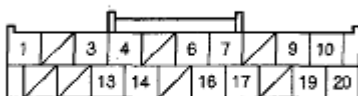
YES - Repair short to body ground in the wire(s) between the audio unit and stereo amplifier.

NO - Go to step 22.

22. Check for continuity between the terminals of stereo amplifier connector A (20P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A3	A13, A6, A16, A7, A17, A9, A19, A10, A20
A13	A6, A16, A7, A17, A9, A19, A10, A20
A6	A16, A7, A17, A9, A19, A10, A20
A16	A7, A17, A9, A19, A10, A20
A7	A17, A9, A19, A10, A20
A17	A9, A19, A10, A20
A9	A19, A10, A20
A19	A10, A20
A10	A20

STEREO AMPLIFIER CONNECTOR A (20P)

Wire side of female terminals

Fig. 69: Identifying Stereo Amplifier Connector A (20P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between audio unit and stereo amplifier (replace appropriate shield harness).

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good stereo amplifier and recheck. If the symptom indicated goes away, replace the original stereo amplifier (see **STEREO AMPLIFIER REMOVAL/ INSTALLATION**).

AUDIO SYSTEM SOUND IS WEAK OR DISTORTED (DISPLAY IS NORMAL)

NOTE:

- **Check the connectors for poor connection or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and check for sound in each mode (AM, FM, XM, and CD).

Is there sound from the speakers, and is the sound quality normal in each mode?

YES - Intermittent failure. The system is OK at this time. Check for loose connections at the audio unit, the amplifier, and each speaker.

NO - Speakers all work, sound quality is poor.

- If sound quality is poor only with the XM radio, or the XM radio does not function, go to **POOR OR NO SOUND WITH THE XM RADIO** .
- If the sound quality is poor only with AM or FM, go to **POOR RADIO RECEPTION OR INTERFERENCE**).
- If the sound is poor in all modes, go to **SOUND QUALITY DIAGNOSIS** .

RADIO PRESET MEMORY IS LOST

NOTE:

- **If only XM stations are lost, go to XM radio preset memory is lost (with AcuraLink) or XM radio preset memory is lost (without AcuraLink)).**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and set each of the radio station preset buttons.

Do each of the preset buttons set properly?

YES - Go to step 3.

NO - Go to step 5.

3. Turn the ignition switch to LOCK (0) for 1 minute, then turn it back to ON (II).
4. Test all the preset buttons for proper recall operation.

Do the preset buttons recall the set radio stations?

YES - System is normal at this time. Check connections at the audio unit.

NO - Go to step 5.

5. Inspect No. 5 (10 A) fuse in the under-dash fuse/ relay box.

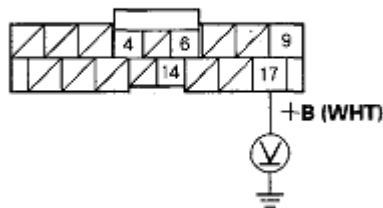
Is it OK?

YES - Go to step 6.

NO - Replace the fuse and reset. If it fails again, repair the short to ground in the harness.

6. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
7. Turn the ignition switch to ON (II).
8. Measure the voltage between the audio unit connector A (17P) No. 17 terminal and body ground.

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

Fig. 70: Identifying Voltage Between Audio Unit Connector A (17P) Terminal 17 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

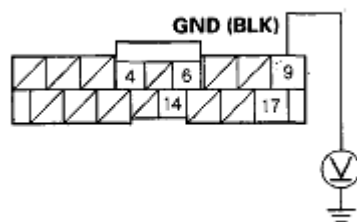
Is there battery voltage?

YES - Go to step 9.

NO - An open wire between the under-dash fuse/ relay box and audio unit A17 terminal.

9. Measure the voltage between the audio unit connector A (17P) No. 9 terminal and body ground.

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

Fig. 71: Identifying Voltage Between Audio Unit Connector A (17P) Terminal 9 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - An open wire between the audio unit connector A (17P) No. 9 terminal and body ground (G504).

VOLUME DOES NOT CHANGE

NOTE:

- Set the fader and balance positions to the center.
- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and check for sound in each mode (AM, FM, XM, and CD).

Is the sound normal ?

YES - Go to step 3.

NO - Go to **AUDIO SYSTEM SOUND IS WEAK OR DISTORTED** (see), or no sound is heard from speakers (see **NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)**).

3. Operate the volume knob to see if the volume changes.

Does the volume change?

YES - Operation is normal at this time.

NO - Substitute a known-good audio unit and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/ indication goes away, replace the

original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

VOLUME DOES NOT INCREASE WITH SPEED

NOTE:

- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Verify the (SVC) mode setting in the navigation or audio unit sound set-up.

Is the (SVC) set to off?

YES - Change the setting to Mid and reset (see **SYSTEM DESCRIPTION**).

NO - Go to step 2.

2. Do the self-diagnostic function for the vehicle speed pulse indication (see **SELF-DIAGNOSTIC FUNCTION**).

Does the self-diagnostic function indicate a VSP signal?

YES - Substitute a known-good navigation or audio unit and retest. If the symptom/indication goes away, replace the original navigation or audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Go to step 3.

3. Check for B-CAN codes with the HDS.

Are there any B-CAN codes?

YES - Go to the applicable B-CAN code troubleshooting.

NO - Go to step 4.

4. Inspect the VSP signal in the navigation system (see **CAR STATUS**).

Does the VSP change from 0 to 1 when the vehicle is moving?

YES - Substitute a known-good audio unit, then retest the VSP signal in the audio self-diagnostic test. If the speed is shown, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If so speed is shown, substitute a known-good navigation unit.

NO - Inspect the VSP circuit (see **NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR C (8P)**).

VOLUME IS TOO HIGH OR TOO LOW WHEN DRIVING AT FREEWAY SPEEDS

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

NOTE:

- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Test-drive the vehicle at highway speeds, and monitor volume level.

Is the volume level too high or too low?

YES - Go to step 2.

NO - Intermittent failure, the system is OK at this time.

2. Change the (SVC) mode setting in sound set-up to Mid (see SYSTEM DESCRIPTION).

Is the volume level still too high, or too low?

YES - Replace the audio unit (see AUDIO UNIT REMOVAL/INSTALLATION).

NO - Improper (SVC) setting for clients sound taste.

RADIO TUNER DOES NOT CHANGE STATIONS

NOTE:

- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and check the audio information on the display panel.

Does the audio information display properly?

YES - Go to step 3.

NO - Go to audio unit power switch will not turn ON (see POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND)).

3. Operate the tuning knob to see if the radio station changes.

Does the radio station change?

YES - Intermittent failure, the turning knob is OK at this time.

NO - Replace the audio unit (see AUDIO UNIT REMOVAL/INSTALLATION).

DISPLAY DOES NOT DIM OR BRIGHTEN WITH DIMMER

NOTE:

- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn the headlight switch to the parking or headlight on position.
3. Check the display of the climate control unit.

Does the climate control illumination change with dimmer?

YES - Go to step 4.

NO - Go to climate control power and ground circuit troubleshooting (see **CLIMATE CONTROL UNIT TROUBLESHOOTING**).

4. Check the No. 7 (10 A) fuse and the No. 32 (10 A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 5.

NO - Replace the fuse, and recheck.

5. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). Check that the audio unit and climate control unit connectors are properly connected.

Are they connected properly?

YES - Go to step 6.

NO - Repair poor connections and reconnect the connector, and recheck the function.

6. Turn the ignition switch to LOCK (0).
7. Disconnect audio unit connector C (24P) and climate control unit connector B (14P).
8. Check for continuity between the audio unit connector C (24P) No. 24 terminal and climate control unit connector B (14P) No. 8 terminal.

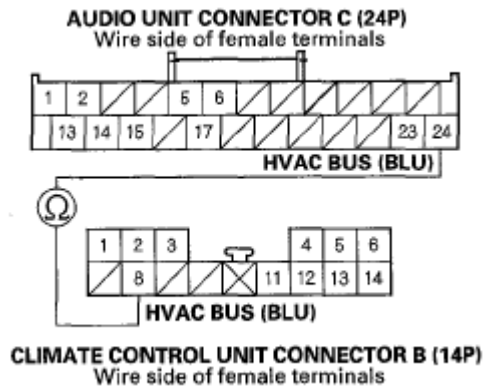


Fig. 72: Identifying Continuity Between Audio Unit C (24P) And Climate Control Unit Connector B (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the audio unit connector C (24P) No. 24 terminal and climate control unit connector B (14P) No. 8 terminal.

9. Check for continuity between the body ground and audio unit connector C (24P) No. 24 terminal.

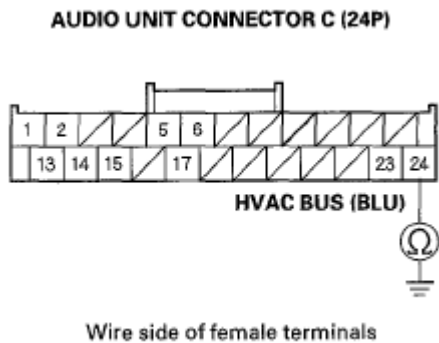


Fig. 73: Identifying Continuity Between Body Ground And Audio Unit Connector C (24P) Terminal 24

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the audio unit and climate control unit.

NO - Go to step 10.

10. Disconnect climate control unit connector A (40P).
11. Measure the voltage between No. 1 terminal of climate control unit connector A (40P) and body ground.

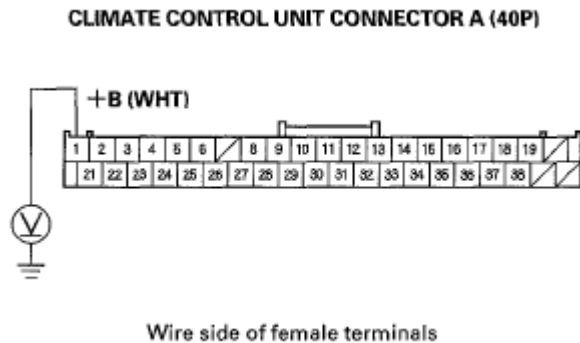


Fig. 74: Identifying Voltage Between Climate Control Unit Connector A (40P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 12.

NO - Repair open in the wire(s) between No. 7 (10 A) fuse in the under-dash fuse/relay box and the climate control unit.

12. Turn the ignition switch to ON (II).
13. Measure the voltage between No. 25 terminal of climate control unit connector A (40P) and body ground.

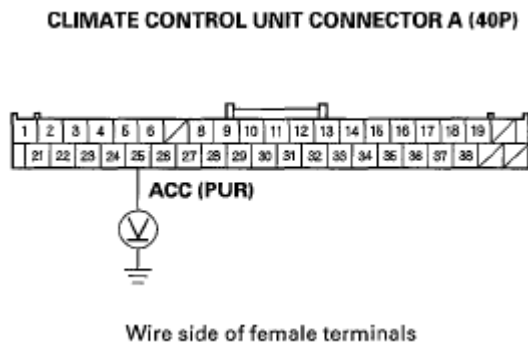


Fig. 75: Identifying Voltage Between Climate Control Unit Connector A (40P) Terminal 25 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

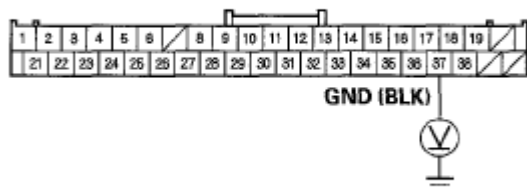
YES - Go to step 14.

NO - Repair open in the wire(s) between the 32 (10 A) fuse in the under-dash fuse/relay box and the climate control unit.

14. Turn the ignition switch to LOCK (0).

15. Reconnect the audio unit connector A (17P).
16. Turn the ignition switch to ON (II).
17. Measure the voltage between climate control unit connector A (40P) No. 37 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 76: Identifying Voltage Between Climate Control Unit Connector A (40P) Terminal 37 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indicated goes away, replace the original climate control unit. If the symptom is still present, substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Repair open in the wire between the climate control unit connector A (40P) terminal No. 37 and body ground (G506) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

AUDIO UNIT BUTTON ILLUMINATION DOES NOT WORK

NOTE:

- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn the combination lighting switch to the parking light position.
3. Check the illumination of the audio unit buttons.

Are the buttons illuminated?

YES - All buttons illuminated: Intermittent problem: the audio unit is OK at this time. Check for loose or poor connections at the audio unit connector C (24P).

Some button(s) illuminated: Audio panel is faulty, replace the audio panel.

NO - Go to step 4.

4. Check the illumination of several other buttons not related to the audio system.

Are the buttons illuminated?

YES - Go to the B-CAN line troubleshooting (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**). If the B-CAN line is OK, substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/indicated goes away, replace the original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Troubleshoot the interior lights. Start by checking the No. 22 (7.5 A) fuse in the under-hood fuse/relay box. If the fuse is OK, check the interior light relay.

AUDIO DISC DOES NOT LOAD

NOTE:

- Disc labels should not be used in the audio unit. They may damage the player mechanism.
- Make sure the CD disc is compatible with the system (see the owner's manual for more information).
- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and insert known-good disc to see if the symptom can be duplicated.

Does the disc load?

YES - Operation is normal. If the disc loads normally, but will not play, go to **AUDIO DISC DOES NOT PLAY** .

NO - Go to step 3.

3. Insert another disc.

Does the disc load?

YES - The original disc is faulty.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC DOES NOT EJECT

NOTE:

- **Disc labels should not be used in the audio unit. They may damage the player mechanism.**
- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit.

Does the system turn on?

YES - Go to step 3.

NO - Go to audio unit power switch will not turn ON (see **POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND)**).

3. Check to see if the disc ejects correctly with no binding by pushing the EJECT button.

Does the disc eject properly?

YES - Operation is normal.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC CHANGER DOES NOT LOAD ALL SIX DISCS

NOTE:

- **Disc labels should not be used in the audio unit. They may damage the player mechanism.**
- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and try loading six discs into the audio unit/CD changer.

Does the audio unit accept all six discs?

YES - Intermittent failure, the audio unit is OK at this time.

NO - Go to step 3.

3. Try loading the disc player with six known-good discs.

Does the audio unit/CD changer accept all six discs?

YES - At least one of the original discs is faulty.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO DISC CHANGER DOES NOT MOVE BETWEEN DISCS

NOTE:

- **Disc labels should not be used in the audio unit. They may damage the player mechanism.**
- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and insert six discs into the audio unit/CD changer and see if the changer moves between discs.

Does the changer operate normally?

YES - Intermittent failure, the disc changer is OK at this time.

NO - Go to step 3.

3. Insert six known-good discs into the audio unit.

Does the changer operate normally?

YES - At least one of the original discs is faulty.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

Special tools required

Diagnostics CD 07AAZ-SDBA100

AUDIO DISC DOES NOT PLAY

NOTE:

- **Check the connectors for poor connections or loose terminals.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and try loading a disc.

Does the disc load?

YES - Go to step 3.

NO - Go to **DISC DOES NOT LOAD** .

3. Insert another audio disc to see if the symptom can be duplicated.

Does the disc play?

YES - Operation is normal.

NO - Go to step 4.

4. Insert audio diagnostic CD (T/N 07AAZ-SDBA100) in the audio unit.

Does the disc play?

YES - The original disc is faulty or has an unreadable format.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

Special tools required

- Diagnostics CD 07AAZ-SDBA100
- Skip test CD 07AAZ-SDBA200
- Skip test CD 07AAZ-SDBA300

AUDIO DISC SKIPS

- NOTE:**
- **Check the connectors for poor connections or loose terminals.**
 - **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Confirm the vehicle's tires are properly inflated.
3. Check the client's disc for scratches and fingerprints.

NOTE: **The following test should be done with the audio unit bass and treble set to the client's listening settings. When comparing to known-good vehicles, do the comparison on the same model and trim level.**

4. Test-drive the vehicle to identify when the client's disc skips. The audio diagnostic CD (T/N 07AAZ-SDBA100) can be used if the client's disc is not available; use tracks 10-12.

Does the disc skip?

YES - Go to step 5.

NO - Operation is normal.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

5. Compare the client's skipping disc that skips to a known-good vehicle under the same conditions.

Does the disc skip in the known-good vehicle under the same conditions?

YES - The CD player operation is normal, the problem is with the client's disc.

NO - Go to step 6.

NOTE: **Do the following test with vehicle parked and the engine running.**

6. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA300). Play tracks 2-11, and note on which number track(s) the disc starts skipping. Do the same test on a known-good vehicle.

Does the disc skip on same track(s) as the known-good vehicle?

YES - Operation is normal.

NO - Go to step 7.

7. Insert the diagnostic skip test CD (T/N 07AAZ-SDBA200). Play tracks 7-11 and tracks 13-15 and note on which number track(s) where the disc starts skipping. Do the same test on a known-good vehicle.

Does the disc skip on same track number(s) as the known-good vehicle?

YES - Operation is normal.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

ERROR CODE: XM NO SIGNAL OR XM ANTENNA IS DISPLAYED

NOTE:

- Check XM radio reception in an open area. Poor reception/interference can be caused by tall buildings, mountains, or high-voltage power lines.
- If you can only tune to channel 000,001,174 and 247, make sure the audio unit is set to channel mode (see), if it is set to channel mode, call XM radio customer support and check the account activation status.
- If you replace the XM receiver, the Acuralink must be reactivated by Acura Client Services.
- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Park vehicle outside with a clear view of the southern horizon.
2. Turn the ignition switch to ON (II).
3. Turn on the audio unit and select XM radio.

Does the XM radio receive a signal?

YES - Reception interference operation is normal.

NO - With AcuraLink: Go to step 5. Without AcuraLink: Go to step 12.

4. Turn the ignition switch to LOCK (0).
5. Check the XM antenna 2P connector and the XM receiver (AcuraLink control unit) connector C (2P).

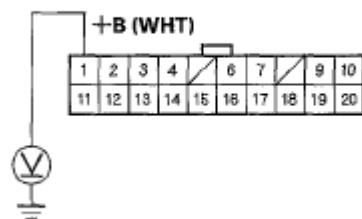
Are the connectors connected?

YES - Go to step 6.

NO - Reconnect XM antenna 2P connector and XM receiver (AcuraLink control unit) connector C (2P), recheck XM radio operation. If the signal is restored, operation is normal. If signal is not restored go to step 6.

6. Disconnect XM receiver (AcuraLink) connector A (20P).
7. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 1 terminal and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 77: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between No. 5 (10 A) fuse in the under-dash fuse/relay box and XM receiver (AcuraLink control unit) connector A (20P) No. 1 terminal.

8. Reconnect the XM receiver (AcuraLink control unit) connector A (20P).
9. Turn the ignition switch to ON (II).
10. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 11 terminal

and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**

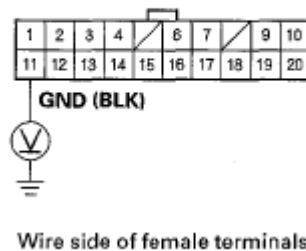


Fig. 78: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Go to step 11.

NO - Repair open in the wire between XM receiver (AcuraLink control unit) connector A (20P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

11. Substitute known-good XM antenna.

Does the XM radio receiver a signal?

YES - Replace XM antenna (see **XM ANTENNA REPLACEMENT**).

NO - Substitute a known-good XM antenna lead. If the XM receiver (AcuraLink control unit) receives a signal, replace the original XM antenna lead. If the XM receiver (AcuraLink control unit) does not receive a signal, substitute a known-good XM receiver (AcuraLink control unit).

12. Check XM antenna 2P connector and XM receiver connector B (2P).

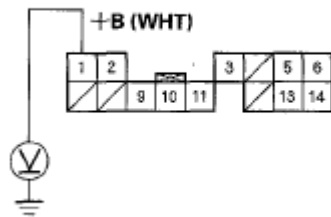
Are the connectors connected?

YES - Go to step 13.

NO - Reconnect XM antenna 2P connector and XM receiver connector B (2P), recheck XM radio operation. If the signal restored, operation is normal. If signal not restored go to step 6.

13. Disconnect XM receiver connector A (14P).
14. Measure the voltage between XM receiver connector A (14P) No. 1 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 79: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

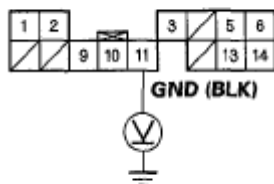
Is there battery voltage?

YES - Go to step 15.

NO - Repair open in the wire between No. 5 (10 A) fuse in the under-dash fuse/relay box and XM receiver connector A (14P) No. 1 terminal.

15. Reconnect the XM receiver connector A (14P).
16. Turn the ignition switch to ON (II).
17. Measure the voltage between XM receiver connector A (14P) No. 11 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 80: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Go to step 18.

NO - Repair open in the wire between XM receiver connector A (14P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

18. Substitute known-good XM antenna.

Does the XM radio receiver a signal?

YES - Replace XM antenna (see **XM ANTENNA REPLACEMENT**).

NO - Substitute a known-good XM antenna lead. If the XM receiver receives a signal, replace the original XM antenna lead. If the XM receiver does not receive a signal, substitute a known-good XM receiver unit.

XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (WITH ACURALINK)

NOTE:

- Always check the connectors for poor connections or loose terminals.
- If you replace the XM receiver, the Acuralink must be reactivated by Acura Client Services.
- Check the vehicle battery condition first.

1. Disconnect the XM receiver (AcuraLink control unit) connector A (20P).
2. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 1 terminal and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**

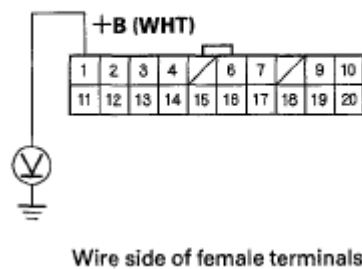


Fig. 81: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

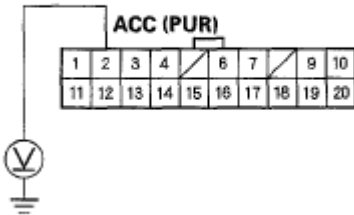
YES - Go to step 3.

NO - Repair open in the between No. 5 (10 A) fuse in the under-dash fuse/relay box and XM receiver (AcuraLink control unit) connector A (20P) No. 1 terminal.

3. Turn the ignition switch to ON (II).

4. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 2 terminal and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 82: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

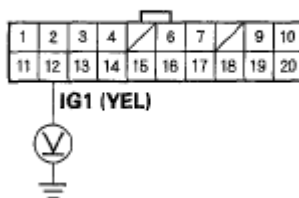
Is there battery voltage?

YES - Go to step 5.

NO - Repair open in the wire between No. 32 (10 A) fuse in the under-dash fuse/relay box and XM receiver (AcuraLink control unit) connector A (20P) No. 2 terminal.

5. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 12 terminal and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 83: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 12 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 6.

NO - Repair open in the wire between No. 21 (10 A) fuse in the under-dash fuse/relay box and XM

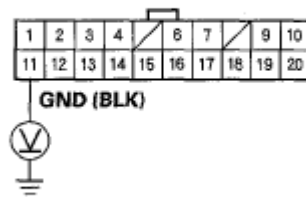
2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

receiver (AcuraLink control unit) connector A (20P) No. 12 terminal.

6. Reconnect the XM receiver (AcuraLink control unit) connector A (20P).
7. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 11 terminal and body ground.

XM RECEIVER (ACURALINK CONTROL UNIT) CONNECTOR A (20P)



Wire side of female terminals

Fig. 84: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Go to step 8.

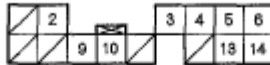
NO - Repair open in the wire between XM receiver (AcuraLink control unit) connector A (20P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

8. Turn the ignition switch to LOCK (0).
9. Disconnect audio unit connector D (14P), XM receiver (AcuraLink control unit) connector A (20P), navigation unit connector A (20P), and navigation display unit 20P connector.
10. Check for continuity between the following terminals of the audio unit connector D (14P) and XM receiver (AcuraLink control unit) connector A (20P).

CONNECTOR TERMINAL REFERENCE

Audio unit connector	XM receiver (AcuraLink control unit) connector	Wire color
D3	A18	BRN
D9	A7	GRN
D10	A17	RED

AUDIO UNIT CONNECTOR D (14P)



Wire side of female terminals

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 85: Identifying Audio Unit D (14P) And XM Receiver (Acuralink Control Unit) Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

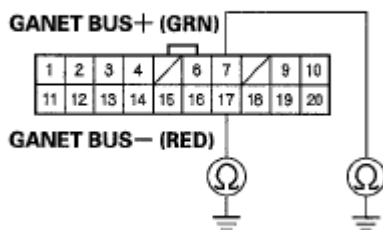
Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire(s) between audio unit and XM receiver (AcuraLink control unit).

11. Check for continuity between body ground and XM receiver (AcuraLink control unit) connector A (20P) terminals No. 7 and 17 individually.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 86: Identifying Continuity Between Body Ground And XM Receiver (Acuralink Control Unit) Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the audio unit and XM receiver (AcuraLink control unit) or between the shield wires (replace the applicable shield harness).

NO - Go to step 12.

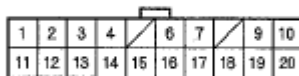
12. Check for continuity between the terminals of XM receiver (AcuraLink control unit) connector A (20P)

according to the cable.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A18	A17, A7
A17	A7

XM RECEIVER (ACURALINK CONTROL UNIT) CONNECTOR A (20P)



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 87: Identifying XM Receiver (Acuralink Control Unit) Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the audio unit and XM receiver (AcuraLink control unit) (replace the appropriate shield harness).

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit. If the symptom is still present, substitute a known-good XM receiver (AcuraLink control unit) and recheck. If the symptom indicated goes away, update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

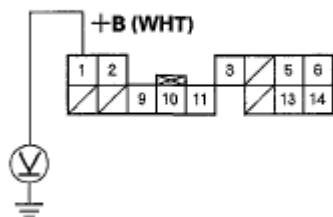
XM RADIO DISPLAY IS BLANK AND NO STATION INFORMATION IS DISPLAYED (WITHOUT ACURALINK)

NOTE:

- Check the vehicle battery condition first.
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to LOCK (0).
2. Disconnect XM receiver connector A (14P).
3. Measure the voltage between XM receiver connector A (14P) No. 1 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 88: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

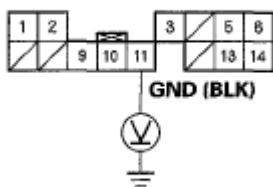
Is there battery voltage?

YES - Go to Step 4.

NO - Repair open in the wire between No. 5 (10 A) fuse in the under-dash fuse/relay box and XM receiver connector A (14P) No. 1 terminal.

4. Turn the ignition switch to ON (II).
5. Measure the voltage between XM receiver connector A (14P) No. 11 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 89: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1V?

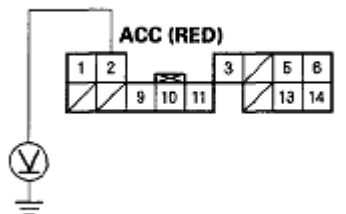
YES - Go to step 6.

NO - Repair open in the wire between XM receiver connector A (14P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

6. Turn the ignition switch to LOCK (0).

7. Reconnect XM receiver connector A (14P).
8. Measure the voltage between XM receiver connector A (14P) No. 2 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 90: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

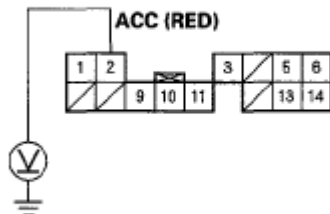
Is there 10 volts or more present?

YES - Go to step 9.

NO - Substitute a known- good XM receiver and recheck. If 10 volts or more are present, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

9. Turn the ignition switch to ON (II).
10. Measure the voltage between XM receiver connector A (14P) No. 2 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 91: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5V?

YES - Go to step 11.

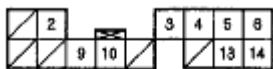
NO - Substitute a known- good audio unit and recheck. If 0.5 volts or less are present, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

11. Turn the ignition switch to LOCK (0).
12. Disconnect audio unit connector D(14P), XM receiver connector A (14P), navigation unit connector A (20P), and navigation display unit 20P connector.
13. Check for continuity between the following terminals of the audio unit connector D (14P) and XM receiver A (14P).

CONNECTOR TERMINAL REFERENCE

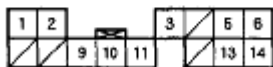
Audio unit connector	XM Receiver connector	Wire color
D3	A3	BRN
D9	A9	GRN
D10	A10	RED

AUDIO UNIT CONNECTOR D (14P)



Wire side of female terminals

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 92: Identifying Audio Unit D (14P) And XM Receiver Connector A (14P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

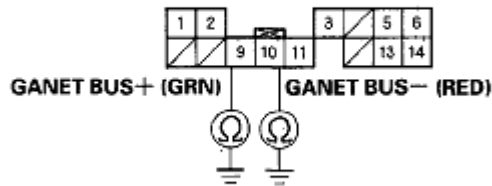
Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire(s) between audio unit and XM receiver.

14. Check for continuity between body ground and XM receiver connector A (14P) terminals No. 9 and 10 individually.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 93: Identifying Continuity Between Body Ground And XM Receiver Connector A (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the audio unit and XM receiver or a short between the shield wires (replace the applicable shielded harness).

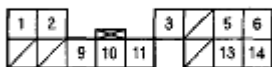
NO - Go to step 15.

15. Check for continuity between the terminals of XM receiver connector A (14P) according to the cable.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A3	A9, A10
A9	A10

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 94: Identifying XM Receiver Connector A (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the audio unit and XM receiver (replace the appropriate shield harness).

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good XM receiver and recheck. If the symptom/ indicated goes away, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

XM RADIO PRESET MEMORY IS LOST (WITH ACURALINK)

NOTE:

- Check the connectors for poor connections or loose terminals.
- If you can only tune to channel 000,001,174, and 247, make sure the audio unit is set to channel mode (see owners manual), if it is set to channel mode, call XM Satellite Radio customer support and check the account activation status.
- If you replace the XM receiver, the AcuraLink must be reactivated by Acura Client Services.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and set each of the XM radio channel preset buttons.

Do each of the XM radio channel preset buttons set properly?

YES - Go to step 3.

NO - Go to step 7.

3. Turn the ignition switch to LOCK (0) for 1 minute, then turn it back to ON (II).
4. Test all of the XM radio channel preset buttons for proper recall operation.

Do the preset buttons recall the set radio stations?

YES - System is normal at this time. Check connections at the audio unit.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Disconnect XM receiver (AcuraLink control unit) connector A (20P).
7. Measure the voltage between XM receiver (AcuraLink control unit) connector A (20P) No. 1 terminal and body ground.

XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)

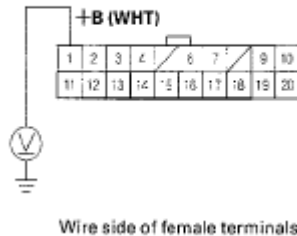


Fig. 95: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between the under-dash fuse/relay box and XM receiver (AcuLink control unit) connector A (20P) No. 1 terminal.

8. Turn the ignition switch to ON (II).
9. Measure the voltage between XM receiver (AcuLink control unit) connector A (20P) No. 2, and No. 12 terminals and body ground individually.

XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)

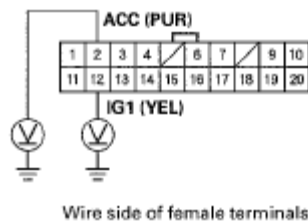


Fig. 96: Identifying Voltage Between XM Receiver Connector A (20P) Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

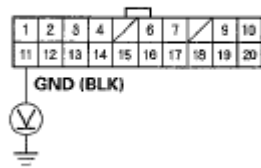
YES - Go to step 10.

NO - Repair open in the wire between the under-dash fuse-relay box and XM receiver (AcuLink control unit) connector A (20P) No. 2 and No. 12 terminals.

10. Reconnect XM receiver (AcuLink control unit) connector A (20P).
11. Measure the voltage between XM receiver (AcuLink control unit) connector A (20P) No. 11 terminal

and body ground.

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**



Wire side of female terminals

Fig. 97: Identifying Voltage Between XM Receiver Connector A (20P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Update the AcuraLink control unit if it does not have the latest software, then recheck. If the software is the latest, replace the AcuraLink control unit (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

NO - Repair open in the wire between XM receiver (AcuraLink control unit) connector A (20P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

XM RADIO PRESET MEMORY IS LOST (WITHOUT ACURALINK)

NOTE:

- Check the connectors for poor connections or loose terminals.
- If you can only tune to channel 000,001,174, and 247, make sure the audio unit is set to channel mode (see owners manual), if it is set to channel mode, call XM Satellite Radio customer support and check the account activation status.
- If you replace the XM receiver, the AcuraLink must be reactivated by Acura Client Services.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and set each of the XM radio channel preset buttons.

Do each of the XM radio channel preset buttons set properly?

YES - Go to step 3.

NO - Go to step 7.

3. Turn the ignition switch to LOCK (0) for 1 minute, then turn it back to ON (II).

4. Test all of the XM radio channel preset buttons for proper recall operation.

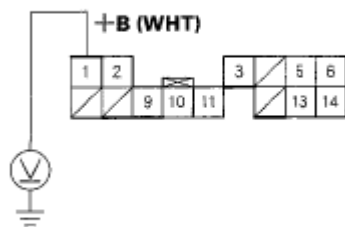
Do the preset buttons recall the set radio stations?

YES - System is normal at this time. Check connections at the audio unit.

NO - Go to step 4.

5. Turn the ignition switch to LOCK (0).
6. Disconnect XM receiver connector A (14P).
7. Measure the voltage between XM receiver connector A (14P) No. 1 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 98: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

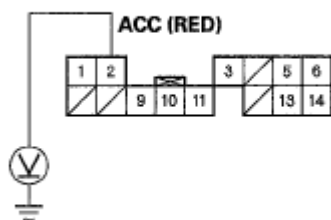
Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between the under-dash fuse/relay box and XM receiver connector A (14P) No. 1 terminal.

8. Turn the ignition switch to ON (II).
9. Measure the voltage between XM receiver connector A (14P) No. 2 terminal, and body ground individually.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 99: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

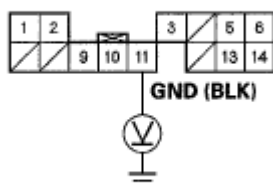
YES - Go to step 10.

NO - Repair open in the wire between the under-dash fuse-relay box and XM receiver connector A (14P) No. 2 terminal.

10. Reconnect XM receiver connector A (14P).

11. Measure the voltage between XM receiver connector A (14P) No. 11 terminal and body ground.

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 100: Identifying Voltage Between XM Receiver Connector A (14P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Replace the XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

NO - Repair open in the wire between XM receiver connector A (14P) No. 11 terminal and body ground (G606) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

POOR OR NO SOUND WITH XM RADIO (AUDIO UNIT DOES DISPLAY XM CHANNELS)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

NOTE:

- Check the XM radio reception in an open area. Poor reception/interference can be caused by nearby tall buildings, mountains, or high-voltage power lines.
- Check the connectors for poor connections or loose terminals.
- If you can only tune to channel 000, 001,174, and 247, make sure the audio unit is set to channel mode (see owners manual), if it is set to channel mode, call XM Satellite Radio customer support and check the account activation status.
- If you replace the XM receiver, the AcuraLink must be reactivated by Acura Client Services.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit and select XM radio.
3. Check for an error message on the display.

Are there any messages displayed?

YES - Go to **ERROR CODE** .

NO -

- With AcuraLink: Go to step 4.
 - Without AcuraLink: Go to step 9.
4. Turn the ignition switch to LOCK (0).
 5. Disconnect audio unit connector D (14P) and the XM receiver (AcuraLink control unit) connector A (20P).
 6. Check for continuity between audio unit connector D (14P) and XM receiver (AcuraLink control unit) connector A (20P) according to the table.

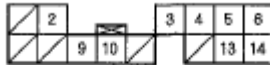
CONNECTOR TERMINAL REFERENCE

Audio unit connector	XM Receiver (AcuraLink control unit) connector	Wire color
D6	A9	BLK
D14	A19	GRN
D5	A10	RED
D13	A20	WHT

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

AUDIO UNIT CONNECTOR D (14P)



Wire side of female terminals

XM RECEIVER (ACURALINK CONTROL UNIT) CONNECTOR A(20P)



Wire side of female terminals

Fig. 101: Identifying Audio Unit D (14P) And XM Receiver Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair open in the wire(s) between the audio unit and XM receiver (AcuraLink control unit) or replace the appropriate shielded harness.

7. Check for continuity to body ground between the terminals of XM receiver (AcuraLink control unit) connector A (20P) and body ground according to the table. Then check for continuity between the same terminals listed in the table and the audio unit connector D (14P) No. 4 terminal (the harness shield).

CONNECTOR TERMINAL REFERENCE

XM Receiver (AcuraLink control unit) connector	Wire color
A9	BLK
A10	RED
A19	GRN
A20	WHT

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

XM RECEIVER (ACURALINK CONTROL UNIT) CONNECTOR A (20P)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

AUDIO UNIT CONNECTOR D (14P)

1	2	3	4	5	6
7	8	9	10	11	12

Wire side of female terminals

Fig. 102: Identifying XM Receiver A (20P) And Audio Unit Connector D (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the shielded wires between the audio unit and XM receiver (AcuraLink control unit).

NO - Go to step 8.

8. Check for continuity between the terminals of XM receiver (AcuraLink control unit) connector A (20P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A9	A10, A19, A20
A10	A19, A20
A19	A20

**XM RECEIVER (ACURALINK CONTROL UNIT)
CONNECTOR A (20P)**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 103: Identifying XM Receiver Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.*Is there continuity between any of the terminals?***YES** - Repair short in the wire(s) between the audio unit and XM receiver (AcuraLink control unit).**NO** - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good XM receiver (AcuraLink control unit) and recheck. If the symptom/indication goes away, replace the original XM receiver (AcuraLink control unit) (see **XM RECEIVER REMOVAL/INSTALLATION**).

9. Check for continuity between audio unit connector D (14P) and XM receiver connector A (14P) according to the table.

CONNECTOR TERMINAL REFERENCE

Audio unit connector	XM receiver connector	Wire color
D6	A6	BLK
D14	A14	GRN
D5	A5	RED
D13	A13	WHT

AUDIO UNIT CONNECTOR D (14P)

1	2	3	4	5	6
7	8	9	10	11	12
13	14				

Wire side of female terminals

XM RECEIVER CONNECTOR A (14P)

1	2	3	4	5	6
7	8	9	10	11	12
13	14				

Wire side of female terminals

Fig. 104: Identifying Audio Unit Connector D (14P) And XM Receiver Connector A (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

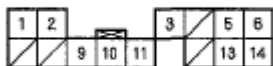
NO - Repair open in the wire(s) between the audio unit and XM receiver.

10. Check for continuity between XM receiver connector A (14P) and body ground according to the table. Then check for continuity between the same terminals listed in the table and the audio unit connector D (14P) No. 4 terminal (the harness shield).

CONNECTOR TERMINAL REFERENCE

XM receiver connector	Wire color
A5	RED
A6	BLK
A13	WHT
A14	GRN

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 105: Identifying XM Receiver Connector A (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the audio unit and XM receiver or a short between the shield wires (replace the applicable shielded harness).

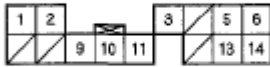
NO - Go to step 11.

11. Check for continuity between the terminals of XM receiver connector A (14P) according to the cable.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
A5	A6, A13, A14
A6	A13, A14
A13	A14

XM RECEIVER CONNECTOR A (14P)



Wire side of female terminals

Fig. 106: Identifying XM Receiver Connector A (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the audio unit and XM receiver.

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good XM receiver and recheck. If the symptom/ indication goes away, replace the original XM receiver (see **XM RECEIVER REMOVAL/INSTALLATION**).

AUDIO REMOTE SWITCH DOES NOT WORK PROPERLY

NOTE:

- Check the connectors for poor connections or loose terminals.
- Check the vehicle battery condition first.

1. Test the audio remote switch (see **AUDIO REMOTE SWITCH TEST**).

Is the audio remote switch OK?

YES - Intermittent failure, the audio remote switch and audio unit are OK at this time.

NO - Go to step 2.

2. Turn the ignition switch to ON (II).
3. Turn on the audio unit and check the audio unit operation (volume up, volume down, CH (-), CH (+), MODE).

Is the audio unit operation OK?

YES - Operation is normal.

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Audio System - MDX

5. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
6. Disconnect the audio unit connector B (32P).

NOTE: Eject all the CDs before disconnecting the audio unit and CD changer to prevent damaging the CD player's load mechanism.

7. Reconnect the audio remote switch. While moving the steering wheel about 3/4 turn left and right, measure the resistance between the audio unit connector B (32P) No. 3 and No. 19 terminals as specified in the table.

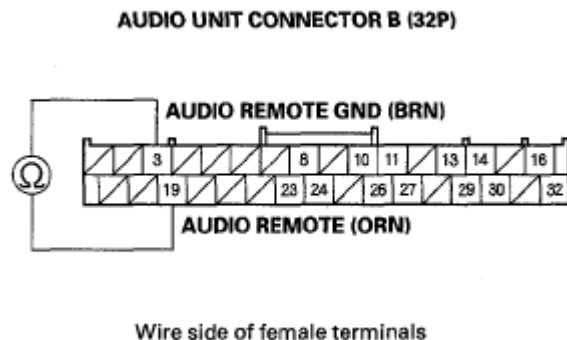


Fig. 107: Identifying Audio Unit Connector B (32P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUDIO REMOTE SWITCH TABLE

AUDIO REMOTE SWITCH CHART

Button held down	VOL DOWN	VOL UP	CH (-)	CH (+)	MODE	(NONE)
Resistance	about 100 ohms	about 357 ohms	about 775 ohms	about 1.7 kohms	about 3.7 kohms	about 10 kohms

Is the resistance OK?

YES - Go to step 8.

NO - Repair open or high resistance in the circuit between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

8. Check for continuity between body ground and the No. 3 and No. 19 terminals of audio unit connector B (32P) individually.

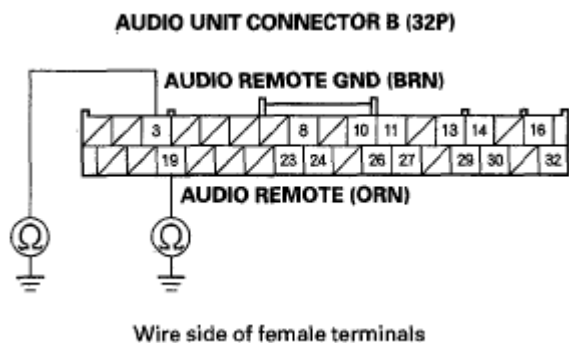


Fig. 108: Identifying Continuity Between Body Ground And Audio Unit Connector B (32P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair the short to body ground in the circuit between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see CABLE REEL REPLACEMENT).

NO - Replace the audio unit (see AUDIO UNIT REMOVAL/INSTALLATION).

AUDIO UNIT BUTTON DOES NOT WORK

NOTE: To troubleshoot the main power switch, go to POWER SWITCH WILL NOT TURN ON (see).

1. Refer to the following switch list, and find the appropriate switch for each button. Then do the following exercise to identify the switch that does not work by operating various buttons that only belong to that switch.

Switch list Switch A: AM/FM, XM, 6DDISC, AUX, DISP, SCAN, RPT, ASEL/RDM, SEEK±, DVD, REAR PWR, FRONT SOURCE, REAR SOURCE, REAR CTRL, ELECT, ROAD, PWR, SOUND, 1-6

Switch B: INFO, MAP/GUIDE, MENU, CANCEL, SET UP, AUDIO, interface dial/ display

2. Check to see if the buttons that do not function all belong to switch A.

Are they all switch A's?

YES - Substitute a known-good audio unit and recheck. If the symptom/indication goes away, replace the original audio unit (see AUDIO UNIT REMOVAL/INSTALLATION). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/ indication goes away, replace the original audio panel (see AUDIO UNIT REMOVAL/INSTALLATION).

NO - Go to Step 3.

3. Check to see if the buttons that do not function belong to switch B.

Are they switch B's?

YES - Faulty audio-HVAC display panel and audio unit. Replace the audio-HVAC display module.

NO - Check the connections between the interface dial and audio panel, and recheck the function. If the symptom is still present, substitute a known-good audio unit and recheck. If the symptom/ indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/indication goes away, replace the original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

AUDIO UNIT DISC INDICATOR DOES NOT WORK

NOTE: **Discs with labels should not be used in the audio unit. They may damage the player mechanism.**

1. Turn on the audio system.
2. Insert a known-good disc or press the EJECT button.

Is the DISC indicator (LED) indicated?

YES - The audio unit is OK at this time. Check for loose or poor connections at audio unit and audio panel.

NO - Substitute a known-good audio unit and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/ indication goes away, replace the original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

SECURITY INDICATOR DOES NOT WORK PROPERLY

NOTE:

- **The system will not operate without the 4-digit : security (anti-theft) code.**
- **Before, troubleshooting, confirm that a 4-digit security (anti-theft) code is recorded.**

1. Turn off the audio system.

Is the security indicator (LED) light on (blink)?

YES - Go to Step 2.

NO - Substitute a known-good audio unit and. recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the, symptom is still present, substitute a known-good audio panel and recheck. If the symptom/ indication goes away, replace the

original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

2. Turn on the audio system.

Is the security indicator (LED) light out?

YES - The audio unit is OK at this time. Check for loose or poor connections at audio unit and audio panel.

NO - Substitute a known-good audio unit and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good audio panel and recheck. If the symptom/ indication goes away, replace the original audio panel (see **AUDIO UNIT REMOVAL/INSTALLATION**).

SOUND QUALITY DIAGNOSIS

Special tools required

Diagnostics CD 07AAZ-SDBA100

Use the following tests to check sound quality.

NOTE: **Before beginning the following tests, write down the client's bass, treble, fader and balance settings, then set them to their center positions for the testing.**

LEFT/RIGHT CHANNEL ID

Do this test to confirm proper channel routing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 1 (left, both, right channel ID) at a normal, or slightly higher than normal, volume level.
3. The voice should be audible only from the channel or channels when indicated.
 - If the channel ID is correct for each side, go to **PHASE TEST**.
 - If the channel ID is not correct, check for
 - Shorted speaker wire
 - Faulty amplifier
 - Faulty audio unit

Special tools required

Diagnostics CD 07AAZ-SDBA100

Use the following tests to check sound quality.

NOTE: Before beginning the following tests, write down the client's bass, treble, fader and balance settings, then set them to their center positions for the testing.

PHASE TEST

Do this test to confirm proper speaker phasing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 2 (phase) at a normal, or slightly higher than normal, volume level.
3. The voice should sound centered and focused when it is in-phase.
4. The voice should sound diffused, and have "less bass" when it is out of phase.
 - If the voice changes from in-phase to out of phase as indicated by the prompt, the phasing is correct. Go to **ELECTRICAL NOISE TEST**.
 - If the voice always sounds out of phase, phasing is not correct. Check for:
 - Crossed speaker wires
 - Faulty amplifier
 - Faulty audio unit

Special tools required

Diagnostics CD 07AAZ-SDBA100

ELECTRICAL NOISE TEST

Do this test to check for electrical noise being induced into the audio system.

NOTE: Electrical noise may be caused by outside sources that cannot be handled by the audio system. Make sure you remove any cell phones and/or turn off any aftermarket devices before beginning this test.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 4 (digital zero) at a normal, or slightly higher than normal, volume level.
3. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
4. Play track No. 5 (near digital zero) at a normal, or slightly higher than normal, volume level.
5. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
6. Play track No. 6 (SNR) at a normal, or slightly higher than normal, volume level.
7. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
 - If no abnormal noise is heard, go to the **INDIVIDUAL SPEAKER TEST**.
 - If the noise is present only during the SNR track, replace the audio unit (see **AUDIO UNIT**

REMOVAL/INSTALLATION).

- If the noise is heard during the digital zero or near digital zero track, check for
 - Poor ground at the audio unit, amplifier, engine, or battery cable
 - Pinched or shorted speaker or amplifier wire
 - Faulty amplifier
 - Faulty audio unit
 - Other faulty components causing excessive electrical noise (ignition coils, alternator, door lock actuators, etc.). Disconnect any suspect components, and then replay the tracks that were originally noisy. If the noise is gone, check the component's circuit and the component.

Special tools required

Diagnostics CD 07AAZ-SDBA100

INDIVIDUAL SPEAKER TEST

Do this test to identify a faulty speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 30 (steady 300 Hz tone) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound compared to the other channels. Use the audio unit's fader and balance settings to help isolate the channel with the problem.
 - If the sound quality produced by a specific speaker is poor, substitute it with a known-good speaker. If the poor sound quality continues, go to the **SOUND BALANCE TEST** .
 - If the sound quality is OK, go to the **SOUND BALANCE TEST** .

Special tools required

Diagnostics CD 07AAZ-SDBA100

SOUND BALANCE TEST

Perform this test to identify a faulty channel or speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Confirm the bass and treble are set to the center positions.
3. Play track No. 3 (pink noise) at a normal, or slightly higher than normal, volume level.
4. A "static" type sound should be heard through all speakers.
5. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit of a known-good vehicle.
6. Set the bass and treble to the center positions.
7. Play track No. 3 (pink noise) all the same level as was played in step 3.
8. Compare the sounds made by the two vehicles.

- If the sound does not have as much bass, check the subwoofer and circuit.
- If the sound does not have enough "hiss," check the tweeters and their circuits.

Special Tools Required

Diagnostics CD 07AAZ-SDBA100

FREQUENCY SWEEP

Do this test to find rattles or reverberations that may cause a perception of poor sound quality.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
2. Play track No. 13 (sweep from 500 Hz to 35 Hz) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound quality or reverberations caused by specific frequencies. Use the voice-over to estimate the frequency that causes the vibration. Use the audio unit's fader and balance settings to help isolate the channel with the problem.
 - If vibrations or poor sound quality are heard, go to step 4.
 - If no vibrations or poor sound quality are heard, go to **SOUND JUDGING** .
4. Choose the appropriate track from No. 14 to 25 (small range frequency sweep) or 26 to 53 (single frequencies) to recreate the frequency that caused the poor sound quality or vibration witnessed in step 3; this aids in diagnosis of the cause.

NOTE: **When you get to the track that recreates the problem, select the repeat function on the audio unit, this will help you isolate the cause.**

5. Replace or insulate the source of the vibration or, if the speaker is the source of the poor sound quality, replace it.

Special tools required

Diagnostics CD 07AAZ-SDBA100

SOUND JUDGING

Do this test to compare overall sound quality, imaging, and dynamics between the client's vehicle and a known-good vehicle. Only use a vehicle of the same model and trim level for this test.

1. In the client's vehicle, set the bass, treble, fader, and balance settings to the client's normal settings that were written down before beginning the test.
2. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
3. Play tracks No. 7 to 12 (sound quality, midland, dynamics, and imaging demonstration tracks) at a normal, or slightly higher than normal, volume level. Write down the volume setting being used.
4. Listen to areas of the track that stand out as being either very clear or poorer than other areas of the track.

5. In a known-good vehicle, insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit.
6. Play the tracks at the same volume level and the same bass, treble, balance, and fader settings as used in step 3 in the client's vehicle.
7. Listen to the same area of the track that stood out as being either very clear or poorer than other areas of the track.
8. Compare the client's vehicle's sound quality results the known-good vehicle's results.
 - If the sound quality in the client's vehicle is comparable to the sound quality in the known-good vehicle, then the client's vehicle is operating as designed.
 - If the sound quality is not comparable, check these items in order.
 - Loose or improperly installed speakers or other hardware that may create interference from the vibrations generated by the speakers
 - Poor power or ground to the stereo amplifier
 - Damaged speaker(s)
 - Faulty amplifier
 - Faulty audio unit

SEEK STOP TEST

Do this test to check the performance of the audio unit's AM and FM reception. Refer to symptom troubleshooting: audio sound weak or distorted, or no sound is heard from speakers (display is normal) (see **NO SOUND IS HEARD FROM SPEAKER(S) (DISPLAY IS NORMAL) (WITH NAVIGATION)**) before continuing with this test.

NOTE:

- **Window tint, aftermarket theft-recovery devices and other aftermarket devices may affect reception.**
- **Changes in cloud cover and other atmospheric conditions will affect the ability of the audio unit to receive radio signals.**

1. Park the client's vehicle in an open area away from buildings or other obstructions.
2. Park a known-good vehicle (same year, model, and trim level) next to the client's vehicle, facing the same direction.
3. Start the engine in the client's vehicle, and turn on the radio.
4. Set the FM receiver to 87.7 MHz.
5. Press the "Seek +" button, and record the first station that the audio unit locks onto.
6. Press the "Seek +" button repeatedly, and write down each station that the audio unit locks onto until the station recorded in step 5 is reached again.
7. Set the AM receiver to 530 kHz.
8. Press the "Seek +" button, and record the first station that the audio unit locks onto.
9. Press the "Seek +" button repeatedly, and write down each station that the audio unit locks onto until the station recorded in step 8 is reached again.
10. Turn the ignition switch to LOCK (0).

11. Start the engine in the known-good vehicle, and then perform steps 4 thru 10 on the known-good vehicle.
12. Compare the number of stations received in steps 6 and 9 in the client's vehicle with the number of stations received in the known-good vehicle.
 - If the number of stations received is the same, or within 10 %, the audio unit's tuner performance is OK. The problem may be atmospheric conditions, multi-path interference, or other obstructions to the radio signal.
 - If the client's vehicle receives fewer stations by at least 10 %, go to step 2 of poor radio reception or interference (see **POOR AM OR FM RADIO RECEPTION OR INTERFERENCE**).

AUDIO UNIT REMOVAL/INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
 - Take care not to scratch the dashboard and related parts.
 - Lay a workshop towel under the parts when working on them to protect the face panel from scratches or other damage.
 - Eject all the disc before remove the audio unit to prevent damaging the CD/DVD player's load mechanism.
 - If you are replacing the audio unit, write down the audio presets (if possible), and enter them into the new audio unit.
1. Make sure you have the anti-theft codes for the audio system and the navigation system (if equipped).
 2. Remove the driver's inner dashboard trim (see **DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION**), and front passenger's dashboard trim (see **PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION**).
 3. Remove the console lower trim panel (A) and the self tapping screws, then pull out the audio unit (B).

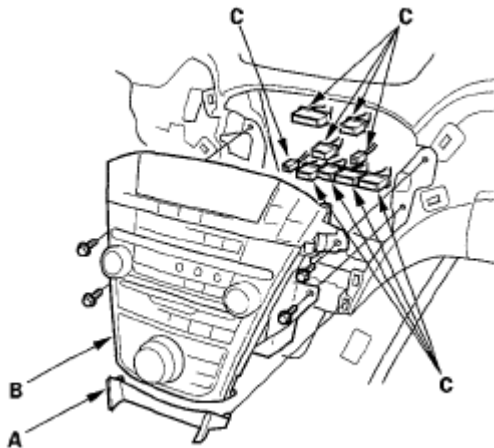


Fig. 109: Identifying Console Lower Trim Panel, Connectors And Audio Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the connectors (C), then remove the audio unit.
5. Remove the climate control unit (see **DUST AND POLLEN FILTER REPLACEMENT**).
6. Remove the screws and the audio unit (A) from the audio panel (B).

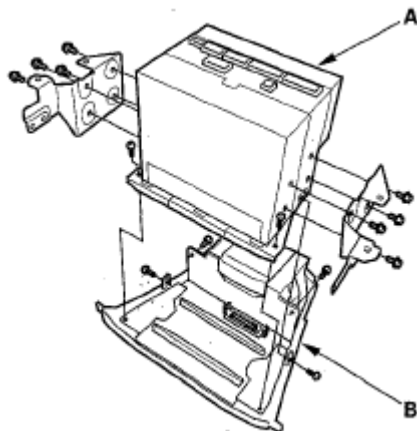


Fig. 110: Identifying Audio Unit And Audio Panel
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the audio unit in the reverse order of removal, and note these items:
8. Give the new anti-theft codes to the client.
 - Make sure all the connectors and the antenna lead are secure.
 - Enter anti-theft codes for the audio system and the navigation system (if equipped).
 - Set the clock (on vehicles without navigation).
 - If necessary, enter the navigation system code.

SPEAKER TEST/REPLACEMENT

DOOR SPEAKER

1. Remove the door panel.
 - Front: (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
 - Rear: (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
2. Remove the three mounting screws from the speaker (A).

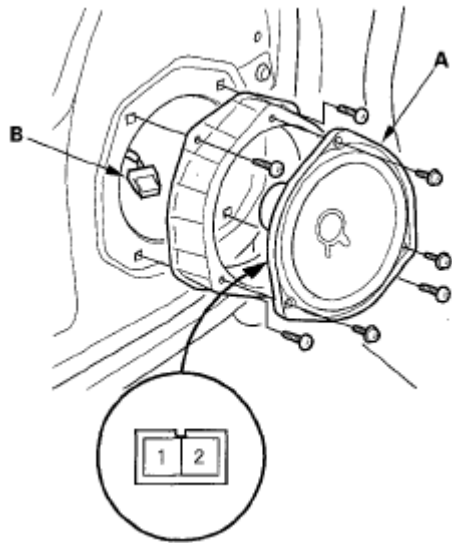


Fig. 111: Identifying Door Speaker Mounting Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B), and remove the speaker.
4. Measure the resistance between the No. 1 and No. 2 terminals. There should be about 2 ohms.
5. If the resistance is not as specified, replace the door speaker.

CENTER SPEAKER

NOTE:

- Put on gloves to protect your hands.
- Take care not scratch the dashboard.

1. Remove the center upper panel (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove the screws and the speaker (A).

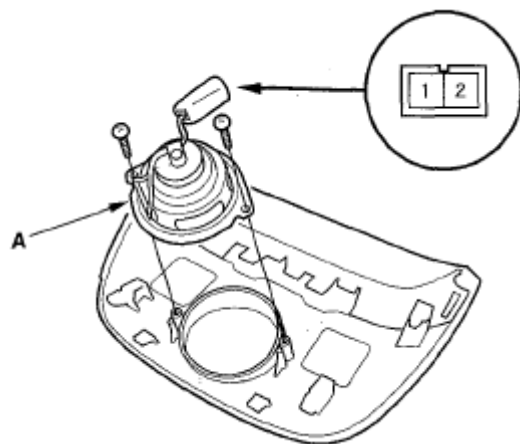


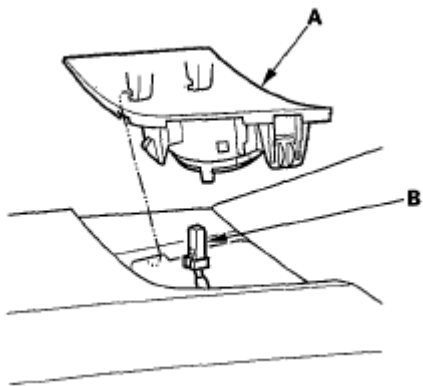
Fig. 112: Identifying Center Speaker Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between No. 1 and No. 2 terminals there should be about 4 ohms.
4. If the resistance is not as specified, replace the front center speaker.

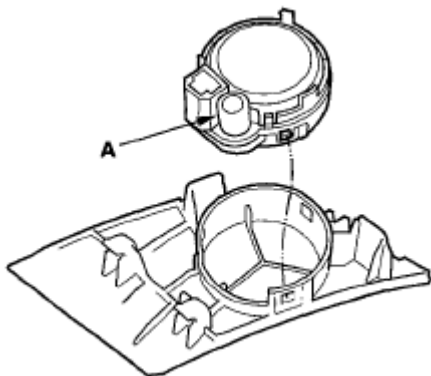
TWEETER

1. Carefully pry the tweeter grille (A) out of the dashboard. Be careful not to damage the tweeter grille and the dashboard.

**Fig. 113: Identifying Tweeter Grille And Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 2P connector (B) from the tweeter.
3. Remove the tweeter speaker from the speaker grille.

**Fig. 114: Identifying Capacitor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the capacitor (A) condition. If any problem is found, replace the tweeter.
5. Measure the resistance between the tweeter (A) No. 2 terminal and the outside terminal of the capacitor.

There should be about 6 ohms.

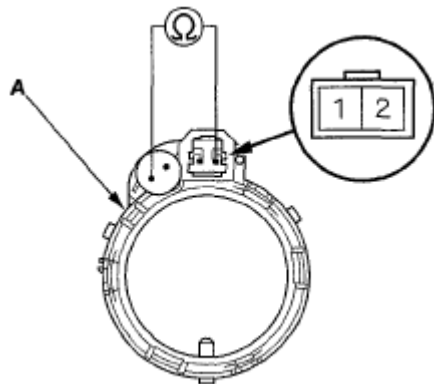


Fig. 115: Identifying Resistance Between Tweeter Terminal 2 And Outside Terminal Of Capacitor
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the resistance is not as specified, replace the tweeter.

SATELLITE SPEAKER

1. Remove the quarter pillar trim (see **QUARTER PILLAR TRIM**).
2. Remove the speaker grille (A) and connector clip (B).

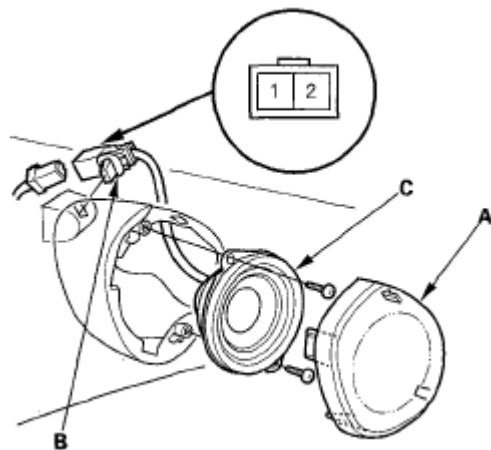


Fig. 116: Identifying Speaker Grille, Satellite Speaker And Connector Clip
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws and the satellite speaker (C).
4. Measure the resistance between the No. 1 and No. 2 terminals. There should be about 4 Ω.
5. If the resistance is not as specified, replace the satellite speaker.

SUBWOOFER/AMPLIFIER UNIT (WITH NAVIGATION)

1. Remove the right rear side trim panel (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
2. Disconnect the 8P connector (A), then remove the bolts, nuts and pull out the subwoofer (B).

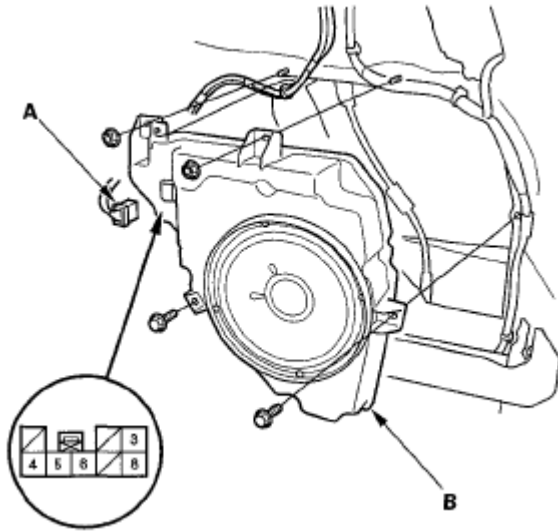


Fig. 117: Identifying Subwoofer/Amplifier Connector Terminals - With Navigation
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INPUT TEST

1. With the connector still disconnected, make the input tests at the connector according to the table.

TERMINAL TEST CHARTS

Terminal	Test
5	Measure the voltage to ground with all conditions: There should be battery voltage.
6	Measure the voltage to ground with audio power switch ON: There should be battery voltage.

2. Reconnect the connector to the subwoofer/ amplifier unit, and make the input test at the connector according to the table.

TERMINAL TEST CHART

Terminal	Test
4	Measure the voltage to ground with all conditions: There should be less than 0.1 V.

3. If the input test proves OK and the subwoofer has no sound, replace the faulty subwoofer/amplifier unit.

SUBWOOFER (WITHOUT NAVIGATION)

1. Remove the right rear side trim panel (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).

2. Disconnect the 8P connector (A), then remove the bolts, nuts and pull out the subwoofer (B).

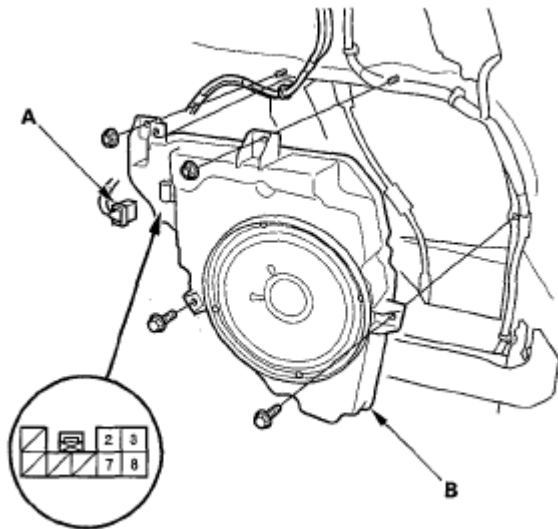


Fig. 118: Identifying Subwoofer Connector Terminals - Without Navigation

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between the No. 2 and No. 7 terminals and No. 3 and No. 8. There should be about 2 ohms.
4. If the resistance is not as specified, replace the subwoofer.

STEREO AMPLIFIER REMOVAL/ INSTALLATION

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**) and passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the connectors (A).

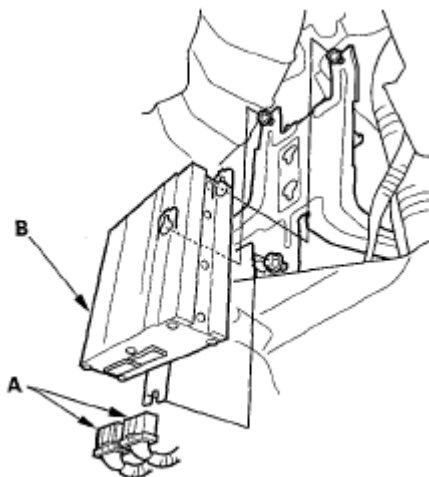


Fig. 119: Identifying Stereo Amplifier And Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the bolts, then pull out the stereo amplifier (B).
4. Install the stereo amplifier in the reverse order of removal.

ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION

With AcuraLink:

NOTE: The AcuraLink must be reactivated by Acura Client Services when:

- The AcuraLink control unit (XM receiver) is replaced.
- DATA RESET was selected while in the self-diagnostic function.
- Vehicle ownership changes.

1. Remove the right rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
2. Disconnect the connectors (A), then remove the bolts and pull out the AcuraLink control unit (XM receiver) (B).

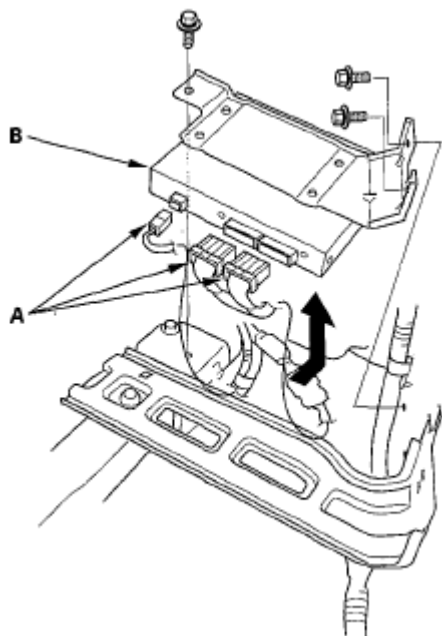


Fig. 120: Identifying Acuralink Control Unit (XM Receiver)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the AcuraLink control unit (XM receiver) in the reverse order of removal.

NOTE: If you replaced the AcuraLink control unit, make sure it has the latest

software (see UPDATING THE ACURALINK CONTROL UNIT).

XM RECEIVER REMOVAL/INSTALLATION

1. Remove the right rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
2. Disconnect the connectors (A), then remove the bolts and pull out the XM receiver (B).

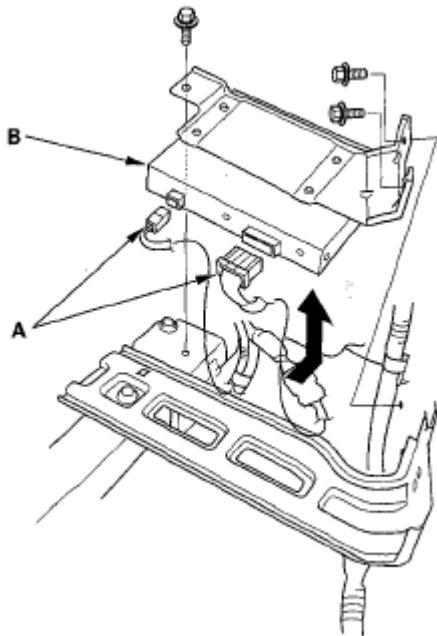


Fig. 121: Identifying XM Receiver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the XM receiver in the reverse order of removal.

AUDIO REMOTE SWITCH TEST

1. Remove the driver's airbag assembly (see DRIVER'S AIRBAG REPLACEMENT).
2. Remove the 20P connector from the cable reel.

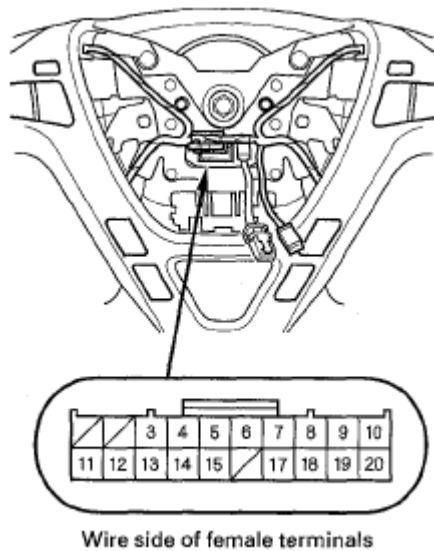


Fig. 122: Identifying Audio Remote Switch Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Measure the resistance between the No. 19 and No. 20 terminals in each switch position according to the table.

RESISTANCE CHART

Position	Resistance
Switch not pressed	About 10 kohms
MODE	About 3.7 kohms
CH (+)	About 1.7 kohms
CH (-)	About 775 ohms
? (VOL. UP)	About 357 ohms
? (VOL. DOWN)	About 100 ohms

- If the resistance is not as specified, replace the audio remote switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).
- Use a diode tester between the terminals in each switch position according to **Fig. 123**.

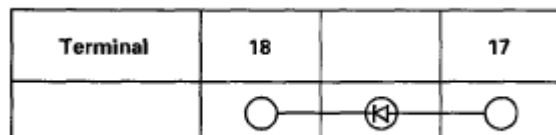


Fig. 123: Using Diode Tester Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the diode test is not as specified, replace the audio remote switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

AM/FM ANTENNA AMPLIFIER REPLACEMENT

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Disconnect the connector (A) from the AM/FM antenna amplifier (B).

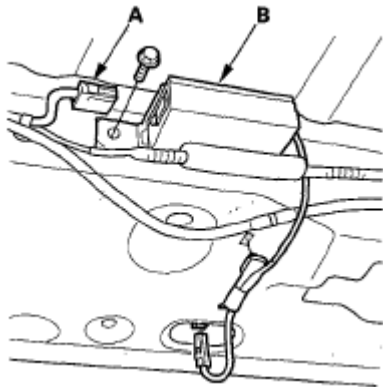


Fig. 124: Identifying Connector And AM/FM Antenna Amplifier
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolt and AM/FM antenna amplifier.
4. Install the unit in the reverse order of removal.

XM ANTENNA REPLACEMENT

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Remove the nut (A) from the XM antenna (B).

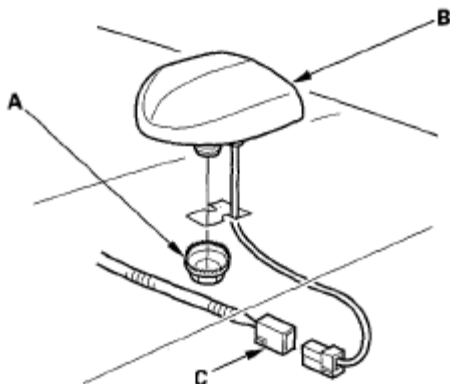


Fig. 125: Identifying XM Antenna, Nut And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the connector (C) and remove the XM antenna.
4. Install the XM antenna in the reverse order of removal.

AUXILIARY JACK ASSEMBLY REPLACEMENT

WITHOUT REAR ENTERTAINMENT

1. Open the center console.
2. Carefully pull out the auxiliary jack assembly (A), then disconnect the 5P connector (B).

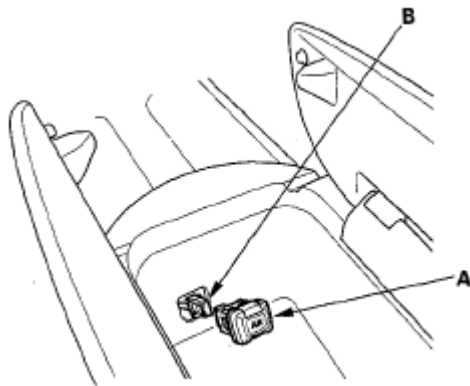


Fig. 126: Identifying Auxiliary Jack Assembly And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install in the reverse order of removal.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

2007-09 TRANSMISSION

Automatic Transmission - MDX

AUTOMATIC TRANSMISSION

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07GAB-PF50101	Mainshaft Holder	1
②	07GAD-PG40100	Oil Seal Driver Attachment	1
③	07GAD-SD40101	Attachment, 78 x 90 mm	1
④	07GAE-PG40200 or 07GAE-PG4020A	Clutch Spring Compressor Bolt Assembly	1
⑤	07HAD-SG00100	Attachment, 83 mm	1
⑥	07JAD-PH80101	Oil Seal Driver Attachment	1
⑦	07JAD-SH30100	Attachment, 65 mm	1
⑧	07LAD-PW50601	Attachment, 40 x 50 mm	1
⑨	07LAE-PX40100	Clutch Spring Compressor Attachment	2
⑩	07MAD-PR90100	Attachment, 45 x 55 mm	1
⑪	07MAF-SP0011A	Tapered Bearing Race Installer A	1
⑫	07MAF-SP0013A	Installer Shaft	1
⑬	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	3
⑭	07MAJ-PY40120	A/T Pressure Hose Adapter	3
⑮	07NAD-PX40100	Attachment, 78 x 80 mm	1
⑯	07XAA-002010A	Wrench, 40 x 42 mm	1
⑰	07XAB-0010101	Companion Flange Holder	1
⑱	07ZAE-PRP0100	Clutch Compressor Attachment	1
⑲	070AJ-0020101	Preload Inspection Tool	1
⑳	07406-0020400 or 07406-0020401	A/T Oil Pressure Gauge Set/Panel	1

07HAE-PL50101 may also be used to substitute one of 07LAE-PX40100.

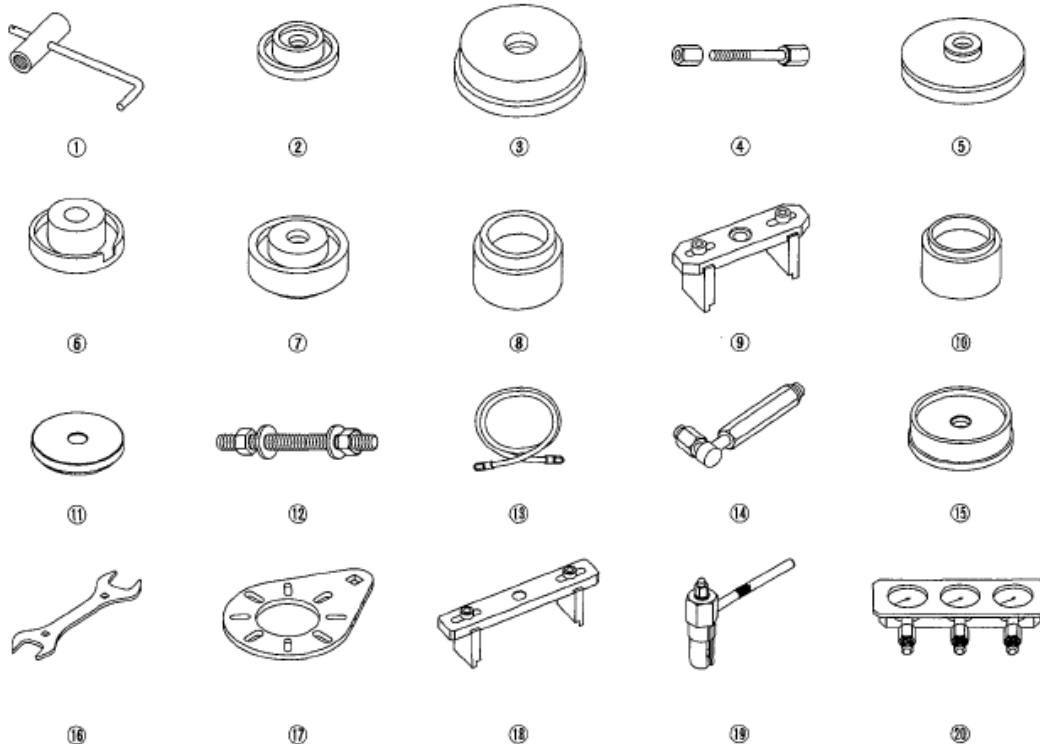


Fig. 1: Identifying Special Tools (1 Of 2)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ref. No.	Tool Number	Description	Qty
21	07736-A01000B or 07736-A01000A	Adjustable Bearing Puller, 25—40 mm	1
22	07741-0010201	Sliding Hammer Weight	1
23	07746-0010200	Attachment, 37 x 40 mm	1
24	07746-0010300	Attachment, 42 x 47 mm	1
25	07746-0010400	Attachment, 52 x 55 mm	1
26	07746-0010500	Attachment, 62 x 68 mm	1
27	07746-0010600	Attachment, 72 x 75 mm	1
28	07746-0010800	Attachment, 22 x 24 mm	1
29	07746-0030100	Driver, 40 mm I.D.	1
30	07746-0030300	Attachment, 30 mm I.D.	1
31	07749-0010000	Driver	1
32	07936-1660101	Bearing Remover Shaft Set, 12 mm	1
33	07936-3710100	Bearing Remover Shaft Handle	1
34	07936-3710600	Bearing Remover Shaft Set, 20 mm	1
35	07936-8890300	Bearing Remover Shaft Set, 30 mm	1
36	07936-GE00100	Bearing Remover Shaft, 10 mm	1
37	07936-GE00200	Bearing Remover Head, 10 mm	1
38	07947-6340500	Driver Attachment	1

07736-A01000B or 07736-A01000A must be used with commercially available 3/8"-16 slide hammer.

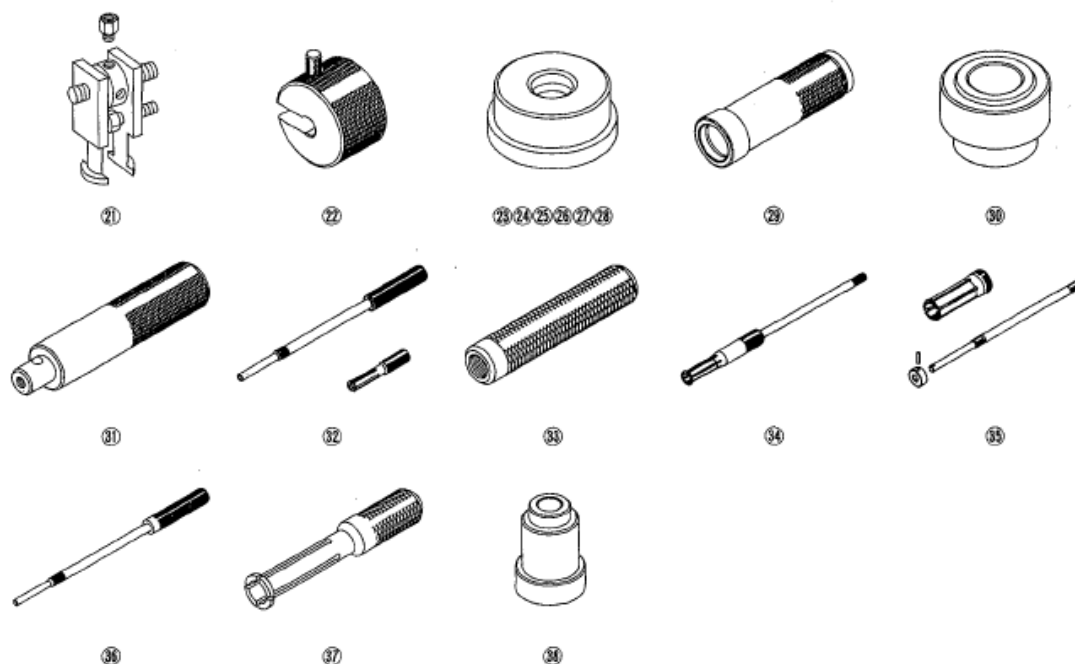


Fig. 2: Identifying Special Tools (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

How to Check for DTCs with the Honda Diagnostic System (HDS)

When the powertrain control module (PCM) senses an abnormality in the input or output system, the D indicator (A) in the gauge assembly (B) will usually blink.

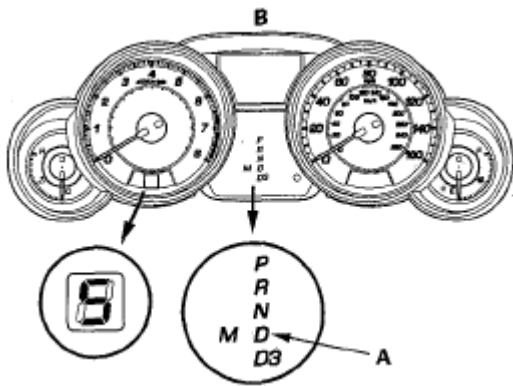


Fig. 3: Identifying D Indicator In Gauge Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the Honda Diagnostic System (HDS) is connected to the data link connector (DLC) (A) (located behind the driver's dashboard lower cover), it will indicate the diagnostic trouble code (DTC) when the ignition switch is turned ON (II) and the appropriate menu is selected.

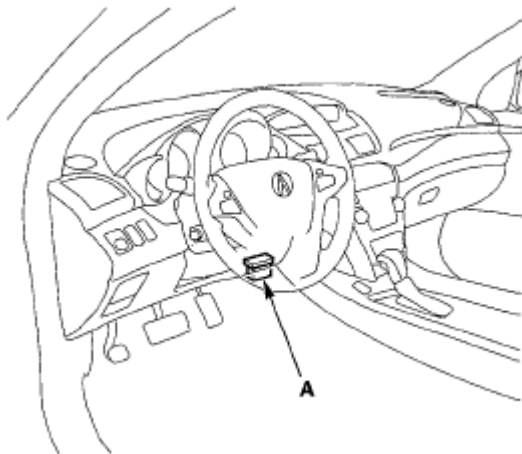


Fig. 4: Identifying Data Link Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the D indicator or malfunction indicator lamp (MIL) has been reported ON, or if a driveability problem is suspected, do this procedure:

1. Connect the HDS to the DLC. (See the HDS user's service information for specific instructions.)
2. Turn the ignition switch to ON (II), select A/T system, and observe the DTC in the DTCs MENU on the HDS screen.
3. Record the freeze data and on-board snapshots for all fuel and emissions DTCs and A/T DTCs.
4. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC (except for DTC P0700, which means there is one or more A/T DTCs, and no problems were detected in the fuel and emissions circuit of the PCM).
5. Clear the DTC and data.

6. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, and then recheck for the DTC. If the A/T DTC returns, go to the **INDICATED DTCS TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

Symptom Troubleshooting Versus DTC Troubleshooting

Some symptoms will not trigger DTCs or cause the D indicator to blink. If the malfunction indicator lamp (MIL) was reported ON or the D indicator has been blinking, check for DTCs. If the vehicle has an abnormal symptom, and there are no DTCs stored, do the symptom troubleshooting. Check the list of probable cause(s) for the symptom, in the sequence listed, until you find the problem.

How to Check for DTCs with the SCS Mode (retrieving the flash codes)

NOTE: The preferred method is to use the HDS to retrieve the P-code.

When the PCM senses an abnormality in the input or output system, the D indicator (A) in the gauge assembly (B) will usually blink.

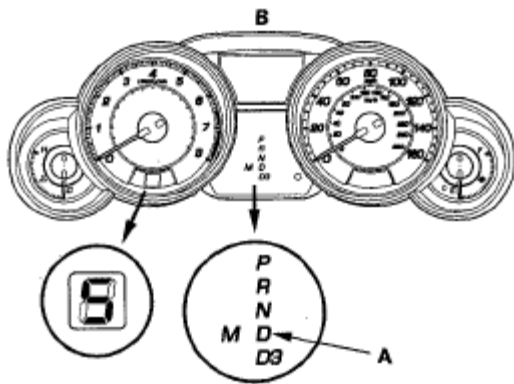


Fig. 5: Identifying D Indicator In Gauge Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

When the D indicator has been reported ON, connect the HDS to the DLC (A) (located behind the driver's dashboard lower cover). Turn the ignition switch to ON (II), select SCS mode, then the D indicator will indicate flash the DTC.

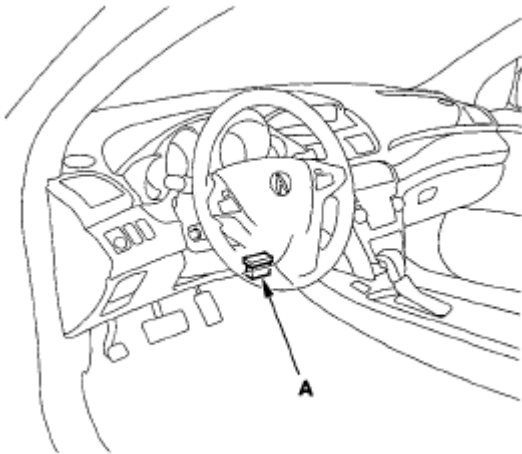


Fig. 6: Identifying Data Link Connector

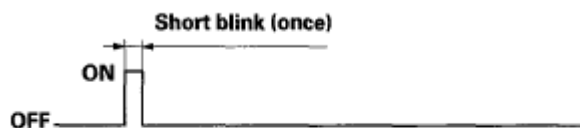
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the D indicator and the MIL come on at the same time, or if a driveability problem is suspected, do this:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch to ON (II), select SCS mode, then observe the D indicator in the gauge assembly.

Codes 1 through 9 are indicated by individual short blinks. Code 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks. Add the long and short blinks together to determine the code.

Example: DTC 1-1



Example: DTC 15-5

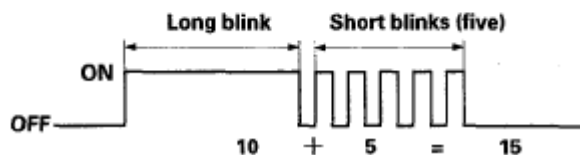


Fig. 7: Identifying DTC Blinking Pattern

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Record all fuel and emissions DTCs and A/T DTCs.
4. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC (except DTC 70, which means there is one or more A/T DTCs, and no problems were detected in the fuel and emissions circuit of the PCM).
5. Clear the DTC and data.

6. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, and then recheck for DTC. If the A/T DTC returns, go to the **INDICATED DTCS TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

How to Troubleshoot Circuits at the PCM Connectors

NOTE: The PCM overwrites data and monitors the EVAP system for up to 15 minutes after the ignition switch is turned to LOCK (0). Jumping the SCS line after turning the ignition switch to LOCK (0) cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.

1. Connect the HDS to the DLC (A), and jump the SCS line with the HDS.

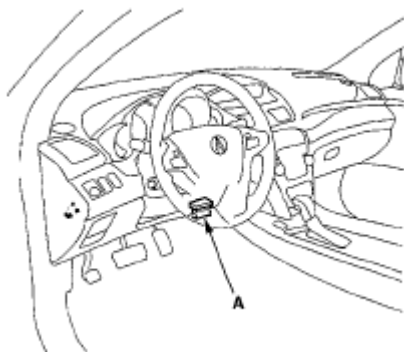


Fig. 8: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the circuit on the PCM, according to the DTC troubleshooting, with a commercially available digital multimeter, patch cords, and pin probes at PCM harness connectors.
3. Remove the bracket (A), then free the A/C discharge line from the clip (B). Remove the A/C suction line mounting bracket bolt (C), then remove the PCM cover (D) and disconnect PCM connectors (E).

NOTE: PCM connectors A, B, and C have symbols (A= $\square$, B= Δ , C=o) embossed on them for identification.

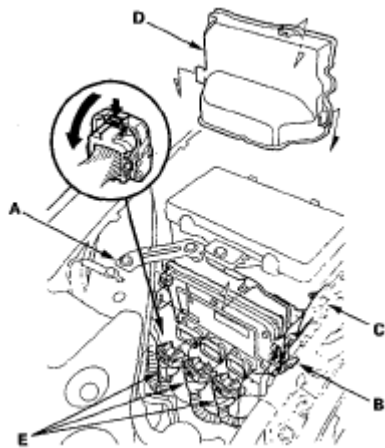


Fig. 9: Identifying PCM Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the connector inspection port (A) size, and select a suitable pin probe.

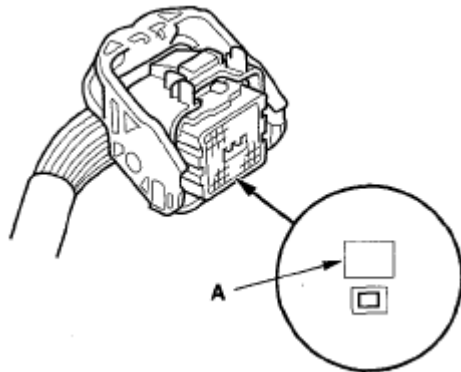


Fig. 10: Identifying Connector Inspection Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect one end of the patch cords (A) to a digital multimeter (B), and connect the other patch cord terminal to a commercially available jack (Pomona Electronics Tool No. 3563 or equivalent) (C).

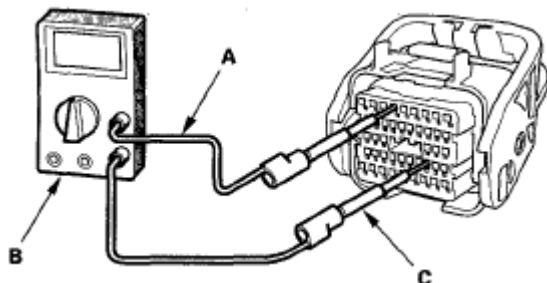


Fig. 11: Identifying Patch Cords To Digital Multimeter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Gently slide the pin probe into the inspection port at the connector terminal side. Always use the inspection port. Do not slide the probe into the connector terminals.

NOTE:

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

Clear A/T DTCs Procedures

1. Connect the HDS to the DLC (A).

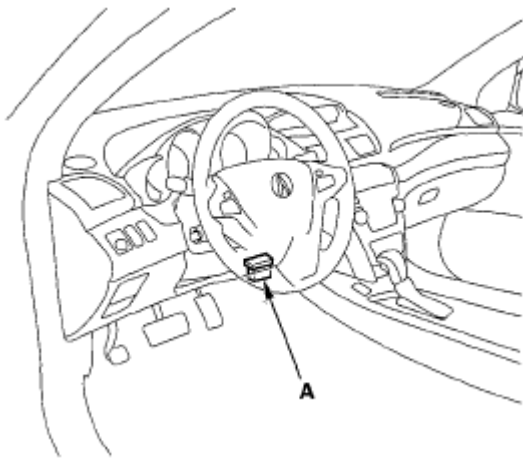


Fig. 12: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communications with the PCM. IF it does not, go to the DLC circuit troubleshooting (see **DTC TROUBLESHOOTING**)
4. Clear the DTC(s) on the HDS screen.

OBD Status

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the technician's repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: On board diagnosis has successfully completed.
- FAILED: On board diagnosis has completed but failed.

- **NOT COMPLETED:** The on board diagnosis was running but is out of the enable conditions of the DTC.

How to End a Troubleshooting Session (required after any troubleshooting)

NOTE: **Reset the PCM with the HDS while the engine is stopped.**

1. Turn the ignition switch to LOCK (0).
2. Turn the ignition switch to ON (II), and wait for 30 seconds.
3. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.
4. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
5. Start the engine in P or N, and warm it up to normal operating temperature (the radiator fan comes on).
6. To check that the problem is repaired, test-drive the vehicle for several minutes at speeds over 30 mph (48 km/h) or under the same conditions as those indicated by the freeze data.

Substitute the PCM**Special Tools Required**

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an IN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an IN workstation with HDS and CM update software

Use any one of these update tools.

NOTE: **Use this procedure when you have to substitute a known-good PCM during a troubleshooting procedure**

1. Connect the HDS to the DLC (A) located behind the driver's side of the dashboard.

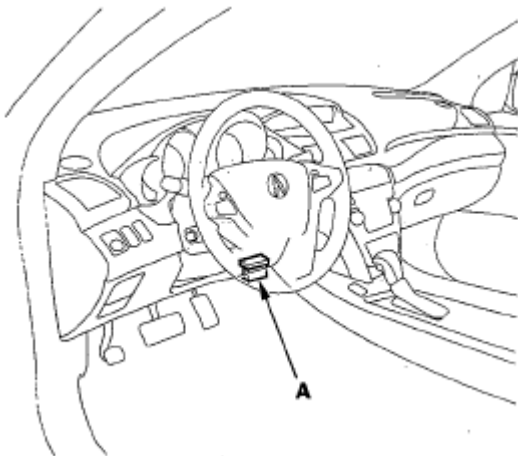


Fig. 13: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from the DLC circuit troubleshooting, skip steps 5 to 6, and clean the throttle body after substituting the PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the HDS screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Turn the ignition switch to LOCK (0).
7. Do the battery removal procedure (see **REMOVAL**).
8. Remove the bracket (D), then free the A/C discharge line from the clip (E). Remove the A/C suction line mounting bracket bolt (F).

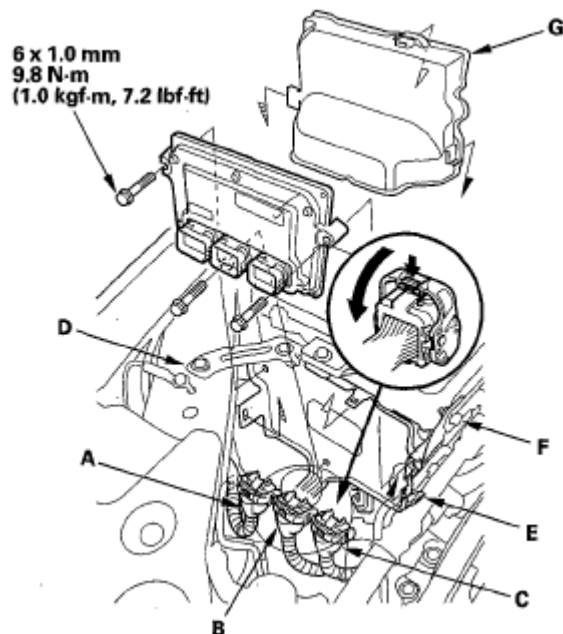


Fig. 14: Identifying PCM Connectors With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the PCM cover (G), disconnect PCM connectors A, B, and C, and remove the mounting bolts, then remove the PCM.
10. Install the PCM and battery cables in the reverse order of removal.
11. Do the battery installation procedure (see **INSTALLATION**).
12. Turn the ignition switch to ON (II).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NOTE: If DTC P0630 "VIN not Programmed or Mismatch" will be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.

13. Manually input the VIN to the PCM with the HDS.
14. Update the PCM if it does not have the latest software.
15. Select the IMMOBI SYSTEM with the HDS.
16. Enter the immobilizer code using the PCM replacement procedure in the HDS; this allows you to start the engine.
17. Reset the PCM with the HDS.
18. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the HDS screen prompts. If the TP POSITION CHECK failed, clean the throttle body (see **THROTTLE BODY CLEANING**).
19. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
20. Do the CKP learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

DTC TROUBLESHOOTING INDEX

NOTE: Before you troubleshoot, record all freeze data and review the General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

DTC TROUBLESHOOTING INDEX

DTC ⁽¹⁾	D Indicator	MIL	Detection Item
<u>P0107</u> (12-7)	Blinks	OFF or ON ⁽³⁾	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage Input
<u>P0108</u> (12-8)	Blinks	OFF or ON ⁽³⁾	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage Input
<u>P0335</u> (88-2)	Blinks	OFF or ON ⁽³⁾	Crankshaft Position (CKP) Sensor A No Signal
<u>P0339</u> (88-6)	Blinks	OFF or ON ⁽³⁾	Crankshaft Position (CKP) Sensor A Intermittent Interruption
<u>P0340</u> (126-2)	Blinks	OFF or ON ⁽³⁾	Camshaft Position (CMP) Sensor No Signal
<u>P0344</u> (126-6)	Blinks	OFF or ON ⁽³⁾	Camshaft Position (CMP) Sensor Intermittent Interruption

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

P0385 (125-2)	Blinks	OFF or ON ⁽³⁾	Crankshaft Position (CKP) Sensor B No Signal
P0389 (125-6)	Blinks	OFF or ON ⁽³⁾	Crankshaft Position (CKP) Sensor B Intermittent Interruption
P062F (0-7)	Blinks	OFF or ON ⁽³⁾	Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error
P0705 (5-2) ⁽²⁾	Blinks	ON	Short in Transmission Range Switch Circuit (Multiple Shift-position Input)
P0706 (6-2) ⁽²⁾	OFF	ON	Open in Transmission Range Switch Circuit
P0711 (28-5) ⁽²⁾	Blinks	OFF	Problem in ATF Temperature Sensor Circuit
P0712 (28-3) ⁽²⁾	Blinks	OFF	Short in ATF Temperature Sensor Circuit
P0713 (28-4) ⁽²⁾	Blinks	OFF	Open in ATF Temperature Sensor Circuit
P0716 (15-5) ⁽²⁾	Blinks	ON.	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit
P0717 (15-3) ⁽²⁾	Blinks	ON	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)
P0718 (15-6) ⁽²⁾	Blinks	ON	Input Shaft (Mainshaft) Speed Sensor Intermittent Failure
P0721 (9-5) ⁽²⁾	Blinks	ON	Problem in Output Shaft (Countershaft) Speed Sensor Circuit
P0722 (9-3) ⁽²⁾	Blinks	ON	Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)
P0723 (9-6) ⁽²⁾	Blinks	ON	Output Shaft (Countershaft) Speed Sensor Intermittent

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Failure

- (1) The DTC in parentheses is the Honda code that you will see when you use the SCS mode. The first number(s) before the - (hyphen) is the flash code the D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.
- (2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.
- (3) The MIL comes on when the PGM-FI control system detects a failure simultaneous with the A/T DTC.

NOTE: Before you troubleshoot, record all freeze data and review the General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

DTC TROUBLESHOOTING INDEX (CONT.)

DTC ⁽¹⁾	D Indicator	MIL	Detection Item
P0731 (64-1)	Blinks	OFF	Problem in 1st Clutch and 1st Clutch Hydraulic Circuit
P0732 (64-2)	Blinks	OFF	Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit
P0733 (64-3)	Blinks	OFF	Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit
P0734 (64-4)	Blinks	OFF	Problem in 4th Clutch and 4th Clutch Hydraulic Circuit
P0735 (64-5)	Blinks	OFF	Problem in 5th Clutch and 5th Clutch Hydraulic Circuit
P0741 (40-3)	OFF	OFF	Torque Converter Clutch Hydraulic Circuit Stuck OFF
P0746 (76-3)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve A Stuck OFF
P0747 (76-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve A Stuck ON
P0751 (70-3)	Blinks	ON	Shift Solenoid Valve A Stuck OFF
P0752 (70-4)	Blinks	ON	Shift Solenoid Valve A Stuck ON

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

P0756 (71-3)	Blinks	ON	Shift Solenoid Valve B Stuck OFF
P0757 (71-4)	Blinks	ON	Shift Solenoid Valve B Stuck ON
P0761 (72-3)	Blinks	ON	Shift Solenoid Valve C Stuck OFF
P0762 (72-4)	Blinks	ON	Shift Solenoid Valve C Stuck ON
P0766 (73-3)	Blinks	ON	Shift Solenoid Valve D Stuck OFF
P0767 (73-4)	Blinks	ON	Shift Solenoid Valve D Stuck ON
P0776 (77-3)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck OFF
P0777 (77-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve B Stuck ON
P0796 (78-3)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
P0797 (78-4)	Blinks	ON	A/T Clutch Pressure Control Solenoid Valve C Stuck ON
P0812 (65-2) ⁽²⁾	Blinks	ON	Open in Transmission Range Switch ATP R Switch Circuit
P0815 (24-2) ⁽²⁾	Blinks	ON	Short in Transmission Gear Selection Switch Upshift Switch Circuit, or Transmission Gear Selection Switch Upshift Switch Stuck ON
P0816 (24-6) ⁽²⁾	Blinks	ON	Short in Transmission Gear Selection Switch Downshift Switch Circuit, or Transmission Gear Selection Switch Downshift Switch Stuck ON

(1) The DTC in parentheses is the Honda code that you will see when you use the SCS mode. The first number(s) before the - (hyphen) is the flash code the D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

(2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NOTE: Before you troubleshoot, record all freeze data and review the General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

DTC TROUBLESHOOTING INDEX (CONT.)

DTC⁽¹⁾	D Indicator	MIL	Detection Item
<u>P0842</u> (25-3) ⁽²⁾	Blinks	ON	Short in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck ON
<u>P0843</u> (25-4) ⁽²⁾	Blinks	ON	Open in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck OFF
<u>P0847</u> (26-3) ⁽²⁾	Blinks	ON	Short in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck ON
<u>P0848</u> (26-4) ⁽²⁾	Blinks	ON	Open in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck OFF
<u>P0872</u> (27-3) ⁽²⁾	Blinks	OFF	Short in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Stuck ON
<u>P0873</u> (27-4) ⁽²⁾	Blinks	OFF	Open in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

			Pressure Switch Stuck OFF
P0957 (24-3) ⁽²⁾	Blinks	ON	Short in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck ON
P0958 (24-4) ⁽²⁾	Blinks	ON	Open in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck OFF
P0962 (16-3) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit
P0963 (16-4) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve A
P0966 (23-3) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit
P0967 (23-4) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve B
P0970 (29-3) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit
P0971 (29-4) ⁽²⁾	Blinks	ON	Problem in A/T Clutch Pressure Control Solenoid Valve C

(1) The DTC in parentheses is the Honda code that you will see when you use the SCS mode. The first number(s) before the - (hyphen) is the flash code the D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode.

(2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

NOTE: Before you troubleshoot, record all freeze data and review the General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

DTC TROUBLESHOOTING INDEX (CONT.)

DTC⁽¹⁾	D Indicator	MIL	Detection Item
P0973 (7-3) ⁽²⁾	Blinks	ON	Short in Shift Solenoid Valve A Circuit

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

<u>P0974</u> (7-4) ⁽²⁾	Blinks	ON	Open in Shift Solenoid Valve A Circuit
<u>P0976</u> (8-3) ⁽²⁾	Blinks	ON	Short in Shift Solenoid Valve B Circuit (Short)
<u>P0977</u> (8-4) ⁽²⁾	Blinks	ON	Open in Shift Solenoid Valve B Circuit (Open)
<u>P0979</u> (22-3) ⁽²⁾	Blinks	ON	Short in Shift Solenoid Valve C Circuit
<u>P0980</u> (22-4) ⁽²⁾	Blinks	ON	Open in Shift Solenoid Valve C Circuit
<u>P0982</u> (60-3) ⁽²⁾	Blinks	ON	Short in Shift Solenoid Valve D Circuit
<u>P0983</u> (60-4) ⁽²⁾	Blinks	ON	Open in Shift Solenoid Valve D Circuit
<u>P16C0</u> (99-1) ⁽²⁾	OFF	ON	PCM A/T Control System Incomplete Update
<u>P1717</u> (62-1) ⁽²⁾	Blinks	ON	Open in Transmission Range Switch ATP RVS Switch Circuit
<u>P1743</u> (45-11)	Blinks	OFF	Problem in Shift Control System; Shift Valve E Stuck OFF
<u>P1744</u> (45-12)	Blinks	OFF	Problem in Shift Control System; Shift Valve E Stuck ON
<u>P1745</u> (45-13)	Blinks	OFF	Problem in Shift Control System; Servo Control Valve Stuck OFF or Servo Control Valve Stuck ON
<u>P1780</u> (49-1)	Blinks	ON	Problem in Shift Control System
<u>P2122</u> (20-3)	Blinks	ON	Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit Low Voltage Input
<u>P2123</u> (20-4)	Blinks	ON	Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit High Voltage Input
<u>U0028</u> (107-1)	Blinks	OFF or ON ⁽³⁾	F-CAN Communication Circuit Error (F-CAN Bus OFF)
<u>U0122</u> (107-4)	Blinks	OFF or ON ⁽³⁾	Lost Communication with VSA Modulator-Control Unit

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

U0155 (107-3)	Blinks	OFF or ON ⁽³⁾	Lost Communication with Gauge Control Module
(1) The DTC in parentheses is the Honda code that you will see when you use the SCS mode. The first number(s) before the - (hyphen) is the flash code the D indicator indicates when the data link connector (DLC) is connected to the HDS, and in the SCS mode. (2) This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission. (3) The MIL comes on when the PGM-FI control system detects a failure simultaneous with the A/T DTC.			

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Probable cause(s)	Notes
When you turn the ignition switch to ON (II), the D indicator comes on and stays on in all shift lever positions, or it never comes on at all	- F-CAN communication line error - Gauge control module defective - PCM defective	- Check the F-CAN communication line for a DTC (see <u>DTC B1168</u>). - Check the F-CAN communication line by using the gauge control module self-diagnostic function (see <u>THE COMMUNICATION LINE CHECK</u>). - Check the indicator drive circuit in the gauge control module by using gauge control module self-diagnostic function (see <u>SELF-DIAGNOSTIC FUNCTION</u>).
A/T gear position indicator does not come on while the shift lever is in that position	- F-CAN communication line error - Gauge control module defective - PCM defective - Transmission range switch defective	- Check the F-CAN communication line for a DTC (see <u>DTC B1168</u>). - Check the F-CAN communication line by using the gauge control module self-diagnostic function (see <u>THE COMMUNICATION LINE CHECK</u>). - Check the indicator drive circuit in the gauge control module by using gauge control module self-diagnostic function (see <u>SELF-DIAGNOSTIC FUNCTION</u>). - Inspect the transmission range switch (see <u>TRANSMISSION RANGE SWITCH TEST</u>).
M indicator does not come on in M position	- F-CAN communication line error - Gauge control module defective	- Check the F-CAN communication line for a DTC (see <u>DTC B1168</u>). - Check the F-CAN communication line by using the gauge control module self-diagnostic function (see <u>THE COMMUNICATION LINE CHECK</u>). - Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see <u>SELF-DIAGNOSTIC</u>).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	• PCM defective	<u>FUNCTION</u>). • Inspect the transmission gear selection switch (see <u>TRANSMISSION GEAR SELECTION SWITCH TEST</u>).
Shift indicator does not work in sequential sportshift mode	• F-CAN communication line error • Gauge control module defective • PCM defective	• Check the F-CAN communication line for a DTC (see <u>DTC B1168</u>). • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see <u>THE COMMUNICATION LINE CHECK</u>). • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see <u>SELF-DIAGNOSTIC FUNCTION</u>). • Inspect the transmission gear selection switch (see <u>TRANSMISSION GEAR SELECTION SWITCH TEST</u>).
Shift lever cannot be moved from P while you are pressing on the brake pedal	• Accelerator pedal position sensor circuit • Accelerator pedal position sensor defective • Brake pedal position switch circuit • Brake pedal position switch defective • Shift lock solenoid defective • Shift lock solenoid control circuit • Shift lock solenoid mechanism • Throttle body defective • Transmission range switch ATP P switch stuck OFF • Transmission range switch ATP P switch line	• Troubleshoot the shift lock system circuit (see <u>SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING</u>). • Test the shift lock solenoid (see <u>SHIFT LOCK SOLENOID TEST</u>). • Inspect the transmission range switch (see <u>TRANSMISSION RANGE SWITCH TEST</u>).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	opened	
Ignition switch cannot be moved from ACCESSORY (1) to LOCK (0) (key is pushed in, the shift lever in P)	• Interlock control system circuit • Key interlock solenoid stuck ON • Park pin switch stuck ON • Transmission range switch ATP P line opened	• Troubleshoot the key interlock system circuit (see <u>KEY INTERLOCK SYSTEM CIRCUIT TROUBLESHOOTING</u>). • Inspect the transmission range switch (see <u>TRANSMISSION RANGE SWITCH TEST</u>).
HDS does not communicate with the PCM or the vehicle	DLC circuit	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>).
Engine runs, but vehicle does not move in any gear	1. Low ATF level 2. Shift cable broken or out of adjustment 3. Connection between shift cable and transmission or body is worn 4. ATF pump worn or binding 5. Regulator valve stuck or spring worn 6. ATF strainer clogged 7. Foreign material in separator plate orifice 8. Mainshaft worn or damaged 9. Countershaft worn or damaged 10. Final gears worn or damaged 11. Park mechanism defective 12. Drive plate worn or damaged	• Check the ATF level and check the ATF cooler lines for leakage and loose connections. If necessary, clean the ATF cooler lines. • Check for a loose shift cable at the shift lever and the transmission control lever. • Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Check the line pressure. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the differential assembly, replace the ATF strainer, and thoroughly clean the transmission, and clean the cooler and lines. Replace the torque converter. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use the proper tools. • Install the main seal flush with the torque converter housing. If you push it into the torque converter

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	13. Torque converter worn or damaged 14. Transmission-to-engine assembly error 15. Axle disengaged	housing until it bottoms out, it will block the fluid return passage and result in damage.
Vehicle moves in R, but not in D, D3, or 1st in M	1. 1st accumulator defective 2. Idler gears worn or damaged 3. 1st clutch defective 4. 5th clutch defective	• Check the 1st and 5th clutch pressures. • Inspect the secondary shaft and 1st/1st-hold clutch assembly for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Vehicle moves in M and R, but not in D or D3	• 1st gear one-way clutch defective • 1st gears worn or damaged • 1st clutch defective	• Check the 1st clutch pressure. • Inspect the 1st gears and one-way clutch for wear and damage. • Inspect the 1st clutch for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Vehicle moves in D, D3, 2nd in M, and R, but not in 1st in M	1st-hold clutch defective	• Check the 1st-hold clutch pressure. • Inspect the secondary shaft and 1st/1st-hold clutch assembly for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

		wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Vehicle moves in D, D3, 1st in M, and R, but not in 2nd in M	1. 2nd accumulator defective 2. 2nd clutch defective	• Check the 2nd clutch pressure. • Inspect the secondary shaft and 2nd clutch assembly for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Vehicle moves in D, D3, and M, but not in R	1. Shift fork shaft stuck 2. 5th accumulator defective 3. 5th clutch defective 4. Reverse gears worn or damaged 5. Reverse idler gear shaft/holder worn or damaged	• Check the 5th clutch pressure. • Check for a missing shift fork bolt on the shift fork shaft. • Inspect the reverse selector gear teeth chamfers, and inspect the engagement teeth chamfers of the countershaft 5th gear and reverse gear. Replace the reverse gears and the reverse selector if they are worn or damaged. If the transmission makes clicking, grinding, or whirring noises, also replace the mainshaft 5th gear, reverse idler gear, and countershaft 5th gear. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
	1. Low ATF level 2. Shift cable broken	• Check the ATF level and check the ATF cooler

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Poor acceleration; flares when starting off in D, D3, and Ft	or out of adjustment - Torque converter one-way clutch defective - Stator shaft defective - ATF pump worn or binding - Regulator valve stuck or spring worn - ATF strainer clogged - Torque converter check valve defective - Shift valve E defective	lines for leakage and loose connections. If necessary, clean the ATF cooler lines. - Check for a loose shift cable at the shift lever and the transmission control lever. - Check the line pressure. - Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. - Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptom is mostly an rpm-related ticking noise or a high pitched squeak. - Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use the proper tools.
Poor acceleration; flares when starting off in D, D3, and R; stall speed high in D and D3	1st accumulator defective 1st clutch defective	- Check the 1st clutch pressure. - Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Poor acceleration; flares when starting off in D, D3, and R; stall speed high in 1st in M	1st-hold clutch defective	- Check the 1st-hold clutch pressure. - Inspect the secondary shaft and 1st/1st-hold clutch assembly for wear and damage. - Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

		the clearance with the clutch end-plate.
Poor acceleration; flares when starting off in D, D3, and R; stall speed high in 2nd in M	• 2nd accumulator defective • 2nd clutch defective	• Check the 2nd clutch pressure. • Inspect the secondary shaft and 2nd clutch assembly for wear and damage. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Poor acceleration; flares when starting off in D, D3, and R; stall speed high in R	1. Shift cable broken or out of adjustment 2. 5th accumulator defective 3. 5th clutch defective	• Check for a loose shift cable at the shift lever and the transmission control lever. • Check the 5th clutch pressure. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
Poor acceleration; flares when starting off in D, D3, and R; stall speed low	1. Engine output low 2. Torque converter clutch piston defective	Replace the torque converter.
Engine idle vibration	1. Low ATF level 2. Engine output low 3. Torque converter clutch piston defective	• Adjust the engine and transmission mounts. • Check the ATF level and check the ATF cooler lines for leakage and loose connections. If necessary, clean the ATF cooler lines. • Replace the torque converter.
	1. Excessive ATF 2. ATF temperature sensor defective 3. Foreign material in separator plate	

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Vehicle moves in N	orifice 4. Relief valve defective 5. Lubrication control valve defective 6. 1st-hold clutch defective 7. 1st clutch defective 8. 2nd clutch defective 9. 3rd clutch defective 10. 4th clutch defective 11. 5th clutch defective 12. Clearance between the top end-plate and top disc incorrect 13. Needle bearing seized up, worn, or damaged	• Check the ATF level, and drain the ATF if necessary. • Check all clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end-plate.
	1. Shift solenoid valve A defective 2. Shift solenoid valve B defective 3. Shift solenoid valve C defective 4. A/T clutch pressure control solenoid valve C defective 5. Shift cable broken or out of adjustment 6. Connection between shift cable and transmission or body is worn	• Check for a stored DTC, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Late shift after shifting from N to D or D3, or excessive shock when shifting	7. ATF temperature sensor defective 8. CPC valve C defective 9. Foreign material in separator plate orifice 10. Shift valve A defective 11. Shift valve D defective 12. Shift valve E defective 13. ATF strainer clogged 14. 1st accumulator defective 15. 2nd accumulator defective 16. 1st check ball stuck 17. 1st clutch defective 18. Clutch end plate clearance incorrect	• Check for a loose shift cable at the shift lever and the transmission control lever. • Check the 1st clutch pressure. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
Late shift after shifting from N to R, or excessive shock when shifting	1. A/T clutch pressure control solenoid valve C defective 2. Shift cable broken or out of adjustment 3. Connection between shift cable and transmission or body is worn 4. ATF temperature sensor defective 5. Reverse CPC valve defective 6. Foreign material in separator plate	• Check for a stored DTC, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves. • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the 5th clutch pressure. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	orifice 7. ATF strainer clogged 8. 5th clutch defective 9. Clutch end plate clearance incorrect	end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
Transmission does not shift	1. Input shaft (mainshaft) speed sensor defective 2. Output shaft (countershaft) speed sensor defective	Check for a stored DTC, and check for loose connectors.
Excessive shock or flares on all upshifts and downshifts	1. Input shaft (mainshaft) speed sensor defective 2. Output shaft (countershaft) speed sensor defective 3. ATF temperature sensor defective 4. Foreign material in separator plate orifice	Check for a stored DTC, and check for loose connectors.
	1. Shift solenoid valve A defective 2. Shift solenoid valve B defective 3. Shift solenoid valve C defective 4. A/T clutch pressure control solenoid valve A defective 5. A/T clutch pressure control solenoid valve B defective 6. A/T clutch pressure control	• Check for a stored DTC, and check for loose connectors. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Excessive shock or flares on 1-2 upshift or 2-1 downshift	solenoid valve C defective 7. 2nd clutch transmission fluid pressure switch defective 8. CPC valve A defective 9. CPC valve B defective 10. CPC valve C defective 11. Shift valve C defective 12. Shift valve D defective 13. Foreign material in separator plate orifice 14. 2nd accumulator defective 15. 2nd clutch defective 16. Clutch end plate clearance incorrect	• Check for clogged orifice in the transmission fluid pressure switch connector. If the orifice is clogged, remove it and clean the connector. • Check the 1st and 2nd clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
	1. Shift solenoid valve D defective 2. A/T clutch pressure control solenoid valve A defective 3. A/T clutch pressure control solenoid valve B defective 4. A/T clutch pressure control solenoid valve C defective 5. 3rd clutch transmission fluid pressure switch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the O-rings, and check the shift solenoid valve for seizure. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Excessive shock or flares on 2-3 upshift or 3-2 downshift	6. Shift fork shaft stuck 7. CPC valve A defective 8. CPC valve B defective 9. Foreign material in separator plate orifice 10. Servo control valve defective 11. Lock-upshift valve defective 12. 2nd accumulator defective 13. 3rd accumulator defective 14. 2nd check ball stuck 15. 2nd clutch defective 16. 3rd clutch defective 17. Clutch end plate clearance incorrect	valve is stuck, inspect the CPC valves. • Check for clogged orifice in the transmission fluid pressure switch connector. If the orifice is clogged, remove it and clean the connector. • Check the 2nd and 3rd clutch pressures. • Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
Excessive shock or flares on 3-4 upshift	1. A/T clutch pressure control solenoid valve A defective 2. A/T clutch pressure control solenoid valve B defective 3. A/T clutch pressure control solenoid valve C defective 4. 4th clutch transmission fluid pressure switch defective 5. Shift fork shaft	• Check for a stored DTC, and check for loose connectors. • Inspect the O-rings, and check the shift solenoid valve for seizure. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves. • Check for clogged orifice in the transmission fluid pressure switch connector. If the orifice is clogged, remove it and clean the connector. • Check the 3rd and 4th clutch pressures.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

or 4-3 downshift	stuck - Foreign material in separator plate orifice - Servo control valve defective 3rd accumulator defective 4th accumulator defective 3rd clutch defective 4th clutch defective - Clutch end plate clearance incorrect	Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
Excessive shock or flares on 4-5 upshift or 5-4 downshift	- A/T clutch pressure control solenoid valve A defective - A/T clutch pressure control solenoid valve B defective - A/T clutch pressure control solenoid valve C defective - Foreign material in separator plate orifice 4th accumulator defective 5th accumulator defective 4th clutch defective 5th clutch defective - Clutch end plate clearance incorrect	- Check for a stored DTC, and check for loose connectors. - Inspect the O-rings, and check the shift solenoid valve for seizure. - Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves. - Check the 4th and 5th clutch pressures. - Inspect the clutch piston, clutch piston check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the clutch end-plate and the top disc. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage, and also inspect the clutch wave-plate height. If the discs and plates are worn or damaged, replace the discs and plates as a set. If the wave-plate height is out of tolerance, replace the wave-plate. If the discs and plates are OK, adjust the clearance with the clutch end plate.
	ATF pump worn	

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Noise from transmission in all shift lever positions	- or binding 2. ATF strainer clogged 3. Idler gears worn or damaged 4. Bearings on mainshaft, countershaft, secondary shaft, and intermediary shaft worn or damaged 5. Thrust washer seized up, worn, or damaged	• Improper alignment of ATF pump and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak. • Check the ATF strainer for debris. If the strainer is clogged, find the damaged components that caused the debris. • Be careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the main valve body. This will result in ATF pump seizure if not detected. Use the proper tools.
Vehicle does not accelerate above 31 mph (50 km/h)	Torque converter one-way clutch defective	Replace the torque converter.
Vibration in all shift lever positions	1. ATF pump worn or binding 2. Torque converter worn or damaged 3. Drive plate defective or transmission misassembled	• Adjust the engine and transmission mounts. • Check the stall speed. • Check the ATF strainer for debris. If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump. If the ATF pump is OK, find the damaged components that caused the debris. If no cause for the contamination is found, replace the torque converter.
Shift lever does not operate smoothly	1. Transmission range switch defective or out of adjustment 2. Shift cable broken or out of adjustment 3. Connection between shift cable and transmission or body is worn 4. Manual valve defective 5. Selector control shaft worn or damaged	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch. If the transmission range switch is faulty, replace it. If the transmission range switch is out of adjustment, adjust it and the shift cable. • Check for a loose shift cable at the shift lever and the transmission control lever.
	1. Shift cable broken	

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Transmission does not shift into P	- or out of adjustment 2. Connection between shift cable and transmission or body is worn 3. Park mechanism defective 4. Secondary shaft 2nd gear worn or damaged	• Check for a loose shift cable at the shift lever and the transmission control lever. • Check the park pawl, control shaft, and park lever link for wear and damage. Check if the control shaft lever pin is disengaged from the manual valve guide.
Torque converter clutch does not disengage	1. Torque converter clutch piston defective 2. Lock-up control valve defective 3. Lock-up timing valve defective	• Replace the torque converter. • Check the lock-up control valves.
Torque converter clutch does not operate smoothly	1. Torque converter clutch piston defective 2. Torque converter check valve defective 3. Lock-up control valve defective 4. Lock-up timing valve defective	• Replace the torque converter. • Check the lock-up control valves.
Torque converter clutch does not engage	1. Shift cable broken or out of adjustment 2. Connection between shift cable and transmission or body is worn 3. Foreign material in separator plate orifice 4. Torque converter clutch piston defective 5. Torque converter check valve	• Check for a loose shift cable at the shift lever and the transmission control shaft. • Replace the torque converter. • Check the lock-up control valves.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	defective 6. Lock-up control valve defective 7. Lock-up timing valve defective	
A/T gear position indicator does not indicate shift lever positions	1. Transmission range switch defective or out of adjustment 2. Shift cable broken or out of adjustment 3. Connection between shift cable and transmission or body is worn	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch. If the transmission range switch is faulty, replace it. If the transmission range switch is out of adjustment, adjust it and the shift cable. • Check for a loose shift cable at the shift lever and the transmission control lever.
Speedometer and odometer do not work	Output shaft (countershaft) speed sensor defective	Check for a stored DTC, and check for loose connectors.
Engine does not rev to high rpm, and the transmission upshifts at low rpm (engine at normal operating temperature)	Engine rocker arms defective	• Check the engine rocker arms. • Check for a restricted or damaged exhaust system.

COMPONENT LOCATION INDEX

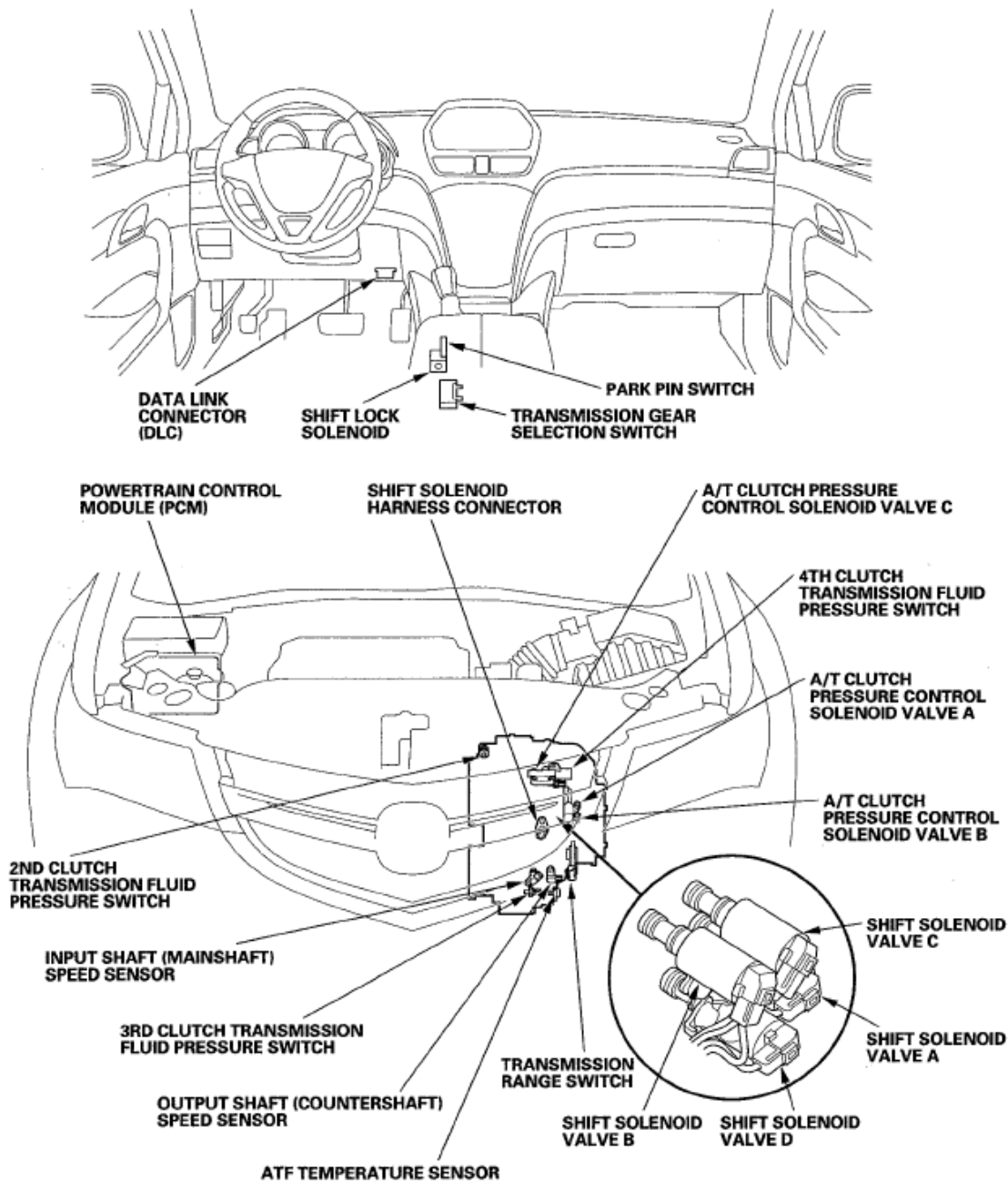


Fig. 15: Identifying Automatic Transmission System Components Location
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

General Operation

The automatic transmission is a combination of a three-element torque converter and a four-shaft electronically controlled unit which provides five speeds and one in reverse. The entire unit is positioned in line with the engine.

Torque Converter, Shafts, Gears, and Clutches

The torque converter consists of a pump, turbine, and stator assembly in a single unit. The converter housing (pump) is connected to the engine crankshaft and turns as the engine turns. Around the outside of the torque converter is a ring gear which meshes with the drive gear when the engine is being started. The entire torque converter assembly serves as a flywheel, transmitting power to the transmission mainshaft. The transmission has four parallel shafts: the mainshaft, the countershaft, the secondary shaft, and the intermediary shaft. The mainshaft is in line with the engine crankshaft. The mainshaft includes the 4th and 5th clutches, and gears for 3rd, 4th, 5th, and reverse (reverse gear is integral with 5th gear). The countershaft includes gears for the final drive, 2nd, idler, 1st, 4th, 5th, and reverse (the final drive gear is integral with the countershaft). The secondary shaft includes the 1st, 1st-hold, and 2nd clutches, and gears for park, 2nd, idler, and 1st. The intermediary shaft includes the 3rd clutch, and gears for 3rd and 4th. The countershaft 5th gear and the countershaft reverse gear can be locked to the countershaft at its left end, providing 5th gear or reverse, depending with which way the selector is moved. The gears on the mainshaft, secondary shaft, and intermediary shaft are in constant mesh with those on the countershaft. When certain conditions of gears in the transmission are engaged by the clutches, power is transmitted through the mainshaft, and/or to the secondary shaft, intermediary shaft, then to the countershaft to provide drive.

Electronic Control

The electronic control system consists of the powertrain control module (PCM), sensors, and seven solenoid valves. Shifting and lock-up are electronically controlled for comfortable driving under all conditions. The PCM is located in the engine compartment.

Hydraulic Control

The valve bodies include the main valve body, the regulator valve body, the secondary valve body, and the accumulator body. They are bolted to the torque converter housing. The main valve body contains the manual valve, the modulator valve, the torque converter check valve, shift valves A, B, E, CPC valve A, the relief valve, the servo control valve, the lock-up shift valve, the lock-up timing valve, the lubrication control valve, the lubrication check valve, and the ATF pump gears. The secondary valve body contains shift valves C, D, CPC valves B and C, the reverse CPC valve, and the reverse control valve. The regulator valve body contains the regulator valve, the cooler check valve, the lock-up control valve, and the 3rd accumulator. The accumulator body contains the 1st, 1st-hold, 2nd, 4th, and 5th accumulators, shift solenoid valves A, B, C, and D. Fluid from the regulator valve passes through the manual valve to the various control valves. All the clutch receive fluid from the internal hydraulic circuit.

Shift Control Mechanism

To shift gears, the PCM controls shift solenoid valves A, B, C, and D, and automatic transmission (A/T) clutch pressure control solenoid valves A, B, and C, while receiving input signals from various sensors and switches located throughout the vehicle. The shift solenoid valves shift the positions of the shift valves to switch the port to send hydraulic pressure to the clutches. A/T clutch pressure control solenoid valves A, B, and C control the CPC valves A and B, and reverse CPC valve to shift smoothly between lower and higher gear. This pressurizes a line to one of the clutches, engaging the clutch and its corresponding gear.

Lock-up Mechanism

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears in D, and in 2nd and 3rd gears in D3. The pressurized fluid is drained from the back of the torque converter through a fluid passage, causing the torque converter clutch piston to be held against the torque converter cover. As this takes place, the mainshaft rotates at the same speed as the engine crankshaft. Together with hydraulic control, the PCM optimizes the timing and volume of the lock-up mechanism. When shift solenoid valve D is turned on by the PCM, shift solenoid valve D pressure switches the lock-up shift valve lock-up on and off. A/T clutch pressure control solenoid valve C, the lock-up control valve, and the lock-up timing valve control the amount of the lock-up conditions. Shift solenoid valve D is located on the accumulator body in the transmission, and A/T clutch pressure control solenoid valve C is mounted on the transmission housing.

Gear Selection

The shift lever has five positions; P: PARK, R: REVERSE, N: NEUTRAL, D: DRIVE 1st through 5th gear range with automatic shift and sequential sportshift in M (sequential sportshift mode), and D3: DRIVE 1st through 3rd gear range with automatic shift.

SHIFT LEVER POSITIONS DESCRIPTION

Position		Description
P: PARK		Front wheels locked; park pawl engaged with park gear on secondary shaft. All clutches are released.
R: REVERSE		Reverse; reverse selector engaged with countershaft reverse gear and 5th clutch engaged.
N: NEUTRAL		All clutches are released.
D: DRIVE (1st through 5th)	Automatic shift	General driving; starts off in 1st, shifts automatically to 2nd, 3rd, 4th, then 5th, depending on vehicle speed and accelerator pedal position. Downshifts through 4th, 3rd, 2nd, and 1st on deceleration to stop. The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears.
	M: Sequential sportshift mode	Manual gear shift driving; vehicle can start off in 1st gear, and does not upshift automatically. Vehicle can also start off in 2nd gear, and does not upshift and downshift automatically. Downshifts automatically to 1st on deceleration to stop. The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears.
D3: DRIVE (1st through 3rd)		Used for rapid acceleration at highway speeds and general driving, up-hill and down-hill driving; starts off in 1st, shifts automatically to 2nd, then 3rd, depending on vehicle speed and accelerator pedal position. Downshifts through 2nd and 1st on deceleration to stop. The lock-up mechanism operates in 2nd and 3rd gears.

Starting is possible only in P and N because of a slide-type neutral-safety switch.

Automatic Transmission (A/T) Gear Position Indicator

The A/T gear position indicator in the gauge control module (located between speedometer and tachometer) shows which shift lever position has been selected without having look down at the console.

Shift Indicator and M indicator

2008 Acura MDX
2007-09 TRANSMISSION Automatic Transmission - MDX

When the shift lever is shifted into M (sequential sportshift mode), the M indicator next to the D indicator comes on, and the shift indicator at the bottom of the tachometer displays the gear selected.

Transfer Assembly

The transfer assembly consists of the transfer drive gear on the differential, the transfer output shaft in the transmission, the transfer drive gear (hypoid gear), the transfer shaft, the transfer output shaft (hypoid gear), and the companion flange. The transfer assembly is on the rear side of the transmission, beside the differential. The transfer drive gear on the differential drives the transfer output shaft in the transmission. The transfer output shaft in the transmission is connected to the transfer drive gear (hypoid gear) by splines. Power is transmitted from the transfer drive gear on the differential to the rear differential via the transfer assembly and the propeller shaft.

Clutches and Gears

The five-speed automatic transmission uses hydraulically-actuated clutches to engage or disengage the transmission gears. When hydraulic pressure is introduced into the clutch drum, the clutch piston moves. This presses the friction discs and steel plates together, locking them so they do not slip. Power is then transmitted through the engaged clutch pack to its hub-mounted gear. Likewise, when the hydraulic pressure is bled from the clutch pack, the piston releases the friction discs and the steel plates, and they are free to slide past each other. This allows the gear to spin independently on its shaft, transmitting no power.

Transmission Cutaway View

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

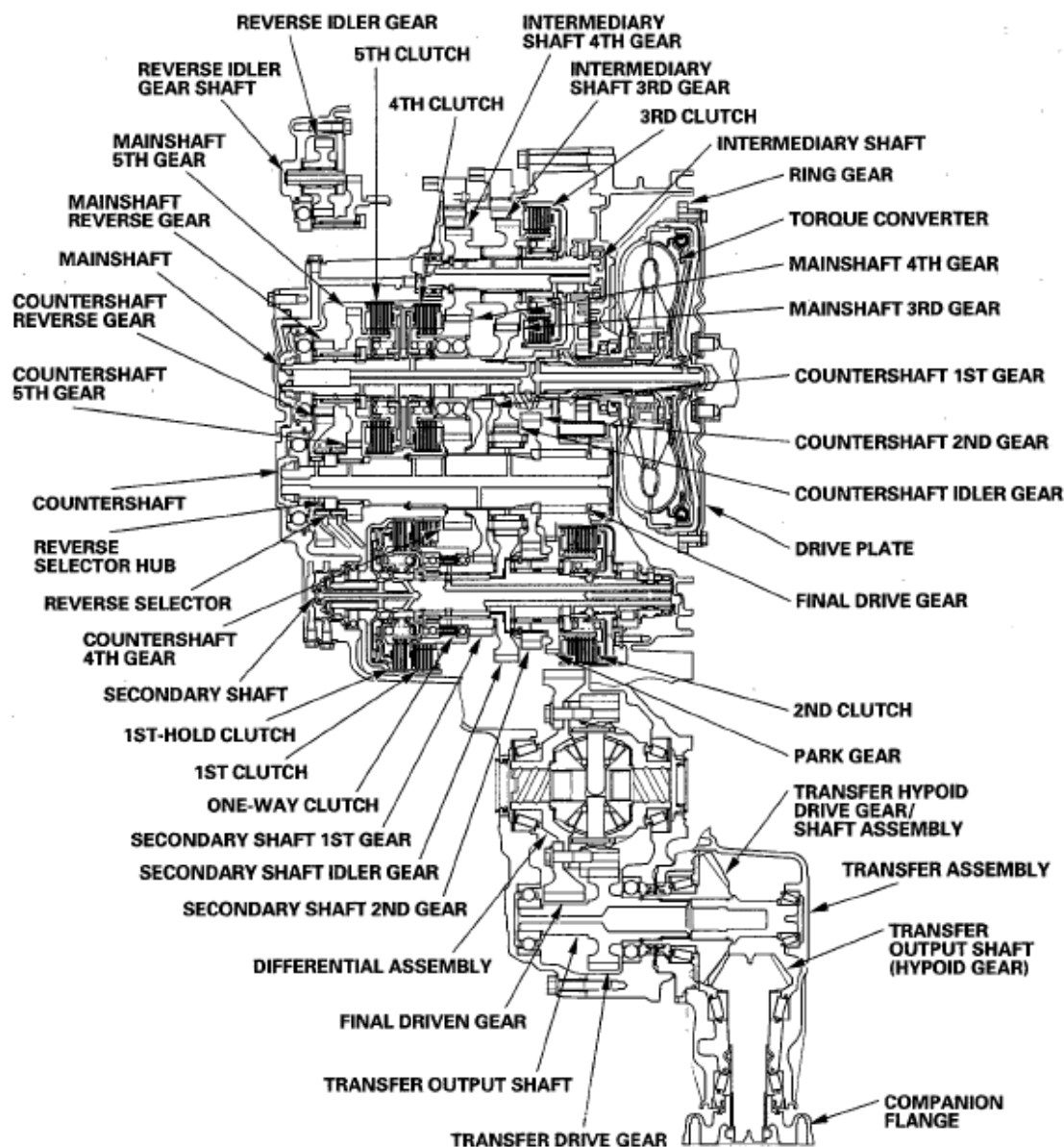


Fig. 16: Identifying Transmission Cutaway View

Courtesy of AMERICAN HONDA MOTOR CO., INC.

1st Clutch

The 1st clutch engages/disengages 1st gear, and is located at the left end of the secondary shaft. The 1st clutch is supplied hydraulic pressure by its ATF feed pipe within the secondary shaft.

1st-hold Clutch

The 1st-hold clutch engages/disengages 1st-hold in 1st gear in M. The 1st-hold clutch is located in the 1st clutch drum, and is supplied hydraulic pressure by its ATF feed pipe within the secondary shaft.

2nd Clutch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

The 2nd clutch engages/disengages 2nd gear, and is located at the right end of the secondary shaft. The 2nd clutch is supplied hydraulic pressure through the secondary shaft by a circuit connected to the internal hydraulic circuit.

3rd Clutch

The 3rd clutch engages/disengages 3rd gear, and is located at the end of the intermediary shaft. The 3rd clutch is supplied hydraulic pressure through the intermediary shaft by a circuit connected to the internal hydraulic circuit.

4th Clutch

The 4th clutch engages/disengages 4th gear, and is located at the middle of the mainshaft. The 4th clutch is joined back-to-back to the 5th clutch. The 4th clutch is supplied hydraulic pressure through the mainshaft by a circuit connected to the internal hydraulic circuit.

5th Clutch

The 5th clutch engages/disengages 5th gear, as well as reverse gear, and is located at the middle of the mainshaft. The 5th clutch is joined back-to-back to the 4th clutch. The 5th clutch is supplied hydraulic pressure through the mainshaft by a circuit connected to the internal hydraulic circuit.

One-way Clutch

The one-way clutch is positioned between the 1st clutch hub and the secondary shaft 1st gear. The secondary shaft 1st gear is splined to the 1st-hold clutch hub, with the 1st-hold clutch hub splined to the secondary shaft. The secondary shaft 1st gear provides the outer race surface, and the 1st clutch hub provides the inner race surface. The one-way clutch locks when power is transmitted from the secondary shaft 1st gear to the countershaft 1st gear. The 1st clutch and gears remain engaged in the 1st, 2nd, 3rd, 4th, and 5th gear ranges in D, and in 1st, 2nd, and 3rd gear ranges in D3.

However, the one-way clutch disengages when the 2nd, 3rd, 4th, or 5th clutches and gears are applied in D or D3. This is because the increased rotational speed of the gears on the secondary shaft causes the one-way clutch to free-wheel with the 1st clutch still engaged.

Gear operation

Gears on the mainshaft:

- 4th gear is engages/disengages with the mainshaft by the 4th clutch.
- 5th gear is engages/disengages with the mainshaft by the 5th clutch.
- Reverse gear is engaged/disengaged with the mainshaft by the 5th clutch.
- 3rd gear is splined with the mainshaft and rotates with the mainshaft.

Gears on the countershaft:

- Final gear is integral with the countershaft.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- 1st gear, 2nd gear, and 4th gear are splined with the countershaft, and rotate with the countershaft.
- 5th gear and reverse gear rotate freely from the countershaft. The reverse selector engages 5th gear and reverse gear with the reverse selector hub. The reverse selector hub is splined to the countershaft so 5th gear and reverse gear engage with the countershaft.
- Idler gear is located over the 2nd gear, and rotates freely from the countershaft.

Gears on the secondary shaft:

- 1st gear is engaged with the secondary shaft by the 1st clutch and the one-way clutch when accelerating, and 1st gear is disengaged from the 1st clutch at the one-way clutch when decelerating. 1st gear is engaged with the secondary shaft by the 1st-hold clutch when decelerating for engine braking.
- 2nd gear is engaged/disengaged with the secondary shaft by the 2nd clutch.
- Idler gear is splined with the secondary shaft, and rotates with the secondary shaft.
- Park gear is integral with the 2nd gear.

Gears on the intermediary shaft:

- 3rd gear is engaged/disengaged with the intermediary shaft by the 3rd clutch.
- 4th gear is splined with the intermediary shaft.

Power Flow

P Position

Hydraulic pressure is not applied to the clutches. Power is not transmitted to the countershaft. The countershaft is locked by the park pawl interlocking the park gear, secondary shaft 2nd gear, and countershaft 2nd gear.

N Position

Engine power transmitted from the mainshaft drives the mainshaft 3rd gear, the intermediary shaft 3rd gear, but hydraulic pressure is not applied to the clutches. Power is not transmitted to the countershaft. In this position, the position of the reverse selector differs according to whether the shift lever shifted from D or R:

- When shifted from D, the reverse selector engages with the countershaft 5th gear and the reverse selector hub, and 5th gear engages with the countershaft.
- When shifted from R, the reverse selector engages with the countershaft reverse gear and the reverse selector hub, and the reverse gear engages with the countershaft.

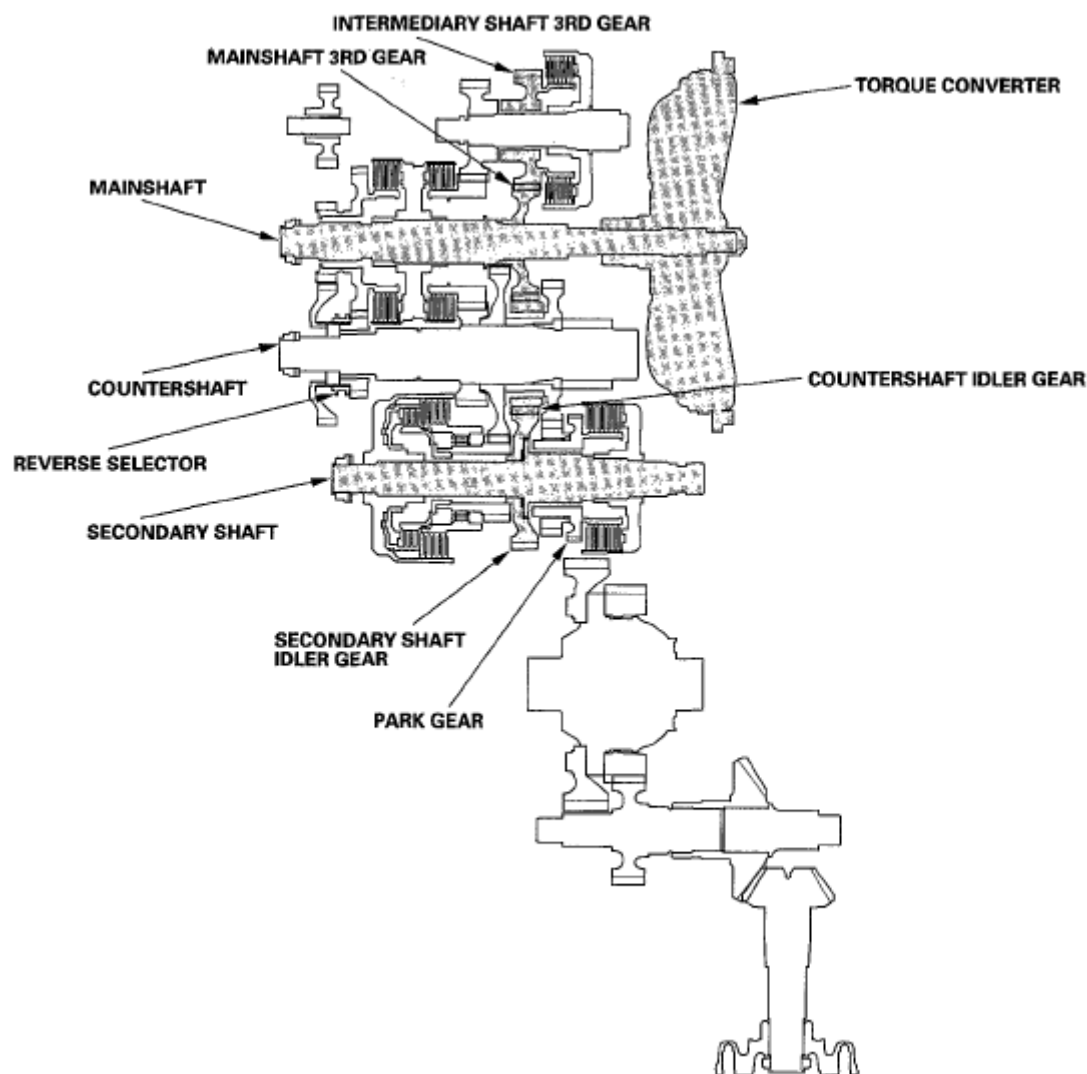


Fig. 17: Power Flow Diagram (N Position)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions

In D and D3, the optimum gear is automatically selected from the 1st, 2nd, 3rd, 4th, and 5th gears in D; and 1st, 2nd, and 3rd gears in D3 according to conditions such as the balance between the throttle plate opening (engine loading) and vehicle speed.

In 1st gear

- Hydraulic pressure is applied to the 1st clutch, then the 1st clutch engages the secondary shaft 1st gear with the secondary shaft by the one-way clutch.
- The mainshaft 3rd gear drives the secondary shaft via the countershaft idler gear and secondary shaft idler gear.
- The secondary shaft 1st gear drives the countershaft 1st gear and the countershaft.

- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).

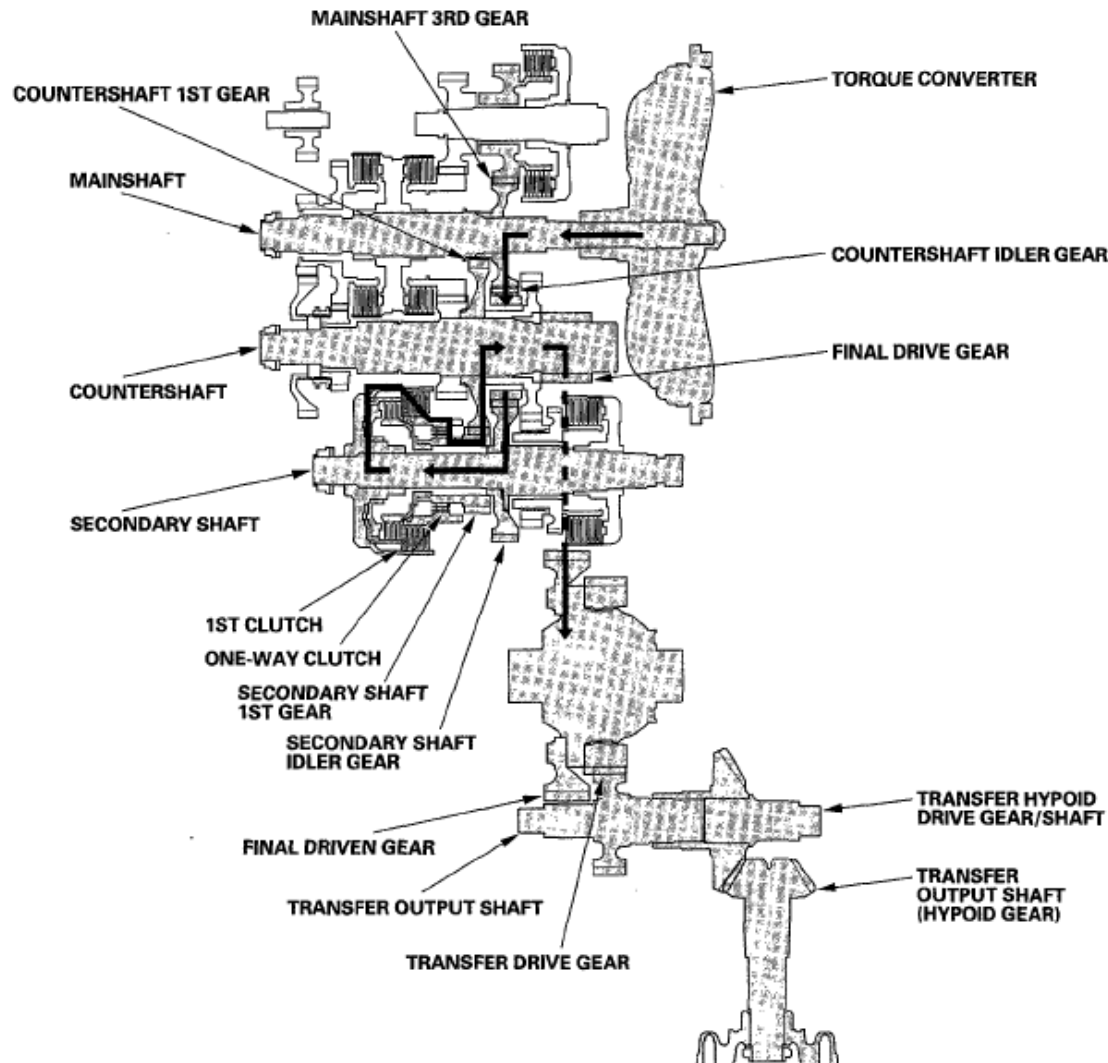


Fig. 18: Power Flow Diagram (In 1st Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 2nd gear

- Hydraulic pressure is applied to the 2nd clutch, then the 2nd clutch engages the secondary shaft 2nd gear with the secondary shaft.
- The mainshaft 3rd gear drives the secondary shaft via the countershaft idler gear and secondary shaft idler gear.
- The secondary shaft 2nd gear drives the countershaft 2nd gear and the countershaft.

- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of 2nd gear exceeds that of 1st gear, power from 1st gear is cut off at the one-way clutch.

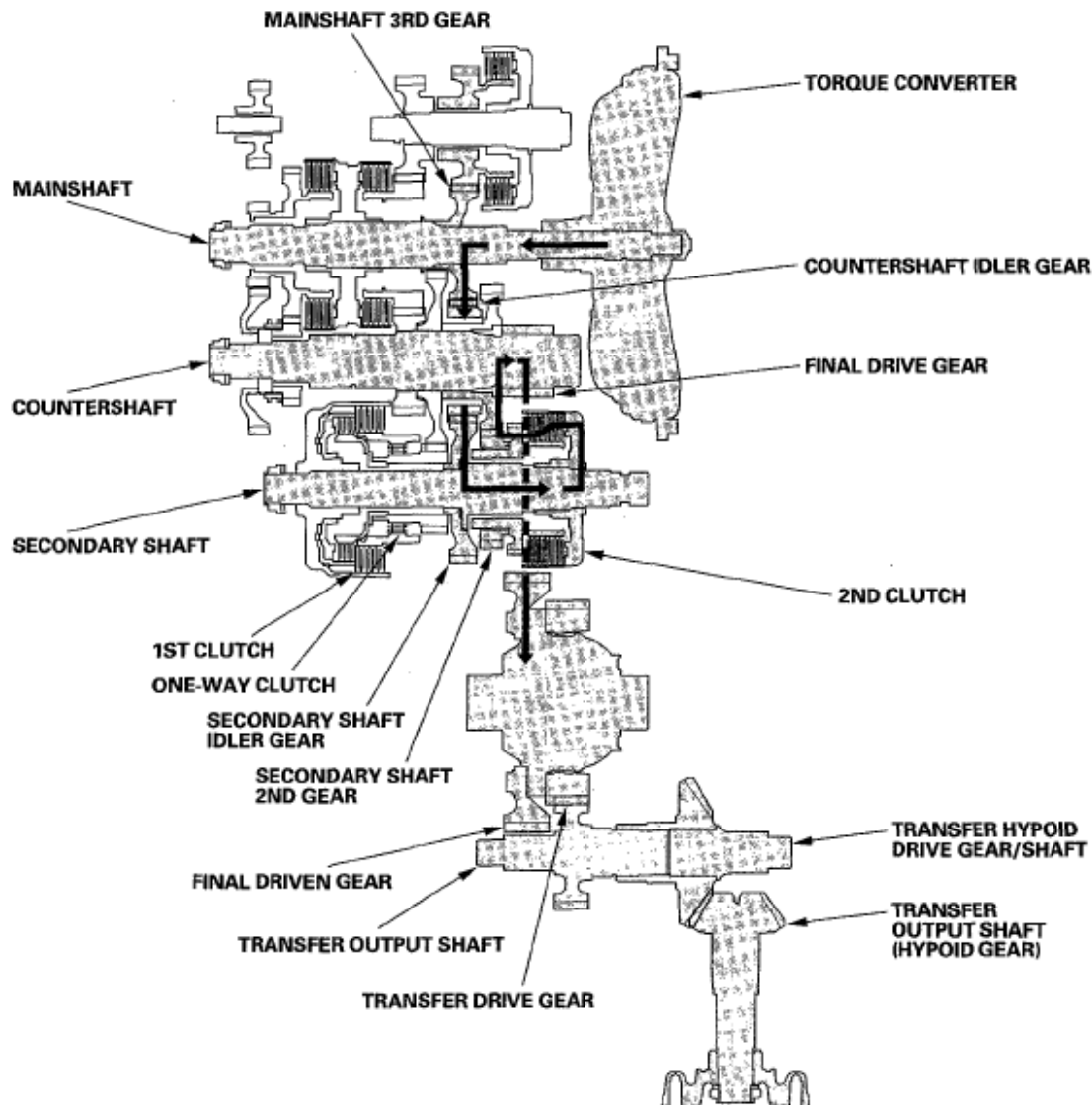


Fig. 19: Power Flow Diagram (In 2nd Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 3rd gear

- Hydraulic pressure is applied to the 3rd clutch, then the 3rd clutch engages the intermediary shaft 3rd gear with the intermediary shaft.

- The mainshaft 3rd gear drives the intermediary shaft 4th gear via the intermediary shaft 3rd gear and the 3rd clutch.
- The intermediary shaft 4th gear drives the countershaft 4th gear and the countershaft via the mainshaft 4th gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of 3rd gear exceeds that of 1st gear, power from 1st gear is cut off at the one-way clutch.

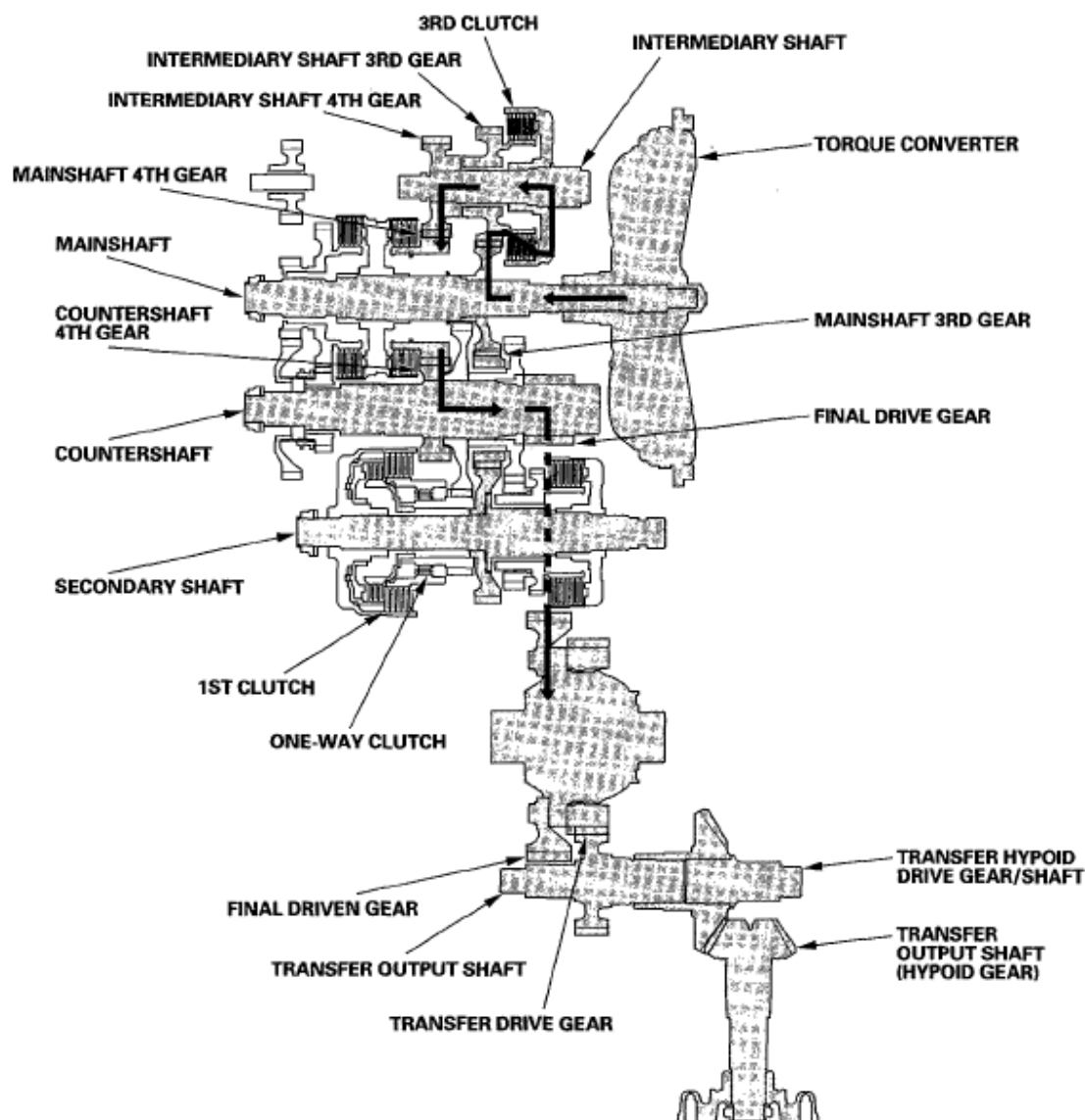


Fig. 20: Power Flow Diagram (In 3rd Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 4th gear

- Hydraulic pressure is applied to the 4th clutch, then the 4th clutch engages the mainshaft 4th gear with the mainshaft.
- The mainshaft 4th gear drives the countershaft 4th gear and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of 4th gear exceeds that of 1st gear, power from 1st gear is cut off at the one-way clutch.

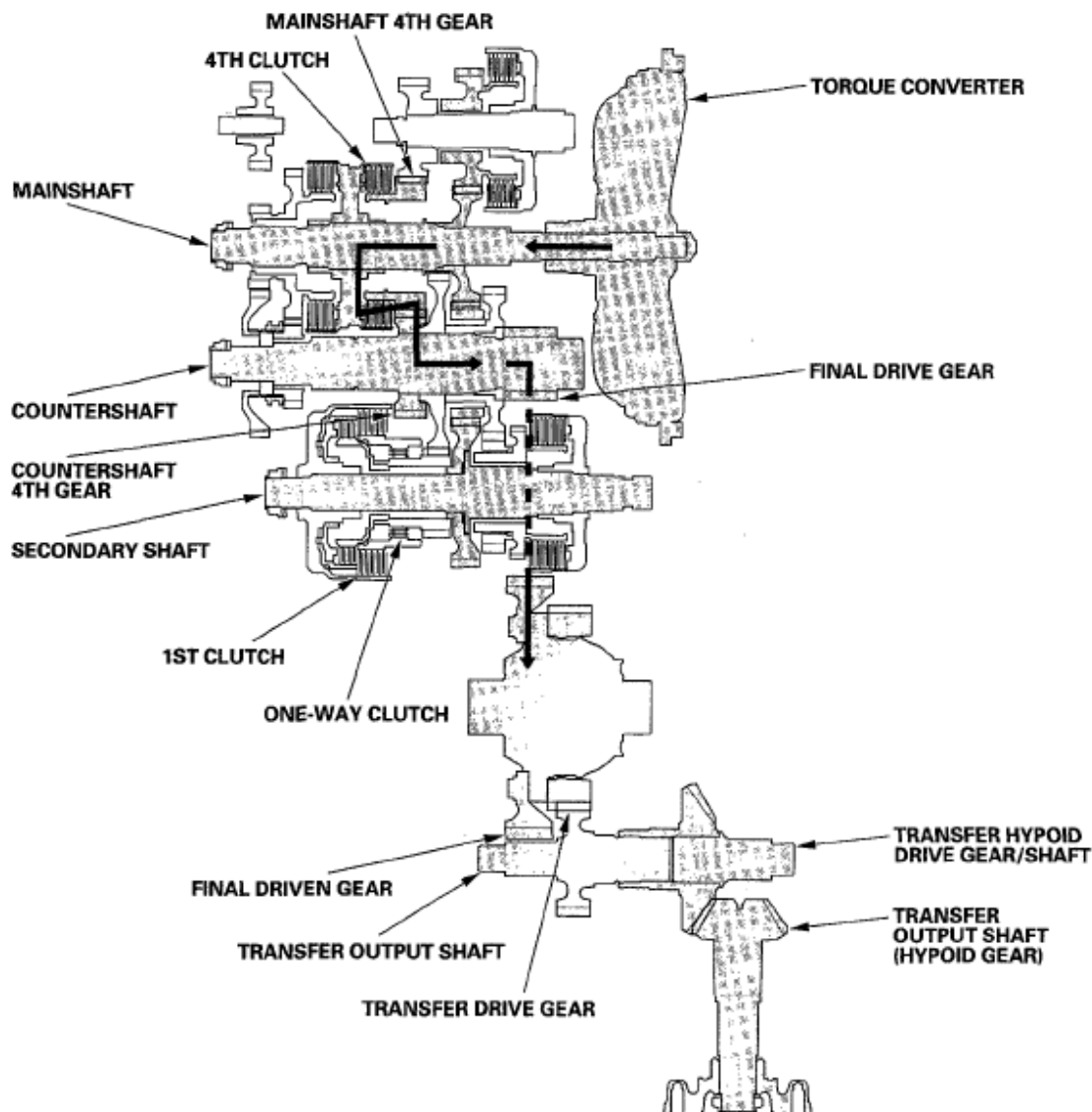


Fig. 21: Power Flow Diagram (In 4th Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

In 5th gear

- Hydraulic pressure is applied to the servo valve to engage the reverse selector with the countershaft 5th gear while the shift lever in D.
- Hydraulic pressure is applied to the 5th clutch, then the 5th clutch engages the mainshaft 5th gear with the mainshaft.
- The mainshaft 5th gear drives the countershaft 5th gear, which drives the reverse selector hub and the countershaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).
- Hydraulic pressure is also applied to the 1st clutch, but since the rotation speed of 5th gear exceeds that of 1st gear, power from 1st gear is cut off at the one-way clutch.

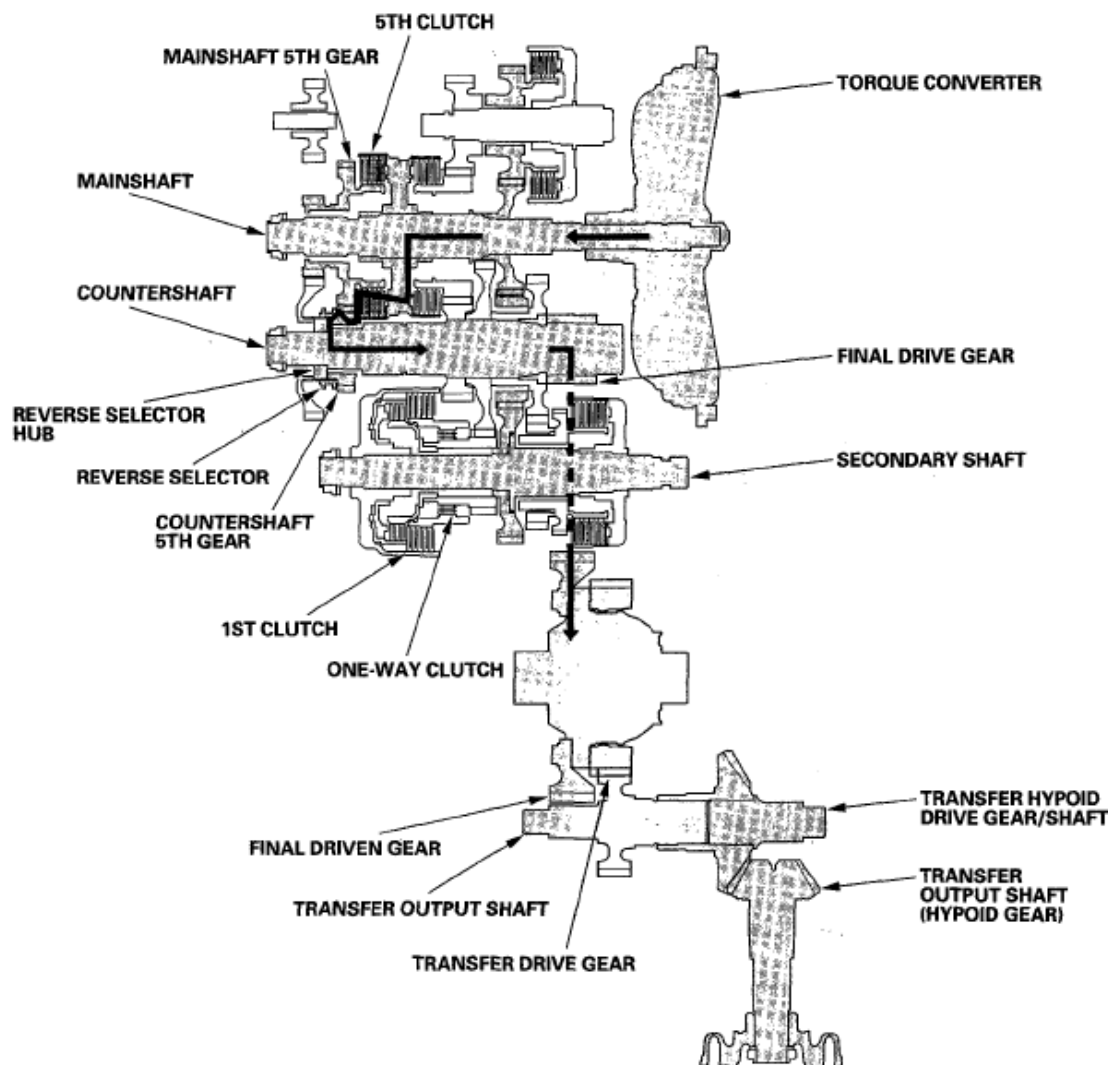


Fig. 22: Power Flow Diagram (In 5th Gear)

2008 Acura MDX
2007-09 TRANSMISSION Automatic Transmission - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Acceleration in 1st gear in M (sequential sportshift mode) position

In 1st gear in M (sequential sportshift mode), hydraulic pressure is applied to the 1st clutch and the 1st-hold clutch. The power flow when accelerating is as follows:

- Hydraulic pressure is applied to the 1st clutch, then the 1st clutch engages the secondary shaft 1st gear with the secondary shaft by the one-way clutch.
- The mainshaft 3rd gear drives the secondary shaft via the countershaft idler gear and secondary shaft idler gear.
- The secondary shaft 1st gear drives the countershaft 1st gear and the countershaft.
- Hydraulic pressure is also applied to the 1st-hold clutch, and the 1st-hold clutch engages the secondary shaft 1st gear with the secondary shaft.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer drive gear.
- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).

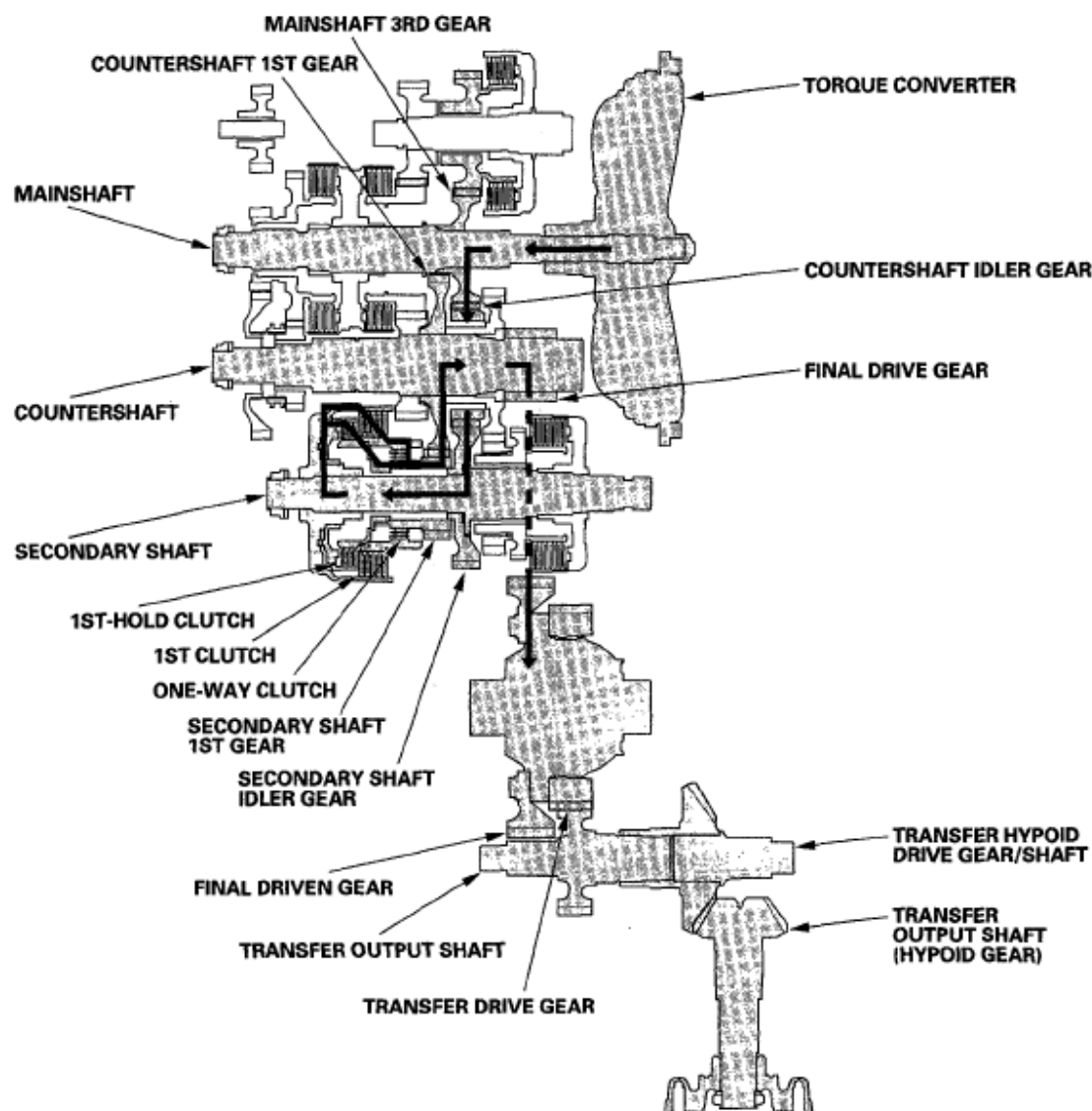


Fig. 23: Power Flow Diagram (Acceleration In 1st Gear In M Position)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Deceleration in 1st gear in M (sequential sportshift mode) position

The power flow in 1st gear in M (sequential sportshift mode) when decelerating is as follows:

- Hydraulic pressure is applied to the 1st clutch and the 1st-hold clutch.
- Rolling resistance from the road surface goes through the front wheels to the final driven gear, then to the countershaft idler gear.
- The one-way clutch disengages because the application of torque is reversed.
- The force conveyed to the secondary shaft idler gear turns the mainshaft 3rd gear via the countershaft idler gear. As a result, engine braking can be obtained with 1st gear.

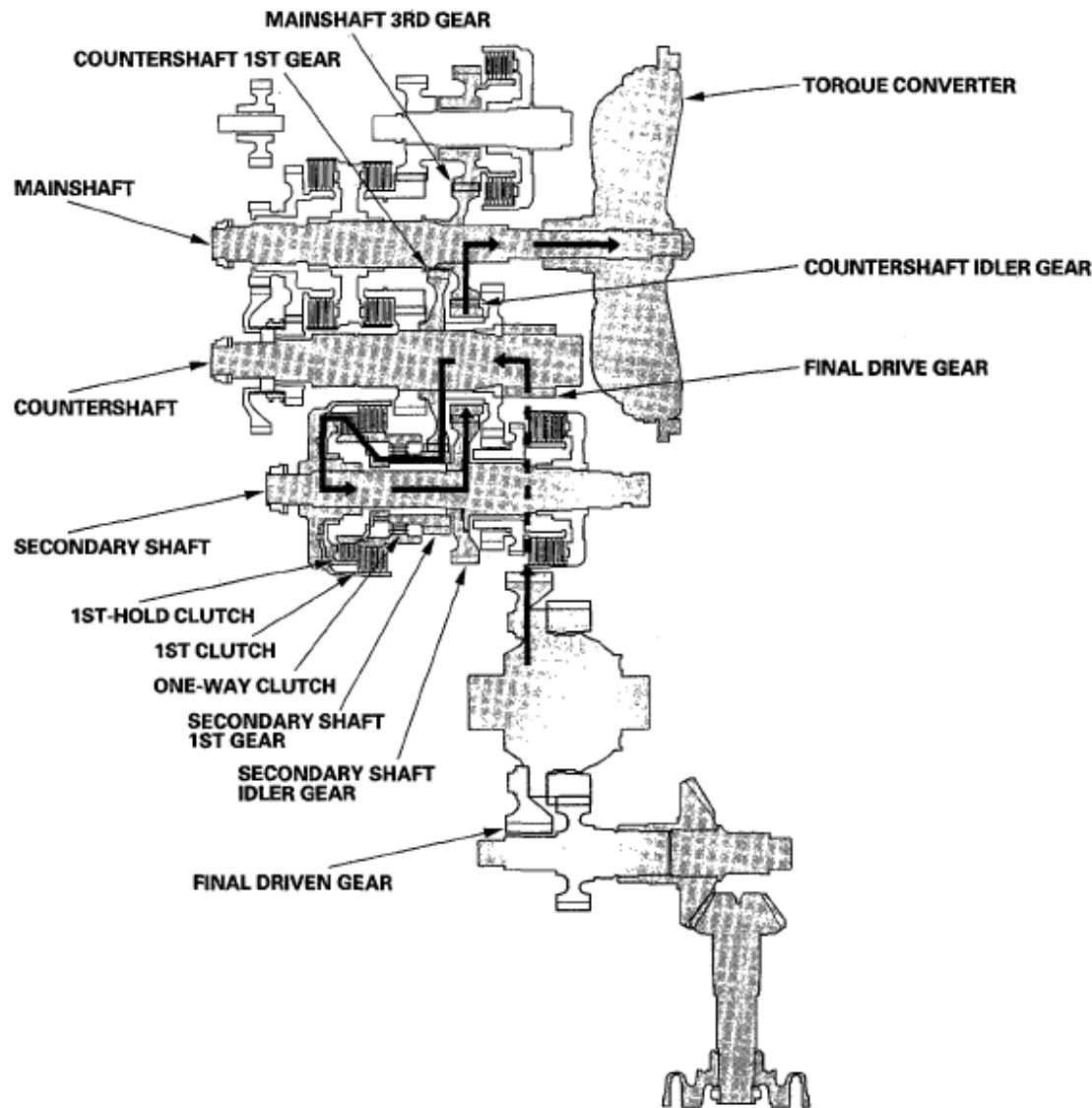


Fig. 24: Power Flow Diagram (Deceleration In 1st Gear In M Position)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position

- Hydraulic pressure is applied to the servo valve to engage the reverse selector with the countershaft reverse gear while the shift lever is in R.
- Hydraulic pressure is applied to the 5th clutch, then the 5th clutch engages the mainshaft reverse gear with the mainshaft.
- The mainshaft reverse gear drives the countershaft reverse gear via the reverse idler gear.
- The countershaft reverse gear drives the countershaft via the reverse selector which drives the reverse selector hub.
- The rotation direction of the countershaft is changed by the reverse idler gear.
- Power is transmitted to the final drive gear, which in turn drives the final driven gear and the transfer

drive gear.

- The transfer output shaft drives the transfer hypoid drive gear/shaft and the transfer output shaft (hypoid gear).

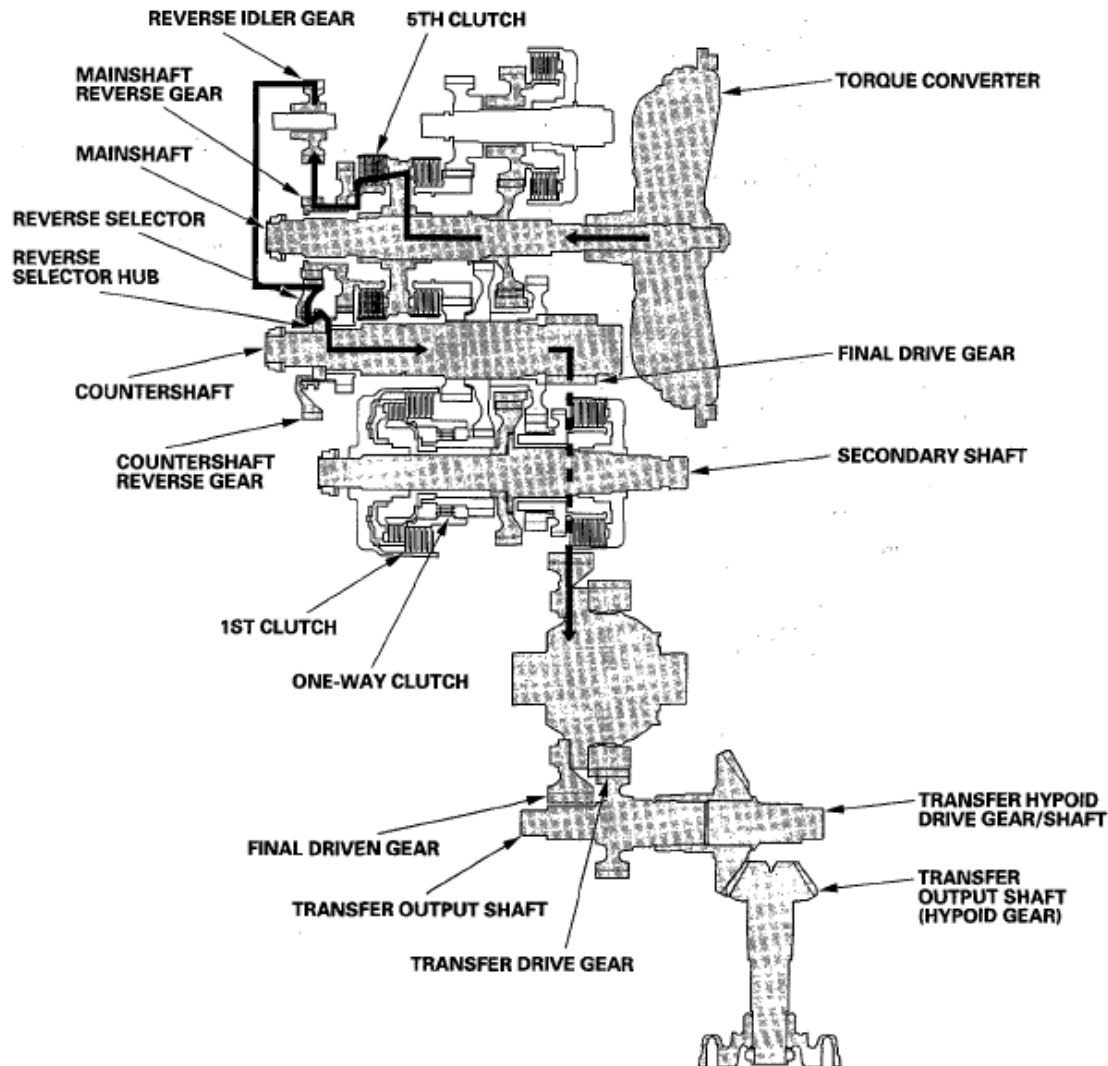


Fig. 25: Power Flow Diagram (R Position)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Electronic Control System

Electronic Control

The electronic control system consists of the powertrain control module (PCM), sensors, and seven solenoid valves. Shifting and lock-up are electronically controlled for comfortable driving under all conditions.

Functional Diagram

The PCM receives input signals from the sensors, switches, and other control units, processes data, and outputs

signals for the engine control system and A/T control system. The A/T control system includes shift control, clutch pressure control, and lock-up control. The PCM switches the shift solenoid valves and A/T clutch pressure control solenoid valves to control gear selection and lock-up torque converter clutch.

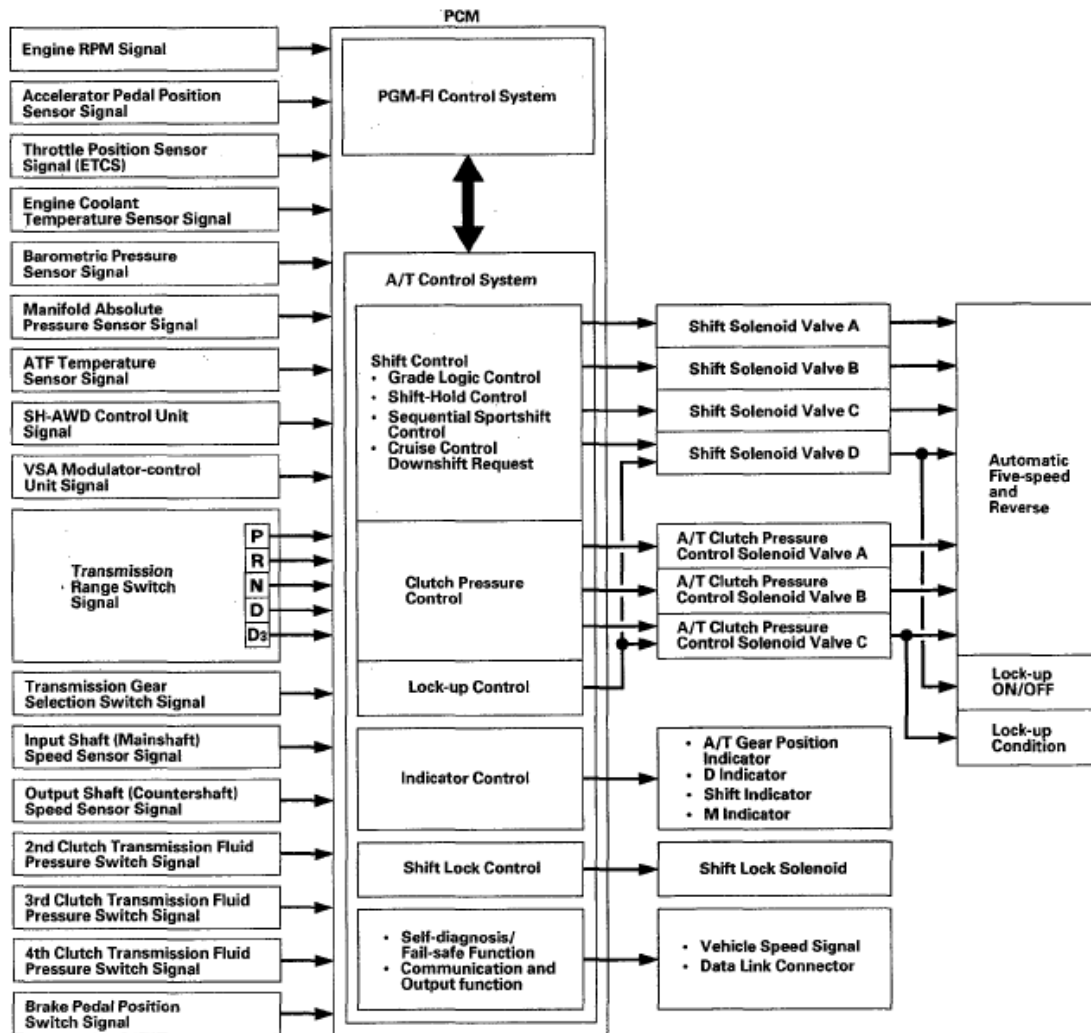


Fig. 26: Electronic Control System Functional Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Control

The PCM instantly determines which gear should be selected by various signals sent from sensors and switches, and it actuates the shift solenoid valves A, B, C, and D to control gear selection.

There are two types of shift solenoid valves:

- Shift solenoid valves A and D use the ON-OPEN/OFF-CLOSE type; the shift solenoid valve opens the port of shift solenoid valve pressure while the shift solenoid valve is turned ON by the PCM, and closes the port when shift solenoid valve is OFF.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- Shift solenoid valves B and C use the ON-CLOSE/OFF-OPEN type; the shift solenoid valve closes the port of shift solenoid valve pressure while the shift solenoid valve is turned ON by the PCM, and opens the port when shift solenoid valve is OFF.

The combination of driving signals to shift solenoid valves A, B, C, and D are shown in the table.

GEAR POSITION AND SHIFT SOLENOID VALVES POSITION REFERENCE

Position	Gear position	Shift solenoid valves			
		A	B	C	D
D and D3	Shifting from N	OFF	ON	OFF	OFF
	Stays in 1st	OFF	ON	ON	OFF
	Shifting gears between 1st and 2nd	ON	ON	ON	OFF or ON
	Stays in 2nd	ON	ON	OFF	OFF or ON
	Shifting gears between 2nd and 3rd	ON	ON	ON	OFF or ON
	Stays in 3rd	ON	OFF	ON	OFF or ON
D	Shifting gears between 3rd and 4th	ON	OFF	OFF	OFF or ON
	Stays in 4th	OFF	OFF	OFF	OFF or ON
	Shifting gears between 4th and 5th	OFF	OFF	ON	OFF or ON
	Stays in 5th	OFF	ON	ON	OFF or ON
M	1st	OFF	ON	ON	OFF or ON
	2nd	ON	ON	OFF	OFF or ON
	3rd	ON	OFF	ON	OFF or ON
	4th	OFF	OFF	OFF	OFF or ON
	5th	OFF	ON	ON	OFF or ON
N	Neutral	OFF	ON	OFF	OFF
R	Shifting from P and N	OFF	ON	OFF	ON
	Stays in reverse	ON	ON	OFF	ON
	Reverse inhibit control	OFF	ON	OFF	OFF
P	Park	OFF	ON	OFF	ON

Shift Control - Grade Logic Control

The grade logic control system has been adopted to control shifting in D and D3. The PCM compares actual driving conditions with memorized driving conditions, based on the input from the throttle position sensor, the engine coolant temperature sensor, the barometric pressure sensor, the brake pedal position switch signal, and the shift lever position signal, to control shifting while the vehicle is ascending or descending a slope.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

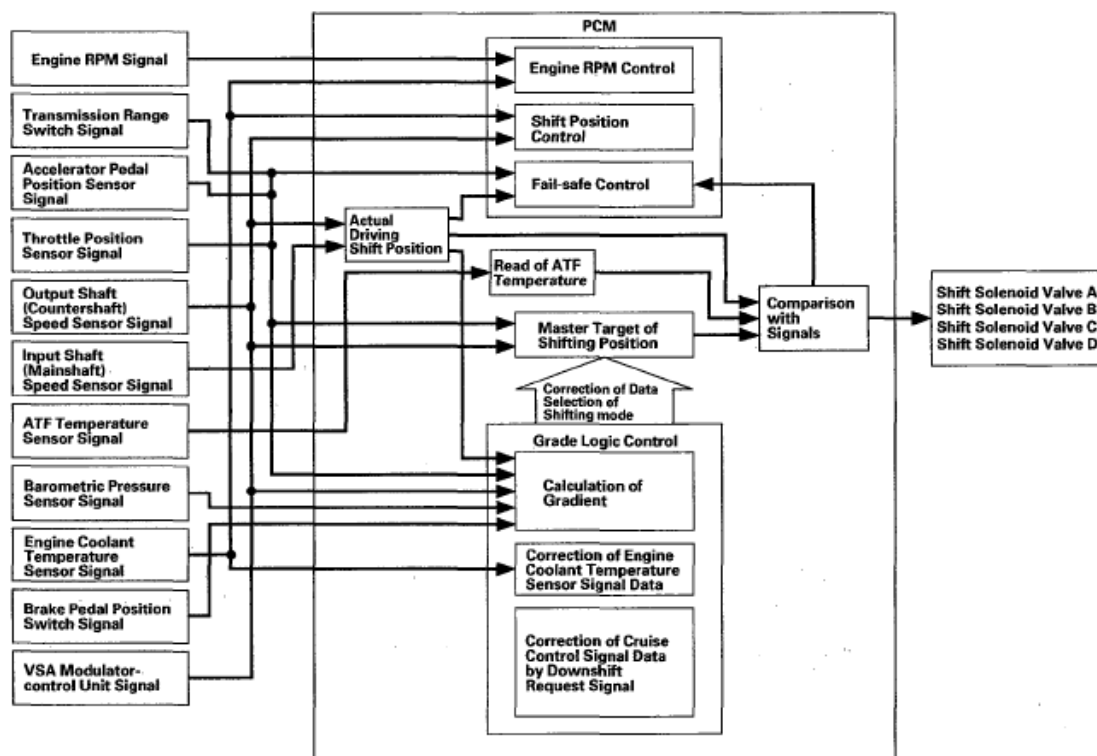


Fig. 27: Grade Logic Control System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grade Logic Control: Ascending Control

When the PCM determines that the vehicle is climbing a hill in D and D3, the system extends the engagement area of 2nd gear, 3rd gear, and 4th gear to prevent the transmission from frequently shifting between 2nd and 3rd gears, between 3rd and 4th gears, and between 4th and 5th gears, so the vehicle can run smooth and have more power when needed.

NOTE: Shift commands stored in the PCM between 2nd and 3rd gears, between 3rd and 4th gears, and between 4th and 5th gears, enable the PCM to automatically select the most suitable gear according to the magnitude of a gradient.

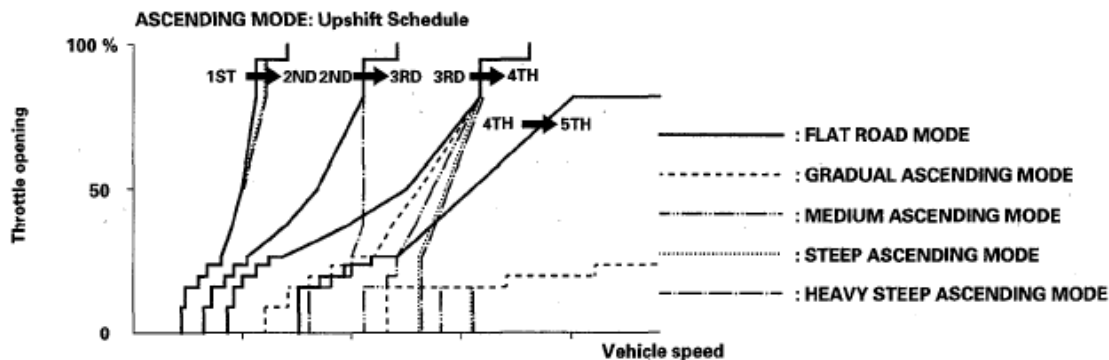


Fig. 28: Throttle Opening And Vehicle Speed Graph (Grade Logic Control: Ascending Control)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grade Logic Control: Descending Control

When the PCM determines that the vehicle is going down a hill in D and D3, the shift-up speed from 4th to 5th gear, 3rd to 4th gear, and from 2nd to 3rd (when the throttle is closed) becomes faster than the set speed for flat road driving to extend the 4th gear, 3rd gear, and 2nd gear driving areas. This, in combination with engine braking from the deceleration lock-up, achieves smooth driving when the vehicle is descending. There are three descending modes with different 4th gear driving areas, 3rd gear driving areas, and 2nd gear driving areas according to the magnitude of a gradient stored in the PCM. When the vehicle is in 5th or 4th gear and you are decelerating while applying the brakes on a steep hill, the transmission will downshift to a lower gear. When you accelerate, the transmission will then return to a higher gear.

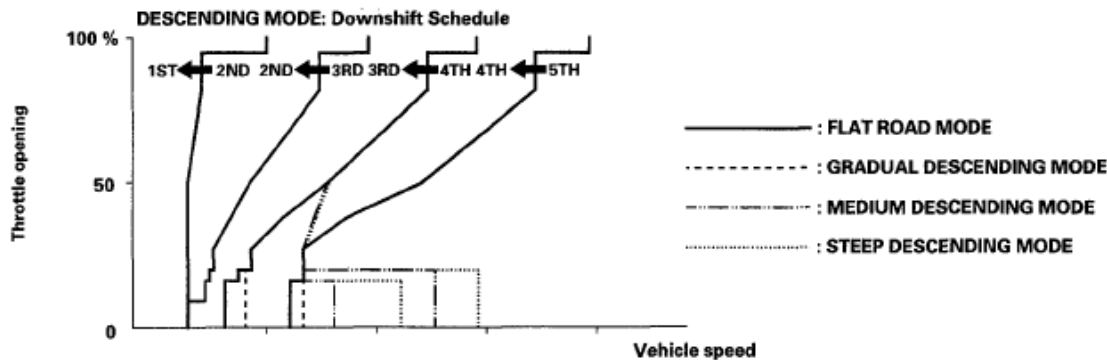


Fig. 29: Throttle Opening And Vehicle Speed Graph (Grade Logic Control: Descending Control)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Deceleration Control

When the vehicle goes around a corner and needs to decelerate first and then accelerate, the PCM sets the data for deceleration control to reduce the number of times the transmission shifts. When the vehicle is decelerating from speeds above 25 mph (40 km/h), the PCM shifts the transmission from 4th to 3rd earlier than normal to cope with upcoming acceleration.

Shift-Hold Control

When negotiating winding roads, the throttle is suddenly released and the brakes are applied, as is the case when decelerating at the entrance of a corner, Shift-Hold Control keeps the transmission in its current (lower) ratio as it negotiates the corner and accelerates out.

When the vehicle is driven aggressively on a winding road, the PCM will extend the engagement time of 3rd gear and 4th gear to prevent the transmission from frequently shifting between 3rd, 4th, and 5th gears. This allows the driver to have more control for both acceleration and deceleration.

The PCM monitors the average change in vehicle speed and throttle overtime. When these values exceed those for normal driving conditions, the shift-up from 3rd to 4th gear and 4th to 5th gear is delayed. This gives more control over power, and engine braking when the driver is driving aggressively around winding roads. The

transmission will resume the normal shift-up pattern after the PCM determines that normal driving has resumed.

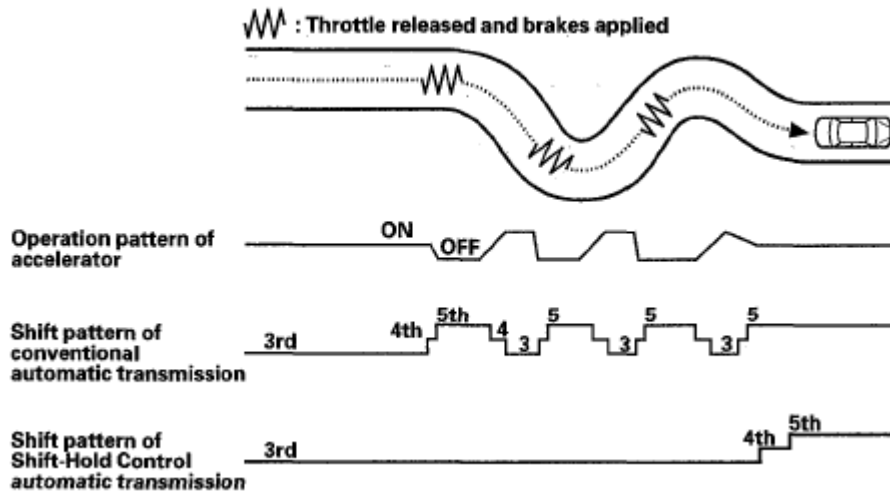


Fig. 30: Identifying Shift Pattern Of Conventional Automatic Transmission
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Control - Sequential Sportshift Mode

The MDX transmission is provided with a sequential sportshift mode in D. In D, the transmission has two shifting modes; the automatic shift mode and the sequential sportshift mode. In the automatic shift mode used for general driving, the transmission upshifts and downshifts automatically from 1st through 5th gear. In the automatic shift mode, the shift indicator and the M indicator in the gauge control module do not come on.

The transmission is switched to the sequential sportshift mode by moving the shift lever into M from the D, the automatic shift mode is canceled and the sequential sportshift mode comes into operation. The shift indicator displays the number of the selected gear, and the M indicator comes on. In the sequential sportshift mode, the driver can shift up and down manually from 1st through 5th gear by using the shift lever, much like a manual transmission, and the transmission must be shifted up and down by using the shift lever. However, the transmission cannot downshift and stays in the current gear if the shift lever is pulled while the vehicle is coasting at a speed that would cause the engine to over-rev by downshifting the transmission, and the shift indicator blinks the number of the selected gear several times, then returns to the number of the current gear. If the vehicle speed reaches an appropriate speed while the shift indicator is blinking the number of the selected gear, the transmission downshifts and the shift indicator displays the selected gear. The transmission also cannot upshift and stay in the current gear if the shift lever is pushed while driving below an appropriate upshifting speed, the shift indicator blinks the number of the selected gear several times, then returns to the number of the current gear. If the vehicle speed reaches an appropriate upshift speed while the shift indicator is blinking the number of the selected gear, the transmission upshifts and the shift indicator displays the selected gear.

When the transmission decelerates to a stop, the transmission shifts to 1st gear automatically. The transmission can be shifted to 2nd gear by pushing the shift lever while the vehicle is stopped, and the vehicle can start off in 2nd gear. The sequential sportshift mode is canceled when moving the shift lever to any position other than M.

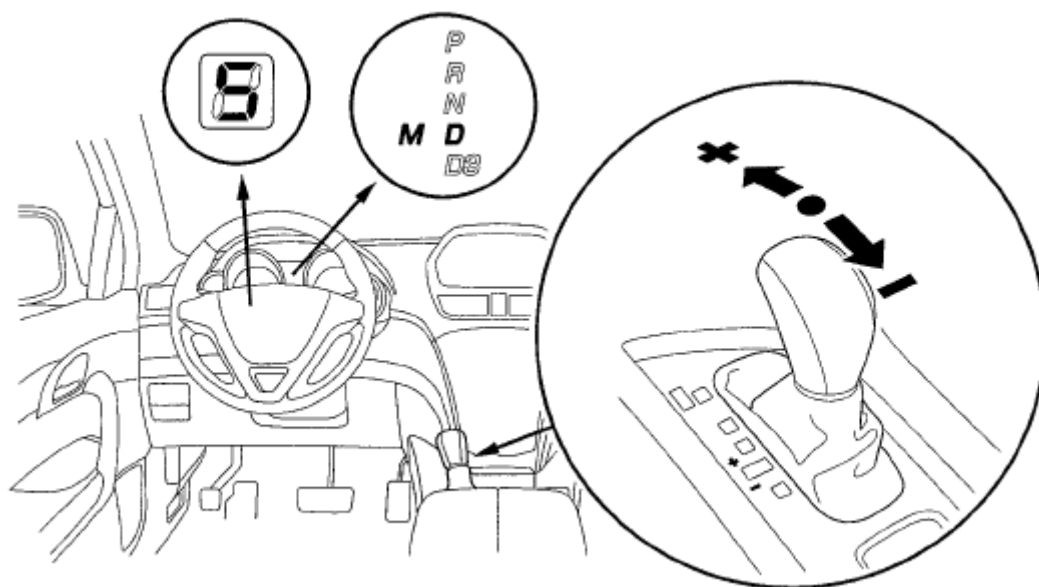


Fig. 31: Moving Shift Lever

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Clutch Pressure Control

The PCM actuates A/T clutch pressure control solenoid valves A, B, and C to control the clutch pressure. When shifting between gears, the clutch pressure regulated by A/T clutch pressure control solenoid valves A, B, and C engages and disengages the clutch smoothly.

The PCM receives input signals from the various sensors and switches, performs processing data, and outputs current to A/T clutch pressure control solenoid valves A, B, and C.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

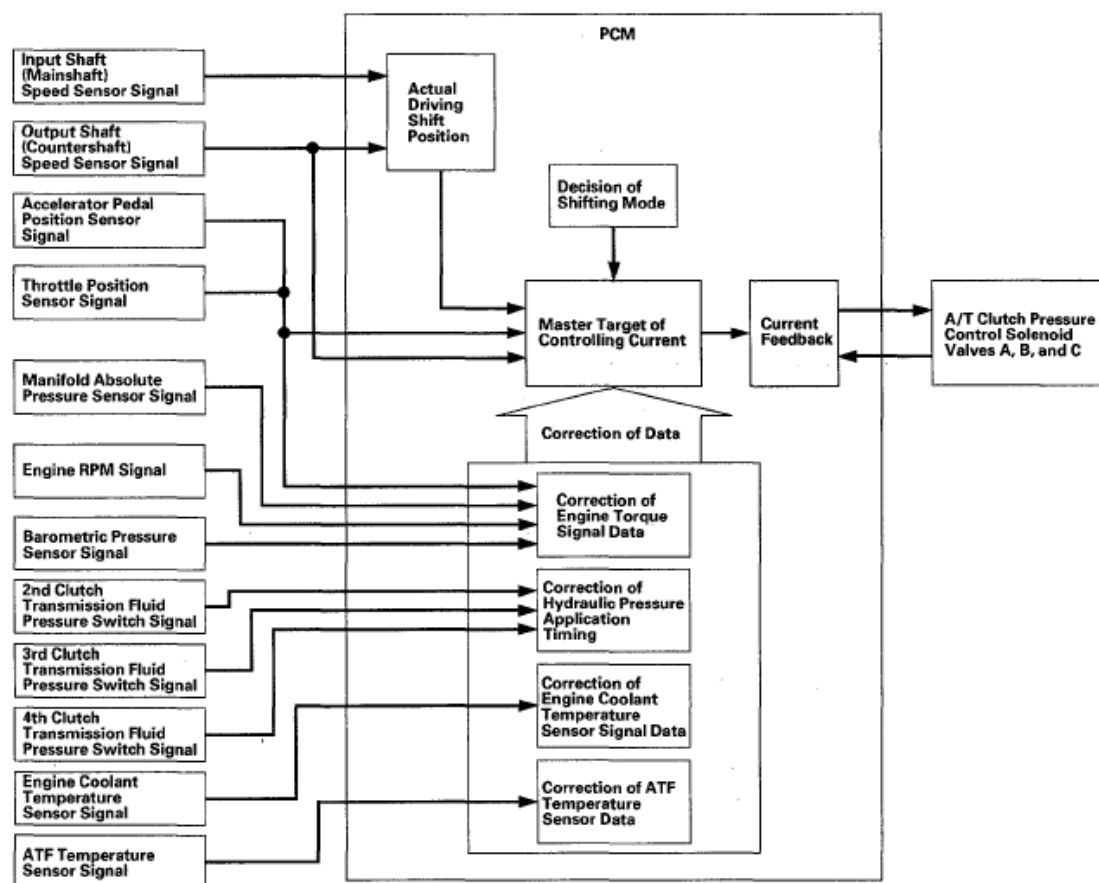


Fig. 32: Clutch Pressure Control System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Lock-up Control

Shift solenoid valve D controls the hydraulic pressure to switch the lock-up shift valve and lock-up ON and OFF. The PCM actuates shift solenoid valve D and A/T clutch pressure control solenoid valve C ON, the condition of lock-up starts. A/T clutch pressure control solenoid valve C regulates and applies hydraulic pressure to the lock-up control valve to control the volume of the lock-up.

The lock-up mechanism operates in 2nd, 3rd, 4th, and 5th gears in D, and in 2nd and 3rd gears in D3.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

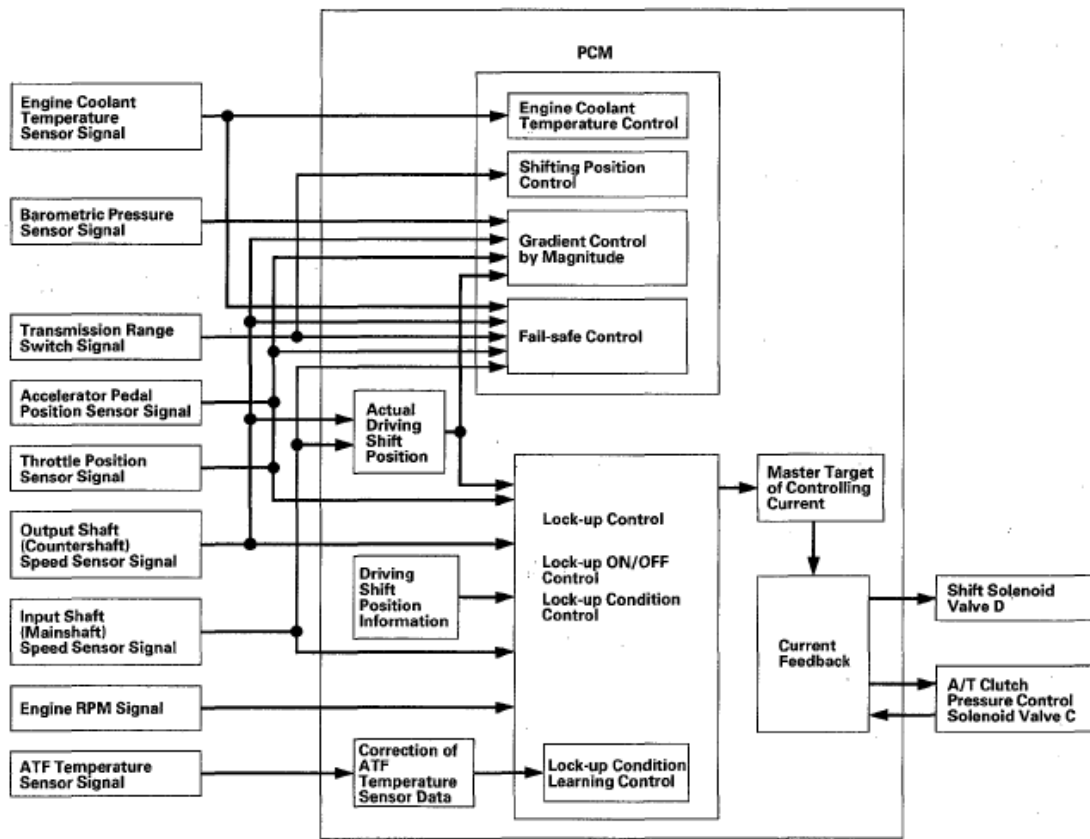


Fig. 33: Lock-Up Control System Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM A/T Control System Electrical Connections

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

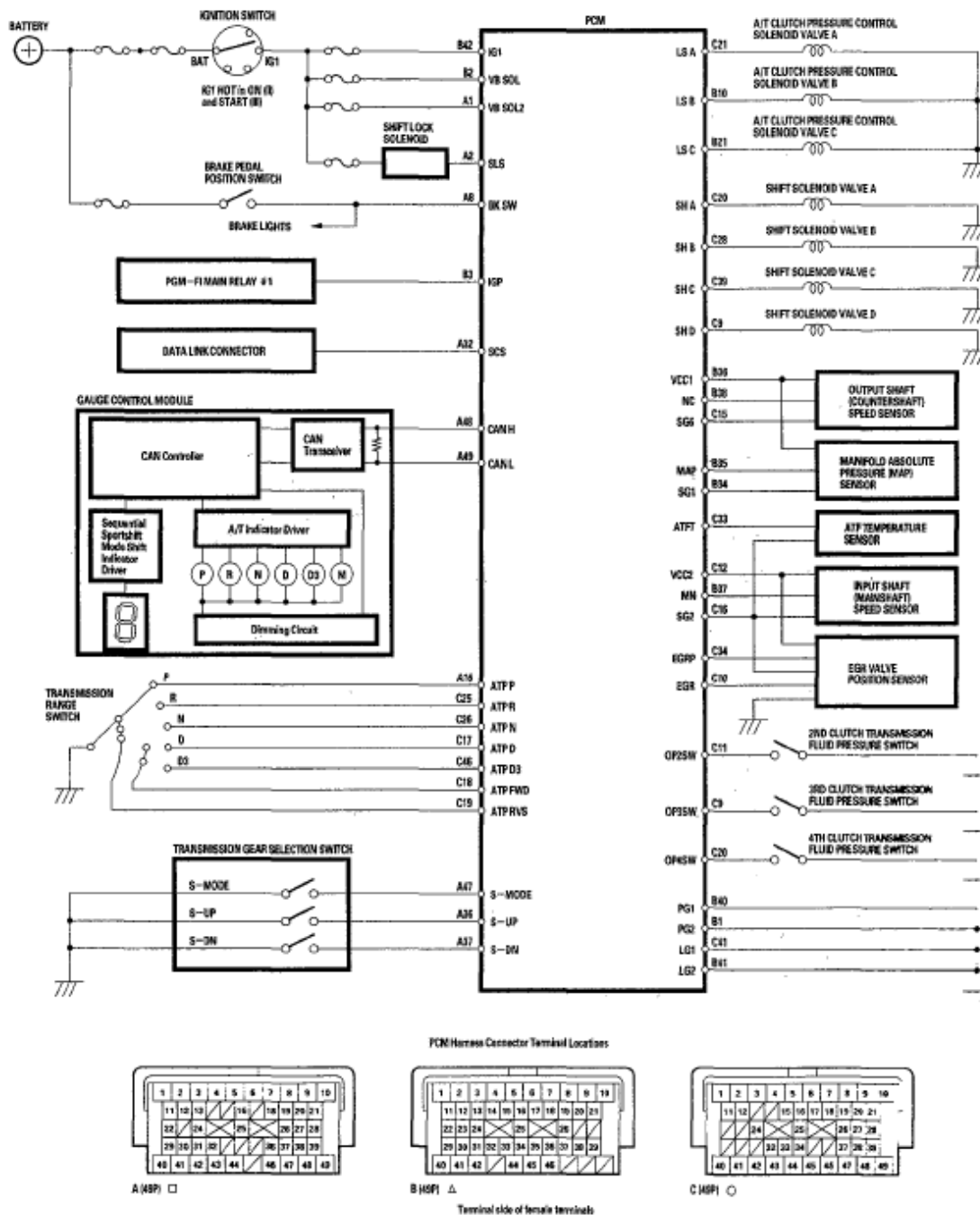


Fig. 34: PCM A/T Control System Electrical Connections Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM A/T Control System Inputs and Outputs

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

PCM Harness Connector Terminal Locations

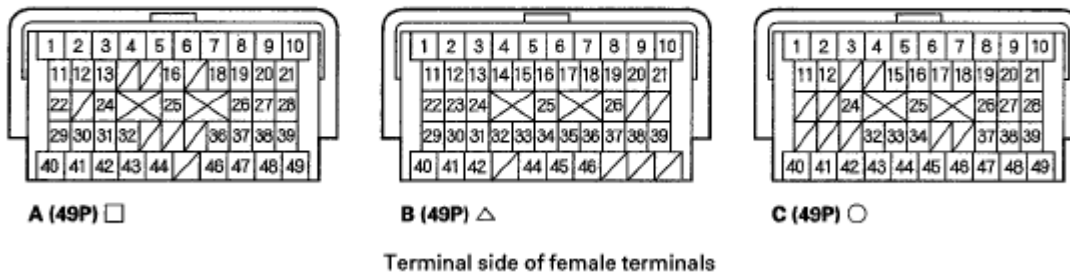


Fig. 35: Identifying PCM Harness Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM CONNECTOR A (49P) []

PCM TERMINALS DESCRIPTION AND SIGNALS REFERENCE (PCM CONNECTOR A (49P))

Terminal number	Wire color	Terminal name	Description	Signal
A1	WHT	VB SOL2 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II): Battery voltage With ignition switch LOCK (0): About 0 V
A2	PNK	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in P, brake pedal pressed, and accelerator released: About 0 V
A8	LTGRN	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: About 0 V With brake pedal pressed: Battery voltage
A16	GRN	ATP P (TRANSMISSION RANGE SWITCH P POSITION)	Detects transmission range switch P position signal	In P: About 0 V In any position other than P: Battery voltage
A32	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With service check signal shorted with the HDS: About 0 V With service check signal opened: About 5.0 V
A36	BLU	S-UP (TRANSMISSION GEAR SELECTION SWITCH UPSHIFT SWITCH)	Detects transmission gear selection switch upshift switch signal	In M: - Shift lever pushed toward upshift position: About 0V - Shift lever released: Battery voltage

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

A37	GRN	S-DN (TRANSMISSION GEAR SELECTION SWITCH DOWNSHIFT SWITCH)	Detects transmission gear selection switch downshift switch signal	In M: - Shift lever pulled toward downshift position: About 0 V - Shift lever released: Battery voltage
A47	PUR	S-MODE (SEQUENTIAL SPORTSHIFT MODE)	Detects transmission gear selection switch S mode switch signal	In M: About 0 V In any position other than M: Battery voltage
A48	WHT	CAN H (CAN COMMUNICATION SIGNAL HIGH)	Sends communication signal	With ignition switch ON (II): Pulses
A49	RED	CAN L (CAN COMMUNICATION SIGNAL LOW)	Sends communication signal	With ignition switch ON (II): Pulses

PCM CONNECTOR B (49P) (Triangle Symbol)

PCM TERMINALS DESCRIPTION AND SIGNALS REFERENCE (PCM CONNECTOR B (49P))

Terminal number	Wire color	Terminal name	Description	Signal
B1	BLK	PG2 (POWER GROUND)	Ground circuit for PCM circuit	Less than 1.0 V at all times
B2	BLK/YEL	VB SOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II): Battery voltage With ignition switch LOCK (0): About 0 V
B3	YEL/BLK	IGP (POWER SOURCE FOR PCM)	Power source for PCM circuit	With ignition switch ON (II): Battery voltage With ignition switch LOCK (0): About 0 V
B10	BRN/WHT	LSB(A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	With ignition switch ON (II): Pulses
B21	GRN/RED	LS C (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II): Pulses
B34	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
				With ignition switch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

B35	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR)	Detects MAP sensor signal	ON (II): Battery voltage At idle: About 1.0 V depending on engine speed
B36	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): About 5.0 V With ignition switch LOCK (0): About 0 V
B37	RED	NM (INPUT SHAFT (MAINSHAFT) SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signal	With ignition switch ON (II): About 0 V or about 5.0 V With engine running in N: About 2.5 V
B38	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II): About 0 V or about 5.0 V With driving: Pulses
B40	BLK	PG1 (POWER GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
B41	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM	Less than 1.0 V at all times
B42	BLK/YEL	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II): Battery voltage With ignition switch LOCK (0): About 0 V

PCM Harness Connector Terminal Locations



A (49P) □



B (49P) △



C (49P) ○

Terminal side of female terminals

Fig. 36: Identifying PCM Harness Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM CONNECTOR C (49P) ○

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

PCM TERMINALS DESCRIPTION AND SIGNALS REFERENCE (PCM CONNECTOR C (49P))

Terminal number	Wire color	Terminal name	Description	Signal
C9	GRN/RED	SHD (SHIFT SOLENOID VALVE D)	Drives shift solenoid valve D	In N, D and D3 during no lock-up condition: About 0 V In P and R, and D and D3 during lock-up condition: Battery voltage
C10	BLU/RED	EGR (EXHAUST GAS RECIRCULATION (EGR) VALVE)	Drives EGR valve	With EGR operating: Duty controlled With EGR not operating: About 0 V
C12	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): About 5.0 V With ignition switch LOCK (0): About 0 V
C16	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 1.0 V at all times
C17	YEL/GRN	ATP D (TRANSMISSION RANGE SWITCH D POSITION)	Detects transmission range switch D position signal input	In D: About 0 V In any position other than D: Battery voltage
C18	BLU/YEL	ATP FWD (TRANSMISSION RANGE SWITCH D AND S)	Detects transmission range switch D and D3 signal input	In D and D3: About 0 V In any position other than D and D3: Battery voltage
C19	RED/WHT	ATP RVS (TRANSMISSION RANGE SWITCH R POSITION)	Detects transmission range switch P, R, and N position signals	In P, R, and N: About 0 V In any position other than P, R, and N: Battery voltage
C20	BLU/YEL	SH A (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	In R, and 2nd and 3rd in D and D3: Battery voltage In P and N, 1st gear in D and D3, and 4th gear and 5th gear in D: About 0 V
C21	RED	LS A (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II): Pulses
C25	WHT	ATP R (TRANSMISSION RANGE SWITCH R POSITION)	Detects transmission range switch R position signal	In R: About 0 V In any position other than R: Battery voltage

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

PCM CONNECTOR C (49P) o**PCM TERMINALS DESCRIPTION AND SIGNALS REFERENCE (PCM CONNECTOR C (49P))**

Terminal number	Wire color	Terminal name	Description	Signal
C26	RED/BLK	ATP N (TRANSMISSION RANGE SWITCH N POSITION)	Detects transmission range switch N position signal	In N: About 0 V In any position other than N: Battery voltage
C27	BLU/BLK	OP2SW (2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 2nd clutch transmission fluid pressure switch signal	With ignition switch ON (II): - Without 2nd clutch pressure: About 5.0 V - With 2nd clutch pressure: About 0 V
C28	GRN/WHT	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	In P, R, and N, and 1st and 2nd gear in D and D3, and 5th gear in D: Battery voltage In 3rd gear in D and D3, and 4th gear in D: About 0 V
C33	BLU/YEL	ATFT (ATF TEMPERATURE SENSOR)	Detects ATF temperature sensor signal	With ignition switch ON (II): About 0.2-4.0 V depending on ATF temperature With ignition switch LOCK (0): About 0 V
C34	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: 1.2-3.0 V depending on EGR valve lift
C37	BLU/YEL	OP4SW (4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 4th clutch transmission fluid pressure switch signal	With ignition switch ON (II): - Without 4th clutch pressure: About 5.0 V - With 4th clutch pressure: About 0 V
C38	BLU/WHT	OP3SW (3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 3rd clutch transmission fluid pressure switch	With ignition switch ON (II): Without 3rd clutch pressure: About 5.0

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

			signal	V • With 3rd clutch pressure: About 0 V
C39	GRN	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	In 1st and 3rd gear in D and D3, and 5th gear in D: Battery voltage In P, R, and N, 2nd gear in D and D3, and 4th gear in D: About 0 V
C41	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM circuit	Less than 1.0 V at all times
C46	RED	ATP D3 (TRANSMISSION RANGE SWITCH D3)	Detects transmission range switch D3 signal input	In D3: About 0 V In any position other than D3: Battery voltage

Hydraulic Controls

The valve body includes the main valve body, the regulator valve body, the secondary valve body, and the accumulator body. The ATF pump is driven by splines on the end of the torque converter which is attached to the engine. Fluid flows through the regulator valve to maintain specified pressure through the main valve body to the manual valve, directing pressure to each of the clutches. Shift solenoid valves A, B, C, and D are mounted on the accumulator body. A/T clutch pressure control solenoid valves A, B, and C are mounted on the transmission housing.

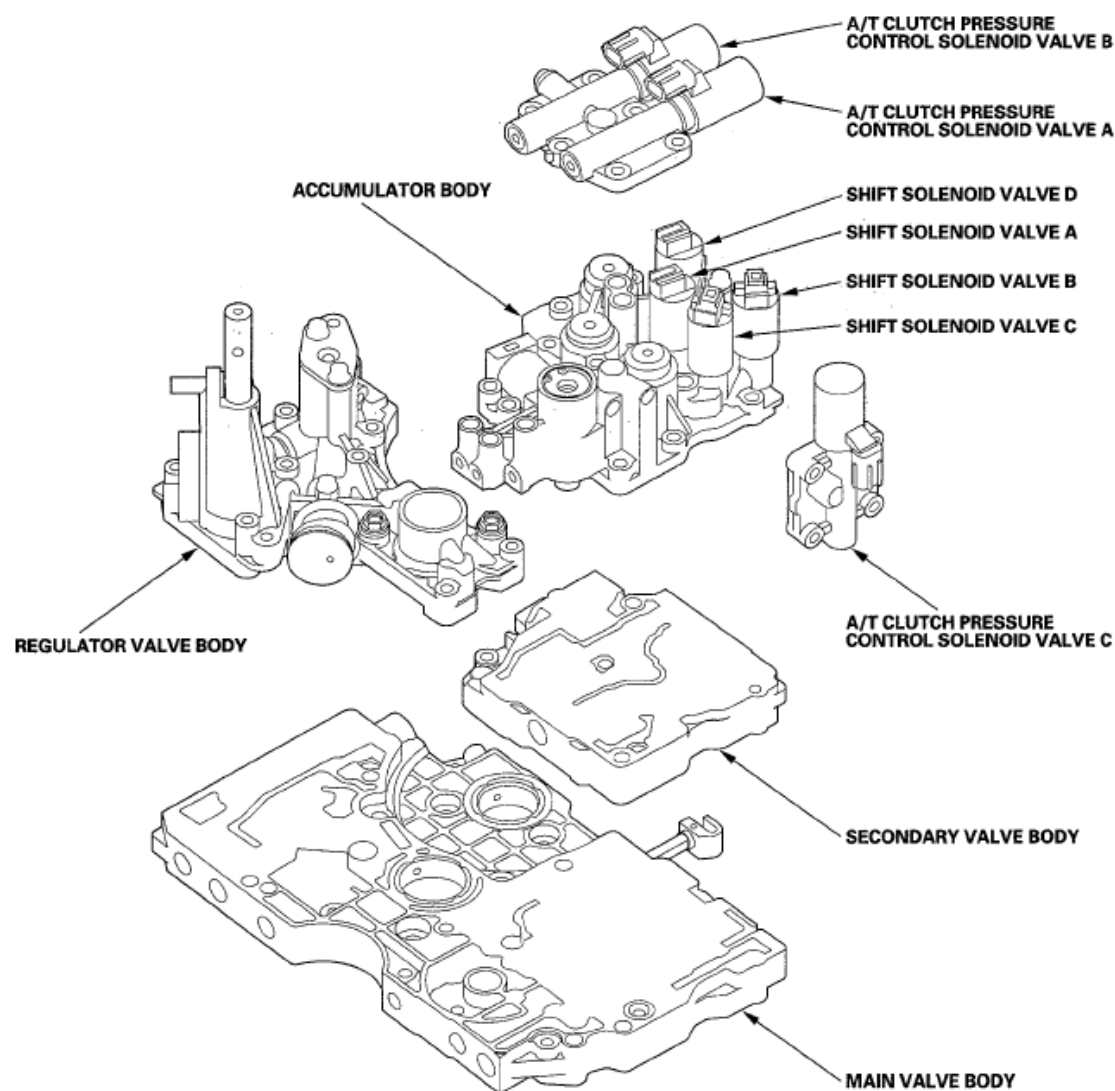


Fig. 37: Identifying Valve Body Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Valve Body

The main valve body contains the manual valve, the modulator valve, the torque converter check valve, shift valve A, shift valve B, shift valve D, shift valve E, CPC valve C, the relief valve, the lock-up shift valve, the lock-up timing valve, the lubrication control valve, the lubrication check valve, and the ATF pump gears. The primary function of the main valve body is to switch fluid pressure on and off to control hydraulic pressure going to the hydraulic control system.

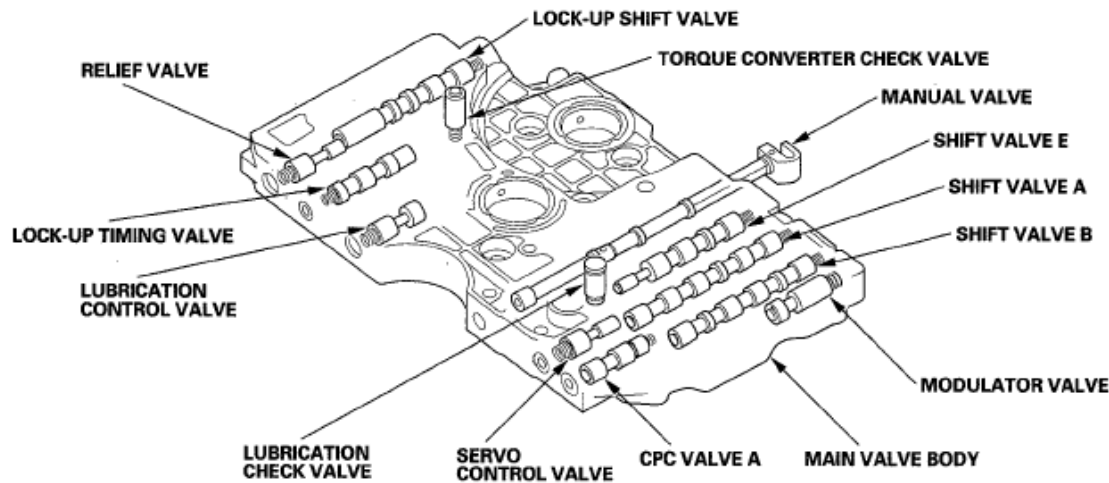


Fig. 38: Identifying Main Valve Body Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regulator Valve Body

The regulator valve body is located on the main valve body. The regulator valve body contains the regulator valve, the cooler check valve, the lock-up control valve, the servo valve, and the 3rd accumulator.

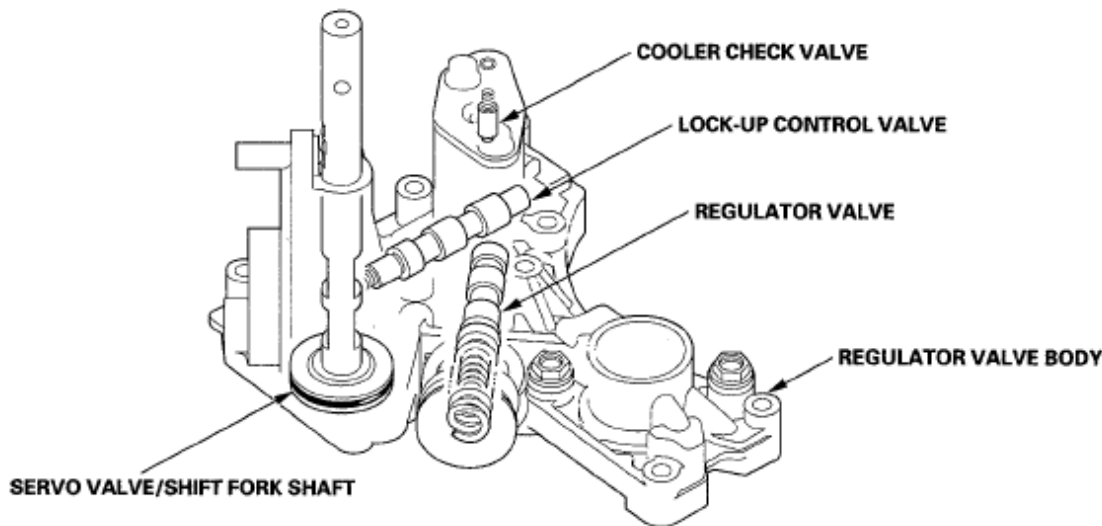


Fig. 39: Identifying Regulator Valve Body Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Regulator Valve

The regulator valve maintains constant hydraulic pressure from the ATF pump to the hydraulic control system, while also furnishing fluid to the lubrication system and torque converter. Fluid from the ATF pump flows through B and B'. Fluid entering from B flows through the valve orifice to the A cavity. This pressure of the A cavity pushes the regulator valve to the spring side, and this movement of the regulator valve uncovers the fluid port to the torque converter and the relief valve. The fluid flows out to the torque converter and the relief valve.

and the regulator valve returns under spring force. According to the level of the hydraulic pressure through B, the position of the regulator valve changes, and the amount of fluid from B' through the torque converter changes. This operation is continued, maintaining the line pressure.

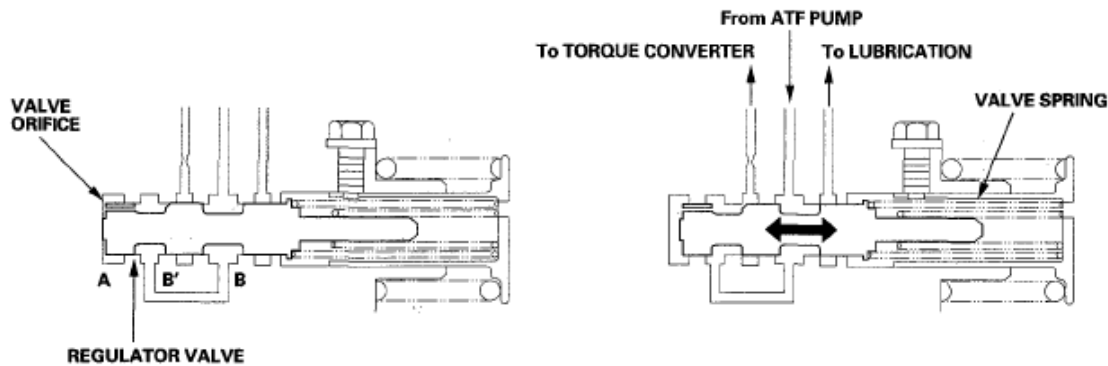


Fig. 40: Regulator Valve Operation Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Increases in hydraulic pressure according to torque are regulated by the regulator valve using stator torque reaction. The stator shaft is splined to the stator in the torque converter, and its arm end contacts the regulator spring cap. When the vehicle is accelerating or climbing (torque converter range), stator torque reaction acts on the stator shaft, and the stator arm pushes the regulator spring cap in the direction of the arrow in proportion to the reaction. The stator reaction spring compresses, and the regulator valve moves to increase the line pressure which is regulated by the regulator valve. The line pressure reaches its maximum when the stator torque reaction reaches its maximum.

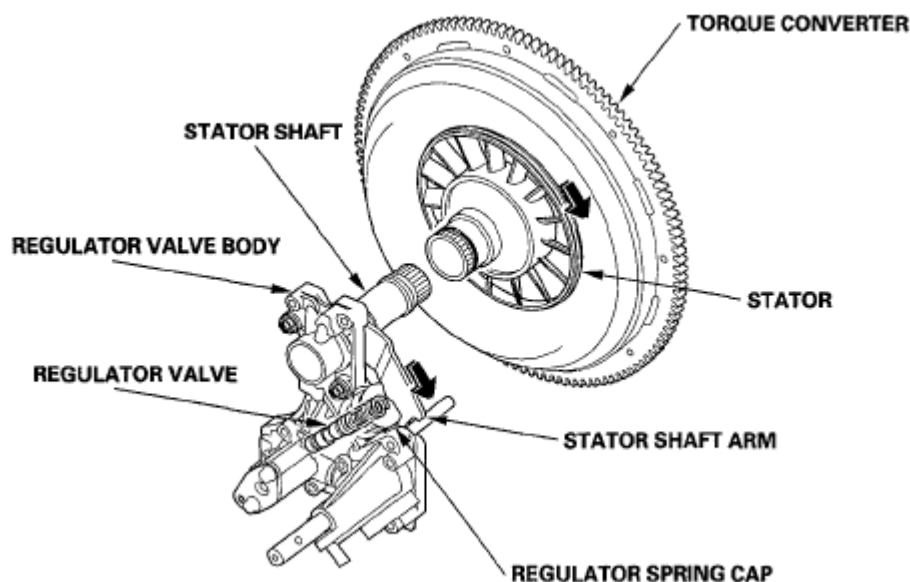


Fig. 41: Identifying Regulator Spring Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The secondary valve body is on the main valve body. The secondary valve body contains shift valve C, shift valve D, CPC valve B, CPC valve C, the reverse control valve, and the reverse CPC valve.

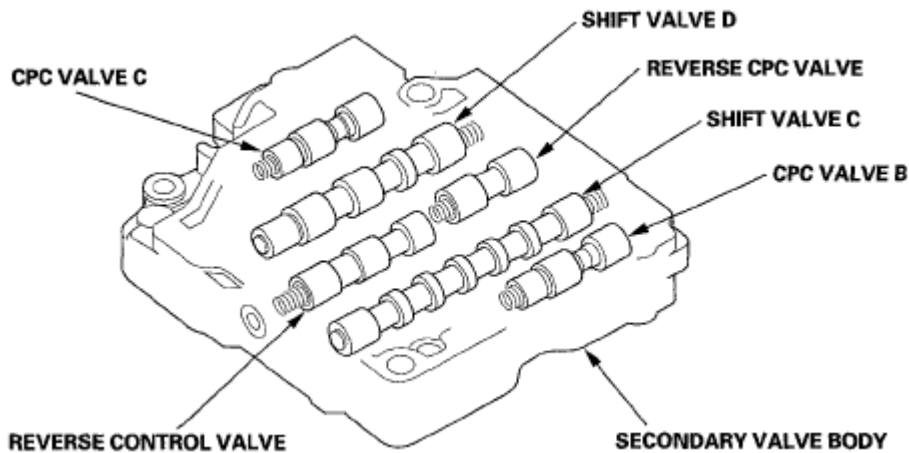


Fig. 42: Identifying Secondary Valve Body Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Accumulator Body

The accumulator body is on the secondary valve body, and contains the 1st, 1st-hold, 2nd, 4th, and 5th accumulators. The 3rd accumulator is in the regulator valve body.

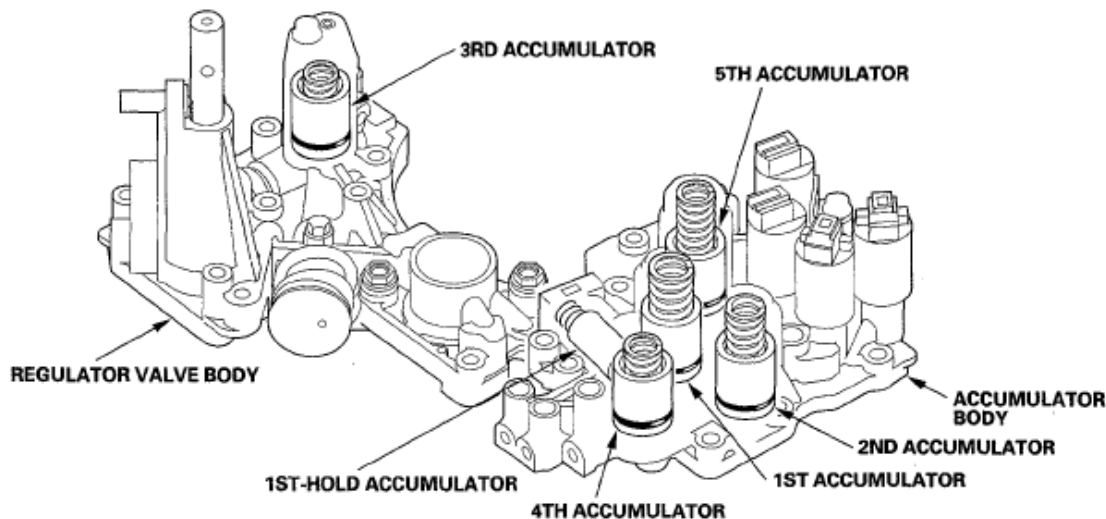


Fig. 43: Identifying Accumulator Body Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hydraulic Flow

Distribution of Hydraulic Pressure

As the engine turns, the ATF pump starts to operate. Automatic transmission fluid (ATF) is drawn through the

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

ATF strainer (filter) and discharged into the hydraulic circuit. Then, ATF flowing from the ATF pump becomes line pressure that is regulated by the regulator valve. Torque converter pressure from the regulator valve enters the torque converter through the lock-up shift valve and lock-up control valve, and it is discharged from the torque converter. The torque converter check valve prevents torque converter pressure from rising.

The PCM controls shift solenoid valves A, B, C, and D ON and OFF, and the shift solenoid valves control shift solenoid pressure to the shift valves. Applying shift solenoid pressure to the shift valves moves the position of the shift valve, and switches the port of hydraulic pressure. The PCM also controls A/T clutch pressure control solenoid valves A, B, and C. The A/T clutch pressure control solenoid valves regulate hydraulic pressure, and apply the pressure to CPC valves A and B, and reverse CPC valve.

When shifting between gears, the clutch is engaged by pressure from the CPC pressure mode. The PCM controls one of the shift solenoid valves to move the position of the shift valve. This movement switches the port of CPC pressure and line pressure. Line pressure is then applied to the clutch, and CPC pressure is released. Engaging the clutch with line pressure mode happens when shifting is completed.

Hydraulic Pressure at the Port for use in the hydraulic circuit:

PORTS AND HYDRAULIC PRESSURE REFERENCE

Port	Hydraulic Pressure	Port	Hydraulic Pressure
1	Line	SC	Shift solenoid valve C
2	Line	SC	Shift solenoid valve C
3	Line	SD	Shift solenoid valve D
3'	Line	10	1st clutch
3"	Reverse CPC or Line	15	1st-hold clutch
3A	Line	20	2nd clutch
3B	Reverse CPC	30	3rd clutch
4	Line	40	4th clutch
4'	Line	50	5th clutch
4"	Line	51	5th clutch
4A	CPC A	56	A/T clutch pressure control solenoid valve A
4B	CPCB	57	A/T clutch pressure control solenoid valve B
4C	CPCC	5R	A/T clutch pressure control solenoid valve B
5A	CPC A	58	A/T clutch pressure control solenoid valve C
5B	CPC A or Line	90	Torque converter
5C	CPC B or Line	90'	Torque converter
5D	CPCB	91	Torque converter
5E	CPCC	91'	Torque converter
5F	CPCC	92	Torque converter
5G	CPCC	93	ATF cooler
5H	CPC B or Line	94	Torque converter
5J	CPC B or Line	95	Lubrication
5K	CPC A or Line	95'	Lubrication

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

5L	CPC A or Line	96	Torque converter
5M	Line	99	Suction
5N	CPCC	X	Drain
6	Modulator	HX	High position drain
SA	Shift solenoid valve A	AX	Air drain
SB	Shift solenoid valve B	-	-

N Position

Line pressure (1) regulated by the regulator valve flows to shift solenoid valves. The PCM controls the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is OFF, and closes the port of shift solenoid valve A pressure (SA); shift valve A stays on the left side.
- Shift solenoid valve B is turned ON, and closes the port of shift solenoid valve B pressure (SB); shift valve B and shift valve E stay on the left side.
- Shift solenoid valve C is OFF, and opens the port of shift solenoid valve C pressure (SC); shift valve C and shift valve D move to the right side.
- Shift solenoid valve D is OFF, and closes the port of shift solenoid valve D pressure (SD).

Line pressure (1) also flows to the modulator valve and becomes modulator pressure (6). Modulator pressure (6) flows to the A/T clutch pressure control solenoid valves. The manual valve covers the port leading pressure to the clutches, and hydraulic pressure is not applied to the clutches.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

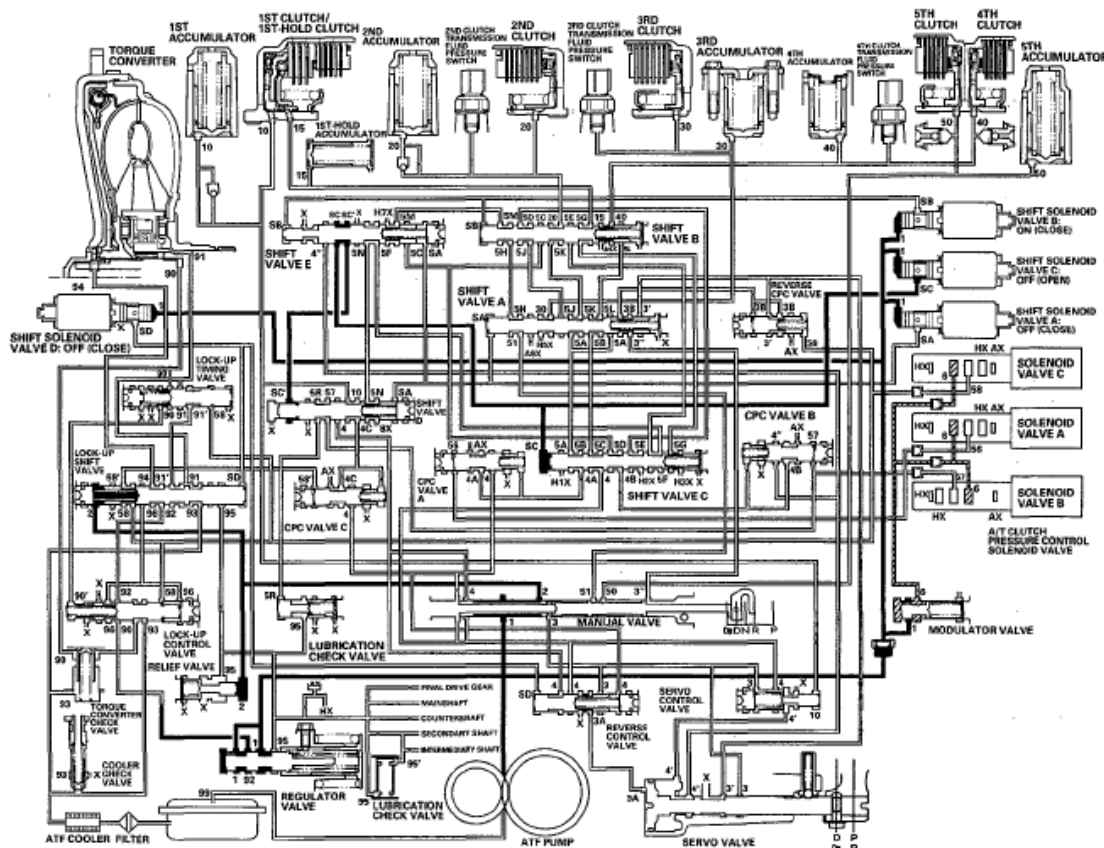


Fig. 44: Hydraulic Flow Diagram (N Position)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: 1st gear shifting from the N position

When shifting to D or M from N, the condition of the shift solenoid valves remain the same as in N. The manual valve is moved to D, and uncovers the port of line pressure (4) leading to CPC valves A and C. The PCM controls A/T clutch pressure control solenoid valves A and C, A/T clutch pressure control solenoid valve A pressure (56) flows to the CPC valve A, and A/T clutch pressure control solenoid valve C pressure (58) flows to the CPC valve C. CPC valves A and C regulate line pressure (4), line pressure (4) becomes CPC C pressure (4C) at the CPC valve C, and becomes CPC A pressure at CPC valve A. CPC C pressure (4C) becomes 1st clutch pressure (10) at shift valve D, and 1st clutch pressure flows to the 1st clutch. CPC A pressure (4A) becomes 2nd clutch pressure (20) at shift valve B via shift valves A and C. The 1st clutch and 2nd clutch engage gently with the CPC pressure mode.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

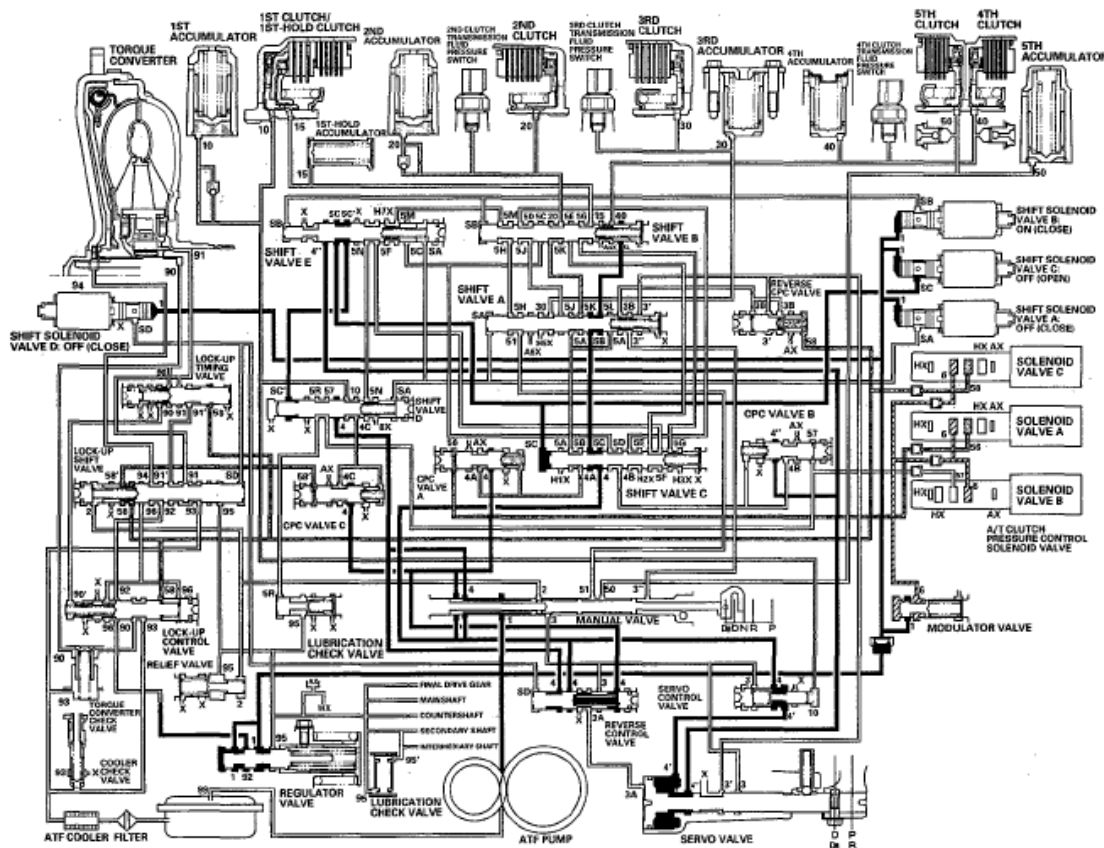


Fig. 45: Hydraulic Flow Diagram (D And D3 Positions: 1st Gear Shifting From N Position)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: Driving in 1st gear

The PCM turns shift solenoid valve C ON, and shift solenoid valve C covers the port of shift solenoid valve C pressure (SC) to shift valve C, and shift valve D via shift valve E. Shift solenoid valve A remains OFF, and shift solenoid valve B remains ON. Shift valves C and D are moved to the left side, shift valve D switches the port of line pressure (4) and CPC C pressure (4C) leading to the 1st clutch, and shift valve C switches the port of CPC A pressure (5A) releasing 2nd clutch pressure. Line pressure (4) becomes 1st clutch pressure (10) at shift valve D, and flows to the 1st clutch. The 1st clutch is engaged securely with the line pressure mode.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

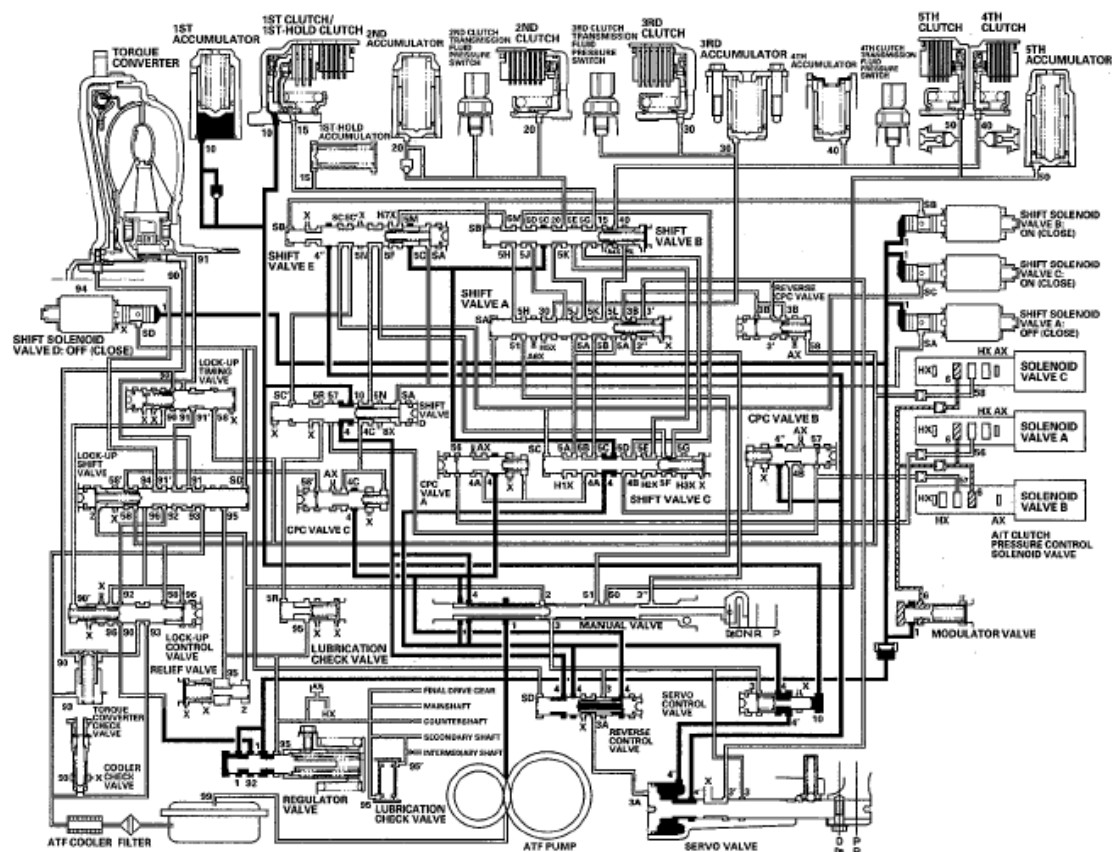


Fig. 46: Hydraulic Flow Diagram (D And D3 Positions: Driving In 1st Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: Shifting between 1st gear and 2nd gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve A ON, and shift solenoid valve A uncovers the port of shift solenoid valve A pressure (SA) to shift valve A. Shift solenoid valves B and C remain ON. Shift valve A is moved to the right side to uncover the port of CPC A pressure (4A) leading to the 2nd clutch. The PCM controls A/T clutch pressure control solenoid valve A, and A/T clutch pressure control solenoid valve A pressure (56) is applied to CPC valve A. CPC valve A regulates line pressure (4), and line pressure (4) becomes CPC A pressure (4A). CPC A pressure (4A) flows to shift valve B via shift valves C and A, and becomes 2nd clutch pressure (20) at shift valve B. The 2nd clutch is engaged in the CPC pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

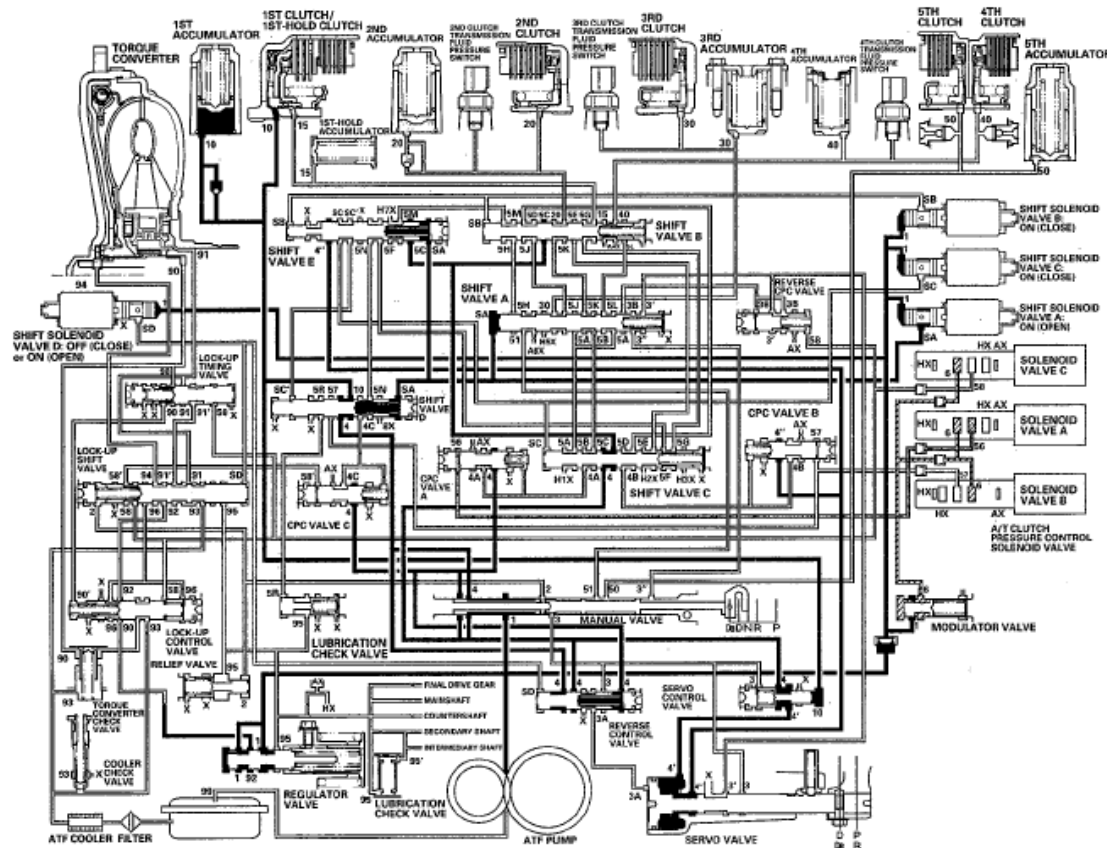


Fig. 47: Hydraulic Flow Diagram (D And D3 Positions: Shifting Between 1st Gear And 2nd Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: Driving in 2nd gear

The PCM turns shift solenoid valve C OFF, and shift solenoid valve C uncovers the port of shift solenoid valve C pressure (SC) to shift valve C. Shift solenoid valves A and B remain ON. Shift valve C is moved to the right side to switch the port of line pressure (4) and CPC A pressure (4A) leading to the 2nd clutch. CPC A pressure (5B) (5K) changes to line pressure (5B) (5K) and 2nd clutch pressure (20) is changed to line pressure mode, and the 2nd clutch is engaged in the line pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

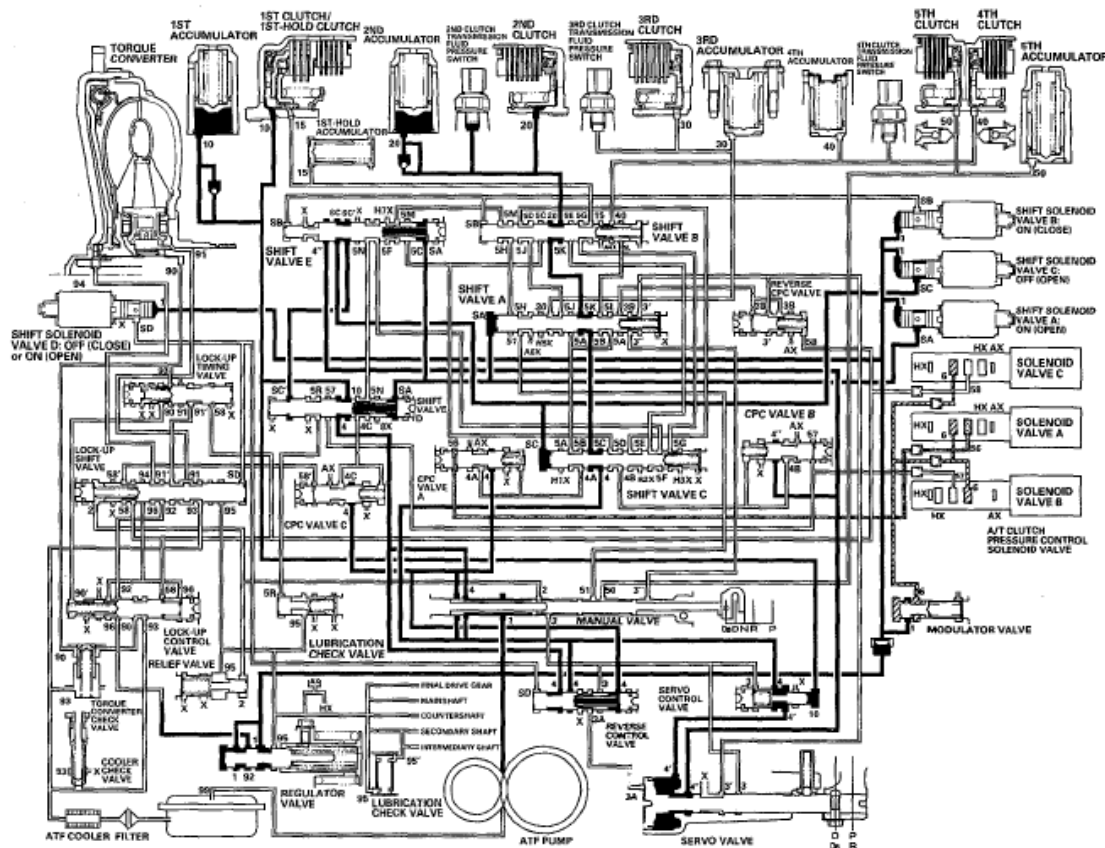


Fig. 48: Hydraulic Flow Diagram (D And D3 Positions: Driving In 2nd Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: Shifting between 2nd gear and 3rd gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve C ON, and shift solenoid valve C covers the port of shift solenoid valve C pressure (SC) to shift valve C. Shift solenoid valves A and B remain ON. Shift valve C is moved to the left side to switch the port of line pressure (4) and CPC A pressure (4A) leading to the 2nd clutch. Shift valve C also uncovers the port of CPC B pressure (4B) leading to the 3rd clutch. The PCM controls A/T clutch pressure control solenoid valves A and B. A/T clutch pressure control solenoid valve A pressure (56) is applied to CPC valve A, and A/T clutch pressure control solenoid valve B pressure (57) is applied to CPC valve B. CPC valve B regulates line pressure (4"), and line pressure (4") becomes CPC B pressure (4B). CPC B pressure flows to shift valve A via shift valves C and B, and becomes 3rd clutch pressure (30) at shift valve A. The 2nd clutch pressure (20) is changed to CPC pressure mode, and the 3rd clutch is engaged with the CPC pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

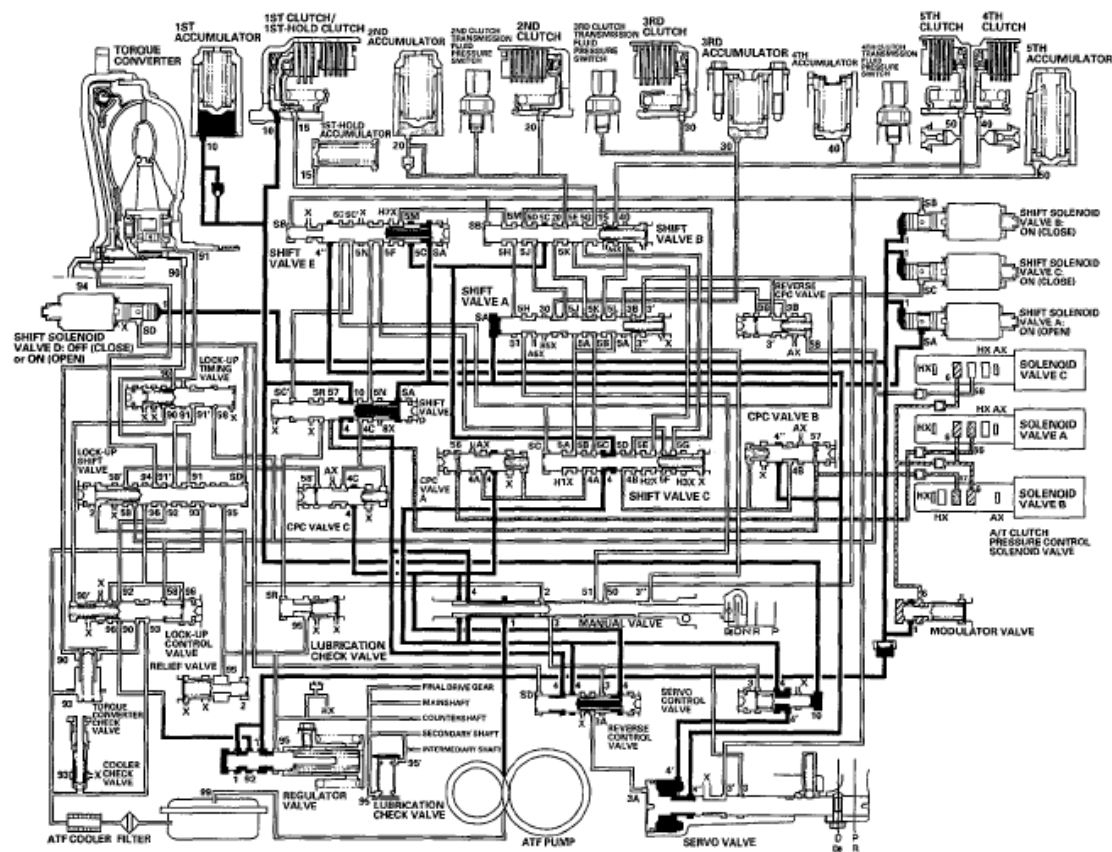


Fig. 49: Hydraulic Flow Diagram (D And D3 Positions: Shifting Between 2nd Gear And 3rd Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D and D3 Positions: Driving in 3rd gear

The PCM turns shift solenoid valve B OFF, and shift solenoid valve B uncovers the port of shift solenoid valve B pressure (SB) to shift valve B. Shift solenoid valves A and C remain ON. Shift valve B is moved to the right side to switch the port of line pressure (5C), CPC B pressure (5J) leading to the 3rd clutch, and 2nd clutch pressure (20) releasing 2nd clutch pressure. CPC B pressure (5J) changes to line pressure (5J) and 3rd clutch pressure (30) is changed to line pressure mode, and the 3rd clutch is engaged with the line pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

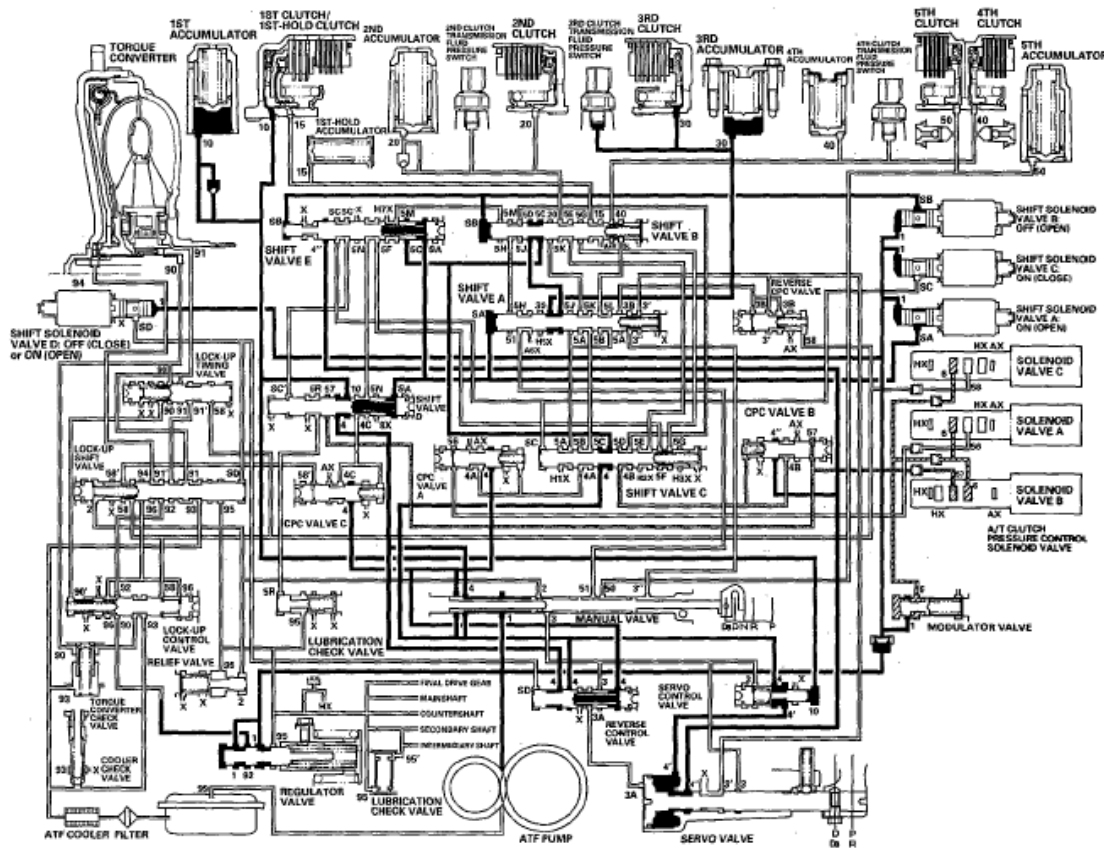


Fig. 50: Hydraulic Flow Diagram (D And D3 Positions: Driving In 3rd Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 3rd gear and 4th gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve C OFF, and shift solenoid valve C uncovers the port of shift solenoid valve C pressure (SC) to shift valve C. Shift solenoid valve A remains ON, and shift solenoid valve B remains OFF. Shift valve C is moved to the right side to switch the port of line pressure (4) and CPC B pressure (4B) leading to the 3rd clutch. Shift valve C also uncovers the port of CPC A pressure (4A) leading to the 4th clutch. The PCM controls A/T clutch pressure control solenoid valves A and B. A/T clutch pressure control solenoid valve A pressure (56) is applied to the CPC valve A, and A/T clutch pressure control solenoid valve B pressure (57) is applied to CPC valve B. CPC valve A regulates line pressure (4), and line pressure (4) becomes CPC A pressure (4A). CPC A pressure (4A) flows to shift valve B via shift valves C and A, and becomes 4th clutch pressure (40) at shift valve B. The 3rd clutch pressure (30) is changed to CPC pressure mode, and the 4th clutch is engaged in the CPC pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

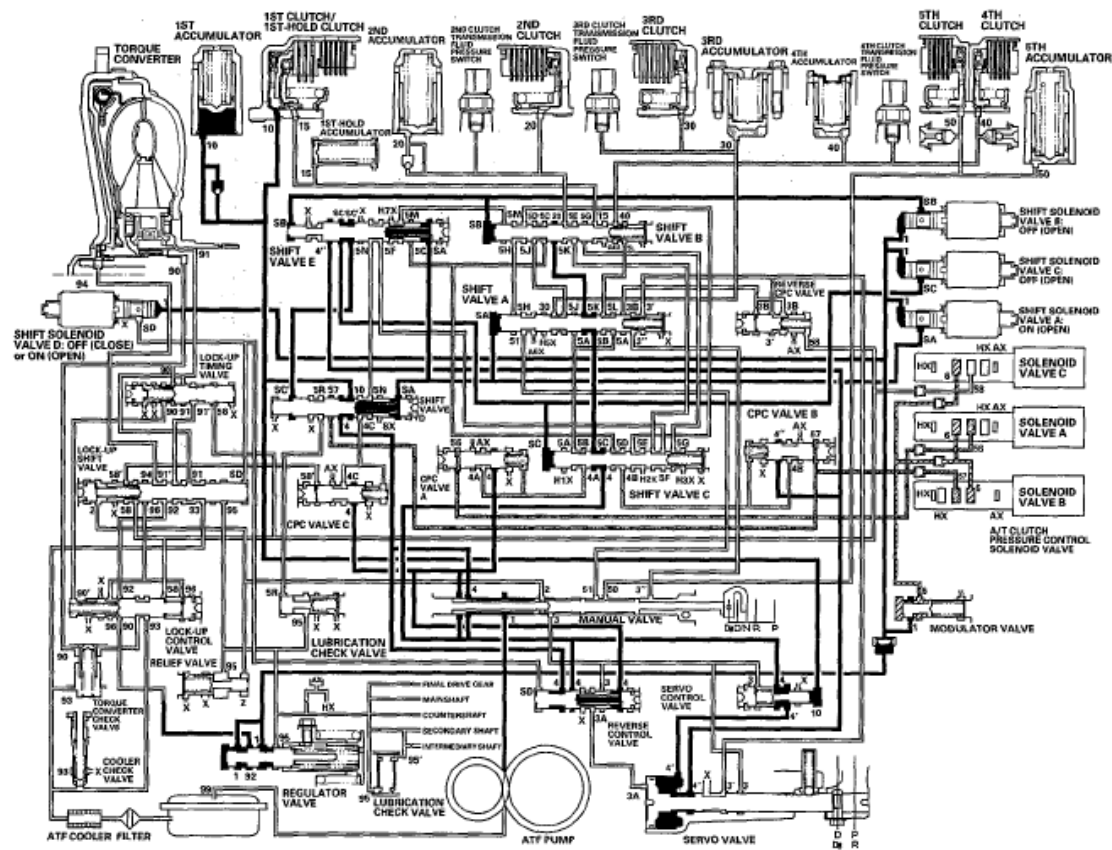


Fig. 51: Hydraulic Flow Diagram (D Position: Shifting Between 3rd Gear And 4th Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 4th gear

The PCM turns shift solenoid valve A OFF, and shift solenoid valve A covers the port of shift solenoid valve A pressure (SA) to the shift valve A. Shift solenoid valves B and C remain OFF. The shift valve A is moved to the left side to switch the port of pressure (5B), CPC A pressure (5A) (5L) leading to the 4th clutch, and 3rd clutch pressure (30) releasing 3rd clutch pressure. CPC A pressure (5L) changes to line pressure (5L) and 4th clutch pressure (40) is changed to line pressure mode, and the 4th clutch is engaged with the line pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

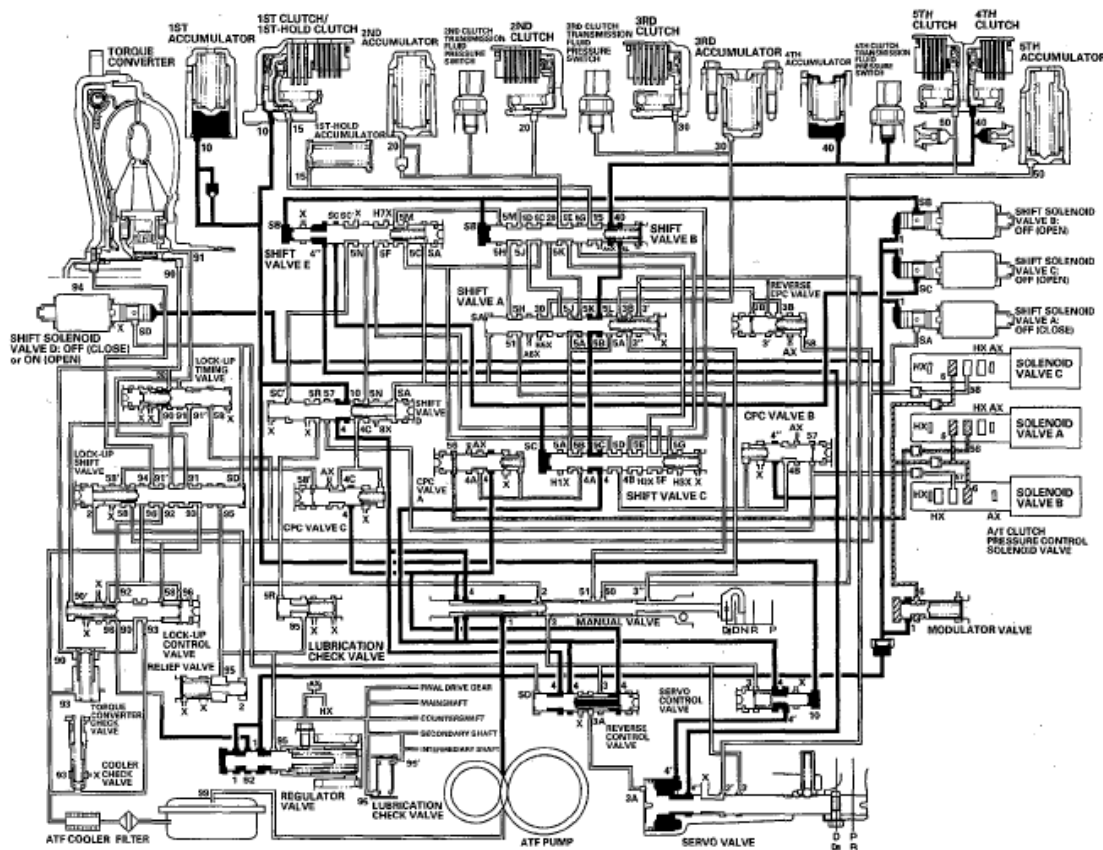


Fig. 52: Hydraulic Flow Diagram (D Position: Driving In 4th Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Shifting between 4th gear and 5th gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve C ON, and shift solenoid valve C covers the port of shift solenoid valve C pressure (SC) to shift valve C. Shift solenoid valve A remains OFF, and shift solenoid valve B remains OFF. Shift valve C is moved to the left side to switch the port of line pressure (4) and CPC A pressure (4A) leading to the 4th clutch. Shift valve C also uncovers the port of CPC B pressure (4B) leading to the 5th clutch. The PCM controls A/T clutch pressure control solenoid valves A and B. A/T clutch pressure control solenoid valve A pressure (56) is applied to the CPC valve A, and A/T clutch pressure control solenoid valve B pressure (57) is applied to CPC valve B. CPC valve B regulates line pressure (4"), and line pressure (4") becomes CPC B pressure (4B). CPC B pressure (4B) flows to shift valve A via shift valves C and B, and becomes 5th clutch pressure (51) at shift valve A. The 4th clutch pressure (40) is changed to CPC pressure mode, and the 5th clutch is engaged in the CPC pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

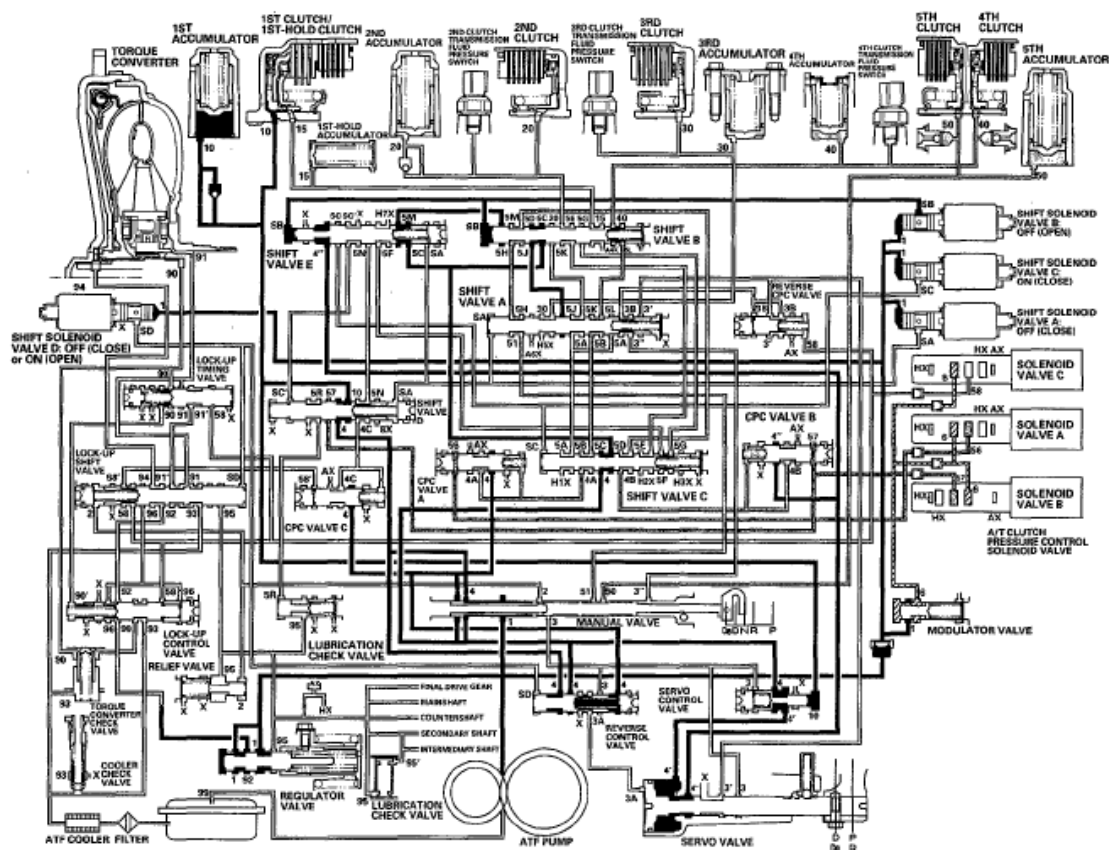


Fig. 53: Hydraulic Flow Diagram (D Position: Shifting Between 4th Gear And 5th Gear)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

D Position: Driving in 5th gear

The PCM turns shift solenoid valve B ON, and shift solenoid valve B covers the port of shift solenoid valve B pressure (SB) to shift valve B. Shift solenoid valve A remains OFF, and shift solenoid valve C remains ON. Shift valve B is moved to the left side to switch the port of line pressure (5H), CPC B pressure (5D) leading to the 5th clutch, and 4th clutch pressure (40) releasing 4th clutch pressure. CPC B pressure (5H) changes to line pressure (5H) and 5th clutch pressure (51) (50) is changed to line pressure mode, and the 5th clutch is engaged in the line pressure mode. The 1st clutch is also engaged, but no power is transmitted because of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

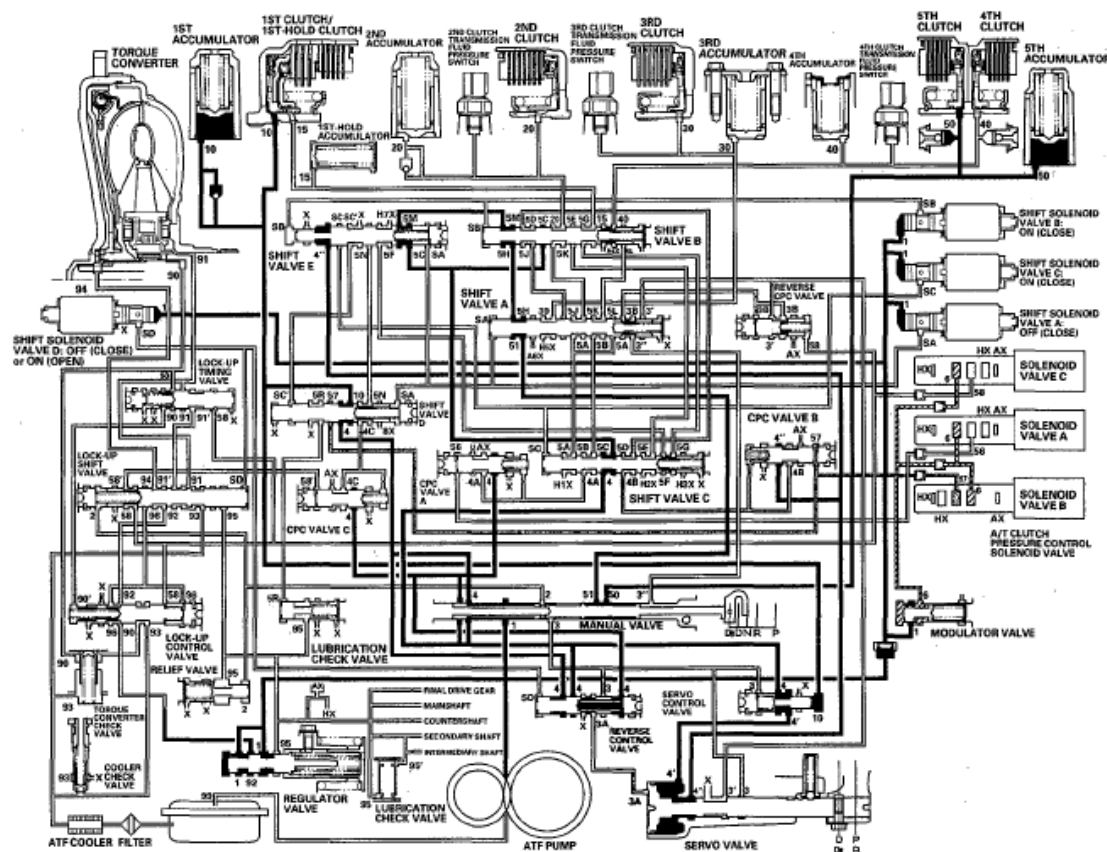


Fig. 54: Hydraulic Flow Diagram (D Position: Driving In 5th Gear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Driving in 1st gear (engaged with 1st and 1st-hold clutches) in the sequential sport shift mode

Line pressure (1) regulated by the regulator valve flows to shift solenoid valves. The PCM controls the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is OFF, and closes the port of shift solenoid valve A pressure (SA); shift valve A stays on the left side.
- Shift solenoid valve B is turned ON, and closes the port of shift solenoid valve B pressure (SB); shift valve B and shift valve E stay on the left side.
- Shift solenoid valve C is turned ON, and closes the port of shift solenoid valve C pressure (SC); shift valve C and shift valve D stay on the left side.
- Shift solenoid valve D is OFF, and closes the port of shift solenoid valve D pressure (SD).

Line pressure (4) becomes 1st clutch pressure (10) at shift valve D, and flows to the 1st clutch. The 1st clutch is engaged. The PCM controls A/T clutch pressure control solenoid valve C, and A/T clutch pressure control solenoid valve C pressure (58) is applied to CPC valve C via the lock-up shift valve. CPC valve C regulates line pressure (4), and line pressure (4) becomes CPC C pressure (4C). CPC C pressure (4C) flows to shift valve B via shift valves D, E, and C, and becomes 1st-hold clutch pressure (15) at shift valve B. 1st-hold clutch pressure

(15) is applied to the 1st-hold clutch, and the 1st-hold clutch is engaged.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

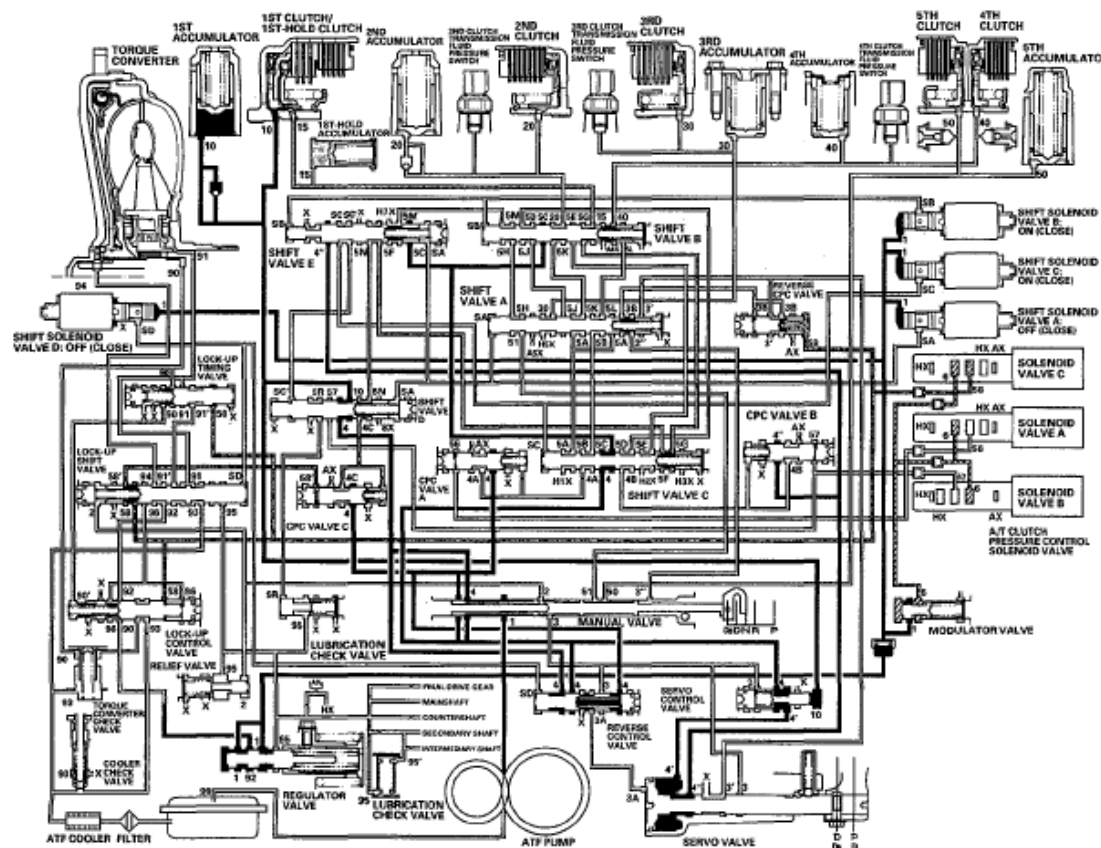


Fig. 55: Hydraulic Flow Diagram (Driving In 1st Gear In Sequential Sport Shift Mode)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position: Shifting to the R position from the P or N position

The PCM controls the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is OFF, and closes the port of shift solenoid valve A pressure (SA); shift valve A stays on the leftside.
- Shift solenoid valve B is turned ON, and closes the port of shift solenoid valve B pressure (SB); shift valve B and shift valve E stay on the left side.
- Shift solenoid valve C is OFF, and opens the port of shift solenoid valve C pressure (SC); shift valve C and shift valve D move to the right side.
- Shift solenoid valve D is turned ON, and opens the port of shift solenoid valve D pressure (SD); reverse control valve moves to the right side.

The manual valve is moved to R, and line pressure (1) becomes line pressure (3) at the manual valve. Line

pressure (3) passes through the reverse control valve, and becomes line pressure (3A), then flows to the servo valve. Line pressure (3A) pushes the servo valve to the reverse position. Line pressure (3) also flows to the reverse CPC valve, and becomes reverse CPC pressure (3B) (3"). Reverse CPC pressure (3") becomes 5th clutch pressure (50) at the manual valve, and 5th clutch pressure (50) flows to the 5th clutch. The 5th clutch is engaged with reverse CPC pressure mode.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

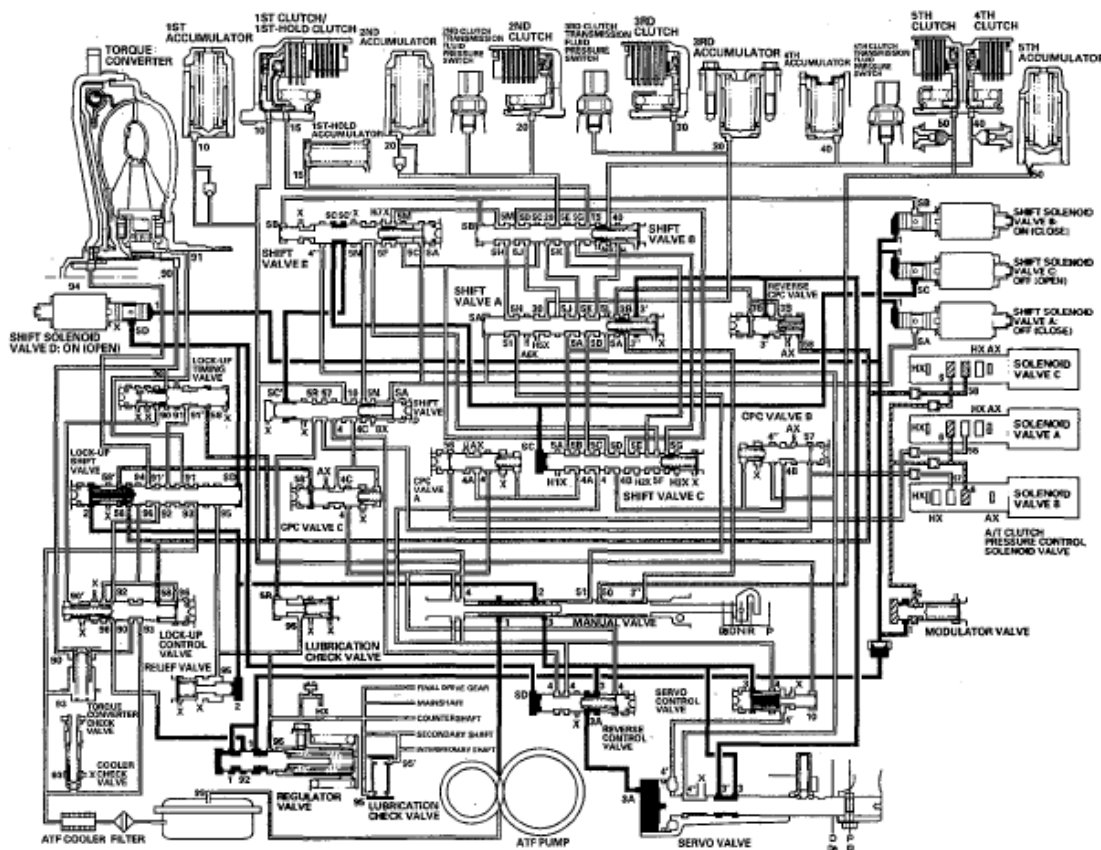


Fig. 56: Hydraulic Flow Diagram (R Position: Shifting To R Position From P Or N Position)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

R Position: Driving in reverse gear

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve A ON, and shift solenoid valve A uncovers the port of shift solenoid valve A pressure (SA) to shift valve A. Shift valve A is moved to the right side to switch the port of line pressure (3') and reverse CPC pressure (3B) leading to the 5th clutch. Line pressure (3) flows to the manual valve via the servo valve and shift valve A, and becomes 5th clutch pressure (50) at the manual valve. The 5th clutch pressure (50) flows to the 5th clutch, and the 5th clutch is engaged with the line pressure mode.

Reverse Inhibitor Control

When R is selected while the vehicle is moving forward at a speed over 6 mph (10 km/h), the PCM commands shift solenoid valve D to remain OFF so that shift solenoid valve D pressure (SD) is not applied to the reverse control valve. Line pressure (3) stops at the reverse control valve, and is not applied to the servo valve. No power is transmitted to the reverse direction.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

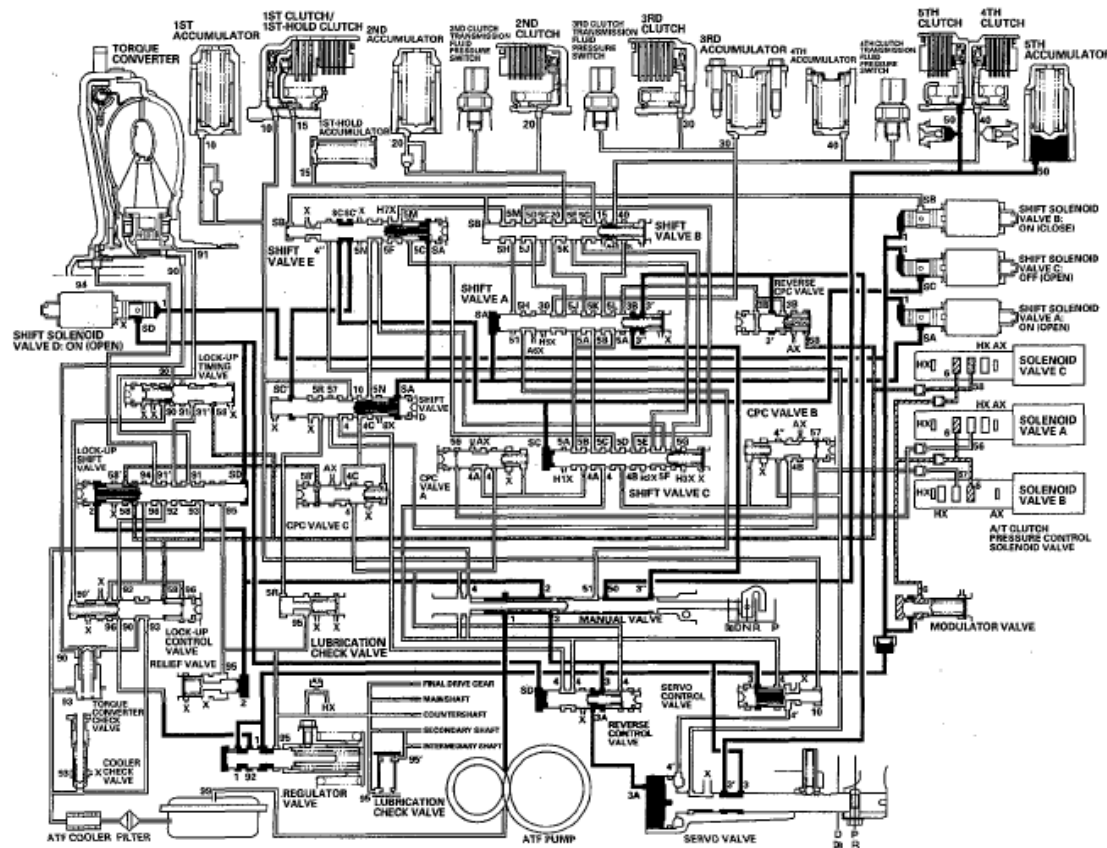


Fig. 57: Hydraulic Flow Diagram (R Position: Driving In Reverse Gear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

P Position

The PCM controls the shift solenoid valves ON and OFF. The conditions of the shift solenoid valves and the positions of the shift valves are as follows:

- Shift solenoid valve A is OFF, and closes the port of shift solenoid valve A pressure (SA); shift valve A stays on the leftside.
- Shift solenoid valve B is turned ON, and closes the port of shift solenoid valve B pressure (SB); shift valve B and shift valve E stay on the left side.
- Shift solenoid valve C is OFF, and opens the port of shift solenoid valve C pressure (SC); shift valve C and shift valve D move to the right side.
- Shift solenoid valve D is turned ON, and opens the port of shift solenoid valve D pressure (SD); reverse

control valve moves to the right side.

The manual valve is moved to the P position, and line pressure (1) becomes line pressure (3) at the manual valve. Line pressure (3) passes through the reverse control valve, and becomes line pressure (3A), then flows to the servo valve. Line pressure (3A) pushes the servo valve to the reverse position. Line pressure (3) flows to the manual valve via the reverse CPC valve and shift valve A, and stops at the manual valve. Hydraulic pressure is not applied to the clutches.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

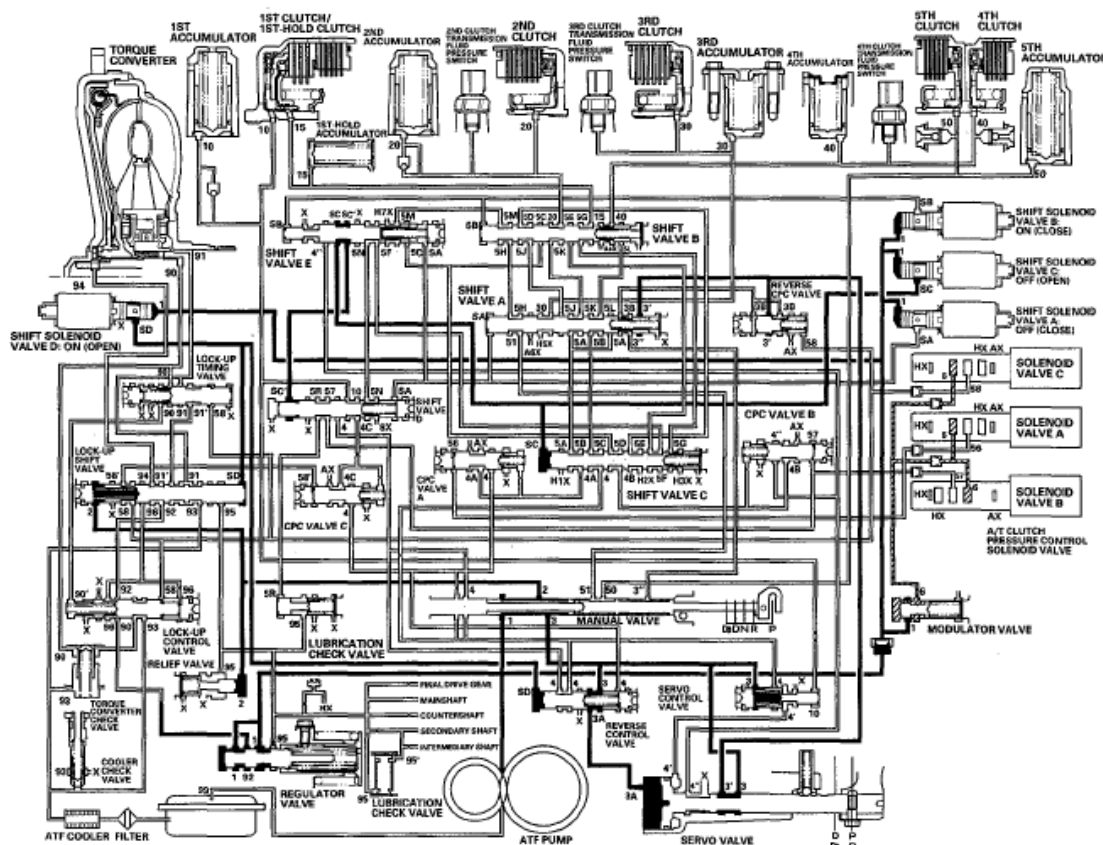


Fig. 58: Hydraulic Flow Diagram (P Position)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Lock-up System

The lock-up mechanism of the torque converter clutch operates in 2nd, 3rd, 4th, and 5th gears in D, and in 2nd and 3rd gears in D3. The pressurized fluid is drained from the back of the torque converter through a fluid passage, causing the torque converter clutch piston to be held against the torque converter cover. As this takes place, the mainshaft rotates at the same speed as the engine crankshaft. Together with the hydraulic control, the PCM optimizes the timing and amount of the lock-up mechanism. When shift solenoid valve D is turned on by the PCM, shift solenoid valve D pressure switches the lock-up shift valve lock-up on and off. A/T clutch pressure control solenoid valve C, the lock-up control valve, and lock-up timing valve control the amount of

lock-up.

Torque Converter Clutch Lock-up ON (Engaging Torque Converter Clutch)

Fluid in the chamber between the torque converter cover and the torque converter clutch piston is drained off, and fluid entering from the chamber between the pump and stator exerts pressure through the torque converter clutch piston against the torque converter cover. The torque converter clutch piston engages with the torque converter cover; the torque converter clutch lock-up is ON, and the mainshaft rotates at the same speed as the engine.

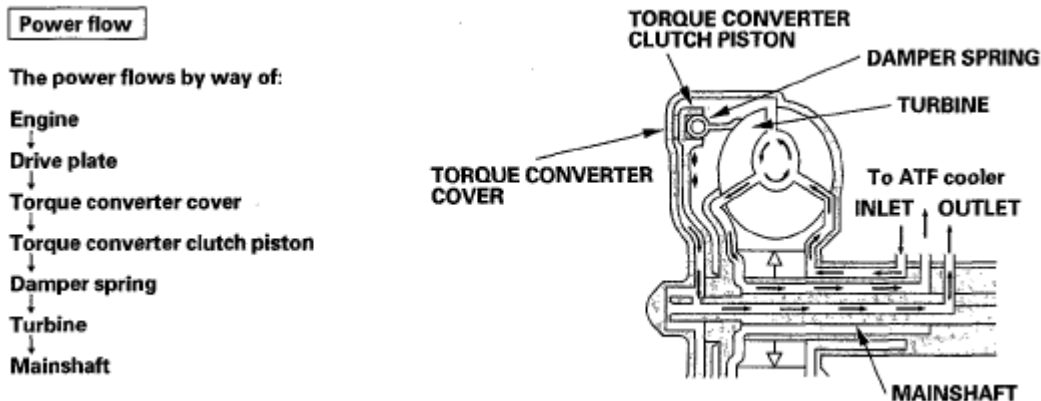


Fig. 59: Power Flow Diagram (Torque Converter Clutch Lock-Up On (Engaging Torque Converter Clutch))

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Torque Converter Clutch Lock-up OFF (Disengaging Torque Converter Clutch)

Fluid entered from the chamber between the torque converter cover and the torque converter clutch piston passes through the torque converter and goes out from the chambers between the turbine and the stator, and between the pump and the stator. As a result, the torque converter clutch piston moves away from the torque converter cover, and the torque converter clutch lock-up is released; the torque converter clutch lock-up is OFF.

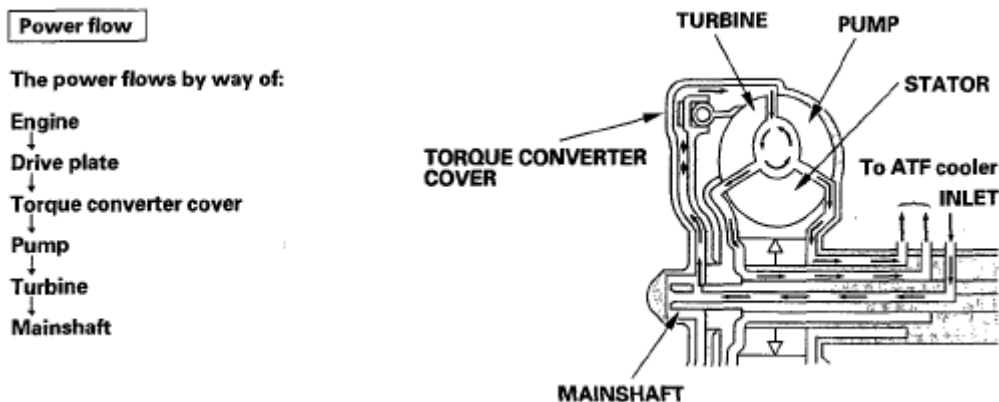


Fig. 60: Power Flow Diagram (Torque Converter Clutch Lock-Up Off (Disengaging Torque Converter Clutch))

Courtesy of AMERICAN HONDA MOTOR CO., INC.

No Lock-up

The PCM commands shift solenoid valve D to remain OFF, and shift solenoid valve D covers the port of shift solenoid valve D pressure (SD) to the lock-up shift valve. The lock-up shift valve is in the right side, and uncovers the torque converter pressure port (92) leading to the left side of the torque converter. Torque converter pressure (92) from regulator valve becomes torque converter pressure (94) at the lock-up shift valve, and enters into the left side of the torque converter to disengage the torque converter clutch. The torque converter clutch is OFF.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

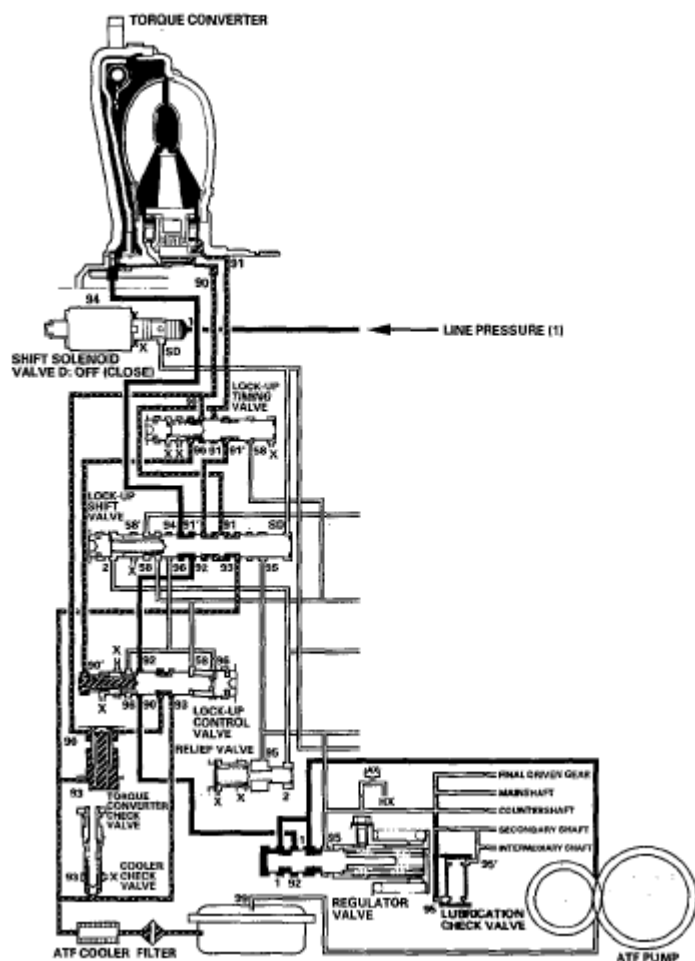


Fig. 61: Lock-Up System Diagram (No Lock-Up)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Partial Lock-up

As the speed of the vehicle reaches the programmed value, the PCM turns shift solenoid valve D ON, and shift

solenoid valve D uncovers the port of shift solenoid valve D pressure (SD) to the lock-up shift valve. The lock-up shift valve is moved to the left side to uncover the torque converter pressure port (91) leading to the right side of the torque converter to engage the torque converter clutch. The PCM also controls A/T clutch pressure control solenoid valve C, and A/T clutch pressure control solenoid valve C pressure (58) is applied to the lock-up control valve and lock-up timing valve. When A/T clutch pressure control solenoid valve C pressure (58) is low, torque converter pressure (91) from the lock-up timing valve is low. The torque converter clutch is engaged partially. A/T clutch pressure control solenoid valve C pressure (58) increases, and the lock-up timing valve is moved to the left side to uncover the port leading torque converter pressure to high. Under this condition, the torque converter clutch is engaged by pressure from the right side of the torque converter; this condition is partial lock-up.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

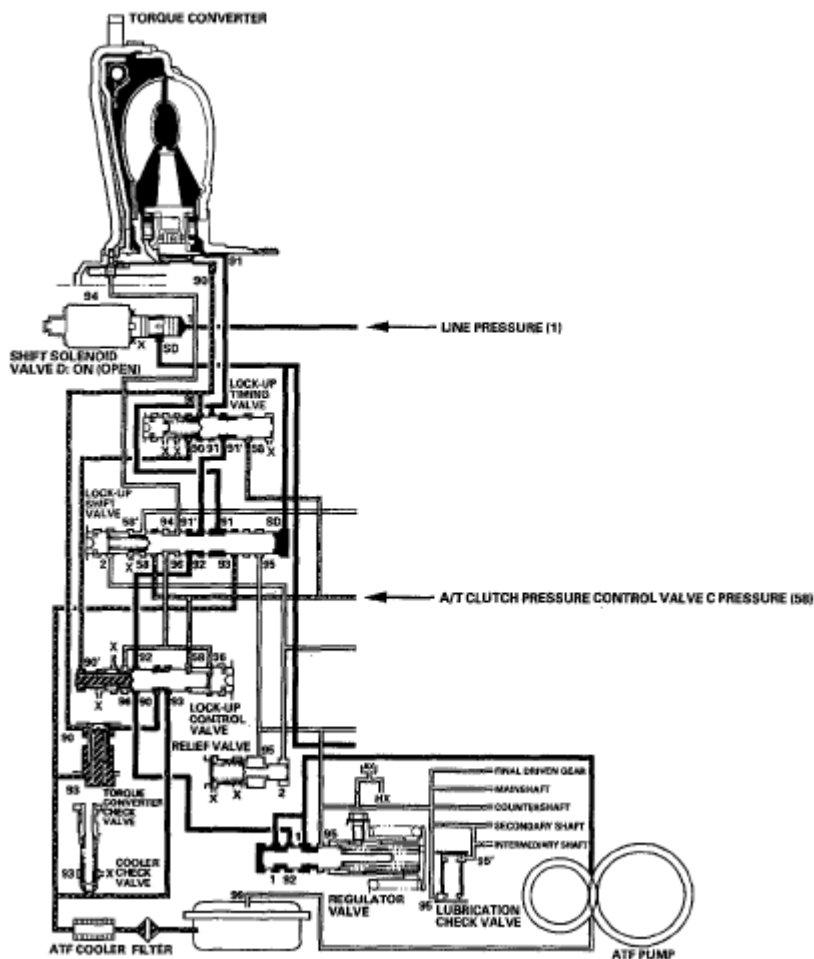


Fig. 62: Lock-Up System Diagram (Partial Lock-Up)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Full Lock-up

When the vehicle speed further increases, the PCM controls A/T clutch pressure control solenoid valve C to

increase A/T clutch pressure control solenoid valve C pressure (58). A/T clutch pressure control solenoid valve C pressure (58) is applied to the lock-up control valve and lock-up timing valve, and the lock-up control valve and lock-up timing valve are moved to the left side. Torque converter pressure (94) from the left side of the torque converter releases at the lock-up control valve, and lock-up timing valve uncovers the port of torque converter pressure (91) leading to the right side of the torque converter. Torque converter back pressure is released fully, and torque converter clutch is engaged fully. :

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

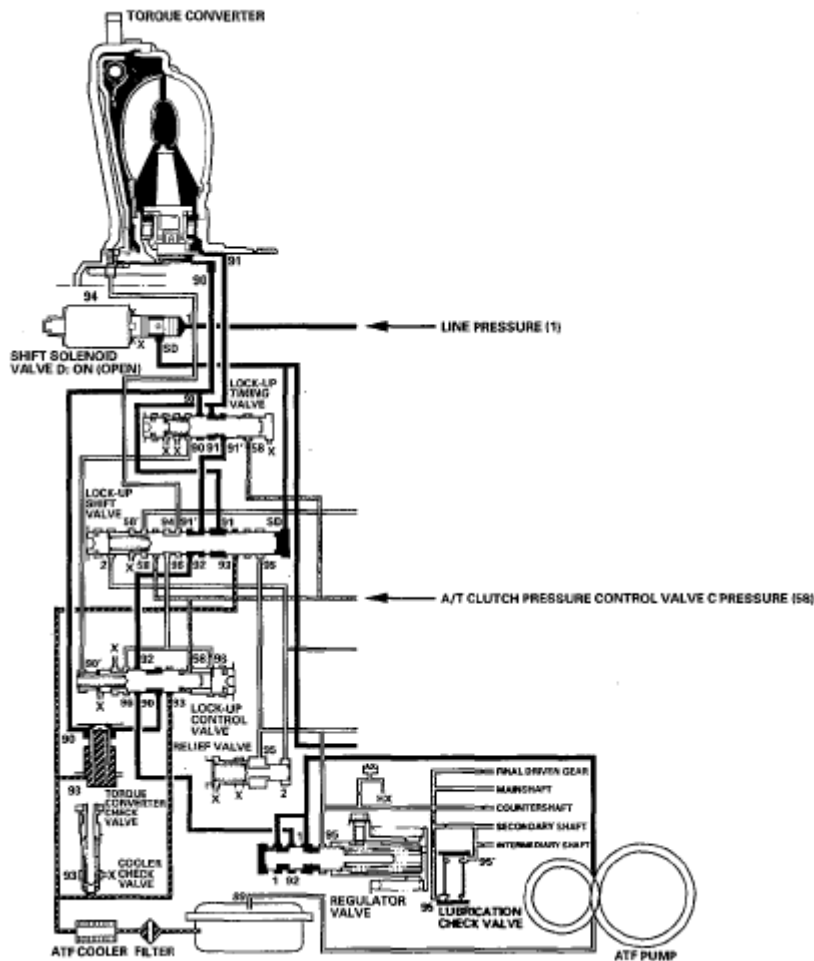


Fig. 63: Lock-Up System Diagram (Full Lock-Up)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Lever Mechanism

The shift lever has five positions; P, R, N, D, and D3. D has two modes; automatic shift mode and sequential sportshift mode with the shift lever moved to M. The shift lever shifts out of P by holding in the shift lever button, and moving the shift lever into any available gears. The shift lever is engaged with the shift lever link in P, R, N, D, and D3. This unit shifts the transmission using the shift cable connected between the shift lever link and the transmission control shaft.

In M, the shift lever is disengaged from the shift lever link, and the shift lever can be used to shift gears manually between 1st through 5th, much like a manual transmission.

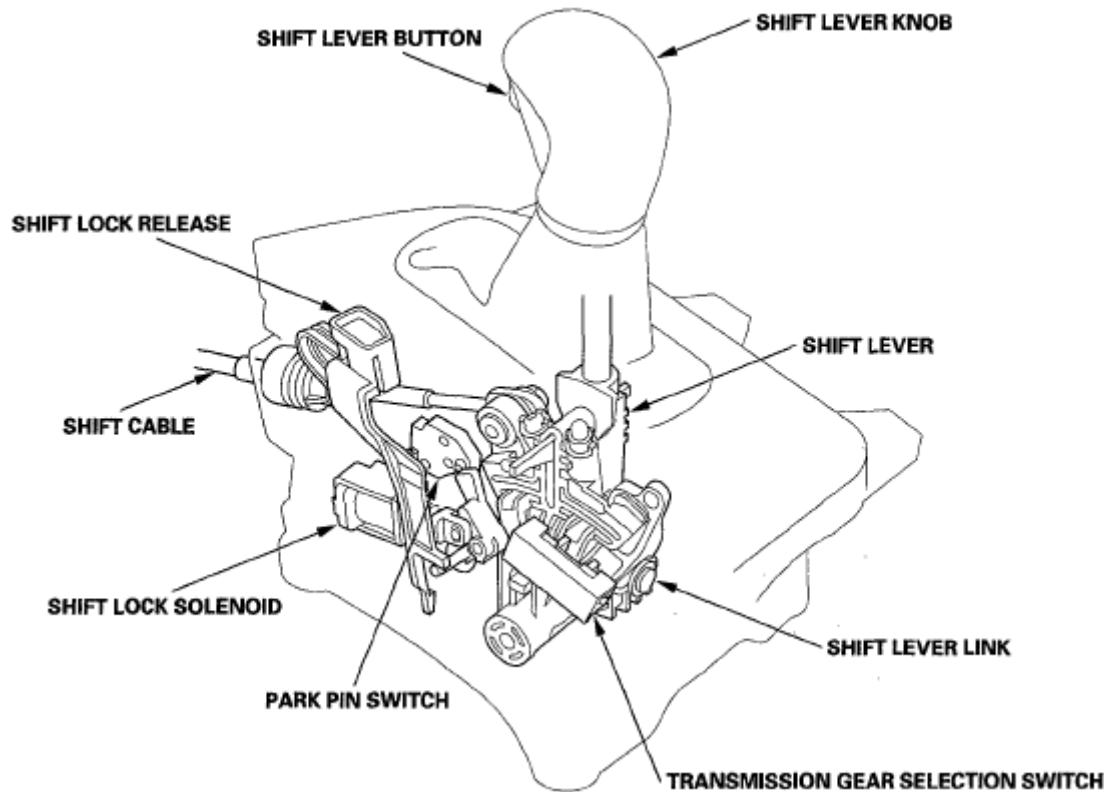


Fig. 64: Identifying Shift Lever Mechanism Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shift Lever Mechanism in M Position

When the shift lever shifts to M, the shift lever is disengaged from the shift lever link/shift lever pivot. The shift lever link lock pops up to engage with the shift lever bracket base; the shift lever link and the transmission are held in D. The shift lever link lock is spring loaded, it pops up in M, and does not engage the shift lever link in any position except M.

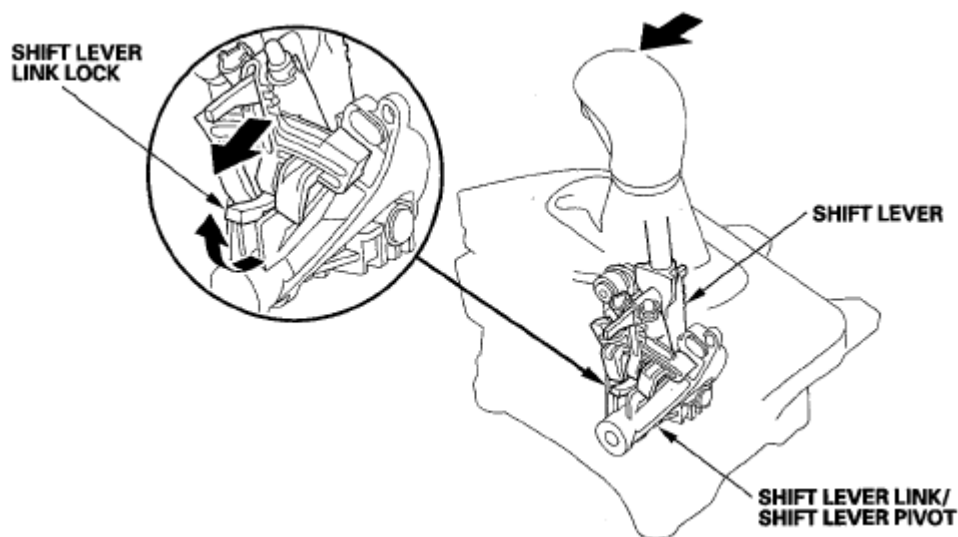


Fig. 65: Pushing Shift Lever Link Lock

Courtesy of AMERICAN HONDA MOTOR CO., INC.

The shift lever fits into M by using a detent plunger with a spring. When shifting to upshift and downshift position, the detent plunger is depressed by the detent bracket wall, and detent plunger spring puts the shift lever back into the neutral position. The detent plunger also works in P.

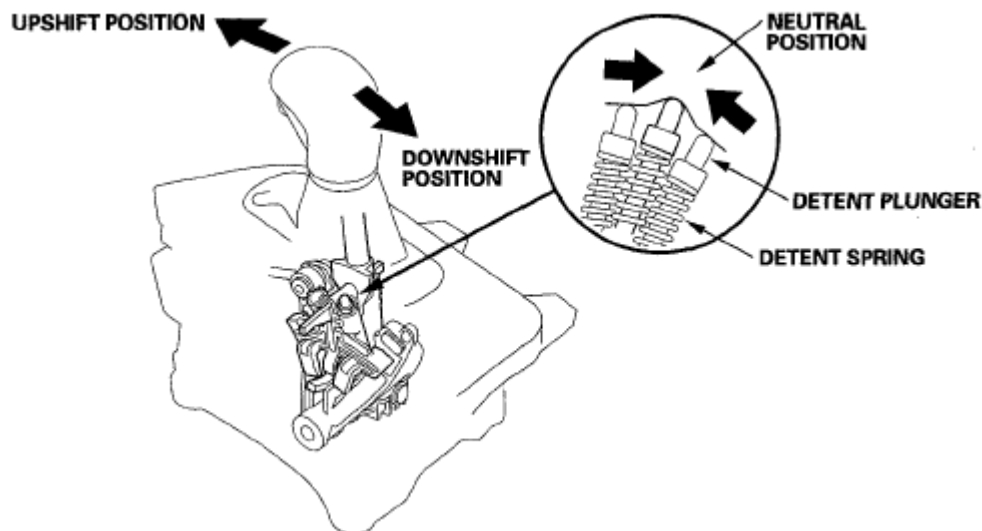


Fig. 66: Shifting Shift Lever To Upshift And Downshift Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

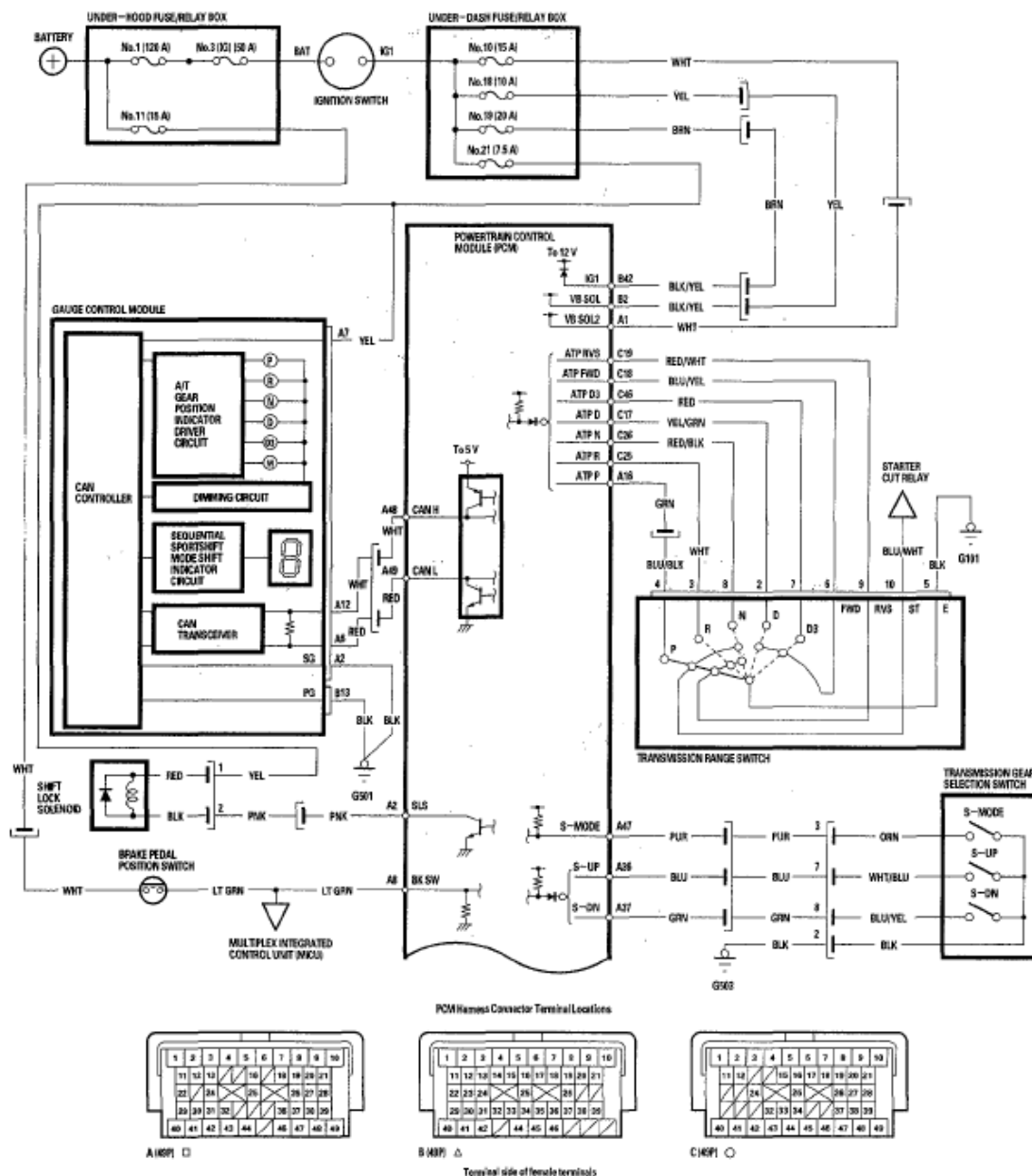


Fig. 67: PCM A/T Control System Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

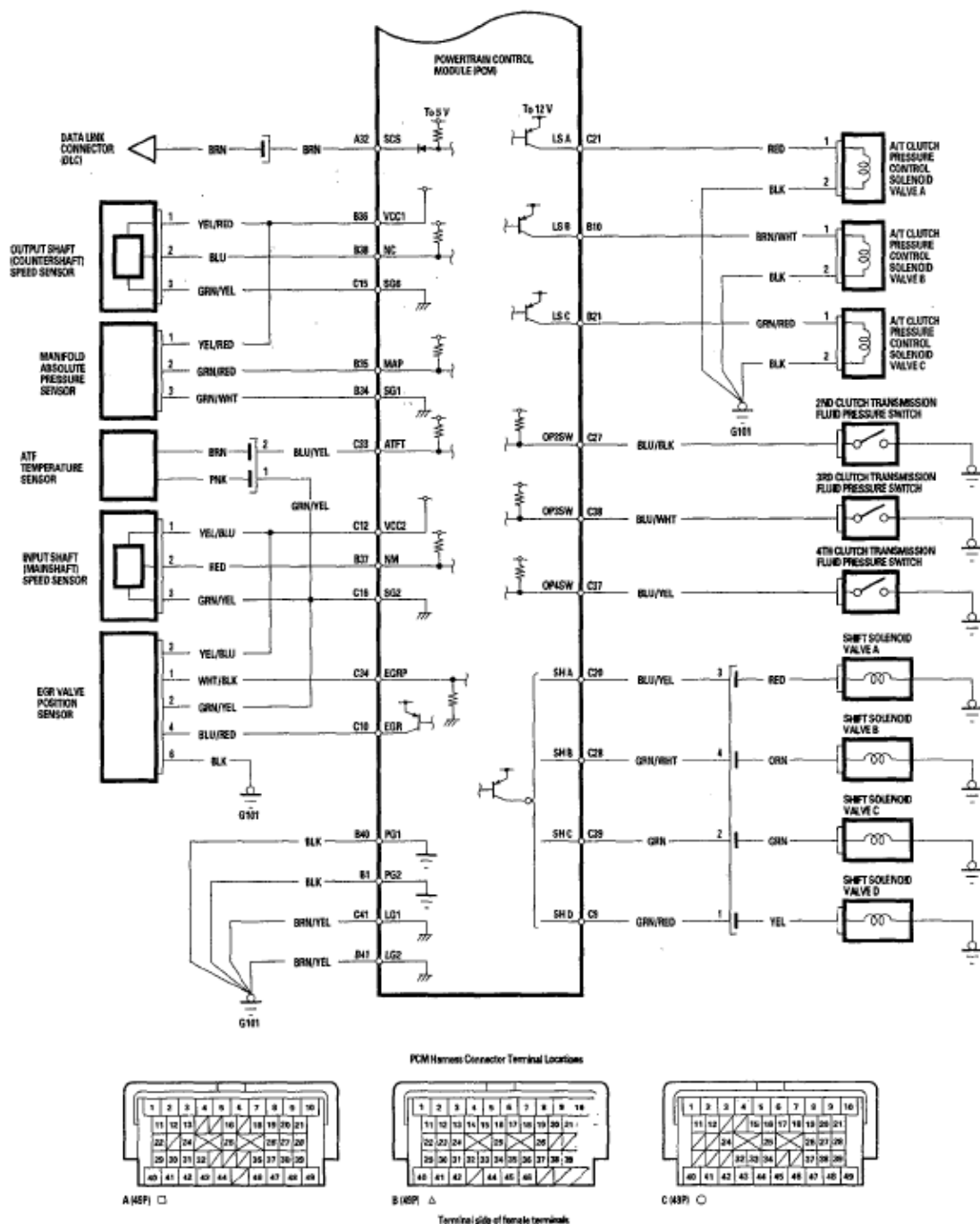


Fig. 68: PCM A/T Control System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0107: Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage Input

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and

review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), then turn it ON (II) again.
3. Check whether DTC P0107 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0107 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0107 in the PGM-FI System (see **DTC P0107: MAP SENSOR CIRCUIT LOW VOLTAGE**).

NO - Go to step 4.

4. Check whether DTC P0107 is indicated in the DTCs/ Freeze Data in A/t Mode Menu with the HDS.

Is DTC P0107 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Turn the ignition switch to LOCK (0), then turn it ON (II).
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0107 indicated?

YES - Check for poor connections and loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0107 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE**

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

THE PCM), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0108: Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage Input

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), then turn it ON (II) again.
3. Check whether DTC P0108 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0108 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0108 in the PGM-FI System (see **DTC P0108: MAP SENSOR CIRCUIT HIGH VOLTAGE**).

NO - Go to step 4.

4. Check whether DTC P0108 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0108 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Turn the ignition switch to LOCK (0), then turn it ON (II).
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0108 indicated?

YES - Check for poor connections and loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0108 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0335: Crankshaft Position (CKP) Sensor A No Signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check whether DTC P0335 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0335 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0335 in the PGM-FI System (see **DTC P0335: CKP SENSOR A NO SIGNAL; DTC P0385: CKP SENSOR B NO SIGNAL**).

NO - Go to step 4.

4. Check whether DTC P0335 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0335 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0335 indicated?

YES - Check for poor connections and loose terminals at the CKP sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

8. Monitor the OBD STATUS for P0335 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO -If the HDS indicates FAILED, check for poor connections and loose terminals at the CKP sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0339: Crankshaft Position (CKP) Sensor A Intermittent Interruption

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and let it idle for 10 seconds.
3. Check whether DTC P0339 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0339 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0339 in the PGM-FI System (see **DTC P0339: CKP SENSOR A INTERMITTENT INTERRUPTION; DTC P0389: CKP SENSOR B INTERMITTENT INTERRUPTION**).

NO - Go to step 4.

4. Check whether DTC P0339 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0339 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and let it idle for 10 seconds.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0339 indicated?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Check for poor connections and loose terminals at the CKP sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0339 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the CKP sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0340: Camshaft Position (CMP) Sensor No signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check whether DTC P0340 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0340 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0340 in the PGM-FI System (see **DTC P0340: CMP SENSOR NO SIGNAL**).

NO - Go to step 4.

4. Check whether DTC P0340 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0340 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

6. Start the engine.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0340 indicated?

YES - Check for poor connections and loose terminals at the CMP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0340 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the CMP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0344: Camshaft Position (CMP) Sensor Intermittent Interruption

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and let it idle for 10 seconds.
3. Check whether DTC P0344 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0344 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0344 in the PGM-FI System (see **DTC P0344: CMP SENSOR CIRCUIT INTERMITTENT INTERRUPTION**).

NO - Go to step 4.

4. Check whether DTC P0344 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0344 indicated?

YES - Go to step 5

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and let it idle for 10 seconds.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0344 indicated?

YES - Check for poor connections and loose terminals at the CMP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0344 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the CMP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0385: Crankshaft Position (CKP) Sensor B No signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check whether DTC P0385 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0385 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0385 in the PGM-FI System (see **DTC P0335: CKP SENSOR A NO SIGNAL; DTC P0385: CKP SENSOR B NO SIGNAL**).

NO - Go to step 4.

4. Check whether DTC P0385 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is DTC P0385 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0385 indicated?

YES - Check for poor connections and loose terminals at the CKP sensor B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0385 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the CKP sensor B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0389: Crankshaft Position (CKP) Sensor B Intermittent Interruption

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and let it idle for 10 seconds.
3. Check whether DTC P0389 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P0389 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P0389 in the PGM-FI System (see **DTC P0339: CKP SENSOR A INTERMITTENT INTERRUPTION; DTC P0389: CKP SENSOR B INTERMITTENT**

INTERRUPTION).

NO - Go to step 4.

4. Check whether DTC P0389 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0389 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and let it idle for 10 seconds.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0389 indicated?

YES - Check for poor connections and loose terminals at the CKP sensor Band the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P0389 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the CKP sensor B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P062F: Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Check whether DTC P062F is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is DTC P062F indicated in the PGM-FI system?

YES - Troubleshoot for DTC P062F in the PGM-FI System (see **DTC P062F: PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR**).

NO - Go to step 3.

3. Check whether DTC P062F is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P062F indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
5. Start the engine, and let it run for at least 2 minutes.
6. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P062F indicated?

YES - Check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 7.

7. Monitor the OBD STATUS for P062F in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 6, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0705: Short in Transmission Range Switch Circuit (Multiple Shift-position Input)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Clear the DTC with the HDS.
2. Start the engine.
3. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position, and monitor the OBD STATUS for P0705 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for an intermittent short in the wire between the transmission range switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 2 and recheck.

4. Turn the ignition switch to LOCK (0).
5. Inspect the transmission range switch (see TRANSMISSION RANGE SWITCH TEST).

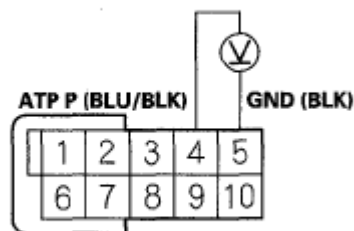
Is the switch OK?

YES - With the switch connector disconnected, go to step 6.

NO - Replace the transmission range switch (see TRANSMISSION RANGE SWITCH REPLACEMENT), then go to step 49.

6. Turn the ignition switch to ON (II).
7. Measure the voltage between transmission range switch connector terminals No. 4 and No. 5.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 69: Identifying Voltage Between Transmission Range Switch Connector Terminals No 4 And 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

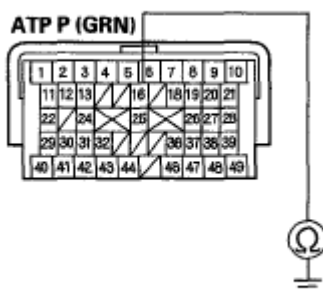
Is there battery voltage?

YES - Go to step 13.

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector A (49P).
11. Check for continuity between the PCM connector terminal A16 and the body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 70: Identifying Continuity Between PCM Connector Terminal A16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

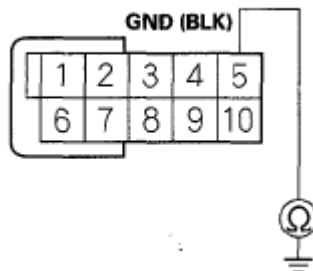
Is there continuity?

YES - Repair short in the wire between PCM connector terminal A16 and the transmission range switch, then go to step 49.

NO - Go to step 12.

12. Check for continuity between transmission range switch connector terminal No. 5 and body ground.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 71: Identifying Continuity Between Transmission Range Switch Connector Terminal No 5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

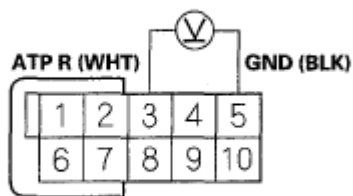
Is there continuity?

YES - Go to step 43.

NO - Repair open in the wire between transmission range switch connector terminal No. 6 and ground (G101), or repair poor ground (G101), then go to step 49.

13. Measure the voltage between transmission range switch connector terminals No. 3 and No. 5.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 72: Identifying Voltage Between Transmission Range Switch Connector Terminals No 3 And No 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

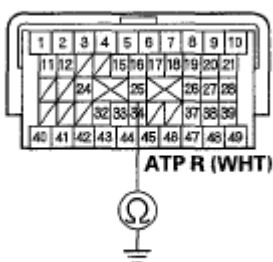
Is there battery voltage?

YES - Go to step 18.

NO - Go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector C (49P).
17. Check for continuity between PCM connector terminal C25 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 73: Identifying Continuity Between PCM Connector Terminal C25 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

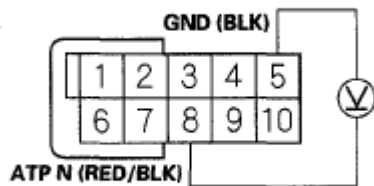
Is there continuity?

YES - Repair short in the wire between PCM connector terminal C25 and the transmission range switch, then go to step 49.

NO - Go to step 43.

18. Measure the voltage between transmission range switch connector terminals No. 5 and No. 8.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 74: Identifying Voltage Between Transmission Range Switch Connector Terminals No 5 And No 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

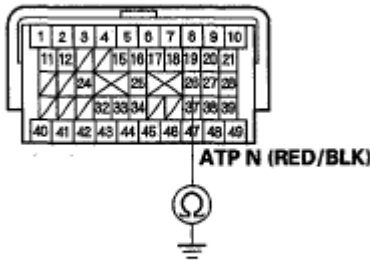
Is there battery voltage?

YES - Go to step 23.

NO - Go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Jump the SCS line with the HDS.
21. Disconnect PCM connector C (49P).
22. Check for continuity between PCM connector terminal C26 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 75: Identifying Continuity Between PCM Connector Terminal C26 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

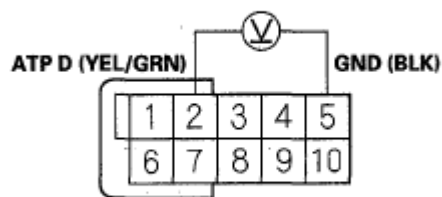
Is there continuity?

YES - Repair short in the wire between PCM connector terminal C26 and the transmission range switch, then go to step 49.

NO - Go to step 43.

23. Measure the voltage between transmission range switch connector terminals No. 2 and No. 5.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 76: Identifying Voltage Between Transmission Range Switch Connector Terminals No 2 And No 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

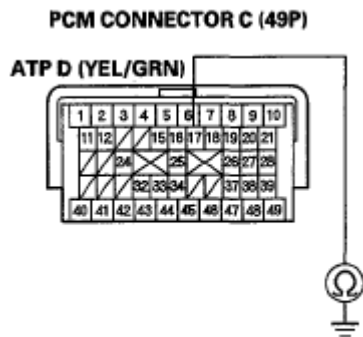
Is there battery voltage?

YES - Go to step 28.

NO - Go to step 24.

24. Turn the ignition switch to LOCK (0).
25. Jump the SCS line with the HDS.

26. Disconnect PCM connector C (49P).
27. Check for continuity between PCM connector terminal C17 and body ground.



Terminal side of female terminals

Fig. 77: Identifying Continuity Between PCM Connector Terminal C17 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

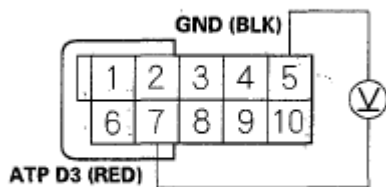
Is there continuity?

YES - Repair short in the wire between PCM connector terminal C17 and the transmission range switch, then go to step 49.

NO - Go to step 43.

28. Measure the voltage between transmission range switch connector terminals No. 5 and No. 7.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 78: Identifying Voltage Between Transmission Range Switch Connector Terminals No 5 And No 7
Courtesy of AMERICAN HONDA MOTOR CO., INC.

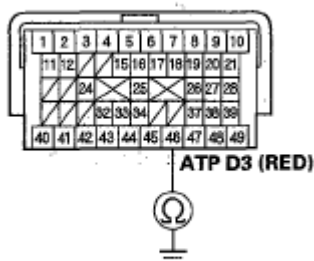
Is there battery voltage?

YES - Go to step 32.

NO - Go to step 29.

29. Turn the ignition switch to LOCK (0).
30. Jump the SCS line with the HDS.
31. Disconnect PCM connector C (49P).
32. Check for continuity between PCM connector terminal C46 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 79: Identifying Continuity Between PCM Connector Terminal C46 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

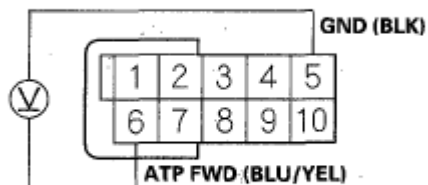
Is there continuity?

YES - Repair short in the wire between PCM connector terminal C46 and the transmission range switch, then go to step 49.

NO - Go to step 43.

33. Measure the voltage between transmission range switch connector terminals No. 5 and No. 6.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

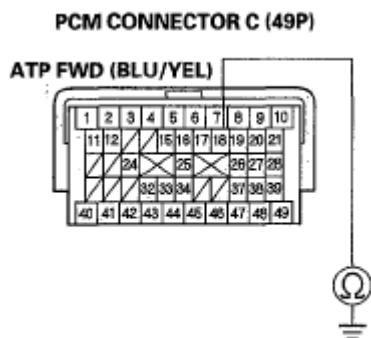
Fig. 80: Identifying Voltage Between Transmission Range Switch Connector Terminals No 5 And No 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 38.

NO - Go to step 34.

34. Turn the ignition switch to LOCK (0).
35. Jump the SCS line with the HDS.
36. Disconnect PCM connector C (49P).
37. Check for continuity between PCM connector terminal C18 and body ground.



Terminal side of female terminals

Fig. 81: Identifying Continuity Between PCM Connector Terminal C18 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

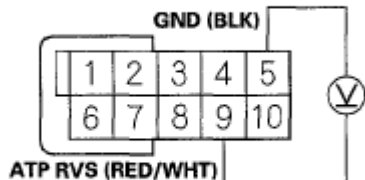
Is there continuity?

YES - Repair short in the wire between PCM connector terminal C18 and the transmission range switch, then go to step 49.

NO - Go to step 43.

38. Measure the voltage between transmission range switch connector terminals No. 5 and No. 9.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 82: Identifying Voltage Between Transmission Range Switch Connector Terminals No 5 And No 9
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 43.

NO - Go to step 39.

39. Turn the ignition switch to LOCK (0).
40. Jump the SCS line with the HDS.
41. Disconnect PCM connector C (49P).
42. Check for continuity between PCM connector terminal C19 and body ground.

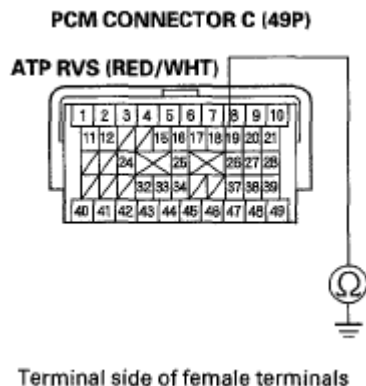


Fig. 83: Identifying Continuity Between PCM Connector Terminal C19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C19 and the transmission range switch, then go to step 49.

NO - Go to step 43.

43. Reconnect all connectors.
44. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
45. Start the engine.
46. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position.
47. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0705 indicated?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 48.

48. Monitor the OBD STATUS for P0705 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 47, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 45 and recheck.

49. Clear the DTC with the HDS.
50. Start the engine.
51. With the brake pedal pressed, move the shift lever through all positions. Stop for at least 1 second in each position.
52. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0705 indicated?

YES - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then return to step 49 and recheck.

NO - Go to step 53.

53. Monitor the OBD STATUS for P0705 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 52, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to the step 50 and recheck.

DTC P0706: Open in Transmission Range Switch Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused

by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.
4. Start the engine, disable the VSA by pressing the VSA OFF switch, run the vehicle in D until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
5. Monitor the OBD STATUS for P0706 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 6

NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the transmission range switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Inspect the transmission range switch.

Is the switch OK?

YES - Go to step 8.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 27.

8. Shift to D, and check the Forward Switch (ATPFWD) and A/T D Switch inputs with the HDS in the A/T data list.

Is the Forward Switch (ATPFWD) and the A/T D Switch ON?

YES - Go to step 9.

NO - Go to step 13.

9. Shift to D3, and check the Forward Switch (ATPFWD) and A/T D3 Switch inputs with the HDS in the A/T data list.

Is the Forward Switch (ATPFWD) and the A/T D3 Switch ON?

YES - Go to step 10.

NO - Go to step 13.

10. Clear the DTC with the HDS.
11. Start the engine, and turn the VSA off (the light on the VSA OFF switch comes on). Run the engine in D until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
12. Monitor the OBD STATUS for P0706 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

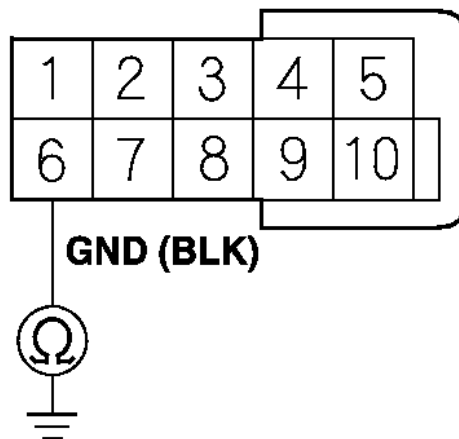
Does the HDS indicate FAILED?

YES - Go to step 13.

NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the transmission range switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

13. Turn the ignition switch to LOCK(0).
14. Disconnect the transmission range switch connector.
15. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 84: Identifying Continuity Between Transmission Range Switch Connector Terminals No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

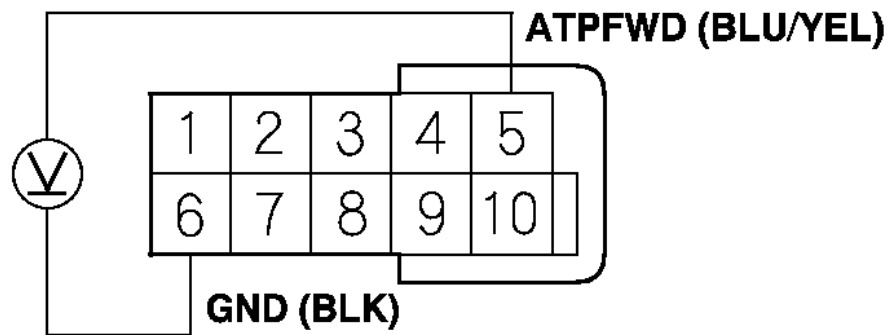
Is there continuity?

YES - Go to step 16

NO - Repair open in the wire between the transmission range switch and ground (G101), or repair poor ground (G101), then go to step 27.

16. Turn the ignition switch to ON (II).
17. Measure the voltage between transmission range switch connector terminals No. 5 and No. 6.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 85: Measuring Voltage Between Transmission Range Switch Connector Terminal No. 5 And No 6.

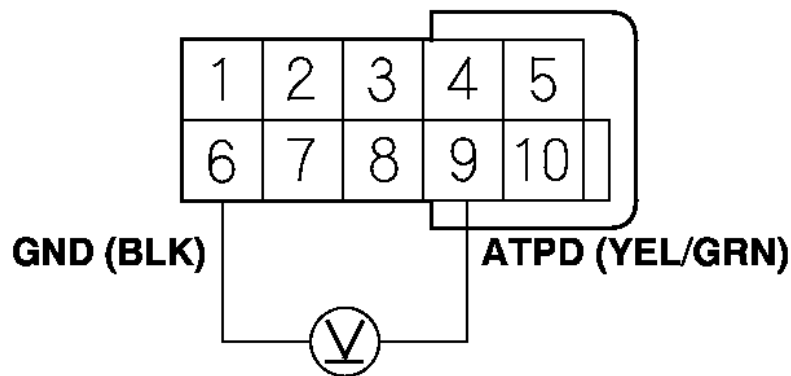
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Go to step 18

NO - Repair open in the wire between the transmission range switch and ground (G101), or repair poor ground (G101), then go to step 27.

18. Measure the voltage between transmission range switch connector terminals No. 6 and No. 9.

TRANSMISSION RANGE SWITCH CONNECTOR

Wire side of female terminals

Fig. 86: Measuring Voltage Between Transmission Range Switch Connector Terminal No. 6 And No 9.

Courtesy of AMERICAN HONDA MOTOR CO., INC.

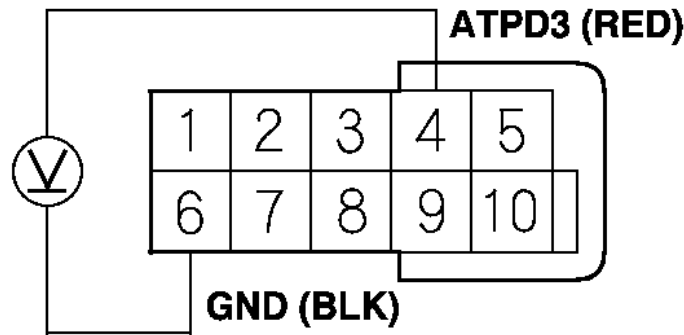
Is there voltage?

YES - Go to step 19.

NO - Repair open in the wire between the transmission range switch and PCM connector terminal C17, then go to step 27.

19. Measure the voltage between transmission range switch connector terminals No. 4 and No. 6.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 87: Measuring Voltage Between Transmission Range Switch Connector Terminal No. 4 And No 6.

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Go to step 20.

NO - Repair open in the wire between the transmission range switch and PCM connector terminal C17, then go to step 27.

20. Reconnect all connectors.
21. Update the A/T software in the PCM if it does not have the latest software, or substitute a known-good PCM.
22. Turn the ignition switch to LOCK (0).
23. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.
24. Start the engine, and turn the VSA off (the light on the VSA OFF switch comes on). Run the engine in D until the vehicle speed reaches 31 mph (50 km/h), then slow down and stop the wheels.
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0706 indicated?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM, then recheck. If the PCM was substituted, go to

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

step 1.

NO - Go to step 23.

26. Monitor the OBD STATUS for P0706 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM. If any other DTCs were indicated on step 25, go to the indicated DTC's troubleshooting.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM, then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 22 and recheck.

27. Clear the DTC with the HDS..
28. Turn the ignition switch to LOCK (0).
29. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.
30. Start the engine, and turn the VSA off (the light on the VSA OFF switch comes on). Run the engine in D until the vehicle speed reaches 30 mph (48 km/h), then slow down and stop the wheels.
31. Check for Temporary DTCs or DTCs with the HDS

Is DTC P0706 indicated?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1.

NO -Go to step 32.

32. Monitor the OBD STATUS for P0706 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 31, go to the indicated DTC's troubleshooting.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 28 and recheck.

DTC P0711: Problem in ATF Temperature Sensor Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL

TROUBLESHOOTING INFORMATION)

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Check the ATF temperature with the HDS in the A/T data list.

Does the ATF temperature exceed the ambient air temperature?

YES - Record the ATF temperature. Leave the engine off for at least 30 minutes, and go to step 2.

NO - Record the ATF temperature. Test the stall speed RPM (see **STALL SPEED TEST**) three times. Go to step 2 after stall speed testing.

2. Check the ATF temperature with the HDS.

Did the ATF temperature change?

YES - Leave the engine off for at least 30 minutes, and go to step 3.

NO - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 5.

3. Check the ECT Sensor with the HDS.

Is the ECT Sensor reading the same as the ambient air temperature?

YES - Go to step 4.

NO - Leave the engine off until the ECT Sensor reads the same as ambient air temperature, then go to step 4.

4. Check the ATF Temp Sensor with the HDS.

Does the ATF temperature read about the same as the ECT Sensor?

YES - Go to step 11.

NO - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 5.

5. Clear the DTC with the HDS.
6. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
7. Turn the ignition switch to LOCK (0), and allow the engine coolant temperature to cool to ambient air temperature.
8. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on). Let the

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

engine run for at least another 20 seconds, then drive the vehicle at speeds over 19 mph (31 km/h) for at least 5 minutes.

9. Check for DTCs with the HDS.

Is DTC P0711 indicated?

YES - Check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1.

NO - Go to step 10.

10. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated in step 9, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals between the ATF temperature sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 5.

11. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
12. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
13. Turn the ignition switch to LOCK (0), then allow the engine coolant temperature to cool to ambient air temperature.
14. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on). Let the engine run for at least another 20 seconds, then drive the vehicle at speeds over 19 mph (31 km/h) for at least 5 minutes.
15. Check for DTCs with the HDS.

Is DTC P0711 indicated?

YES - Check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then go to step 12. If the PCM was substituted, go to step 1.

NO - Go to step 16.

16. Monitor the OBD STATUS for P0711 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated in step 15, go to the

INDICATED DTCS TROUBLESHOOTING.

NO - If the HDS indicates FAILED, check for intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then go to step 12. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 12.

DTC P0712: Short in ATF Temperature Sensor Circuit**NOTE:**

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Check the ATF temperature sensor voltage with the HDS in the A/T data list.

Is the ATF Temp Sensor voltage 0.07 V or less?

YES - Go to step 2.

NO - Intermittent failure, the system is OK at this time. Check for an intermittent short in the ATFT wire between the ATF temperature sensor and the PCM.

2. Disconnect the ATF temperature sensor connector at the transmission end cover.
3. Check the ATF Temp Sensor voltage with the HDS.

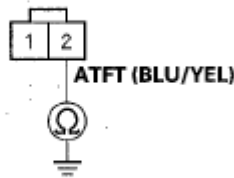
Is the ATF Temp Sensor voltage 0.07 V or less?

YES - Go to step 4.

NO - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 13.

4. Turn the ignition switch to LOCK (0).
5. Jump the SCS line with the HDS.
6. Disconnect PCM connector C (49P).
7. Check for continuity between ATF temperature sensor connector terminal No. 2 and body ground.

ATF TEMPERATURE SENSOR CONNECTOR



Wire side of female terminals

Fig. 88: Identifying Continuity Between ATF Temperature Sensor Connector Terminal No 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 2, then go to step 13.

NO - Go to step 8.

8. Reconnect all connectors.
9. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
10. Start the engine in P, and let it run for at least 20 seconds.
11. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0712 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 12.

12. Monitor the OBD STATUS for P0712 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 11, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 10 and recheck.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

13. Clear the DTC with the HDS.
14. Start the engine in P, and let it run for at least 20 seconds.
15. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0712 indicated ?

YES - Check for poor connections and loose terminals at the ATF temperature sensor and the PCM, then go to step 1.

NO - Go to step 16.

16. Monitor the OBD STATUS for P0712 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 15, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, return to step 14 and recheck.

DTC P0713: Open in ATF Temperature Sensor Circuit

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Check the ATF Temp Sensor voltage with the HDS in the A/T data list.

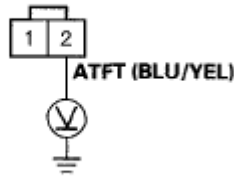
Does the ATF Temp Sensor voltage exceed 4.93 V?

YES - Go to step 2.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ATF temperature sensor and the PCM.

2. Turn the ignition switch to LOCK (0).
3. Disconnect the ATF temperature sensor connector at the transmission end cover.
4. Turn the ignition switch to ON (II).
5. Measure the voltage between ATF temperature sensor connector terminal No. 2 and body ground.

ATF TEMPERATURE SENSOR CONNECTOR



Wire side of female terminals

Fig. 89: Identifying Voltage Between ATF Temperature Sensor Connector Terminal No 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

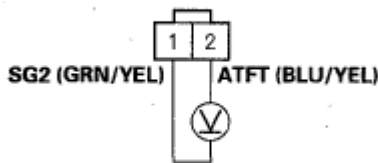
Is there about 5 V?

YES - Go to step 6.

NO - Go to step 7.

6. Measure the voltage between ATF temperature sensor connector terminals No. 1 and No. 2.

ATF TEMPERATURE SENSOR CONNECTOR



Wire side of female terminals

Fig. 90: Identifying Voltage Between ATF Temperature Sensor Connector Terminals No 1 And No 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the ATF temperature sensor (see **ATF TEMPERATURE SENSOR REPLACEMENT**), then go to step 16.

NO - Repair open in the wire between PCM connector terminal C16 and the ATF temperature sensor connector, then go to step 16.

7. Turn the ignition switch to LOCK (0).

8. Jump the SCS line with the HDS.

9. Disconnect PCM connector C (49P).
10. Check for continuity between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 2.

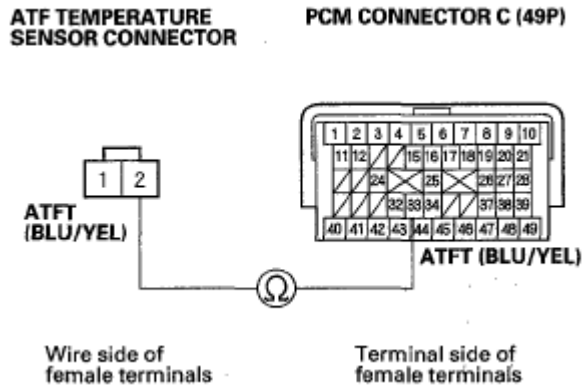


Fig. 91: Identifying Continuity Between PCM Connector Terminal C33 And ATF Temperature Sensor Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections and loose terminals at the ATF temperature sensor and the PCM. If the connections are OK, go to step 11.

NO - Repair open in the wire between PCM connector terminal C33 and the ATF temperature sensor, then go to step 16.

11. Connect all connectors.
12. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
13. Start the engine in P, and let it run for at least 20 seconds.
14. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0713 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 15.

15. Monitor the OBD STATUS for P0713 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 14, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 12 and recheck.

16. Connect the ATF temperature sensor connector.
17. Clear the DTC with the HDS.
18. Start the engine in P, and let it run for at least 20 seconds.
19. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0713 indicated ?

YES - Check for poor connections and loose terminals at the ATF temperature sensor and the PCM, then go to step 1.

NO - Go to step 20.

20. Monitor the OBD STATUS for P0713 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 19, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the ATF temperature sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 18 and recheck.

DTC P0716: Problem in Input Shaft (Mainshaft) Speed Sensor Circuit; DTC P0717: Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.
3. Check for proper input shaft (mainshaft) speed sensor installation (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**). If the sensor was installed improperly, correct the problem, then go to step 36.

4. Start the engine, and turn the VSA off (the light on the VSA OFF switch comes on). Run the engine in D, and hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds. Slow down and stop the wheel.
5. Monitor the OBD STATUS for P0716 or P0717 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for loose or poor connections at the PCM and input shaft (mainshaft) speed sensor connectors. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors B (49P) and C (49P).
9. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

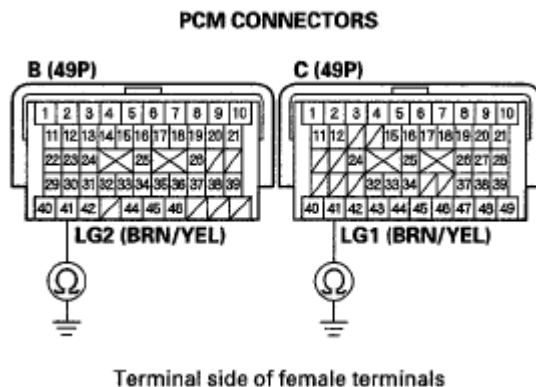


Fig. 92: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

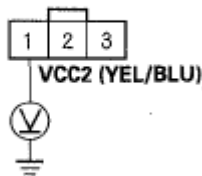
YES - Go to step 10.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 37.

10. Connect PCM connectors B (49P) and C (49P).
11. Disconnect the input shaft (mainshaft) speed sensor connector.
12. Turn the ignition switch to ON (II).

13. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 1 and body ground.

**INPUT SHAFT (MAINSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 93: Identifying Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 17.

NO - Go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Disconnect PCM connector C (49P).
16. Check for continuity between PCM connector terminal C12 and input shaft (mainshaft) speed sensor connector terminal No. 1.

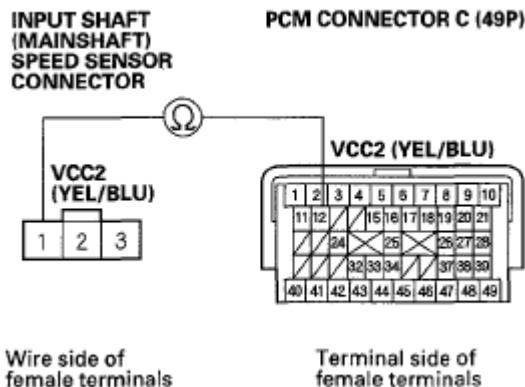


Fig. 94: Identifying Continuity Between PCM Terminal C12 And Input Shaft (Mainshaft) Speed Sensor Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

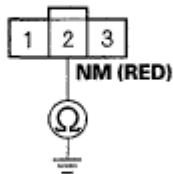
Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between PCM connector terminal C12 and the input shaft (mainshaft) speed sensor, then go to step 37.

17. Turn the ignition switch to LOCK (0).
18. Disconnect PCM connector B (49P).
19. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

**INPUT SHAFT (MAINSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 95: Identifying Continuity Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor connector, then go to step 37.

NO - Go to step 20.

20. Disconnect PCM connector C (49P).
21. Check for continuity between PCM connector terminal C16 and input shaft (mainshaft) speed sensor connector terminal No. 3.

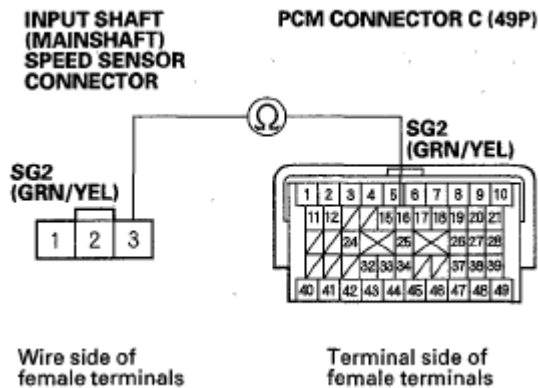


Fig. 96: Identifying Continuity Between PCM Terminal C16 And Input Shaft (Mainshaft) Speed Sensor Terminal 3

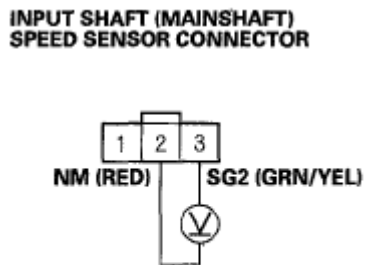
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the input shaft (mainshaft) speed sensor connector and PCM connector terminal C16, then go to step 37.

22. Connect PCM connectors B (49P) and C (49P).
23. Turn the ignition switch to ON (II).
24. Measure the voltage between input shaft (mainshaft) speed sensor connector terminals No. 2 and No. 3.



Wire side of female terminals

Fig. 97: Identifying Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminals No 2 And 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 28.

NO - Go to step 25.

25. Turn the ignition switch to LOCK (0).
26. Disconnect PCM connector B (49P).
27. Check for continuity between PCM connector terminal B37 and input shaft (mainshaft) speed sensor connector terminal No. 2.

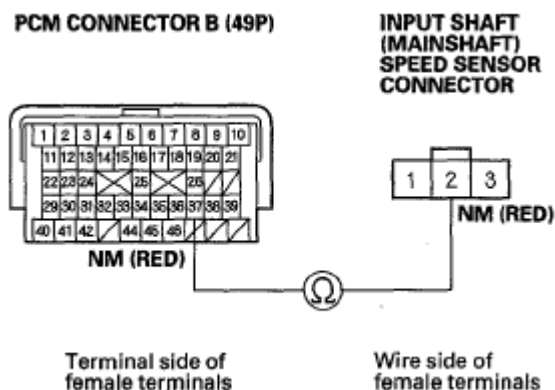


Fig. 98: Identifying Continuity Between PCM Terminal B37 And Input Shaft (Mainshaft) Speed Sensor Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor, then go to step 37.

28. Connect the input shaft (mainshaft) speed sensor connector.
29. Clear the DTC with the HDS.
30. Start the engine, run the vehicle in D, and hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds.
31. Monitor the OBD STATUS for P0716 or P717 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Replace the input shaft (mainshaft) speed sensor (see **INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 37.

NO - Go to step 32.

32. Reconnect all connectors.
33. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

34. Start the engine, run the vehicle in D. Hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds.
35. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0716 or P0717 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 36.

36. Monitor the OBD STATUS for P0716 or P717 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 35, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 34 and recheck.

37. Clear the DTC with the HDS.
38. Start the engine, run the vehicle in D. Hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds while no shifting is taking place.
39. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0716 or P0717 indicated?

YES - Check for poor connections and loose terminals at the input shaft (mainshaft) speed sensor and the PCM, then go to step 1.

NO - Go to step 40.

40. Monitor the OBD STATUS for P0716 or P0717 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 39, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the input shaft

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

(mainshaft) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 38 and recheck.

DTC P0718: Input Shaft (Mainshaft) Speed Sensor Intermittent Failure

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Test-drive the vehicle at speeds over 12 mph (20 km/h) in D through all five gears.
3. Monitor the OBD STATUS for P0718 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 4.

NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the input shaft (mainshaft) speed sensor and the PCM. If the HDS indicates NOT COMPLETED, return to step 2 and recheck.

4. Turn the ignition switch to LOCK (0)
5. Disconnect the input shaft (mainshaft) speed sensor connector, and inspect the connector and connector terminals to be sure they are making good contact.

Are the connector terminals OK?

YES - Go to step 6.

NO - Repair the connector terminals, then go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors B (49P) and C (49P).
9. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

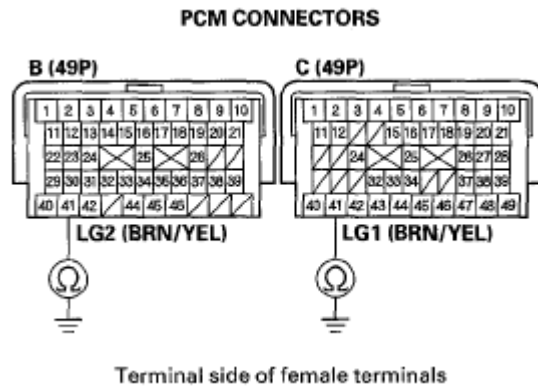


Fig. 99: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then 27 .

10. Connect PCM connectors B (49P) and C (49P).
11. Disconnect the input shaft (mainshaft) speed sensor connector.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 1 and body ground.

Is there about 5 V?

YES - Go to step 14.

NO - Go to step 23.

**INPUT SHAFT (MAINSHAFT)
 SPEED SENSOR CONNECTOR**

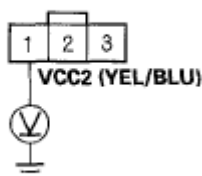
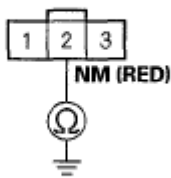


Fig. 100: Identifying Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Turn the ignition switch to LOCK (0).
15. Disconnect PCM connector B (49P).
16. Check for continuity between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

**INPUT SHAFT (MAINSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 101: Identifying Continuity Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

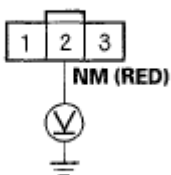
Is there continuity?

YES - Repair short in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor connector, then go to step 31.

NO - Go to step 17.

17. Connect PCM connector B (49P).
18. Turn the ignition switch to ON (II).
19. Measure the voltage between input shaft (mainshaft) speed sensor connector terminal No. 2 and body ground.

**INPUT SHAFT (MAINSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 102: Identifying Voltage Between Input Shaft (Mainshaft) Speed Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the input shaft (mainshaft) speed sensor (see INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT), then go to step 31.

NO - Go to step 20.

20. Turn the ignition switch to LOCK (0).
21. Disconnect PCM connector B (49P).
22. Check for continuity between PCM connector terminal B37 and input shaft (mainshaft) speed sensor connector terminal No. 2.

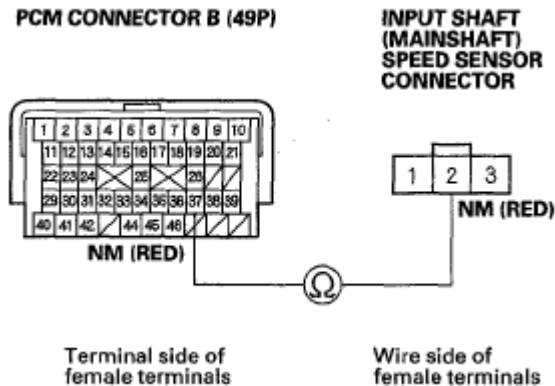


Fig. 103: Identifying Continuity Between PCM Terminal B37 And Input Shaft (Mainshaft) Speed Sensor Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between PCM connector terminal B37 and the input shaft (mainshaft) speed sensor, then go to step 31.

23. Turn the ignition switch to LOCK (0).
24. Disconnect PCM connector C (49P).
25. Check for continuity between PCM connector terminal C12 and input shaft (mainshaft) speed sensor connector terminal No. 1.

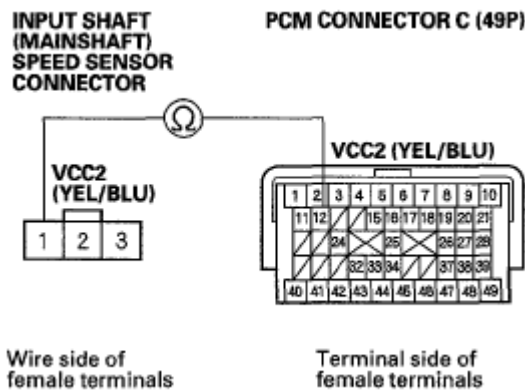


Fig. 104: Identifying Continuity Between PCM Terminal C12 And Input Shaft (Mainshaft) Speed Sensor Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between PCM connector terminal C12 and the input shaft (mainshaft) speed sensor, then go to step 31.

26. Reconnect all connectors.
27. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE** , or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
28. Test-drive the vehicle at speeds over 12 mph (20 km/h) in D through all five gears.
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0718 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for P0718 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM(see **PCM REPLACEMENT** . If any other DTCs were indicated on step 28, go to the indicated DTC's troubleshooting.

NO -If the HDS indicates FAILED, check for poor connections and loose terminals at the input shaft (mainshaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM, then

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 28 and recheck.

31. Clear the DTC with the HDS.
32. Test-drive the vehicle at speeds over 12 mph (20 km/h) in D through all five gears.
33. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0718 indicated?

YES - Check for poor connections and loose terminals at the input shaft (mainshaft) speed sensor and the PCM, then go to step 1.

NO - Go to step 34.

34. Monitor the OBD STATUS for P0718 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 33, go to the indicated DTC's troubleshooting.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the input shaft (mainshaft) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 32 and recheck.

DTC P0721: Problem in Output Shaft (Countershaft) Speed Sensor Circuit; DTC P0722: Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Raise the vehicle on a lift, make sure it is securely supported, and allow all four wheels to rotate freely.
3. Check for proper output shaft (countershaft) speed sensor installation (see OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT). If the sensor is installed improperly, correct problem, then go to step 37.
4. Start the engine. Run the vehicle in D with the engine speed at 2,000 rpm or higher, for at least 10 seconds.
5. Monitor the OBD STATUS for P0721 or P0722 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for loose or poor connections at the PCM and output shaft (countershaft) speed sensor connectors. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors B (49P) and C (49P).
9. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

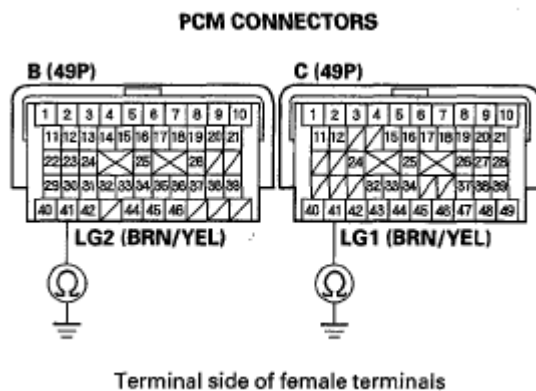


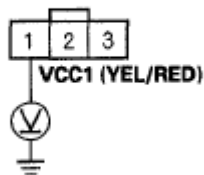
Fig. 105: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 37.

10. Connect PCM connectors B (49P) and C (49P).
11. Disconnect the output shaft (countershaft) speed sensor connector.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 1 and body ground.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**

Wire side of female terminals

Fig. 106: Identifying Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 17.

NO - Go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Disconnect PCM connector B (49P).
16. Check for continuity between PCM connector terminal B36 and output shaft (countershaft) speed sensor connector terminal No. 1.

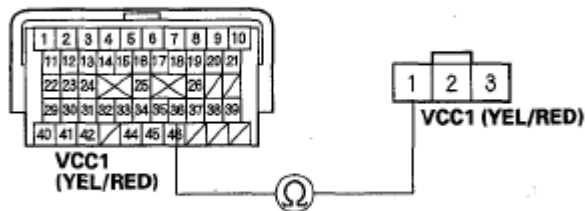
PCM CONNECTOR B (49P)**OUTPUT SHAFT
(COUNTERSHAFT)
SPEED SENSOR
CONNECTOR**Terminal side of
female terminalsWire side of
female terminals

Fig. 107: Identifying Continuity Between PCM Terminal B36 And Output Shaft (Countershaft) Speed Sensor Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

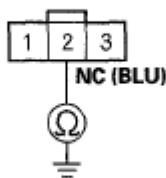
YES - Go to step 32.

NO - Repair open in the wire between PCM connector terminal B36 and the output shaft (countershaft)

speed sensor, then go to step 37.

17. Turn the ignition switch to LOCK (0).
18. Disconnect PCM connector B (49P).
19. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 108: Identifying Continuity Between Output Shaft (Countershaft) Speed Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor connector, then go to step 37.

NO - Go to step 20.

20. Disconnect PCM connector C (49P).
21. Check for continuity between PCM connector terminal C15 and output shaft (countershaft) speed sensor connector terminal No. 3.

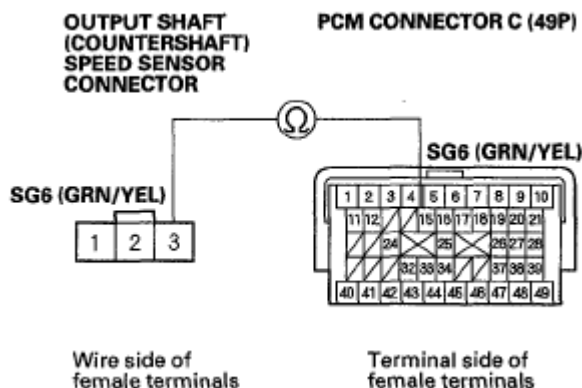


Fig. 109: Identifying Continuity Between PCM Terminal C15 And Output Shaft (Countershaft) Speed Sensor Terminal 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

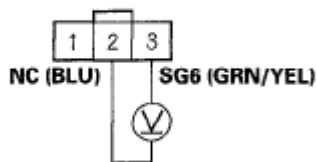
Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the output shaft (countershaft) speed sensor connector and PCM connector terminal C15, then go to step 37.

22. Connect PCM connectors B (49P) and C (49P).
23. Turn the ignition switch to ON (II).
24. Measure the voltage between output shaft (countershaft) speed sensor connector terminals No. 2 and No. 3.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**



Wire side of female terminals

Fig. 110: Identifying Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminals No 2 And 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 28.

NO - Go to step 25.

25. Turn the ignition switch to LOCK (0).
26. Disconnect PCM connector B (49P).
27. Check for continuity between PCM connector terminal B38 and output shaft (countershaft) speed sensor connector terminal No. 2.

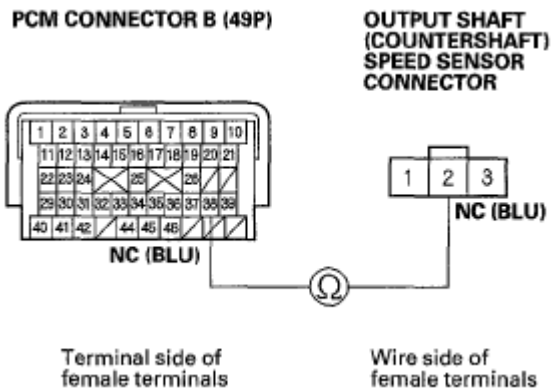


Fig. 111: Identifying Continuity Between PCM Terminal B38 And Output Shaft (Countershaft) Speed Sensor Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor, then go to step 37.

28. Connect the output shaft (countershaft) speed sensor connector.
29. Clear the DTC with the HDS.
30. Start the engine. Run the vehicle in D with the engine speed at 2,000 rpm or higher, for at least 10 seconds.
31. Monitor the OBD STATUS for P0721 or P0722 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Replace the output shaft (countershaft) speed sensor (see **OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT**), then go to step 37.

NO - Go to step 32.

32. Reconnect all connectors.
33. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
34. Start the engine, run the vehicle in D, and hold the vehicle at speeds over 12 mph (20 km/h) for at least 10 seconds when the transmission is not shifting.
35. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0721 or P0722 indicated?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 36.

36. Monitor the OBD STATUS for P0721 or P0722 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 35, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 34 and recheck.

37. Clear the DTC with the HDS.
38. Start the engine. Run the vehicle in D with the engine speed at 2,000 rpm or higher, for at least 10 seconds.
39. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0721 or P0722 indicated?

YES - Check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM, then go to step 1.

NO - Go to step 40.

40. Monitor the OBD STATUS for P0721 or P0722 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 39, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 38 and recheck.

DTC P0723: Output Shaft (Countershaft) Speed Sensor Intermittent Failure

NOTE:

- Before you troubleshoot, record all freeze data and any on-board

snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Clear the DTC with the HDS.
2. Start the engine, run the vehicle in D through all five gears with engine speed at 2,000 rpm or higher, slow down and stop the wheels.
3. Monitor the OBD STATUS for P0723 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 4.

NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM. If the HDS indicates NOT COMPLETED, return to step 2 and recheck.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the output shaft (countershaft) speed sensor connector, and inspect the connector and connector terminals to be sure they are making good contact.

Are the connector terminals OK?

YES - Go to step 6.

NO - Repair the connector terminals, then go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect PCM connectors B (49P) and C (49P).
9. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

Is there continuity?

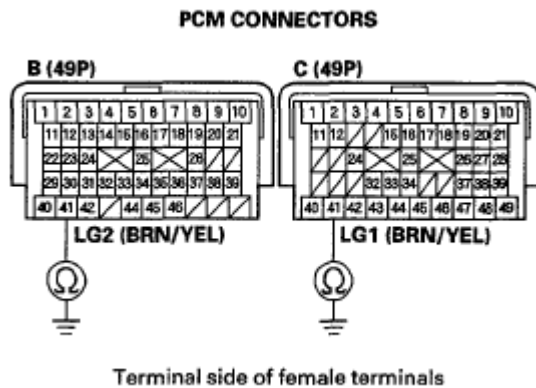


Fig. 112: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

YES -Go to step 10.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 31.

10. Connect PCM connectors B (49P) and C (49P).
11. Disconnect the output shaft (countershaft) speed sensor connector
12. Turn the ignition switch to ON (II).
13. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 1 and body ground.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**

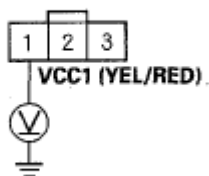


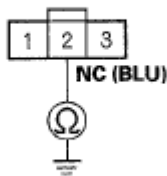
Fig. 113: Identifying Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 14.

NO - Go to step 23.

14. Turn the ignition switch to LOCK (0).
15. Disconnect PCM connector B (49P).
16. Check for continuity between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**

Wire side of female terminals

Fig. 114: Identifying Continuity Between Output Shaft (Countershaft) Speed Sensor Connector Terminal 2 And Body Ground

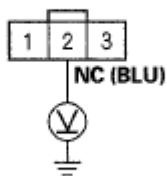
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor connector, then go to step 3131.

NO - Go to step 17.

17. Connect PCM connector B (49P).
18. Turn the ignition switch to ON (II).
19. Measure the voltage between output shaft (countershaft) speed sensor connector terminal No. 2 and body ground.

**OUTPUT SHAFT (COUNTERSHAFT)
SPEED SENSOR CONNECTOR**

Wire side of female terminals

Fig. 115: Identifying Voltage Between Output Shaft (Countershaft) Speed Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the output shaft (countershaft) speed sensor(see **OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT**, then go to step 31 .

NO - Go to step 20.

20. Turn the ignition switch to LOCK (0).
21. Disconnect PCM connector B (49P).
22. Check for continuity between PCM connector terminal B38 and output shaft (countershaft) speed sensor connector terminal No. 2.

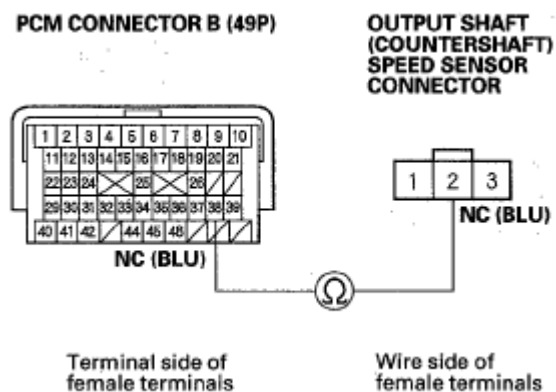


Fig. 116: Identifying Continuity Between PCM Terminal B38 And Output Shaft (Countershaft) Speed Sensor Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between PCM connector terminal B38 and the output shaft (countershaft) speed sensor, then go to step 3131.

23. Turn the ignition switch to LOCK (0).
24. Disconnect PCM connector B (49P).
25. Check for continuity between PCM connector terminal B36 and output shaft (countershaft) speed sensor connector terminal No. 1.

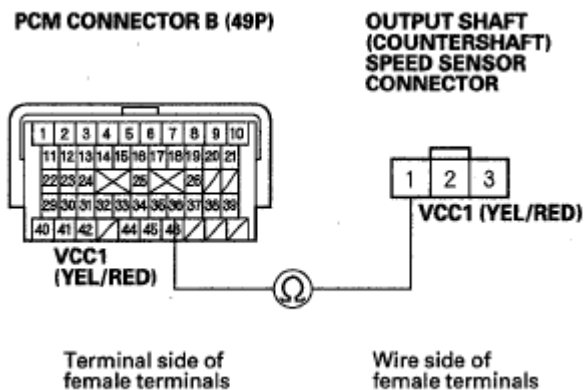


Fig. 117: Identifying Continuity Between PCM Terminal B36 And Output Shaft (Countershaft) Speed Sensor Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between PCM connector terminal 636 and the output shaft (countershaft) speed sensor, then go to step 31.31

26. Reconnect all connectors.
27. Update the A/T software in the PCM if it does not have the latest software (see **PCM Update**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
28. Start the engine, run the vehicle in D through all five gears with engine speed at 2,000 rpm or higher, slow down and stop the wheels.
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0723 indicated?

YES - If the PCM was updated, substitute a known-good PCM **SUBSTITUTE THE PCM**, then recheck. If the PCM was substituted, go to step 11.

NO - Go to step 30.

30. Monitor the OBD STATUS for P0723 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 29, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the output shaft

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

(countershaft) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 28 and recheck.

31. Clear the DTC with the HDS.
32. Start the engine, run the vehicle in D through all five gears with engine speed at 2,000 rpm or higher, slow down and stop the wheels.
33. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0723 indicated?

YES - Check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM, then go to step 11

NO -Go to step 34.

34. Monitor the OBD STATUS for P0723 in the DTCs/Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 3333, go to the indicated DTC's troubleshooting.

NO -If the HDS indicates FAILED, check for poor connections and loose terminals at the output shaft (countershaft) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 32 and recheck.

DTC P0731: Problem in 1st Clutch and 1st Clutch Hydraulic Circuit

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 9.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is the line pressure within the service limits?

YES - Go to step 5.

NO - Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 9.

5. Measure the 1st clutch pressure (see **PRESSURE TEST**).

Is the 1st clutch pressure within the service limits?

YES - Go to step 6.

NO - Shift valves B and C are stuck. Repair these valves and hydraulic circuit, or replace the transmission, then go to step 9.

6. Clear the DTC with the HDS.
7. Test-drive the vehicle: Start off in D, accelerate at 10 % opened-throttle or more, and run the vehicle in 1st gear at speeds over 7 mph (12 km/h) with the engine speed at 1,000 rpm or higher, for at least 12 seconds. Slow down and stop the wheels.
8. Monitor the OBD STATUS for P0731 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the 1st clutch, or replace the transmission, then go to step 19.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 7 and recheck.

9. Test-drive the vehicle: Start off in D, accelerate at 10 % opened-throttle or more, and run the vehicle in 1st gear at speeds over 7 mph (12 km/h) with the engine speed at 1,000 rpm or higher, for at least 12 seconds. Slowdown and stop the wheels.
10. Monitor the OBD STATUS for P0731 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

DTC P0732: Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 9.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

Is the line pressure within the service limits?

YES - Go to step 5.

NO - Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 9.

5. Measure the 2nd clutch pressure (see **PRESSURE TEST**).

Is the 2nd clutch pressure within the service limits?

YES - Go to step 6.

NO - Shift valves A, B, and C are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 9.

6. Clear the DTC with the HDS.
7. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 2nd gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.
8. Monitor the OBD STATUS for P0732 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the 2nd clutch, or replace the transmission, then go to step 9.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 7 and recheck.

9. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 2nd gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slowdown and stop the wheels.
10. Monitor the OBD STATUS for P0732 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

DTC P0733: Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 9.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Measure the line pressure (see PRESSURE TEST).

Is the line pressure within the service limits?

YES - Go to step 5.

NO - Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 9.

5. Measure the 3rd clutch pressure (see PRESSURE TEST).

Is the 3rd clutch pressure within the service limits?

YES - Go to step 6.

NO - Shift valves A, B, and C are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 9.

6. Clear the DTC with the HDS.
7. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 3rd gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

8. Monitor the OBD STATUS for P0733 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the 3rd clutch, or replace the transmission, then go to step 9.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 7 and recheck.

9. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 3rd gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.
10. Monitor the OBD STATUS for P0733 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

DTC P0734: Problem in 4th Clutch and 4th Clutch Hydraulic Circuit

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 9.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Measure the line pressure (see PRESSURE TEST).

Is the line pressure within the service limits?

YES - Go to step 5.

NO - Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 9.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

5. Measure the 4th clutch pressure (see **PRESSURE TEST**).

Is the 4th clutch pressure within the service limits?

YES - Go to step 6.

NO - Shift valves A, B, C, and D are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 9.

6. Clear the DTC with the HDS.
7. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 4th gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.
8. Monitor the OBD STATUS for P0734 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the 4th clutch, or replace the transmission, then go to step 9.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 7 and recheck.

9. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 4th gear in D at speeds over 7 mph (12 km/h) for 12 seconds. Slow down and stop the wheels.
10. Monitor the OBD STATUS for P0734 in the DTCs/ Freeze Data in A/T Mode Menu for at least a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

DTC P0735: Problem in 5th Clutch and 5th Clutch Hydraulic Circuit

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 9.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Measure the line pressure (see **PRESSURE TEST**).

Is the line pressure within the service limits?

YES - Go to step 5.

NO - Repair the ATF pump and the regulator valve, or replace the transmission, then go to step 9.

5. Measure the 5th clutch pressure (see **PRESSURE TEST**).

Is the 5th clutch pressure within the service limits?

YES - Go to step 6.

NO - Shift valves A, B, C, and D are stuck. Repair these valves and the hydraulic circuit, or replace the transmission, then go to step 9.

6. Clear the DTC with the HDS.
7. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 5th gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.
8. Monitor the OBD STATUS for P0735 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the 5th clutch, or replace the transmission, then go to step 9.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 7 and recheck.

9. Test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data, or drive in 5th gear in D at speeds over 7 mph (12 km/h) for at least 12 seconds. Slow down and stop the wheels.
10. Monitor the OBD STATUS for P0735 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT

COMPLETED, return to step 9 and recheck.

DTC P0741: Torque Converter Clutch Hydraulic Circuit Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 12.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Select Shift Solenoid E in the Miscellaneous Test Menu, and check that shift solenoid valve D operates with the HDS.

Is a clicking sound heard?

YES - Go to step 6.

NO - Replace shift solenoid valve D (see SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT), then go to step 12.

6. Run the engine until the engine coolant temperature reaches 176 °F (80 °C).
7. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

Does the result indicate NORMAL?

YES - Go to step 8.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to 10 step . If any part is replaced, go to step 11.

8. Test-drive the vehicle on a level road with a steady throttle at 60 mph (96 km/h) for at least 22 seconds.
9. Monitor the OBD STATUS for P0741 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Repair the faulty torque converter clutch mechanism, torque converter clutch hydraulic circuit, lock-up shift valve, lock-up control valve, or replace the transmission/then go to step 12.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

10. Inspect A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST**).

Does A/T clutch pressure control solenoid valve C work properly?

YES - Repair the hydraulic system related to the lock-up shift valve, lock-up control valve, and lock-up timing valve, or replace the transmission, then go to step 12.

NO - Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**), then go to step 12.

11. Clear the DTC with the HDS.
12. Test-drive the vehicle on a level road with a steady throttle at 60 mph (96 km/h) for at least 22 seconds, or test-drive the vehicle for several minutes under the same conditions as those indicated by the freeze data.
13. Monitor the OBD STATUS for P0741 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 12 and recheck.

DTC P0746: A/T Clutch Pressure Control Solenoid Valve A Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in Q, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P0746 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

Does the HDS indicate NORMAL?

YES - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to step 9. If any part is replaced, go to step 10.

9. Inspect A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST**).

Does A/T clutch pressure control solenoid valve A work properly?

YES - Repair the hydraulic system related with shift valve A, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 11.

10. Clear the DTC with the HDS.
11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
12. Monitor the OBD STATUS for P0746 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT

COMPLETED, return to step 11 and recheck.

DTC P0747: A/T Clutch Pressure Control Solenoid Valve A Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P0747 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

Does the HDS indicate NORMAL?

YES - Intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to step 10. If any part is replaced, go to step 10.

9. Inspect A/T clutch pressure control solenoid valve A (see A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does A/T clutch pressure control solenoid valve A work properly?

YES - Repair the hydraulic system related with shift valve A, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 11.

10. Clear the DTC with the HDS.
11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
12. Monitor the OBD STATUS for P0747 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0751: Shift Solenoid Valve A Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P0751 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid A in the Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 1111.

9. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
10. Monitor the OBD STATUS for P0751 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve A, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
12. Monitor the OBD STATUS for P0751 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0752: Shift Solenoid Valve A Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
6. Monitor the OBD STATUS for P0752 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid A in the Miscellaneous Test Menu, and check that shift solenoid valve A operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 11.

9. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
10. Monitor the OBD STATUS for P0752 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve A, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
12. Monitor the OBD STATUS for P0752 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0756: Shift Solenoid Valve B Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D through all five gears, then slow down to a stop.
6. Monitor the OBD STATUS for P0756 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid B in the Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve B (see SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT), then go to step 11

9. Test-drive the vehicle in D through all five gears, then slow down to a stop.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

10. Monitor the OBD STATUS for P0756 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve B, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle in D through all five gears, then slow down to a stop.
12. Monitor the OBD STATUS for P0756 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0757: Shift Solenoid Valve B Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
6. Monitor the OBD STATUS for P0757 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid B in the Miscellaneous Test Menu, and check that shift solenoid valve B operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 1111

9. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
10. Monitor the OBD STATUS for P0757 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Repair shift valve B, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 11 seconds.
12. Monitor the OBD STATUS for P0757 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0761: Shift Solenoid Valve C Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
6. Monitor the OBD STATUS for P0761 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid C in the Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 11.11

9. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
10. Monitor the OBD STATUS for P0761 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve C, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
12. Monitor the OBD STATUS for P0761 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0762: Shift Solenoid Valve C Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
6. Monitor the OBD STATUS for P0762 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid C in the Miscellaneous Test Menu, and check that shift solenoid valve C operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve C (see SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT), then go to step 11.11

9. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
10. Monitor the OBD STATUS for P0762 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve C, or replace the transmission, then go to step 11.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle in D, then run the vehicle in 5th gear for at least 20 seconds.
12. Monitor the OBD STATUS for P0762 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0766: Shift Solenoid Valve D Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears at least 11 seconds.
6. Monitor the OBD STATUS for P0766 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid D in the Miscellaneous Test Menu, and check that shift solenoid valve D operates with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 11.11

9. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears at least 11 seconds.
10. Monitor the OBD STATUS for P0766 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Repair shift valve D, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears at least 11 seconds.
12. Monitor the OBD STATUS for P0766 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0767: Shift Solenoid Valve D Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P0767 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Shift Solenoid D in the Miscellaneous Test Menu, and check that shift solenoid valve D operates with the HDS.

Is a clicking sound heard?

YES - Go to step 9.

NO - Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 11.11

9. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
10. Monitor the OBD STATUS for P0767 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve D, or replace the transmission, then go to step 11.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 9 and recheck.

11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
12. Monitor the OBD STATUS for P0767 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0776: A/T Clutch Pressure Control Solenoid Valve B Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then continue in 5th gear for at least 20 seconds.
6. Monitor the OBD STATUS for P0776 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid B in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

Does the HDS indicate NORMAL? .

YES - If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO -Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to step 9. If any part is replaced, go to step 9. ,then go to step 1010.

9. Inspect A/T clutch pressure control solenoid valve B.**A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST**

Does A/T clutch pressure control solenoid valve B work properly?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Repair the hydraulic system related with shift valve B, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve B, then go to step 11.

10. Clear the DTC with the HDS
11. Test-drive the vehicle in D, then continue in 5th gear for at least 20 seconds.
12. Monitor the OBD STATUS for P0776 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0777: A/T Clutch Pressure Control Solenoid Valve B Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 1111.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P0777 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid B in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

Does the HDS indicate NORMAL?

YES - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to step 9. If any part is replaced, go to step 10.

9. Inspect A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST**).

Does A/T clutch pressure control solenoid valve B work properly?

YES - Repair the hydraulic system related with shift valve B, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 11.

10. Clear the DTC with the HDS.
11. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
12. Monitor the OBD STATUS for P0777 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0796: A/T Clutch Pressure Control Solenoid Valve C Stuck OFF

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine, and shift into D while pressing the brake pedal, wait for at least 3 seconds. Test-drive the vehicle in R at speeds below 6 mph (9 km/h) for at least 3 seconds.
6. Monitor the OBD STATUS for P0796 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

Does the HDS indicate NORMAL?

YES - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined the cause of the failure, go to step 9. If any part is replaced, go to step 10.

9. Inspect A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST**).

Does A/T clutch pressure control solenoid valve C work properly?

YES - Repair the hydraulic system related with shift valve C, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**), then go to step 11.

10. Clear the DTC with the HDS.
11. Start the engine, and shift into D while pressing the brake pedal, wait for at least 3 seconds. Test-drive the vehicle in R at speeds below 6 mph (9 km/h) for at least 3 seconds.
12. Monitor the OBD STATUS for P0796 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0797: A/T Clutch Pressure Control Solenoid Valve C Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 11.

NO - Replace the ATF (see step 7 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D, then continue in 5th gear for at least 20 seconds.
6. Monitor the OBD STATUS for P0797 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Clear the DTC with the HDS.
8. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

Does the HDS indicate NORMAL?

YES - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 8 and recheck.

NO - Follow the instructions indicated on the HDS by the test result, but if the HDS has not determined

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

the cause of the failure, go to step 9. If any part is replaced, go to step 10.

9. Inspect A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST**).

Does A/T clutch pressure control solenoid valve C work properly?

YES - Repair the hydraulic system related with shift valve C, or replace the transmission, then go to step 11.

NO - Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**), then go to step 11.

10. Clear the DTC with the HDS.
11. Test-drive the vehicle in D, then continue in 5th gear for at least 20 seconds.
12. Monitor the OBD STATUS for P0797 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - If the HDS indicates FAILED, return to step 1 and recheck. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

DTC P0812: Open in Transmission Range Switch ATP R Switch Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

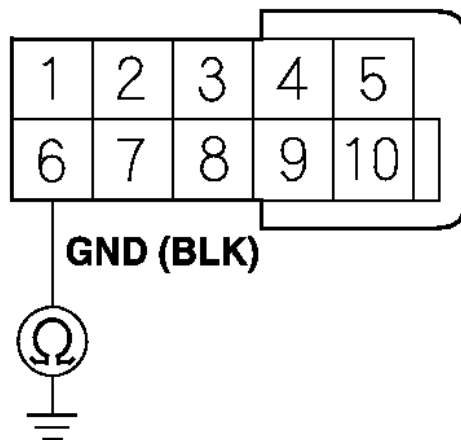
1. Turn the ignition switch to ON (II).
2. Shift to R, and check the A/T R Switch signal with the HDS in the A/T data list.

Is the A/T R Switch ON?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Disconnect the transmission range switch connector.
5. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

TRANSMISSION RANGE SWITCH CONNECTOR

Wire side of female terminals

Fig. 118: Identifying Continuity Between Transmission Range Switch Connector Terminal 6 And Body Ground

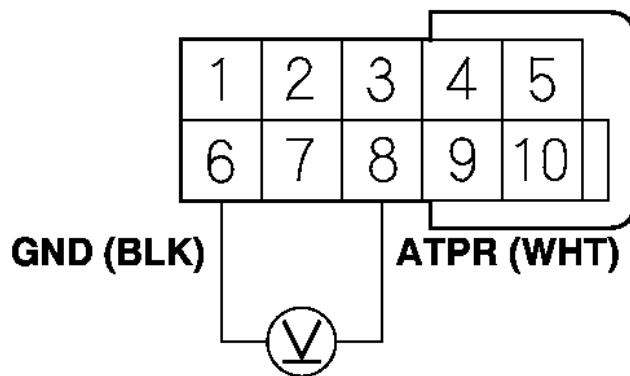
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - Repair open in the wire between transmission range switch connector terminal No. 5 and ground (G101), or repair poor ground (G101), then go to step 14.

6. Turn the ignition switch to ON (II).
7. Measure the voltage between transmission range switch connector terminals No. 6 and No. 8.

TRANSMISSION RANGE SWITCH CONNECTOR

Wire side of female terminals

Fig. 119: Identifying Voltage Between Transmission Range Switch Connector Terminals No 6 And No 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

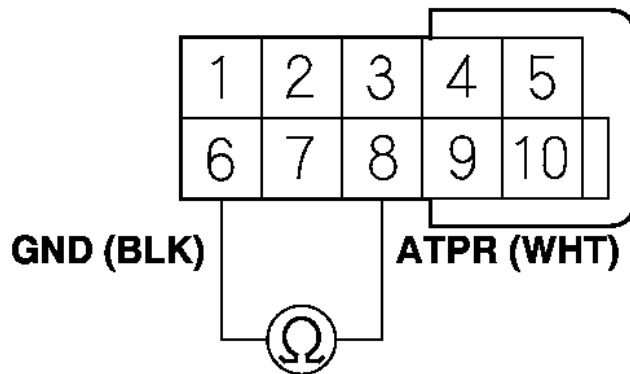
Is there voltage?

YES - Go to step 8.

NO - Repair open in the wire between PCM connector terminal C25 and the transmission range switch, then go to step 14.

8. Check for continuity between transmission range switch connector terminals No. 6 and No. 8 while the shift lever is in each position.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 120: Identifying Continuity Between Transmission Range Switch Connector Terminals No 6 And No 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity while the shift lever is in P, R, and N, and no continuity while the shift lever is in the D and D3?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM. If the connections are OK, go to step 9.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 9.

9. Reconnect the transmission range switch connector.
10. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
11. Test-drive the vehicle in R at speeds below 3 mph (5 km/h) for at least 2 seconds. Then test-drive at speeds over 3 mph (5 km/h) for at least 2 seconds. Slow down and stop the wheels.
12. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0812 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 13.

13. Monitor the OBD STATUS for P0812 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS Indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 12, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 11 and recheck.

14. Clear the DTC with the HDS.
15. Test-drive the vehicle in R at speeds below 3 mph (5 km/h) for at least 2 seconds. Then test-drive at speeds over 3 mph (5 km/h) for at least 2 seconds. Slow down and stop the wheels.
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0812 indicated?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1.

NO - Go to step 17.

17. Monitor the OBD STATUS for P0812 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 16, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 15 and recheck.

DTC P0815: Short in Transmission Gear Selection Switch Upshift Switch Circuit, or Transmission Gear Selection Switch Upshift Switch Stuck ON

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Shift to P.
3. Check the Upshift Switch signal input with the HDS in the A/T data list.

Is the Upshift Switch ON?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check the S-UP (BLU) wire for an intermittent short to ground between the transmission gear selection switch and the PCM.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission gear selection switch/ park pin switch/A/T gear position indicator panel light connector at the shift lever bracket.
6. Turn the ignition switch to ON (II).
7. Check the transmission gear selection switch upshift switch signal input with the HDS in the A/T data list.

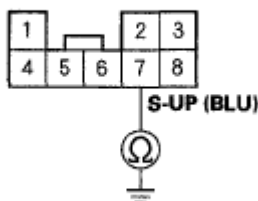
Is the Upshift Switch ON?

YES - Go to step 8.

NO - Replace the transmission gear selection switch (see **TRANSMISSION GEAR SELECTION SWITCH TEST**), then go to step 19.

8. Turn the ignition switch to LOCK (0).
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector A (49P).
11. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 7 and body ground.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Wire side of female terminals

Fig. 121: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminal 7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is there continuity?

YES - Repair short in the wire between PCM connector terminal A36 and the transmission gear selection switch, then go to step 19.

NO - Go to step 12.

12. Reconnect all connectors.
13. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
14. Start the engine in P, wait at least 10 seconds, then shift to M.
15. Push the shift lever toward the upshift position (+) slowly, and release it; repeat this test 10 times or more.
16. Pull the shift lever toward the downshift position (-) slowly, and release it; repeat this test 10 times or more.
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0815 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P0815 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 14 and recheck.

19. Clear the DTC with the HDS.
20. Start the engine in P, wait at least 10 seconds, then shift to M.
21. Push the shift lever toward the upshift position (+) slowly, and release it; repeat this test 10 times or more.
22. Pull the shift lever toward the downshift position (-) slowly, and release it; repeat this test 10 times or more.
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0815 indicated?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for P0815 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 23, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0816: Short in Transmission Gear Selection Switch Downshift Switch Circuit, or Transmission Gear Selection Switch Downshift Switch Stuck ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II).
2. Shift to P.
3. Check the Downshift Switch signal input with the HDS in the A/T data list.

Is the Downshift Switch ON?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check the S-DN (GRN) wire for an intermittent short to ground between the transmission gear selection switch and the PCM.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission gear selection switch/ park pin switch/A/T gear position indicator panel light connector at the shift lever bracket.
6. Turn the ignition switch to ON (II).
7. Check the transmission gear selection switch downshift switch signal input with the HDS in the A/T data list.

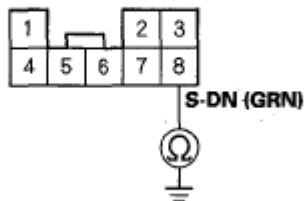
Is the Downshift Switch ON?

YES - Go to step 8.

NO - Replace the transmission gear selection switch (see **TRANSMISSION GEAR SELECTION SWITCH TEST**), then go to step 19.

8. Turn the ignition switch to LOCK (0).
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector A (49P).
11. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 8 and body ground.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Wire side of female terminals

Fig. 122: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminal 8 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire between PCM connector terminal A37 and the transmission gear selection switch, then go to step 19.

NO - Go to step 12.

12. Reconnect all connectors.
13. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
14. Start the engine in P, wait at least 10 seconds, then shift to M.
15. Push the shift lever toward the upshift position (+) slowly, and release it; repeat this test 10 times or more.
16. Pull the shift lever toward the downshift position (-) slowly, and release it; repeat this test 10 times or more.
17. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0816 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE**

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

PCM), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P0816 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 14 and recheck.

19. Clear the DTC with the HDS.
20. Start the engine in P, wait at least 10 seconds, then shift to M.
21. Push the shift lever toward the upshift position (+) slowly, and release it; repeat this test 10 times or more.
22. Pull the shift lever toward the downshift position (-) slowly, and release it; repeat this test 10 times or more.
23. Check for Temporary DTCs or DTCs with the HDS. .

Is DTC P0816 indicated?

YES - Check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for P0816 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 23, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0842: Short in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck ON

NOTE:

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Clear the DTC with the HDS.
2. Check the 2nd PRESSURE SWITCH signal with the HDS in the A/T data list when not in 2nd gear.

Is the 2nd Pressure Switch OFF?

YES - Go to step 3.

NO - Go to step 6.

3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Drive the vehicle in 3rd gear in M for at least 2 seconds.
5. Monitor the OBD STATUS for P0842 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the OP2SW wire for an intermittent short to ground between the 2nd clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 2nd clutch transmission fluid pressure switch connector.
8. Turn the ignition switch to ON (II).
9. Check the 2nd Pressure Switch signal with the HDS in the A/T data list.

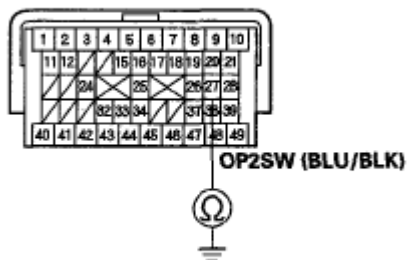
Is the 2nd Pressure Switch OFF?

YES - Replace the 2nd clutch transmission fluid pressure switch (see 2nd Clutch Transmission Fluid Pressure Switch Replacement), then go to step 19.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C27 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 123: Identifying Continuity Between PCM Connector Terminal C27 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C27 and the 2nd clutch transmission fluid pressure switch, then go to step 19.

NO - Go to step 14.

14. Reconnect all connectors.
15. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
16. Drive the vehicle in 2nd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds.
17. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0842 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P0842 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

(see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 16 and recheck.

19. Clear the DTC with the HDS.
20. Drive the vehicle in 2nd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds.
21. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0842 indicated?

YES - Check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for P0842 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 21, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0843: Open in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
3. Shift the shift lever into M while pressing the brake pedal, upshift to 2nd gear by pushing the shift lever to upshift position, and check with the HDS in the A/T data list that the SHIFT COMMAND indicates 2nd.
4. Check the 2nd Pressure Switch signal with the HDS in the A/T data list.

Is the 2nd Pressure Switch ON?

YES - Go to step 5.

NO - Go to step 7.

5. Drive the vehicle in 2nd gear in M for at least 2 seconds.
6. Monitor the OBD STATUS for P0843 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

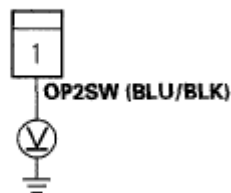
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the 2nd clutch transmission fluid pressure switch connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between the 2nd clutch transmission fluid pressure switch connector terminal and body ground.

**2ND CLUTCH TRANSMISSION FLUID
PRESSURE SWITCH CONNECTOR**



Wire side of female terminals

Fig. 124: Identifying Voltage Between 2nd Clutch Transmission Fluid Pressure Switch Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the 2nd clutch transmission fluid pressure switch (see **2nd Clutch Transmission Fluid Pressure Switch Replacement**), then go to step 20.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C27 and the 2nd clutch transmission fluid pressure switch connector terminal.

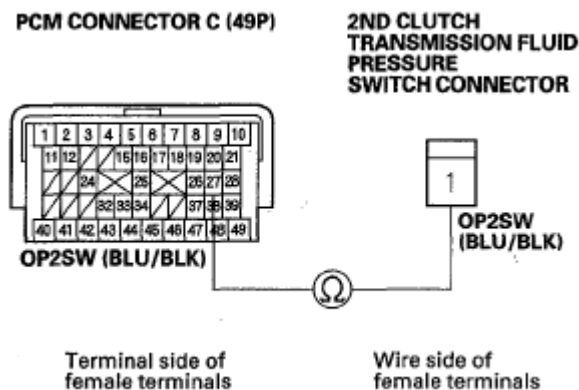


Fig. 125: Identifying Continuity Between PCM Terminal C27 And 2nd Clutch Transmission Fluid Pressure Switch Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM. If the connections are OK, go to step 15.

NO - Repair open in the wire between PCM connector terminal C27 and the 2nd clutch transmission fluid pressure switch, then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Drive the vehicle in 2nd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0843 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0843 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTCS TROUBLESHOOTING**.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Drive the vehicle in 2nd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0843 indicated?

YES - Check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0843 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 2nd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0847: Short in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck ON

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Check the 3rd Pressure Switch signal with the HDS in the A/T data list when not in 3rd gear.

Is the 3rd Pressure Switch OFF ?

YES - Go to step 3.

NO - Go to step 6.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Drive the vehicle in 3rd gear in M for at least 2 seconds.
5. Monitor the OBD STATUS for P0847 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the OP3SW wire for an intermittent short to ground between the 3rd clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 3rd clutch transmission fluid pressure switch connector.
8. Turn the ignition switch to ON (II).
9. Check the 3rd Pressure Switch signal with the HDS in the A/T data list.

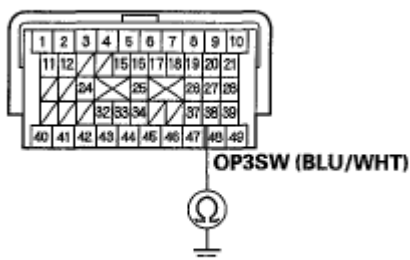
Is the 3rd Pressure Switch OFF?

YES - Replace the 3rd clutch transmission fluid pressure switch (see **3rd Clutch Transmission Fluid Pressure Switch Replacement**), then go to step 19.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C38 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 126: Identifying Continuity Between PCM Connector Terminal C38 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Repair short in the wire between PCM connector terminal C38 and the 3rd clutch transmission fluid pressure switch, then go to step 19.

NO - Go to step 14.

14. Reconnect all connectors.
15. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
16. Drive the vehicle in 3rd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds. Slow down and stop the wheels.
17. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0847 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P0847 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 16 and recheck.

19. Clear the DTC with the HDS.
20. Drive the vehicle in 3rd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds. Slow down and stop the wheels.
21. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0847 indicated?

YES - Check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for P0847 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 21, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0848: Open in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
3. Drive the vehicle in 3rd gear in M, and check with the HDS in the A/T data list that the SHIFT COMMAND indicates 3rd.
4. Check the 3rd Pressure Switch signal with the HDS in the A/T data list.

Is the 3rd Pressure Switch ON?

YES - Go to step 5.

NO - Go to step 7.

5. Drive the vehicle in 3rd gear in M for at least 2 seconds.
6. Monitor the OBD STATUS for P0848 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

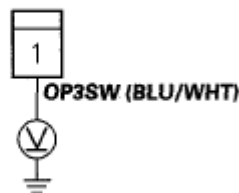
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the 3rd clutch transmission fluid pressure switch connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between the 3rd clutch transmission fluid pressure switch connector terminal and body ground.

**3RD CLUTCH TRANSMISSION FLUID
PRESSURE SWITCH CONNECTOR**



Wire side of female terminals

Fig. 127: Identifying Voltage Between 3rd Clutch Transmission Fluid Pressure Switch Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the 3rd clutch transmission fluid pressure switch (see **3rd Clutch Transmission Fluid Pressure Switch Replacement**), then go to step 20.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C38 and the 3rd clutch transmission fluid pressure switch connector terminal.

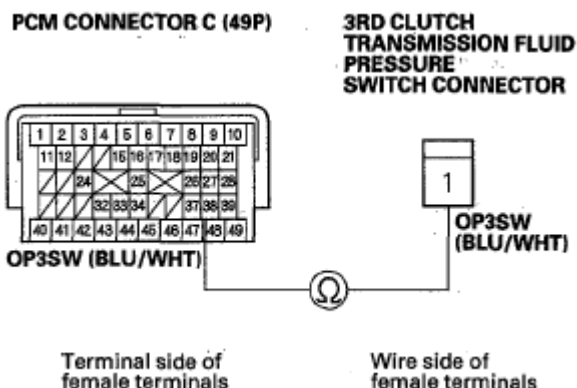


Fig. 128: Identifying Continuity Between PCM Terminal C38 And 3rd Clutch Transmission Fluid Pressure Switch Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

and the PCM. If the connections are OK, go to step 15.

NO - Repair open in the wire between PCM connector terminal C38 and the 3rd clutch transmission fluid pressure switch, then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Drive the vehicle in 3rd gear in M for at least 2 seconds, then upshift to 4th gear, and drive for at least 2 seconds. Slow down and stop the wheels.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0848 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0848 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does theHDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Drive the vehicle in 3rd gear in M for at least 2 seconds, then upshift to, and drive for at least 2 seconds. Slow down and stop the wheels.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0848 indicated?

YES - Check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0848 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 3rd clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0872: Short in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Stuck ON

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Clear the DTC with the HDS.
2. Check the 4th Pressure Switch signal with the HDS in the A/T data list when not in 4th gear.

Is the 4th Pressure Switch OFF?

YES - Go to step 3.

NO - Go to step 6.

3. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).
4. Drive the vehicle in 5th gear in M for at least 2 seconds.
5. Monitor the OBD STATUS for P0872 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the OP4SW wire for an intermittent short to ground between the 4th clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 4th clutch transmission fluid pressure switch connector.
8. Turn the ignition switch to ON (II).
9. Check the 4th Pressure Switch signal with the HDS in the A/T data list.

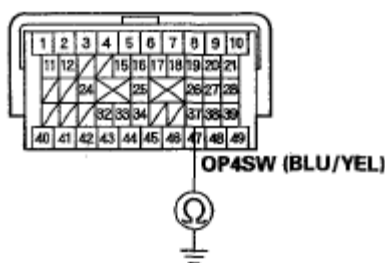
Is the 4th Pressure Switch OFF?

YES - Replace the 4th clutch transmission fluid pressure switch (see **4th Clutch Transmission Fluid Pressure Switch Replacement**), then go to step 19.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C37 and body ground.

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 129: Identifying Continuity Between PCM Connector Terminal C37 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C37 and the 4th clutch transmission fluid pressure switch, then go to step 19.

NO - Go to step 14.

14. Reconnect all connectors.
15. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
16. Drive the vehicle in 4th gear in M for at least 2 seconds, then upshift to 5th gear, and drive for at least 2 seconds.
17. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0872 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

18. Monitor the OBD STATUS for P0872 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 16 and recheck.

19. Clear the DTC with the HDS.
20. Drive the vehicle in 4th gear in M for at least 2 seconds, then upshift to 5th gear, and drive for at least 2 seconds.
21. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0872 indicated?

YES - Check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for P0872 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 21, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0873: Open in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on).

3. Drive the vehicle in 4th gear in M, and check with the HDS in the A/T data list that the SHIFT COMMAND indicates 4th.
4. Check the 4th Pressure Switch signal with the HDS in the A/T data list.

Is the 4th Pressure Switch ON?

YES - Go to step 5.

NO - Go to step 7.

5. Drive the vehicle in 4th gear in M for at least 2 seconds.
6. Monitor the OBD STATUS for P0873 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

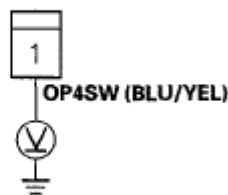
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the 4th clutch transmission fluid pressure switch and the PCM. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the 4th clutch transmission fluid pressure switch connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between the 4th clutch transmission fluid pressure switch connector terminal and body ground.

**4TH CLUTCH TRANSMISSION FLUID
PRESSURE SWITCH CONNECTOR**



Wire side of female terminals

Fig. 130: Identifying Voltage Between 4th Clutch Transmission Fluid Pressure Switch Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the 4th clutch transmission fluid pressure switch (see **4th Clutch Transmission Fluid Pressure Switch Replacement**), then go to step 20.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (49P).
14. Check for continuity between PCM connector terminal C37 and the 4th clutch transmission fluid pressure switch connector terminal.

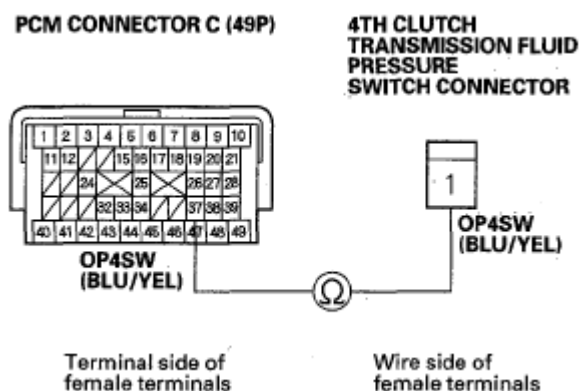


Fig. 131: Identifying Continuity Between PCM Terminal C37 And 4th Clutch Transmission Fluid Pressure Switch Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM. If the connections are OK, go to step 15.

NO - Repair open in the wire between PCM connector terminal C37 and the 4th clutch transmission fluid pressure switch, then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Drive the vehicle in 4th gear in M for at least 2 seconds, then upshift to 5th gear, and drive for at least 2 seconds.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0873 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

19. Monitor the OBD STATUS for P0873 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Drive the vehicle in 4th gear in M for at least 2 seconds, then upshift to, and drive for at least 2 seconds.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0873 indicated?

YES - Check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0873 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the 4th clutch transmission fluid pressure switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0957: Short in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck ON

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Shift to P.

3. Check the SS Mode Switch signal with the HDS in the A/T data list.

Is the SS Mode Switch ON?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check the SS Mode Switch wire for an intermittent short to ground between the transmission gear selection switch and the PCM.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission gear selection switch/ park pin switch/A/T gear position indicator panel light connector at the shift lever bracket.
6. Turn the ignition switch to ON (II).
7. Check the SS Mode Switch signal input with the HDS in the A/T data list.

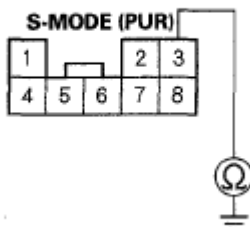
Is the SS Mode Switch ON?

YES - Go to step 8.

NO - Replace the transmission gear selection switch (see TRANSMISSION GEAR SELECTION SWITCH TEST), then go to step 19.

8. Turn the ignition switch to LOCK (0).
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector A (49P).
11. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 3 and body ground.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Wire side of female terminals

Fig. 132: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Repair short in the wire between PCM connector terminal A47 and the transmission gear selection switch, then go to step 19.

NO - Go to step 12.

12. Reconnect all connectors.
13. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
14. Start the engine in P, wait for at least 10 seconds, then shift to M.
15. Push the shift lever toward upshift position (+) slowly, and release it; repeat this test 10 times or more.
16. Pull the shift lever toward downshift position (-) slowly, and release it; repeat this test 10 times or more.
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0957 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P0957 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 14 and recheck.

19. Clear the DTC with the HDS.
20. Start the engine in P, wait for at least 10 seconds, then shift to M.
21. Push the shift lever toward upshift position (+) slowly, and release it; repeat this test 10 times or more.
22. Pull the shift lever toward downshift position (-) slowly, and release it; repeat this test 10 times or more.
23. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0957 indicated?

YES - Check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 24.

24. Monitor the OBD STATUS for P0957 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 23, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0958: Open in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck OFF

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Turn the ignition switch to ON (II).
2. Shift to M.
3. Check the SS Mode Switch signal with the HDS in the A/T data list.

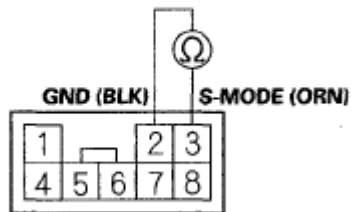
Is the SS Mode Switch OFF?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at the transmission gear selection switch and the PCM.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission gear selection switch / park pin switch/A/T gear position indicator panel light connector at the shift lever bracket.
6. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminals No. 2 and No. 3.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Terminal side of male terminals

Fig. 133: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminals No 2 And 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

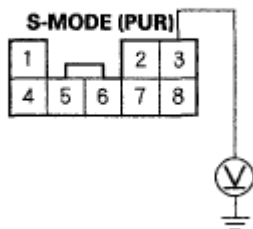
Is there continuity while the shift lever is in M, and no continuity when the shift lever is in any position other than M?

YES - Go to step 7.

NO - Replace the transmission gear selection switch (see **TRANSMISSION GEAR SELECTION SWITCH TEST**), then go to step 20.

7. Turn the ignition switch to ON (II).
8. Measure the voltage between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 3 and body ground.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Wire side of female terminals

Fig. 134: Identifying Voltage Between Transmission Gear Selection Switch Connector Terminal No 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair open in the wire between transmission gear selection switch/park pin switch/ A/T gear position indicator panel light connector and ground (G503), or repair poor ground (G503), then go to step 20.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (49P).
12. Check for continuity between PCM connector terminal A47 and transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 3.

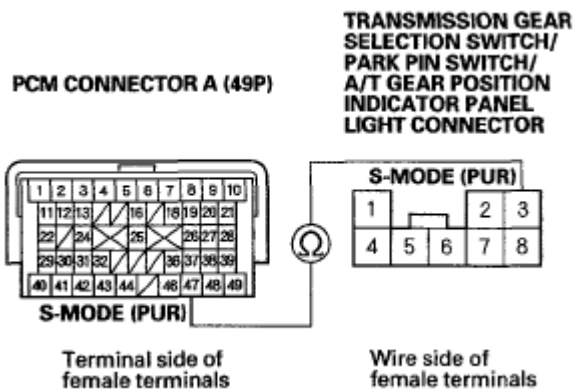


Fig. 135: Identifying Continuity Between PCM Terminal A47 And Transmission Gear Selection Switch Terminal 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between PCM connector terminal A47 and the transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector, then go to step 20.

NO - Go to step 13.

13. Reconnect all connectors.
14. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
15. Start the engine in P, wait for at least 10 seconds, then shift to M.
16. Push the shift lever toward upshift position (+) slowly, and release it; repeat this test 10 times or more.
17. Pull the shift lever toward downshift position (-) slowly, and release it; repeat this test 10 times or more.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0958 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

19. Monitor the OBD STATUS for P0958 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 15 and recheck.

20. Clear the DTC with the HDS.
21. Start the engine in P, wait for at least 10 seconds, then shift to M.
22. Push the shift lever toward upshift position (+) slowly, and release it; repeat this test 10 times or more.
23. Pull the shift lever toward downshift position (-) slowly, and release it; repeat this test 10 times or more.
24. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0958 indicated?

YES - Check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1.

NO - Go to step 25.

25. Monitor the OBD STATUS for P0958 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 24, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission gear selection switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0962: Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check that DTC P0962 recurs.

Is DTC P0962 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Valve A at 1.0 A.
6. Monitor the OBD STATUS for P0962 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

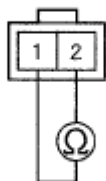
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve A connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE A CONNECTOR**



Terminal side of male terminals

Fig. 136: Identifying Resistance Between Clutch Pressure Control Solenoid Valve A Connector Terminals 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

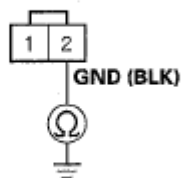
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 26.

10. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 2 and body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE A CONNECTOR**



Wire side of female terminals

Fig. 137: Identifying Continuity Between Clutch Pressure Control Solenoid Valve A Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve A and ground (G101), or repair poor ground (G101), then go to step 26.

11. Disconnect PCM connector C (49P).

12. Hook up a voltmeter between AT clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.
13. Check for continuity between PCM connector terminal C21 and A/T clutch pressure control solenoid valve A connector terminal No. 1.

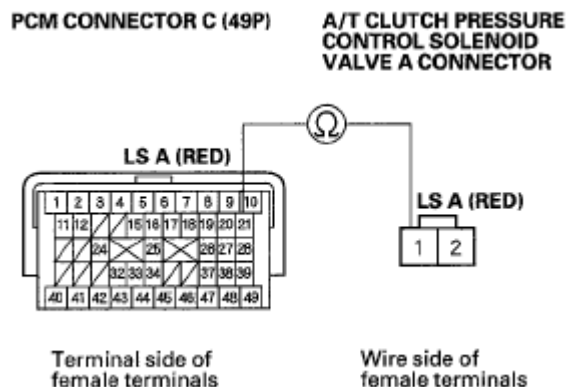


Fig. 138: Identifying Continuity Between PCM Terminal C21 And Clutch Pressure Control Solenoid Valve A Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Check for open or short in the wire between PCM connector terminal C21 and A/T clutch pressure control solenoid valve A, if the wiring is OK, go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect PCM connectors B (49P) and C (49P).
17. Turn the ignition switch to ON (II).
18. Measure the voltage between PCM connector terminals B2 and B41 or C41.

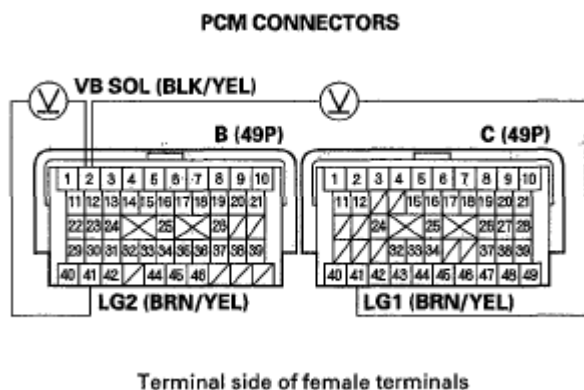


Fig. 139: Identifying Voltage Between PCM Connector Terminals B2 And B41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 21.

NO - Go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

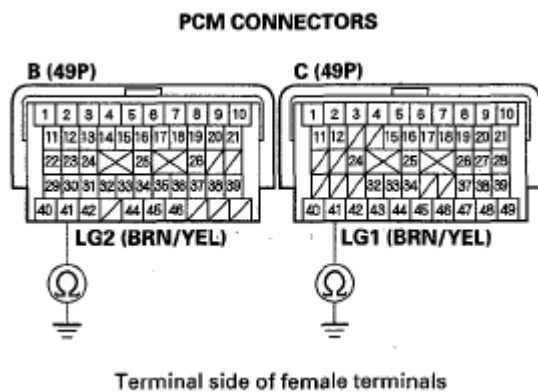


Fig. 140: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 18 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between PCM connector terminal B2 and the under-dash fuse/relay box, then go to step 26.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 26.

21. Reconnect all connectors.
22. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
23. Start the engine.
24. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0962 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 25.

25. Monitor the OBD STATUS for P0962 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 24, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 23 and recheck.

26. Clear the DTC with the HDS.
27. Start the engine.
28. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0962 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM, then go to step 1.

NO - Go to step 29.

29. Monitor the OBD STATUS for P0962 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 28, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 27 and recheck.

DTC P0963: Problem in A/T Clutch Pressure Control Solenoid Valve A

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

2. Start the engine.
3. Check that DTC P0963 recurs.

Is DTC P0963 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve A with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Solenoid Valve A at 0.2 A.
6. Monitor the OBD STATUS for P0963 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

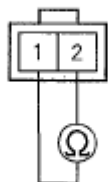
Does the result indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve A connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve A connector terminals No. 1 and No. 2.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE A CONNECTOR**



Terminal side of male terminals

Fig. 141: Identifying Resistance Between Clutch Pressure Control Solenoid Valve A Terminals No 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

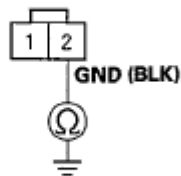
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 16.

10. Check for continuity between A/T clutch pressure control solenoid valve A connector terminal No. 2 and body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE A CONNECTOR**



Wire side of female terminals

Fig. 142: Identifying Continuity Between Clutch Pressure Control Solenoid Valve A Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve A and ground (G101), or repair poor ground (G101), then go to step 16.

11. Reconnect the A/T clutch pressure control solenoid valve A connector.
12. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
13. Start the engine.
14. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0963 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 15.

15. Monitor the OBD STATUS for P0963 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 14, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 13 and recheck.

16. Clear the DTC with the HDS.
17. Start the engine.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0963 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0963 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve A and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

DTC P0966: Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

2. Start the engine.
3. Check that DTC P0966 recurs.

Is DTC P0966 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid B in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Solenoid Valve B at 1.0 A.
6. Monitor the OBD STATUS for P0966 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

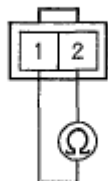
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve B connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B CONNECTOR



Terminal side of male terminals

Fig. 143: Identifying Resistance Between Clutch Pressure Control Solenoid Valve B Terminals No 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

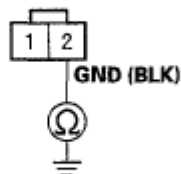
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 26.

10. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 2 and body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE B CONNECTOR**



Wire side of female terminals

Fig. 144: Identifying Continuity Between Clutch Pressure Control Solenoid Valve B Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve B and ground (G101), or repair poor ground (G101), then go to step 26.

11. Disconnect PCM connector B (49P).
12. Hook up a voltmeter between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.
13. Check for continuity between PCM connector terminal B10 and A/T clutch pressure control solenoid valve B connector terminal No. 1.

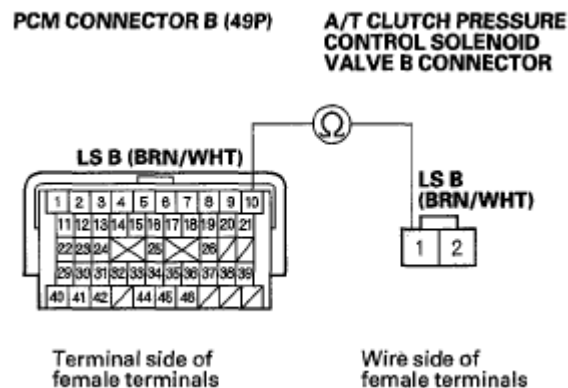


Fig. 145: Identifying Continuity Between PCM Terminal B10 And Clutch Pressure Control Solenoid Valve B Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Check for open or short in the wire between PCM connector terminal B10 and A/T clutch pressure control solenoid valve B, if the wiring is OK, go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect PCM connectors B (49P) and C (49P).
17. Turn the ignition switch to ON (II).
18. Measure the voltage between PCM connector terminals B2 and B41 or C41.

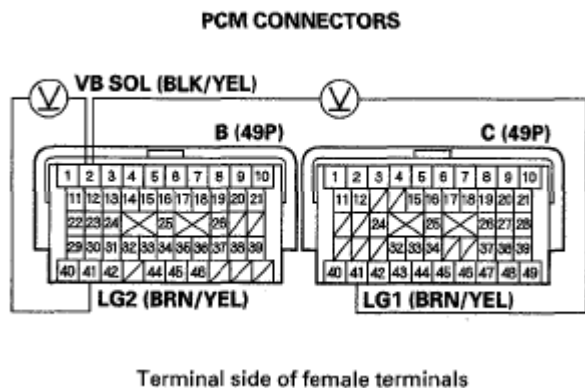


Fig. 146: Identifying Voltage Between PCM Connector Terminals B2 And B41

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 21.

NO - Go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

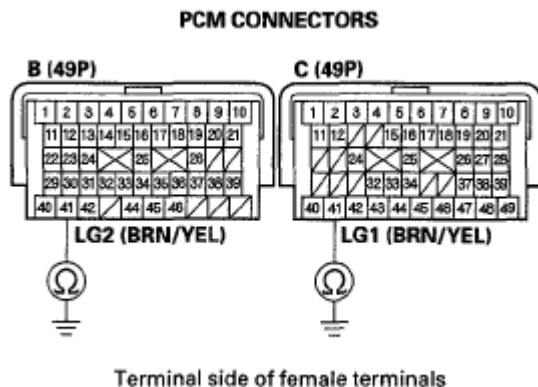


Fig. 147: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 18 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between PCM connector terminal B2 and the under-dash fuse/relay box, then go to step 26.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 26.

21. Reconnect all connectors.
22. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
23. Start the engine.
24. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0966 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 25.

25. Monitor the OBD STATUS for P0966 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 24, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 23 and recheck.

26. Clear the DTC with the HDS.
27. Start the engine.
28. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0966 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve Band the PCM, then go to step 1.

NO - Go to step 29.

29. Monitor the OBD STATUS for P0966 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 28, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 27 and recheck.

DTC P0967: Problem in A/T Clutch Pressure Control Solenoid Valve B

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check that DTC P0967 recurs.

Is DTC P0967 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid B in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve B with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Solenoid Valve B at 0.2 A.
6. Monitor the OBD STATUS for P0967 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

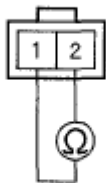
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve B connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve B connector terminals No. 1 and No. 2.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE B CONNECTOR**



Terminal side of male terminals

Fig. 148: Identifying Resistance Between Clutch Pressure Control Solenoid Valve B Terminals No 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

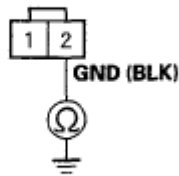
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**), then go to step 16.

10. Check for continuity between A/T clutch pressure control solenoid valve B connector terminal No. 2 and the body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE B CONNECTOR**



Wire side of female terminals

Fig. 149: Identifying Continuity Between Clutch Pressure Control Solenoid Valve B Terminal 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve C and ground (G101), or repair poor ground (G101), then go to step 16.

11. Reconnect the A/T clutch pressure control solenoid valve B connector.
12. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
13. Start the engine.
14. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0967 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 15.

15. Monitor the OBD STATUS for P0967 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED ?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 14, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 13 and recheck.

16. Clear the DTC with the HDS.
17. Start the engine.
18. Check for Temporary DTC(s) or DTC with the HDS.

Is DTC P0967 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0967 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 18, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve B and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

DTC P0970: Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check that DTC P0970 recurs.

Is DTC P0970 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Solenoid Valve C at 1.0 A.
6. Monitor the OBD STATUS for P0970 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

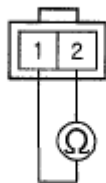
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve C connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE C CONNECTOR**



Terminal side of male terminals

Fig. 150: Identifying Resistance Between A/T Clutch Pressure Control Solenoid Valve C Terminals 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

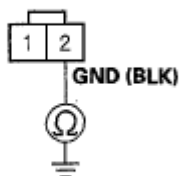
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**), then go to step 26.

10. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 2 and body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE C CONNECTOR**



Wire side of female terminals

Fig. 151: Identifying Continuity Between Clutch Pressure Control Solenoid Valve C Terminal 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

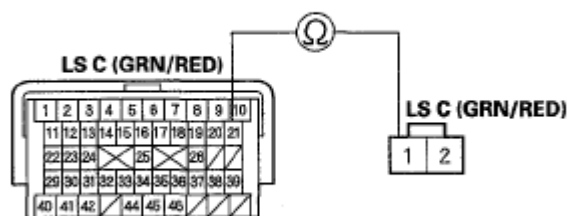
YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve C and ground (G101), or repair poor ground (G101), then go to step 26.

11. Disconnect PCM connector B (49P).
12. Turn the ignition switch to ON (II).
13. Check for continuity between PCM connector terminal B21 and A/T clutch pressure control solenoid valve C connector terminal No. 1.

PCM CONNECTOR B (49P)

**A/T CLUTCH PRESSURE
CONTROL SOLENOID
VALVE C CONNECTOR**



Terminal side of
female terminals

Wire side of
female terminals

Fig. 152: Identifying Continuity Between PCM Terminal B21 And Clutch Pressure Control Solenoid Valve C Terminal 1

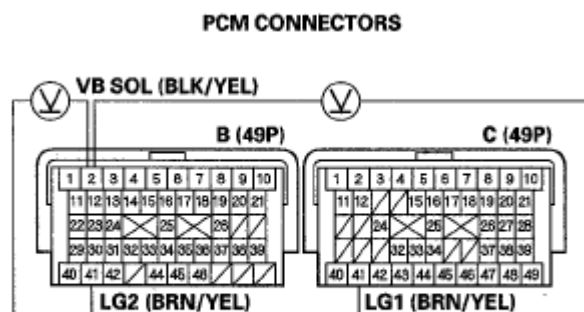
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Check for open or short in the wire between PCM connector terminal B21 and A/T clutch pressure control solenoid valve C, if the wiring is OK, go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect PCM connectors B (49P) and C (49P).
17. Turn the ignition to switch to ON (II).
18. Measure the voltage between PCM connector terminals B2 and B41 or C41.



Terminal side of female terminals

Fig. 153: Identifying Voltage Between PCM Connector Terminals B2 And B41

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 21.

NO - Go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

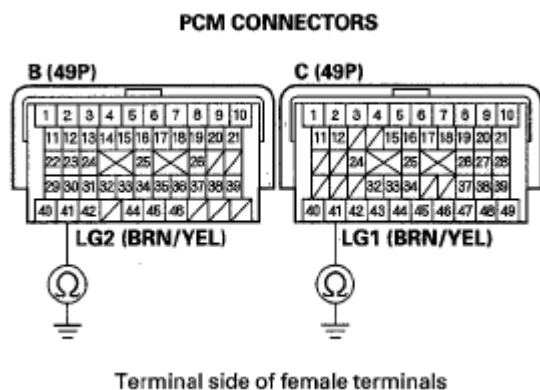


Fig. 154: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 18 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between PCM connector terminal B2 and the under-dash fuse/relay box, then go to step 26.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 26.

21. Reconnect all connectors.
22. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
23. Start the engine.
24. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0970 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 25.

25. Monitor the OBD STATUS for P0970 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 24, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

(see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 23 and recheck.

26. Clear the DTC with the HDS.
27. Start the engine.
28. Check for Temporary DTCs or DTCs with the HDS..

Is DTC P0970 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM, then go to step 1.

NO - Go to step 29.

29. Monitor the OBD STATUS for P0970 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 28, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 27 and recheck.

DTC P0971: Problem in A/T Clutch Pressure Control Solenoid Valve C

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine.
3. Check that DTC P0971 recurs.

Is DTC P0971 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu, and test A/T clutch pressure control solenoid valve C with the HDS.

Is the result NORMAL?

YES - Go to step 5.

NO - Go to step 7.

5. In the Clutch Pressure Control Solenoid Valve control menu, select Clutch Pressure Control Solenoid Valve C at 0.2 A.
6. Monitor the OBD STATUS for P0971 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

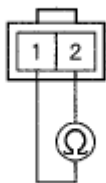
Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Disconnect A/T clutch pressure control solenoid valve C connector.
9. Measure the resistance between A/T clutch pressure control solenoid valve C connector terminals No. 1 and No. 2.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE C CONNECTOR**



Terminal side of male terminals

Fig. 155: Identifying Resistance Between Clutch Pressure Control Solenoid Valve C Terminals 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

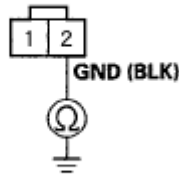
Is there 3-10 ohms?

YES - Go to step 10.

NO - Replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**), then go to step 16.

10. Check for continuity between A/T clutch pressure control solenoid valve C connector terminal No. 2 and body ground.

**A/T CLUTCH PRESSURE CONTROL
SOLENOID VALVE C CONNECTOR**



Wire side of female terminals

Fig. 156: Identifying Continuity Between Clutch Pressure Control Solenoid Valve C Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between A/T clutch pressure control solenoid valve C and ground (G101), or repair poor ground (G101), then go to step 16.

11. Reconnect A/T clutch pressure control solenoid valve C connector.
12. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
13. Start the engine.
14. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0971 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 15.

15. Monitor the OBD STATUS for P0971 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 14, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 13 and recheck.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

16. Clear the DTC with the HDS.
17. Start the engine.
18. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0971 indicated?

YES - Check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0971 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at A/T clutch pressure control solenoid valve C and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

DTC P0973: Short in Shift Solenoid Valve A Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine, and the brake pedal pressed with shifting from P to R.
3. Check that DTC P0973 recurs.

Is DTC P0973 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid A in the Miscellaneous Test Menu, and test shift solenoid valve A with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Start the engine, and the brake pedal pressed with shifting from P to R.
6. Monitor the OBD STATUS for P0973 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the SH A wire for an intermittent short to ground between shift solenoid valve A and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C20 and C41 or B41.

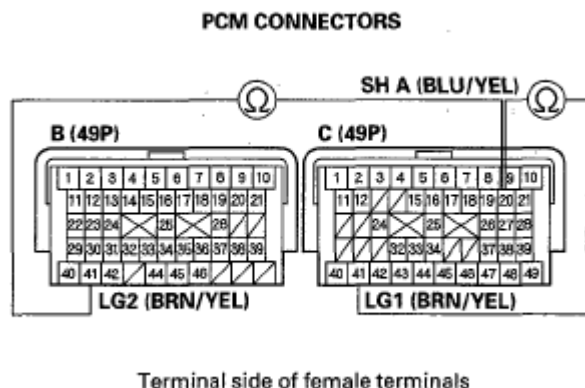


Fig. 157: Identifying Resistance Between PCM Connector Terminals C20 And C41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES - Go to step 11.

NO - Go to step 19.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminals C20 and C41 or B41.

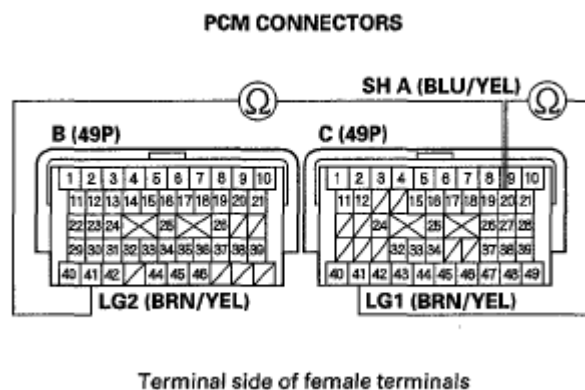


Fig. 158: Identifying Continuity Between PCM Connector Terminals C20 And C41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C20 and the shift solenoid harness connector, then go to step 24.

NO - Go to step 13.

13. Inspect shift solenoid valve A (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).

Is shift solenoid valve A OK?

YES - Go to step 14.

NO - Replace shift solenoid valve A or the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 18.

14. Disconnect PCM connector A (49P).
15. Turn the ignition switch to ON (II).
16. Measure the voltage between PCM connector terminals A1 and B41 or C41.

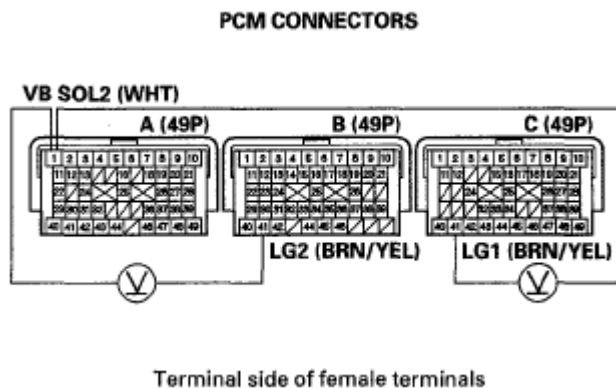


Fig. 159: Identifying Voltage Between PCM Connector Terminals A1 And B41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 19.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

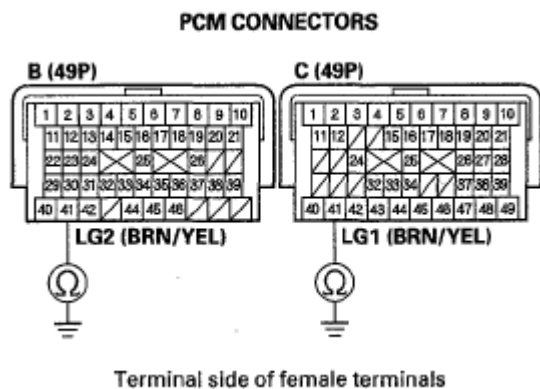


Fig. 160: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 10 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between PCM connector terminal A1 and the under-dash fuse/relay box, then go to step 24.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 24.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

19. Reconnect all connectors.
20. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
21. Start the engine, and shift to R.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0973 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0973 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

24. Clear the DTC with the HDS.
25. Start the engine, and shift to R.
26. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0973 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve A and the PCM, then go to step 1.

NO - Go to step 27.

27. Monitor the OBD STATUS for P0973 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 26, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

valve A and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 25 and recheck.

DTC P0974: Open in Shift Solenoid Valve A Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine in P. Wait for at least 1 second, then press the brake pedal, shift to R, and wait for at least 1 second.
3. Check that DTC P0974 recurs.

Is DTC P0974 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid A in the Miscellaneous Test Menu, and test shift solenoid valve A with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Start the engine in P. Wait for at least 1 second, then press the brake pedal, shift to R, and wait for at least 1 second.
6. Monitor the OBD STATUS for P0974 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at shift solenoid valve A and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).

10. Measure the resistance between PCM connector terminals C20 and C41 or B41.

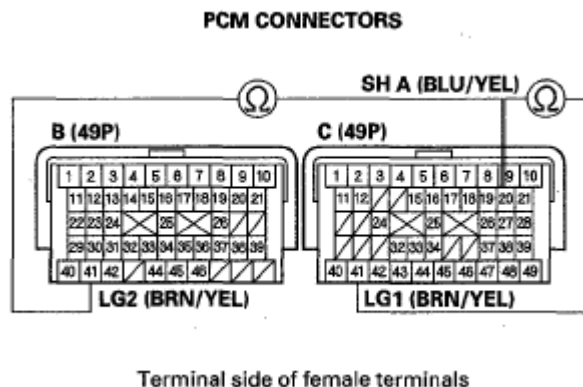


Fig. 161: Identifying Resistance Between PCM Connector Terminals C20 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES - Go to step 15.

NO - Go to step 11.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminal C20 and shift solenoid harness connector terminal No. 3.

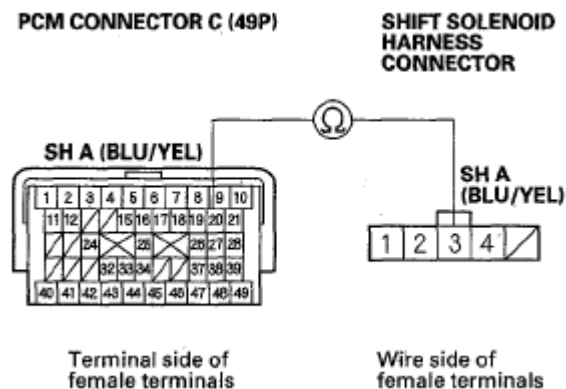


Fig. 162: Identifying Continuity Between PCM Connector Terminal C20 And Shift Solenoid Connector Terminal 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between PCM connector terminal C20 and the shift solenoid harness connector, then go to step 20.

13. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).
14. Check for continuity between shift solenoid harness connector terminal No. 3 and the shift solenoid valve A connector terminal.

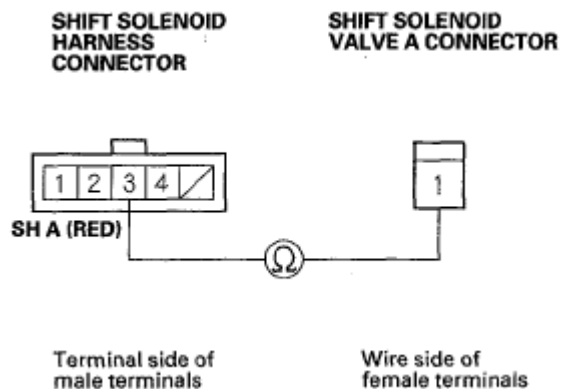


Fig. 163: Identifying Continuity Between Shift Solenoid Connector Terminal 3 And Shift Solenoid Valve A Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace shift solenoid valve A (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

NO - Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Start the engine in P. Wait for at least 1 second, then press the brake pedal, shift to R, and wait for at least 1 second.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0974 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

19. Monitor the OBD STATUS for P0974 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Start the engine in P. Wait for at least 1 second, then press the brake pedal, shift to R, and wait for at least 1 second.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0974 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve A and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0974 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve A and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0976: Short in Shift Solenoid Valve B Circuit (Short)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

2. Start the engine in P, and wait for at least 1 second.
3. Check that DTC P0976 recurs.

Is DTC P0976 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid B in the Miscellaneous Test Menu, and test shift solenoid valve B with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Start the engine in P, and wait for at least 1 second.
6. Monitor the OBD STATUS for P0976 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the SH B wire for an intermittent short to ground between shift solenoid valve B and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C28 and C41 or B41.

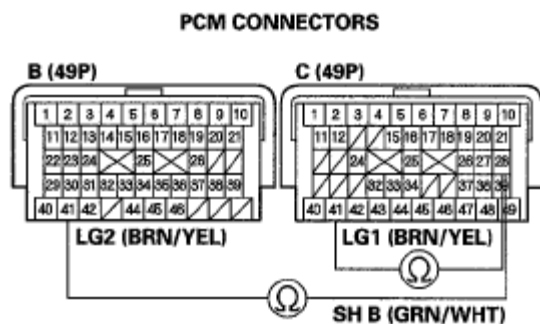


Fig. 164: Identifying Resistance Between PCM Connector Terminals C28 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES - Go to step 11.

NO - Go to step 18.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminals C28 and C41 or B41.

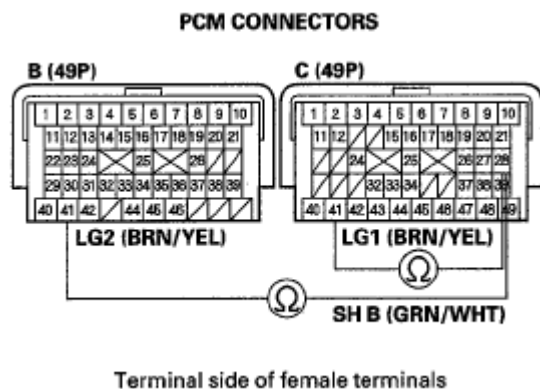


Fig. 165: Identifying Continuity Between PCM Connector Terminals C28 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C28 and the shift solenoid harness connector, then go to step 24.

NO - Go to step 13.

13. Inspect shift solenoid valve B (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).

Is shift solenoid valve B OK?

YES - Go to step 14.

NO - Replace shift solenoid valve B or the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 24.

14. Turn the ignition switch to ON (II).
15. Measure the voltage between PCM connector terminals B3 and B41 or C41.

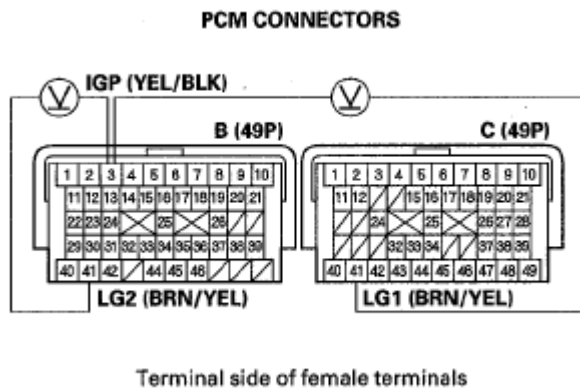


Fig. 166: Identifying Voltage Between PCM Connector Terminals B3 And B41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

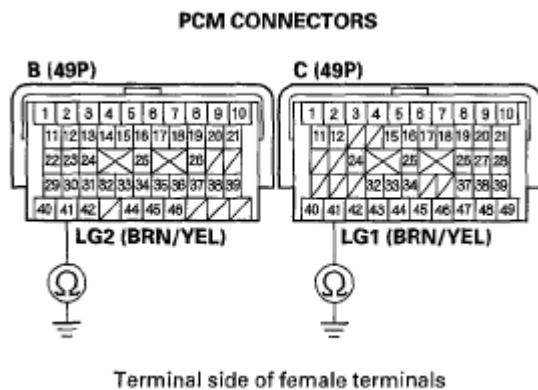


Fig. 167: Identifying Continuity Between PCM Connector Terminal B41 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 19 fuse in the under-dash fuse/relay box, and check the PGM-FI main relay 1. If the fuse and relay are OK, repair open in the wire between PCM connector terminal B3 and the under-dash fuse/relay box via the main relay, then go to step 24.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

poor ground (G101), then go to step 24.

18. Reconnect all connectors.
19. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
20. Start the engine.
21. Test-drive the vehicle so that it shifts from 1st thru 4th gear in D. Then continue driving for at least 1 second in 3rd or 4th gear.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0976 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0976 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 22, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

24. Clear the DTC with the HDS.
25. Start the engine.
26. Test-drive the vehicle so that it shifts from 1st thru 4th gear in D. Then continue driving for at least 1 second in 3rd or 4th gear.
27. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0976 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve B and the PCM, then go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for P0976 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the result indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 27, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve B and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 25 and recheck.

DTC P0977: Open in Shift Solenoid Valve B Circuit (Open)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Test-drive the vehicle so that it shifts from 1st thru 4th gear in D. Then continue driving for at least 1 second in 3rd or 4th gear.
3. Check that DTC P0977 recurs.

Is DTC P0977 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid B in the Miscellaneous Test Menu, and test shift solenoid valve B with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Test-drive the vehicle so that it shifts from 1st gear to 4th gear in D, then run the vehicle in 3rd or 4th gear for at least 1 second.
6. Monitor the OBD STATUS for P0977 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor

connections or loose terminals at shift solenoid valve B and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C28 and C41 or B41.

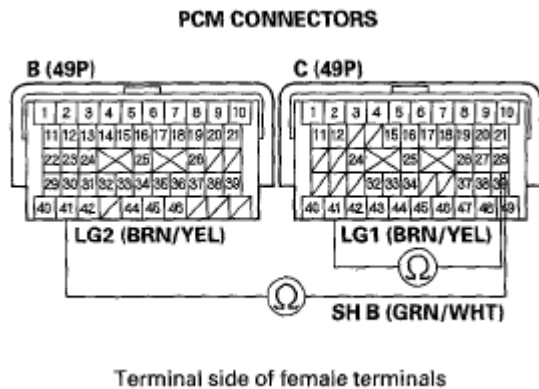


Fig. 168: Identifying Resistance Between PCM Connector Terminals C28 And C41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES - Go to step 15.

NO - Go to step 11.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminal C28 and shift solenoid harness connector terminal No. 4.

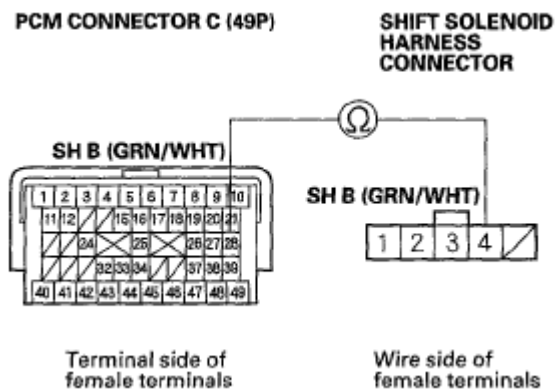


Fig. 169: Identifying Continuity Between PCM Connector Terminal C28 And Shift Solenoid Connector Terminal 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between PCM connector terminal C28 and the shift solenoid harness connector, then go to step 15.

13. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).
14. Check for continuity between shift solenoid harness connector terminal No. 4 and the shift solenoid valve B connector terminal.

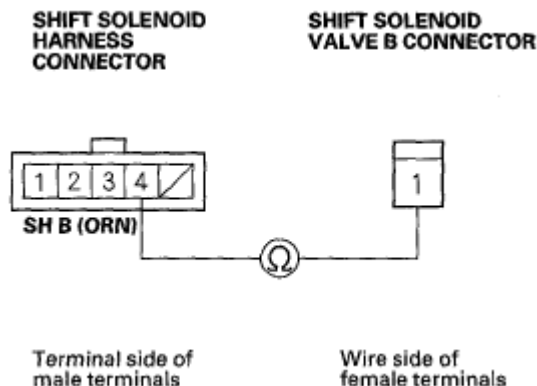


Fig. 170: Identifying Continuity Between Shift Solenoid Connector Terminal 4 And Shift Solenoid Valve B Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace shift solenoid valve B (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

NO - Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Test-drive the vehicle so that it shifts from 1st thru 4th gear in D. Then continue driving for at least 1 second in 3rd or 4th gear.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0977 indicated?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0977 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve B and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Test-drive the vehicle so that it shifts from 1st to 4th gear in D, then drive the vehicle in 3rd or 4th gear for at least 1 second.
22. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0977 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve B and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0977 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve B and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0979: Short in Shift Solenoid Valve C Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- **This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.**

1. Clear the DTC with the HDS.
2. Test-drive the vehicle in 1st gear in D.
3. Check that DTC P0979 recurs.

Is DTC P0979 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid C in the Miscellaneous Test Menu, and test shift solenoid valve C with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Test-drive the vehicle in 1st gear in D.
6. Monitor the OBD STATUS for P0979 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the SH C wire for an intermittent short to ground between shift solenoid valve C and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C39 and C41 or B41.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

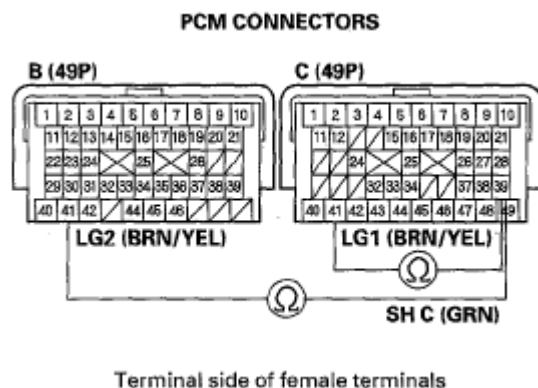


Fig. 171: Identifying Resistance Between PCM Connector Terminals C39 And C41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES - Go to step 11.

NO - Go to step 18.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminals C39 and C41 or B41.

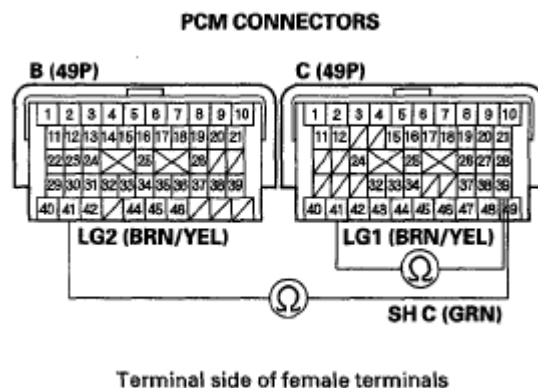


Fig. 172: Identifying Continuity Between PCM Connector Terminals C39 And C41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C39 and the shift solenoid harness connector, then go to step 24.

NO - Go to step 13.

13. Inspect shift solenoid valve C (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND**

SHIFT SOLENOID WIRE HARNESS REPLACEMENT).

Is shift solenoid valve C OK?

YES - Go to step 14.

NO - Replace shift solenoid valve C or the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 24.

14. Turn the ignition switch to ON (II).
15. Measure the voltage between PCM connector terminals B3 and B41 or C41.

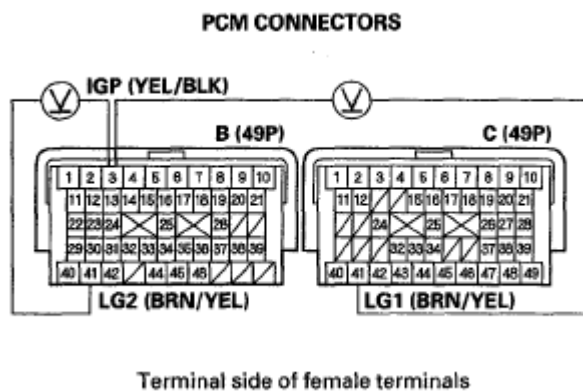


Fig. 173: Identifying Voltage Between PCM Connector Terminals B3 And B41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 18.

NO - Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body the ground.

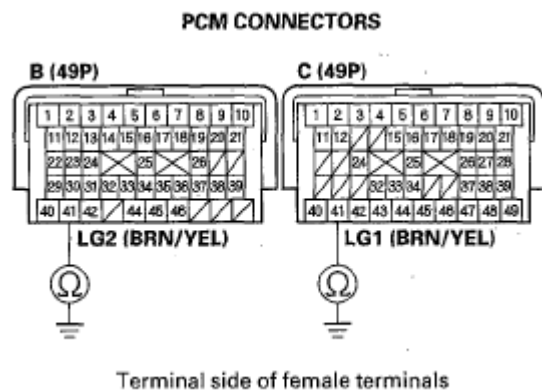


Fig. 174: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 19 fuse in the under-dash fuse/relay box, and check the PGM-FI main relay 1. If the fuse and relay are OK, repair open in the wire between PCM connector terminal B3 and the under-dash fuse/relay box via the main relay, then go to step 24.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 24.

18. Reconnect all connectors.
19. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
20. Start the engine in P, and wait for at least 1 second.
21. Test-drive the vehicle in 1st gear in D for at least 1 second.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0979 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0979 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 22, go to the **INDICATED DTCs TROUBLESHOOTING**.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

24. Clear the DTC with the HDS.
25. Start the engine in P, and wait for at least 1 second.
26. Test-drive the vehicle in 1st gear in D for at least 1 second.
27. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0979 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve C and the PCM, then go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for P0979 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 27, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve C and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 25 and recheck.

DTC P0980: Open in Shift Solenoid Valve C Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine in P.
3. Check that DTC P0980 recurs.

Is DTC P0980 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid C in the Miscellaneous Test Menu, and test shift solenoid valve C with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

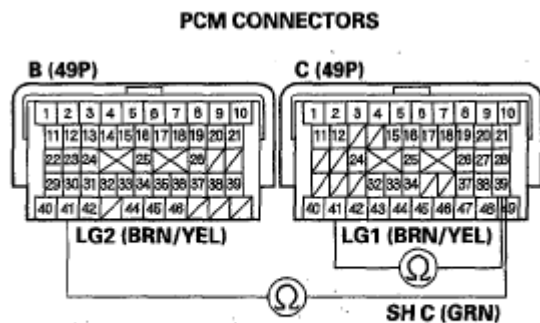
5. Start the engine in P.
6. Monitor the OBD STATUS for P0980 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at shift solenoid valve C and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C39 and C41 or B41.



Terminal side of female terminals

Fig. 175: Identifying Resistance Between PCM Connector Terminals C39 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES - Go to step 15.

NO - Go to step 11.

11. Disconnect the shift solenoid harness connector.

12. Check for continuity between PCM connector terminal C39 and shift solenoid harness connector terminal No. 2.

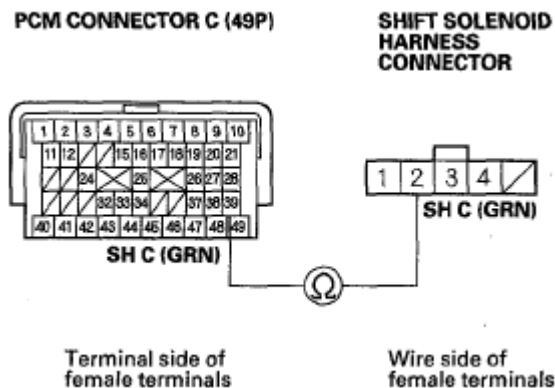


Fig. 176: Identifying Continuity Between PCM Connector Terminal C39 And Shift Solenoid Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between PCM connector terminal C39 and the shift solenoid harness connector, then go to step 20.

13. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).
14. Check for continuity between shift solenoid harness connector terminal No. 2 and the shift solenoid valve C connector terminal.

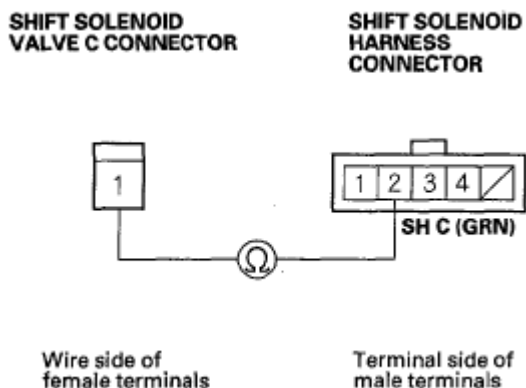


Fig. 177: Identifying Continuity Between Shift Solenoid Terminal 2 And Shift Solenoid Valve C Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is there continuity?

YES - Replace shift solenoid valve C (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

NO - Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Start the engine in P.
18. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P0980 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0980 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve C and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Start the engine in P.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0980 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve C and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0980 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve C and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P0982: Short in Shift Solenoid Valve D Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine in P.
3. Check that DTC P0982 recurs.

Is DTC P0982 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid D in the Miscellaneous Test Menu, and test shift solenoid valve D with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Start the engine in P.
6. Monitor the OBD STATUS for P0982 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check the SH D wire for an intermittent short to ground between shift solenoid valve D and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C9 and C41 or B41.

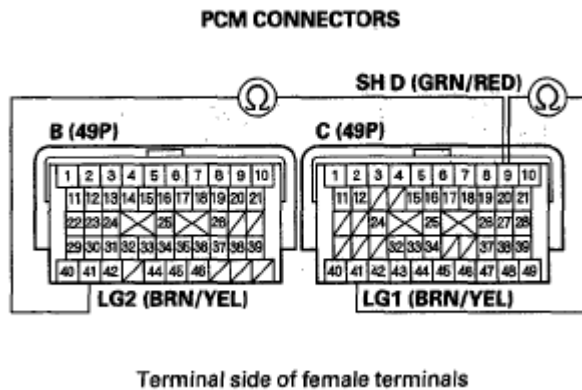


Fig. 178: Identifying Resistance Between PCM Connector Terminals C9 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 12 ohms?

YES - Go to step 11.

NO - Go to step 19.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminals C9 and C41 or B41.

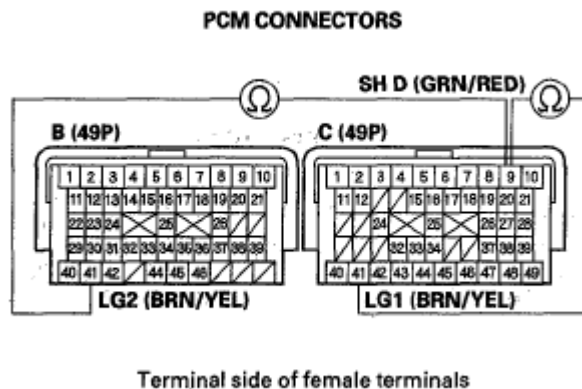


Fig. 179: Identifying Continuity Between PCM Connector Terminals C9 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal C9 and the shift solenoid harness connector, then go to step 24.

NO - Go to step 13.

13. Inspect shift solenoid valve D (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).

Is shift solenoid valve D OK?

YES - Go to step 14.

NO - Replace shift solenoid valve D or the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 24.

14. Disconnect PCM connector A (49P).
15. Turn the ignition switch to ON (II).
16. Measure the voltage between PCM connector terminals A1 and B41 or C41.

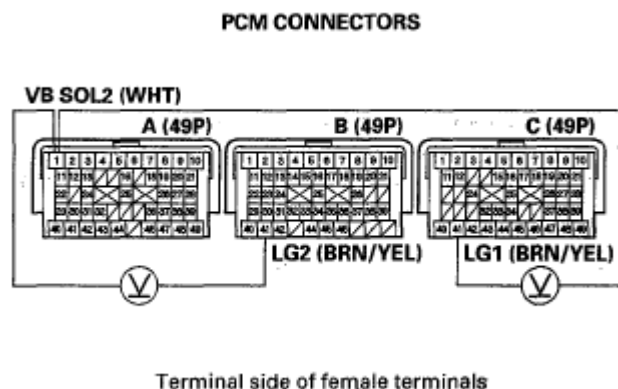


Fig. 180: Identifying Voltage Between PCM Connector Terminals A1 And B41
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 19.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Check for continuity between PCM connector terminals B41 and body ground, and between C41 and body ground.

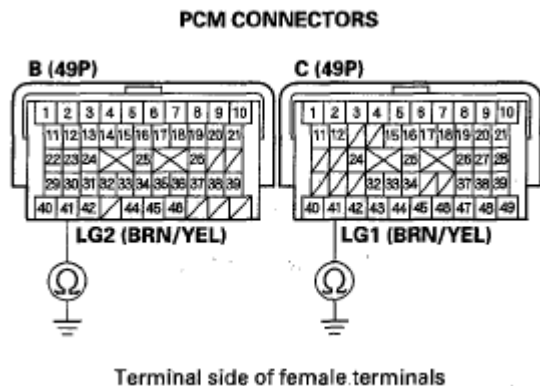


Fig. 181: Identifying Continuity Between PCM Connector Terminals B41 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a blown No. 10 fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between PCM connector terminal A1 and the under-dash fuse/relay box, then go to step 24.

NO - Repair open in the wires between PCM connector terminals B41, C41 and ground (G101), or repair poor ground (G101), then go to step 24.

19. Reconnect all connectors.
20. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
21. Start the engine in P.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0982 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0982 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 17, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO**

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

SUBSTITUTE THE PCM), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

24. Clear the DTC with the HDS.
25. Start the engine in P.
26. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0982 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve D and the PCM, then go to step 1.

NO - Go to step 27.

27. Monitor the OBD STATUS for P0982 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 21, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve D and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 20 and recheck.

DTC P0983: Open in Shift Solenoid Valve D Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Clear the DTC with the HDS.
2. Start the engine, and shift to N.
3. Check that DTC P0983 recurs.

Is DTC P0983 indicated?

YES - Go to step 7.

NO - Go to step 4.

4. Select Shift Solenoid D in the Miscellaneous Test Menu, and test shift solenoid valve D with the HDS.

Is a clicking sound heard?

YES - Go to step 5.

NO - Go to step 7.

5. Start the engine, and shift to N.
6. Monitor the OBD STATUS for P0983 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at shift solenoid valve D and the PCM. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connectors B (49P) and C (49P).
10. Measure the resistance between PCM connector terminals C9 and C41 or B41.

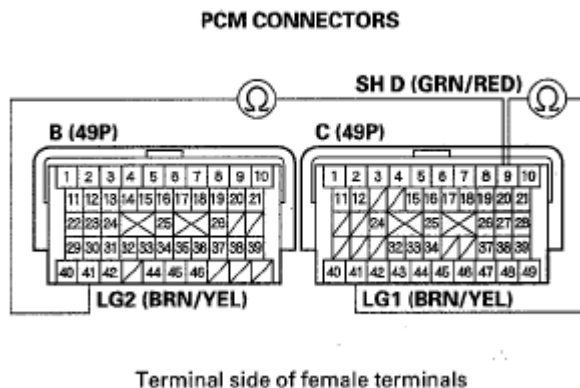


Fig. 182: Identifying Resistance Between PCM Connector Terminals C9 And C41
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12-25 ohms?

YES - Go to step 15.

NO - Go to step 11.

11. Disconnect the shift solenoid harness connector.
12. Check for continuity between PCM connector terminal C9 and shift solenoid harness connector terminal No. 1.

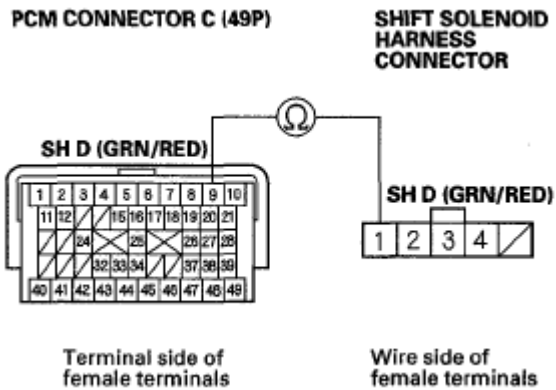


Fig. 183: Identifying Continuity Between PCM Connector Terminal C9 And Shift Solenoid Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between PCM connector terminal C9 and the shift solenoid harness connector, then go to step 20.

13. Remove the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**).
14. Check for continuity between shift solenoid harness connector terminal No. 1 and the shift solenoid valve D connector terminal.

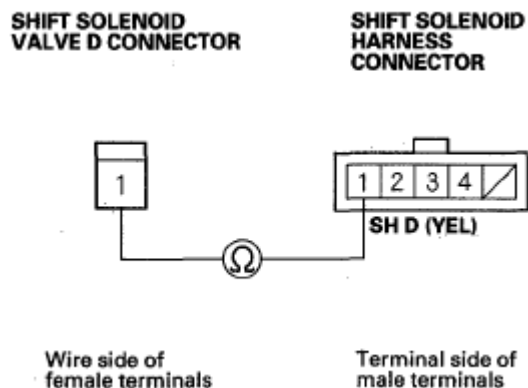


Fig. 184: Identifying Continuity Between Shift Solenoid Terminal 1 And Shift Solenoid Valve D Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace shift solenoid valve D (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT,**

AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT), then go to step 20.

NO - Replace the shift solenoid harness (see **SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT**), then go to step 20.

15. Reconnect all connectors.
16. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
17. Start the engine, and shift to N.
18. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0983 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for P0983 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the result indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 18, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve D and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 17 and recheck.

20. Clear the DTC with the HDS.
21. Start the engine, and shift to N.
22. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P0983 indicated?

YES - Check for poor connections and loose terminals at shift solenoid valve D and the PCM, then go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for P0983 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Troubleshooting is complete. If any other DTCs were indicated on step 22, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at shift solenoid valve D and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 21 and recheck.

DTC P16C0: PCM A/T Control System Incomplete Updated

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is indicated when PCM updating is incomplete.

1. Update the A/T software in the PCM (see **PCM UPDATE**).
2. Check whether the DTC P16C0 is indicated in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P16C0 indicated?

YES - Replace the original PCM (see **PCM REPLACEMENT**).

NO - PCM updating is complete.

DTC P1717: Open in Transmission Range Switch ATP RVS Switch Circuit

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Shift to P, R, and N. Then shift to R and wait at least 2 seconds. And check the A/T R Switch signal with the HDS in the A/T data list.

Is the A/T R Switch ON?

YES - Go to step 3.

NO - Check for proper transmission range switch installation (see **TRANSMISSION RANGE SWITCH TEST**), adjust the shift cable (see **SHIFT CABLE ADJUSTMENT**), then recheck.

3. Check the Reverse Switch (ATP RVS) signal with the HDS.

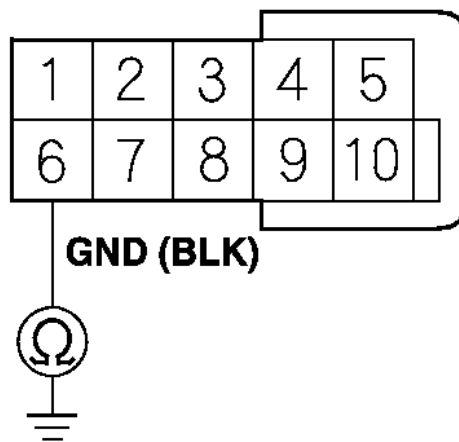
Is the Reverse Switch ON (ATP RVS)?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission range switch connector.
6. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 185: Identifying Continuity Between Transmission Range Switch Connector Terminal 6 And Body Ground

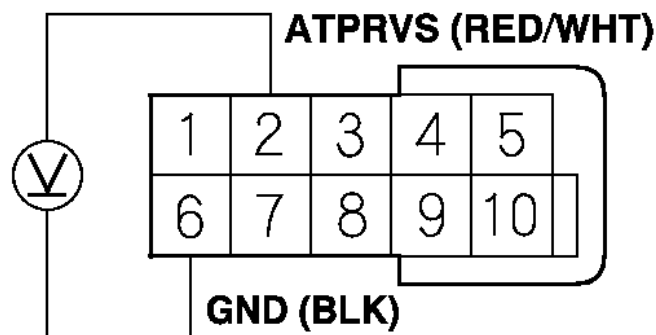
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair open in the wire between transmission range switch connector terminal No. 5 and ground (G101), or repair poor ground (G101), then go to step 15.

7. Turn the ignition switch to ON (II).
8. Measure the voltage between transmission range switch connector terminals No. 2 and No. 6.

TRANSMISSION RANGE SWITCH CONNECTOR

Wire side of female terminals

Fig. 186: Identifying Voltage Between Transmission Range Switch Connector Terminals No 2 And No 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

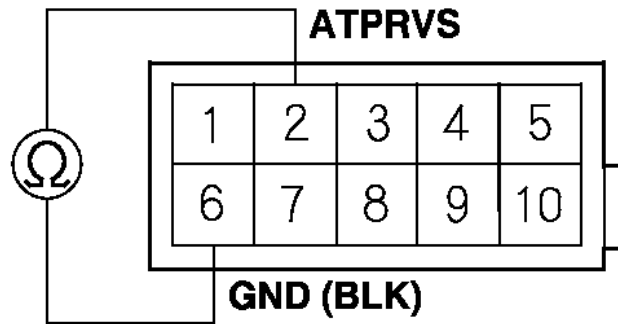
Is there voltage?

YES - Go to step 9.

NO - Repair open in the wire between PCM connector terminal C19 and the transmission range switch, then go to step 15.

9. Check for continuity between the No. 2 and No. 6 terminals at the transmission range switch.

TRANSMISSION RANGE SWITCH CONNECTOR



Terminal side of male terminals

Fig. 187: Identifying Continuity Between Transmission Range Switch Terminals No 2 And No 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity when the shift lever is in P, R, and N, and no continuity when the shift lever is in D and D3?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM. If the connections are OK, go to step 10.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**), then go to step 15.

10. Reconnect the transmission range switch connector.
11. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
12. Start the engine, and shift the shift lever slowly into P and R, then into N. Then, shift back into R, and wait at least 2 seconds.
13. Check for Temporary DTC(s) to DTCs with the HDS.

Is DTC P1717 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 14.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

14. Monitor the OBD STATUS for P1717 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 13, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 12 and recheck.

15. Clear the DTC with the HDS.
16. Start the engine, and shift the shift lever slowly into P and R, then into N. Then, shift back into R, and wait at least 2 seconds.
17. Check for Temporary DTC(s) to DTCs with the HDS.

Is DTC P1717 indicated?

YES - Check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for P1717 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete. If any other DTCs were indicated on step 17, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the transmission range switch and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, return to step 16 and recheck.

DTC P1743: Problem in Shift Control System; Shift Valve E Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 7.

NO - Replace the ATF (see step 6 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P1743 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve E in the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), replace the main valve body, or replace the transmission, then go to step 7.

NO - Intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
8. Monitor the OBD STATUS for P1743 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - Return to step 7.

DTC P1744: Problem in Shift Control System; Shift Valve E Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Replace the transmission, then go to step 7.

NO - Replace the ATF (see step 6 on), then go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Monitor the OBD STATUS for P1744 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair shift valve E in the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), replace the main valve body, or replace the transmission, then go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 4 and recheck.

7. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
8. Monitor the OBD STATUS for P1744 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - Return to step 7.

DTC P1745: Problem in Shift Control System; Servo Control Valve Stuck OFF or Servo Control Valve Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Make sure that the transmission is filled to the proper level, and check for fluid leaks.
3. Drain the ATF (see step 5 on) through a strainer. Inspect the strainer for metal debris or excessive clutch material.

Does the strainer have metal debris or excessive clutch material?

YES - Replace the transmission, then go to step 7.

NO - Replace the ATF (see step 6 on), then go to step 4.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

4. Clear the DTC with the HDS.
5. Test-drive the vehicle in D through all five gears at speeds over 5 mph (8 km/h). Do not release the accelerator pedal until after the transmission shifts to 5th gear.
6. Monitor the OBD STATUS for P1745 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate FAILED?

YES - Repair the servo control valve in the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), servo valve in the regulator valve body (see **REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), or replace the main valve body, regulator valve body, then go to step 7, or replace the transmission.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

7. Test-drive the vehicle in D through all five gears at speeds over 5 mph (8 km/h). Do not release the accelerator pedal until after the transmission shifts to 5th gear.
8. Monitor the OBD STATUS for P1745 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - Troubleshooting is complete.

NO - Return to step 7.

DTC P1780: Problem in Shift Control System

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
3. Check for other Temporary DTCs or DTCs indicated simultaneous with the code P1780.

NOTE: DTC P1780 means there is one or more A/T DTCs about the shift control system.

Are there other DTCs?

YES - Troubleshoot a problem as indicated by the DTC.

NO - Go to step 4.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

4. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
5. Test-drive the vehicle for several minutes with the shift lever in D, and let the transmission shift through all five gears.
6. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P1780 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 7.

7. Monitor the OBD STATUS for P1780 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 6, go to the **INDICATED DTC'S TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 5 and recheck.

DTC P2122: Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit Low Voltage Input

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to ON (II).
3. Check whether DTC P2122 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P2122 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P2122 in the PGM-FI System (see **DTC P2122: APP SENSOR A (TP SENSOR D) CIRCUIT LOW VOLTAGE**).

NO - Go to step 4.

4. Check whether DTC P2122 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Is DTC P2122 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and wait at least 2 minutes.
7. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC P2122 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P2122 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 6 and recheck.

DTC P2123: Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit High Voltage Input

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to ON (II).
3. Check whether DTC P2123 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC P2123 indicated in the PGM-FI system?

YES - Troubleshoot for DTC P2123 in the PGM-FI System (see **DTC P2123: APP SENSOR A (TP SENSOR D) CIRCUIT HIGH VOLTAGE**).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

NO - Go to step 4.

4. Check whether DTC P2123 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC P2123 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and wait at least 2 minutes.
7. Check for DTC(s) in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC P2123 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for P2123 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the accelerator pedal position sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 6 and recheck.

DTC U0028: F-CAN Communication Circuit Error (F-CAN Bus OFF)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to ON (II).
3. Check whether DTC U0028 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC U0028 indicated in the PGM-FI system?

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

YES - Troubleshoot for DTC U0028 in the PGM-FI System (see **DTC U0028: F-CAN MALFUNCTION (BUS-OFF (PCM))**).

NO - Go to step 4.

4. Check whether DTC U0028 is indicated in the DTCs/ Freeze Data in A/T Mode Menu with the HDS.

Is DTC U0028 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and wait at least 2 minutes.
7. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC U0028 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for U0028 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the PCM and the connectors on the F-CAN circuit. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 6 and recheck.

DTC U0122: Lost Communication with VSA Modulator-Control Unit

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to ON (II).

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

3. Check whether DTC U0122 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC U0122 indicated in the PGM-FI system?

YES - Troubleshoot for DTC U0122 in the PGM-FI System (see **DTC U0122: F-CAN MALFUNCTION (PCM-VSA MODULATOR-CONTROL UNIT)**).

NO - Go to step 4.

4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0122 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and wait at least 2 minutes.
7. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC U0122 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for U0122 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCs TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the VSA modulator-control unit the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 6 and recheck.

9. Check the communication line between the VSA modulator-control unit and the gauge control module with the HDS.

Is there a malfunction in the F-CAN line between the VSA modulator-control unit and the gauge control

module?

YES - Repair open in the wires between the VSA modulator-control unit connector and the CAN communication lines.

NO - Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), then recheck. If the symptom/indication goes away with a known-good VSA modulator-control unit, replace the original VSA modulator-control unit.

DTC U0155: Lost Communication with Gauge Control Module

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review General Troubleshooting Information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Clear the DTC with the HDS.
2. Turn the ignition switch to ON (II).
3. Check whether DTC U0155 is indicated in the DTCs/ Freeze Data in PGM-FI Mode Menu with the HDS.

Is DTC U0155 indicated in the PGM-FI system?

YES - Troubleshoot for DTC U0155 in the PGM-FI System (see **DTC U0155: F-CAN MALFUNCTION (PCM-GAUGE CONTROL MODULE)**).

NO - Go to step 4.

4. Check whether the DTC U0155 is indicated in the DTCs/Freeze Data in A/T Mode Menu with the HDS.

Is DTC U0155 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Update the A/T software in the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**).
6. Start the engine, and wait at least 2 minutes.
7. Check for Temporary DTC(s) or DTCs with the HDS.

Is DTC U0155 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for U0155 in the DTCs/ Freeze Data in A/T Mode Menu for a pass/fail.

Does the HDS indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other DTCs were indicated on step 7, go to the **INDICATED DTCS TROUBLESHOOTING**.

NO - If the HDS indicates FAILED, check for poor connections and loose terminals at the gauge control module and the PCM. If the PCM was updated, substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, return to step 6 and recheck.

ROAD TEST

1. Warm up the engine to normal operating temperature (the radiator fan comes on).
2. Apply the parking brake, and block all four wheels. Start the engine, then shift to D while pressing the brake pedal. Press the accelerator pedal, and release it suddenly. The engine should not stall.
3. Repeat step 2 in all shift lever positions.
4. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

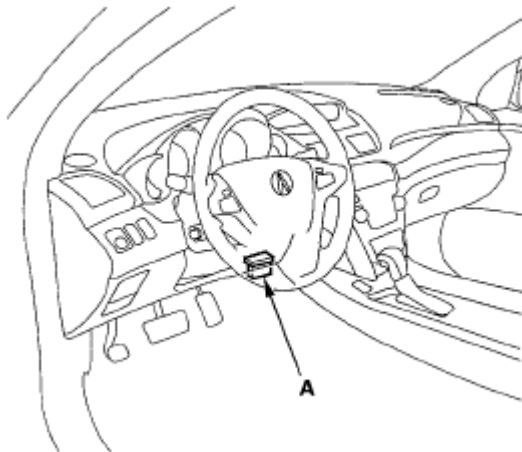


Fig. 188: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Prepare the HDS to take a HIGH SPEED SNAPSHOT (refer to the HDS user's guide for more details if needed):
 - Select High Speed icon.
 - Select these parameters:
 - Vehicle Speed
 - Output Shaft (Countershaft) Speed

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- Input Shaft (Mainshaft) Speed (rpm)
 - Engine Speed
 - Relative TP Sensor
 - APP Sensor A
 - ATF Temp Sensor
 - Battery Voltage
 - Shift Control
 - Brake Switch
 - Set the Trigger Type to Parameter.
 - Adjust the Parameter setting to APP Sensor A above 1.2 V.
 - Set the recording time to 60 seconds.
 - Set the trigger point to -30 seconds.
6. Find a suitable level road. When you are ready to do the test, press OK on the HDS.
 7. Monitor the HDS and accelerate quickly until APP Sensor A reads 1.2 V. Maintain a steady throttle until the transmission shifts to 5th gear, then slow the vehicle and come to a stop.
 8. Save the snapshot if the entire event was recorded or increase the recording time setting as necessary and repeat step 7.
 9. Adjust the parameter setting to 2.49 V. Test-drive the vehicle again. While monitoring the HDS, accelerate quickly until APP Sensor A reads 2.49 V. Maintain a steady throttle until the transmission shifts to 5th gear (or reasonable speed), then slow the vehicle and come to a stop.
 10. Save the snapshot if the entire event was recorded or increase the recording time setting as necessary and repeat step 9.
 11. Accelerate quickly until the accelerator pedal is to the floor. Maintain a steady pedal until the transmission shifts to 3rd gear, then slow to a stop, and save the snapshot.
 12. Review each snapshot individually, and compare the Shift Command, the APP Sensor A voltage, and the Vehicle Speed to the following table.

Upshift: D Position

VOLTAGE REFERENCE

APP sensor voltage: 1.2V	
1st-->2nd	9-13 mph (16-20 km/h)
2nd-->3rd	17-21 mph (28-34 km/h)
3rd-->4th	25-31 mph (40-48 km/h)
4th-->5th	40-48 mph (65-75 km/h)
Lock-up ON	47-53 mph (76-84 km/h)
APP sensor voltage: 2.49 V	
1st-->2nd	22-26 mph (36-42 km/h)
2nd-->3rd	45-53 mph (73-83 km/h)
3rd-->4th	70-78 mph (113-125 km/h)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

4th-->5th	99-109 mph (159-175 km/h)
Lock-up ON	100-110 mph (160-176 km/h)
Fully-opened throttle APP sensor voltage: 4.42 V	
1st-->2nd	36-42 mph (57-67 km/h)
2nd-->3rd	65-73 mph (104-116 km/h)
3rd-->4th	99-109 mph (158-174 km/h)

Downshift: D Position (reference)

VOLTAGE REFERENCE

APP sensor A voltage: 1.2 V	
Lock-up OFF	44-50 mph (71-79 km/h)
5th-->4th	35-41 mph (55-65 km/h)
4th-->3rd	17-21 mph (28-34 km/h)
3rd-->2nd	7-11 mph (11-17 km/h)
APP sensor A voltage: 2.49 V	
Lock-up OFF	65-73 mph (104-116 km/h)
Fully-opened throttle APP sensor A voltage: 4.42 V	
5th-->4th	128-140 mph (206-224 km/h)
4th-->3rd	78-88 mph (126-140 km/h)
3rd-->2nd	54-58 mph (87-99 km/h)
3rd-->1st	26-32 mph (42-52 km/h)

13. Drive the vehicle in 4th or 5th gear in the sequential sportshift mode in M, then downshift to 2nd gear. The vehicle should immediately begin to slow down from engine braking.
14. Shift to R. Then, from a full stop, accelerate to full throttle, and check for abnormal noise and clutch slippage.
15. Park the vehicle on a slope (about 16 degrees), apply the brake, and shift into P. Release the brake; the vehicle should not move.

NOTE: Always use the brake to hold the vehicle when stopped on an incline in gear. Depending on the grade of the incline, the vehicle could roll backwards if the brake is released.

STALL SPEED TEST

1. Make sure the transmission fluid is filled to the proper level (see ATF LEVEL CHECK).
2. Apply the parking brake, and block all four wheels.
3. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).

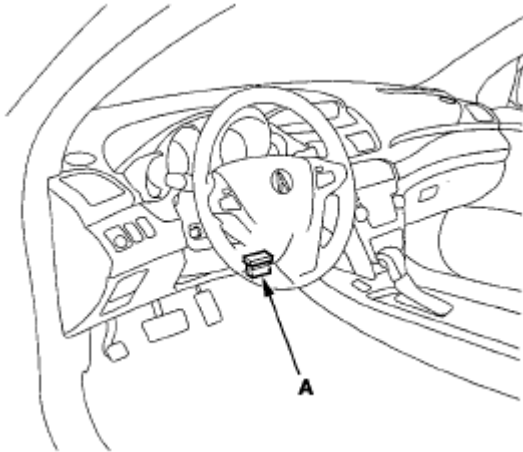


Fig. 189: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make sure the A/C switch is OFF.
5. After the engine has warmed up to normal operating temperature (the radiator fan comes on), shift to D.
6. Firmly press and hold the brake pedal then, while still holding the brake pedal, press the accelerator pedal for six to eight seconds, and note max engine speed. Do not move the shift lever while raising the engine speed.
7. Allow 2 minutes for cooling, then repeat the test in R.

NOTE:

- Do not test stall speed for more than 10 seconds at a time.
- Stall speed tests should be used for diagnostic purposes only.
- Stall speed should be the same in D and R.
- Do not test stall speed with A/T pressure gauges installed.

Stall Speed rpm:

Specification: 1,950 rpm

Service Limit: 1,800-2,100 rpm

8. If any of the stall speeds are out of the service limit, the possible problems and probable causes are listed in the table.

PROBLEM SYMPTOM CHART

Problem	Probable causes
Stall speed rpm high in D and R	• ATF pump output low • Regulator valve stuck • Slipping clutch
Stall speed rpm high in R	Slippage of 5th clutch

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Stall speed rpm low in D and R

- Engine output low
- Engine throttle valve closed
- Torque converter one-way clutch slipping

PRESSURE TEST

Special Tools Required

- A/T oil pressure gauge set 07406-0020400 or 07406-0020401
 - A/T pressure hose, 2,210 mm 07MAJ-PY4011A
 - A/T pressure hose adapter 07MAJ-PY40120
1. Make sure the transmission fluid is filled to the proper level (see **ATF LEVEL CHECK**).
 2. Raise the vehicle on a lift, and make sure it is securely supported.
 3. Allow all four wheels to rotate freely.
 4. Remove the transmission undercover (A) and splash shield (B).

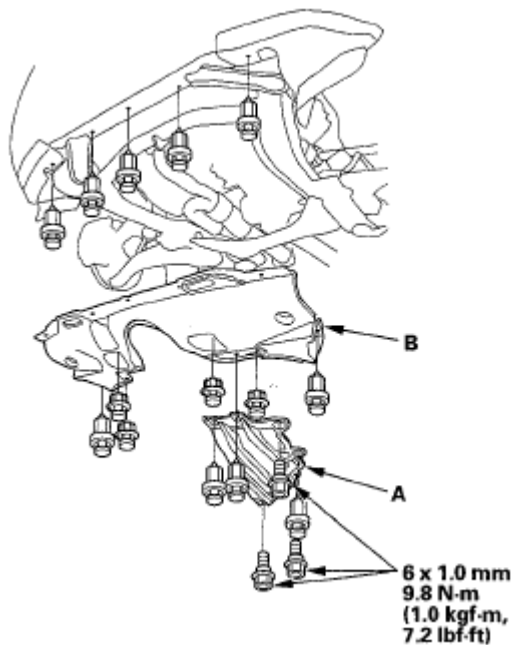


Fig. 190: Identifying Transmission Undercover And Splash Shield With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the damper from the front subframe.

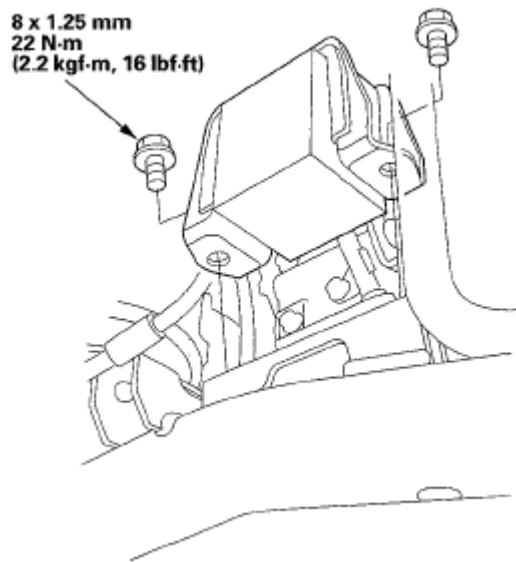


Fig. 191: Identifying Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the HDS to the DLC (A), and go to the A/T data list. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

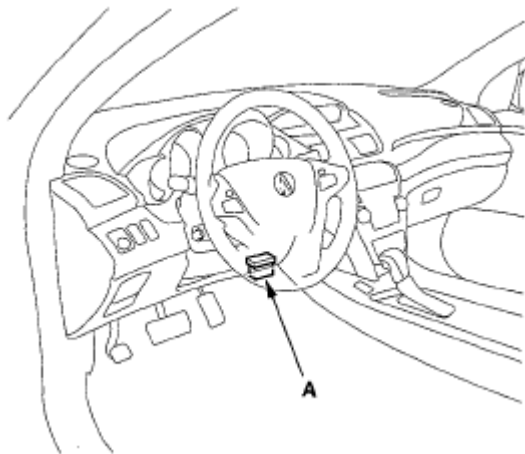
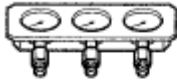


Fig. 192: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the oil pressure gauge to the line pressure inspection hole (A). Do not allow dust or other foreign particles to enter the hole while connecting the gauge.

**A/T OIL PRESSURE
GAUGE SET W/PANEL**
07406-0020400 or 07406-0020401



**A/T PRESSURE
HOSE, 2,210 mm**
07MAJ-PY4011A



**A/T PRESSURE
HOSE ADAPTER**
07MAJ-PY40120

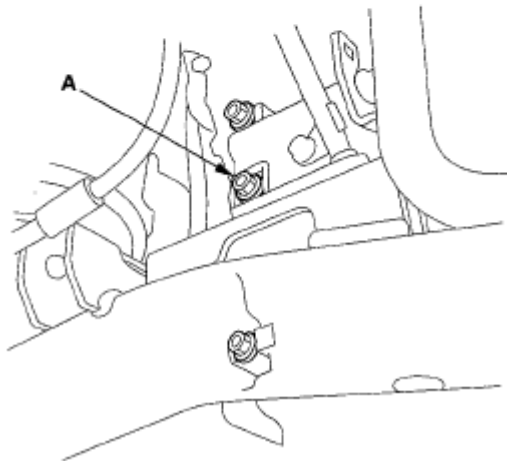
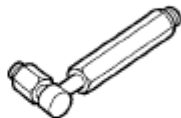


Fig. 193: Identifying A/T Oil Pressure Gauge Set And Line Pressure Inspection Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Start the engine in P, and warm it up to normal operating temperature (the radiator fan comes on).
9. Measure the line pressure at the line pressure inspection port (A) in P or N while holding the engine speed at 2,000 rpm.

NOTE: Higher pressure may be indicated if measurements are made in the shift lever position other than P or N.

FLUID PRESSURE REFERENCE

Pressure	Fluid Pressure	
	Standard	Service Limit
Line (A)	950-1,010 kPa (9.7-10.3 kgf/cm ² , 138-147 psi)	900 kPa (9.2 kgf/cm ² , 131 psi)

10. Turn the engine off, then disconnect the oil pressure gauge from the line pressure inspection port.
11. Install the sealing bolt to the line pressure inspection port with a new sealing washer, and tighten the bolt to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse the old sealing washer.
12. Connect the oil pressure gauge to the 1st clutch pressure inspection port (B) and the 1st-hold clutch

pressure inspection port (C).

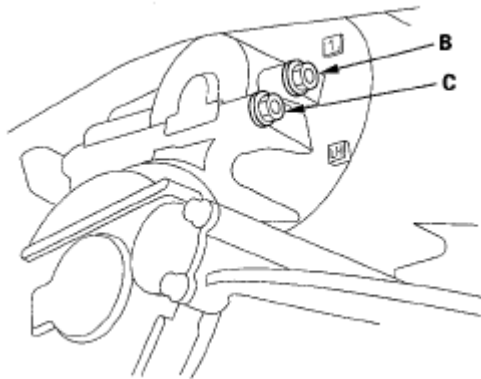


Fig. 194: Identifying 1st Clutch Pressure Inspection Port And 1st-Hold Clutch Pressure Inspection Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the air cleaner housing and intake air duct, and connect the oil pressure gauge to the 2nd clutch pressure inspection port (D). Then temporarily install the air cleaner housing and intake air duct.

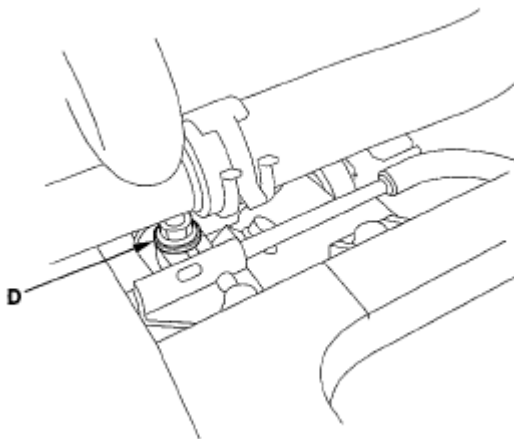


Fig. 195: Identifying 2nd Clutch Pressure Inspection Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Start the engine disable the VSA by pressing the VSA OFF switch, the shift in to P.
15. Shift into 1st gear, and measure the 1st clutch pressure at the 1st clutch pressure inspection port (B) and 1st-hold clutch pressure at the 1st-hold clutch pressure inspection port (C) while holding the engine speed at 2,000 rpm.
16. Upshift to 2nd gear by pushing the shift lever, and measure the 2nd clutch pressure at the 2nd clutch pressure inspection port (D) while holding the engine speed at 2,000 rpm.

FLUID PRESSURE REFERENCE

Pressure	Fluid Pressure	

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	Standard	Service Limit
1st clutch (B) 2nd clutch (D)	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
1st-hold clutch (C)	680-760 kPa (6.9-7.7 kgf/cm ² , 98-110 psi)	630 kPa (6.4 kgf/cm ² , 91 psi)

17. Turn the engine off, remove the air cleaner housing and intake air duct, then disconnect the oil pressure gauges from the 1st clutch pressure, 1st-hold clutch pressure, and 2nd clutch pressure inspection ports.
18. Install the sealing bolts in the 1st clutch pressure, 1st-clutch hold clutch pressure, and 2nd clutch pressure inspection ports with new sealing washers, and tighten the bolts to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse the old sealing washers.
19. Install the air cleaner housing and intake air duct.
20. Connect the oil pressure gauge to the 3rd clutch pressure inspection port (E) and the 5th clutch pressure inspection port (G).

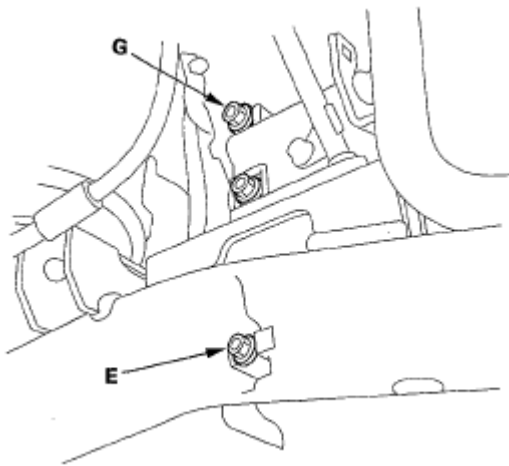


Fig. 196: Identifying 3rd Clutch Pressure Inspection Port And 5th Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Connect the oil pressure gauge to the 4th clutch pressure inspection port (F).

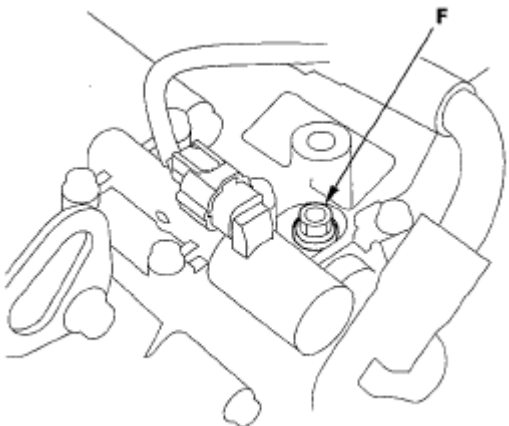


Fig. 197: Identifying 4th Clutch Pressure Inspection Port
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Cancel the transmission 2nd-hold control mode with the HDS; select Pressure Assistance Mode in the Miscellaneous Test Menu of the A/T Mode Menu.
23. Start the engine, and shift to D3.
24. Measure the 3rd clutch pressure at the 3rd clutch pressure inspection port (D) while holding the engine speed at 2,000 rpm.
25. Shift to D, and measure the 4th clutch pressure at the 4th clutch pressure inspection port (E) while holding the engine speed at 2,000 rpm.
26. Measure the 5th clutch pressure at the 5th clutch pressure inspection port (F) while holding the engine speed at 2,000 rpm.

FLUID PRESSURE REFERENCE

Pressure	Fluid Pressure	
	Standard	Service Limit
3rd clutch (E)	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
4th clutch (F)		
5th clutch (G)		

27. Bring the engine back to an idle, then apply the brake pedal to stop the wheels from rotating.
28. Shift to R, then release the brake pedal. Raise the engine speed to 2,000 rpm, and measure the 5th clutch pressure at the 5th clutch pressure inspection port (G).

FLUID PRESSURE REFERENCE

Pressure	Fluid Pressure	
	Standard	Service Limit
5th clutch (G) in R	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)

29. Turn the engine off, then disconnect the oil pressure gauges from the 3rd, 4th, and 5th clutch pressure inspection ports.
30. Install the sealing bolts in the 3rd, 4th, and 5th clutch pressure inspection ports with new sealing washers, and tighten the bolts to 18 N.m (1.8 kgf.m, 13 lbf.ft). Do not reuse the old sealing washers.
31. If any of the pressures are out of the service limit, the possible problems and probable causes are listed in the table.

PROBLEM SYMPTOM CHART

Problem	Probable causes
No or low line pressure	• Torque converter • ATF pump • Regulator valve • Torque converter check valve

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

	• Clogged ATF strainer
No or low 1st clutch pressure	• 1st clutch • O-rings
No or low 2nd clutch pressure	• 2nd clutch • O-rings
No or low 3rd clutch pressure	• 3rd clutch • O-rings
No or low 4th clutch pressure	• 4th clutch • O-rings
No or low 5th clutch pressure	• 5th clutch • O-rings
No or low 5th clutch pressure in R	• Servo valve • 5th clutch • O-rings
No or low 1st-hold clutch pressure	• 1st-hold clutch • O-rings

32. Install the damper on the front subframe.
33. Install the splash shield and transmission undercover.
34. Relive any VSA DTCs with the HDS, and clear them.

SHIFT SOLENOID VALVE TEST, REPLACEMENT, AND SHIFT SOLENOID WIRE HARNESS REPLACEMENT

1. Connect the HDS to the DLC (A).

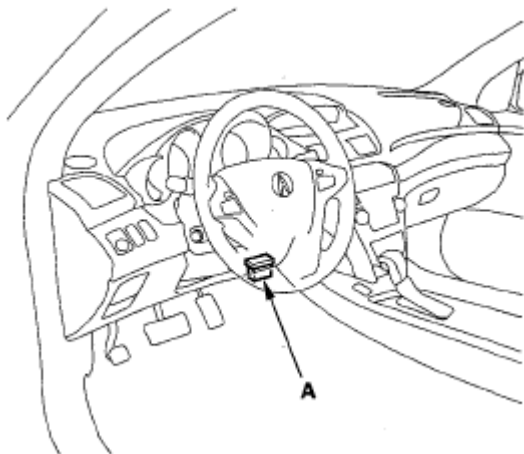


Fig. 198: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Shift Solenoid A, B, C, and D in the Miscellaneous Test Menu on the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

3. Check that shift solenoid valves A, B, C, and D operate with the HDS. A clicking sound should be heard.
 - If a clicking sound is heard, the valves are OK.
 - If no clicking sound is heard, go to step 4, and test the solenoid valves.
4. Do the battery removal procedure(see **REMOVAL**).
5. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
6. Remove the intake air duct and air cleaner housing.
7. Remove the battery base and battery base bracket.
8. Remove the nuts securing the shift cable bracket (A).

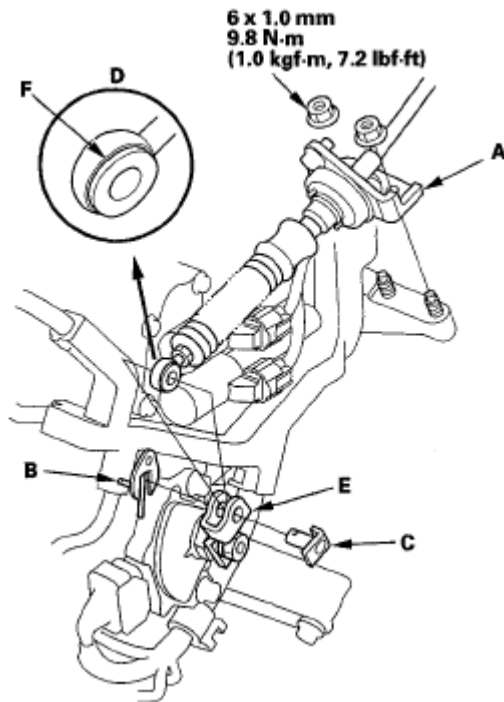


Fig. 199: Identifying Shift Cable Bracket, Spring Clip/Washer, Control Pin, Bushing And Control Lever With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
10. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).

11. Disconnect the transmission range switch connector (A), input shaft (mainshaft) speed sensor connector (B), output shaft (countershaft) speed sensor connector (C), 3rd clutch transmission fluid pressure switch connector (D), and ATF temperature sensor connector (E).

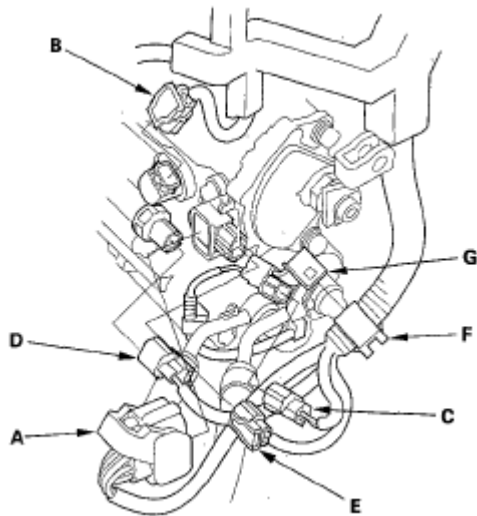


Fig. 200: Identifying Transmission Range Switch Connector And ATF Temperature Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the harness clamp (F) from the clamp bracket (G).
13. Disconnect the A/T clutch pressure control solenoid valve A connector (A), A/T clutch pressure control solenoid valve B connector (B), and shift solenoid harness connector (C).

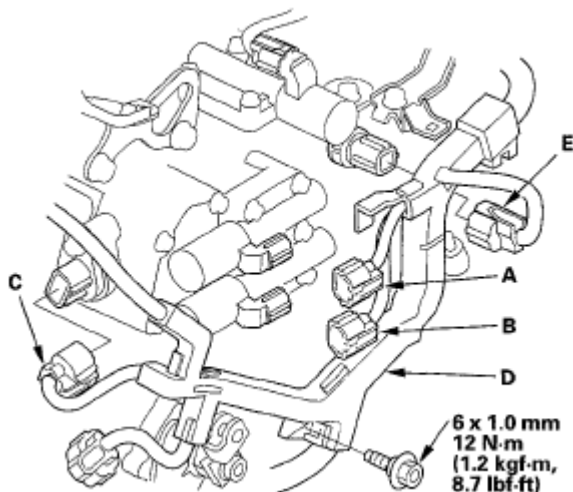


Fig. 201: Identifying A/T Clutch Pressure Control Solenoid Valves Connectors With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the bolt securing the harness cover (D), and disconnect the 4th clutch transmission fluid pressure switch connector (E).
15. Remove the A/T clutch pressure control solenoid valve A and B, ATF pipes (C), and gasket (D).

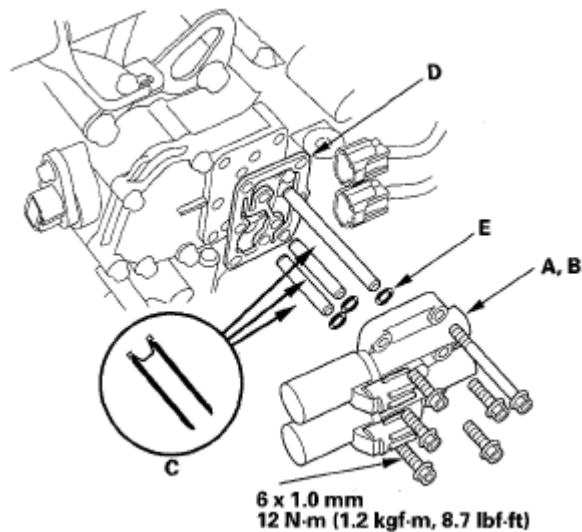


Fig. 202: Identifying A/T Clutch Pressure Control Solenoid Valves And ATF Pipes With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Replace the gasket and O-rings (E) with new ones when installing the A/T clutch pressure control solenoid valve A and B.
17. Remove the solenoid valve cover (A), dowel pins (B), and gasket (C).

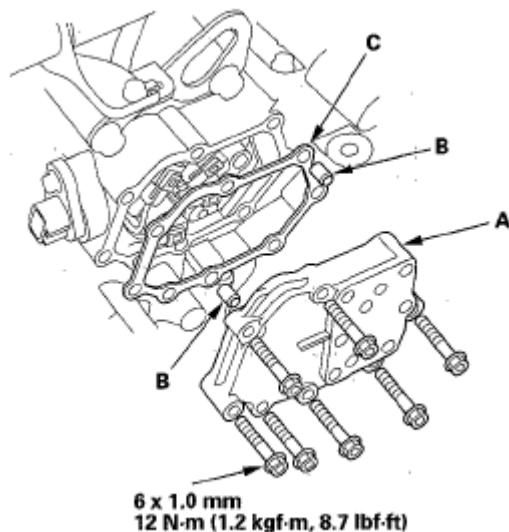


Fig. 203: Identifying Solenoid Valve Cover, Dowel Pins And Gasket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Replace the gasket with a new one when installing the solenoid valve cover.
19. Disconnect the connectors from shift solenoid valve A, shift solenoid valve B, shift solenoid valve C, and shift solenoid valve D.

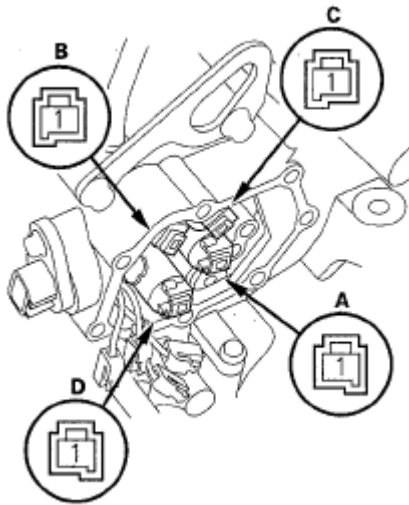


Fig. 204: Identifying Shift Solenoid Valves Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Measure the resistance of each shift solenoid valve between the connector terminal and body ground.

Standard: 12-25 ohms

- If the resistance is out of standard, go to step 23 and replace shift solenoid valve.
 - If the resistance is within the standard, go to step 21 and check the solenoid valve for a clicking sound.
21. Connect a jumper wire from the negative battery terminal to the body ground, and connect another jumper wire from the positive battery terminal to each solenoid valve terminal individually.
 - If a clicking sound is heard, go to step 22 and replace the shift solenoid harness.
 - If no clicking sound is heard, go to step 23 and replace the shift solenoid valve.
 22. Remove the shift solenoid harness connector (A), and replace it. Install a new O-ring (B) on the shift solenoid harness connector, and install the connector in the transmission housing, then go to step 29.

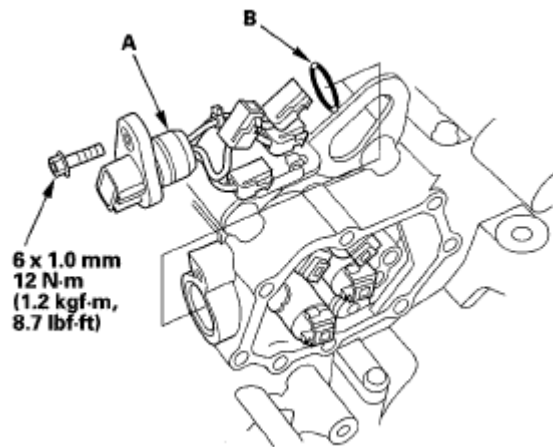


Fig. 205: Identifying Shift Solenoid Harness Connector And O-Ring With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the mounting bolts, then remove the solenoid valves.

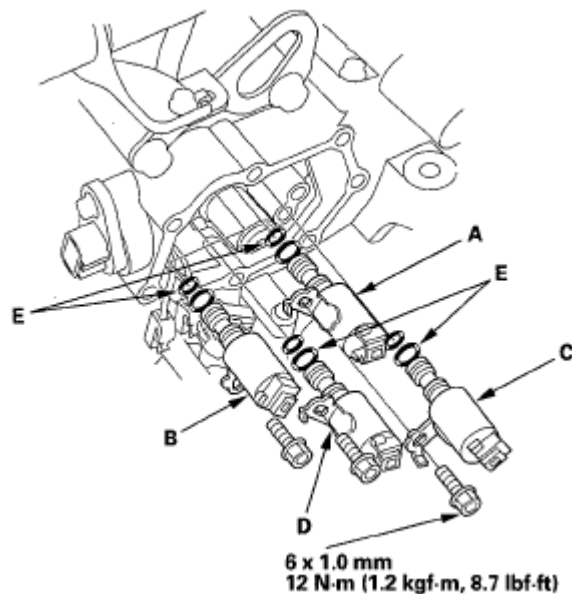


Fig. 206: Identifying Shift Solenoid Valves With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install new O-rings (two O-rings per solenoid valve) (E) on each reused solenoid valves.

NOTE: A new solenoid valve comes with new O-rings. If you install a new solenoid valve, use the O-rings provided with it.

25. Install shift solenoid valve D (black connector) by holding the shift solenoid valve body; make sure the mounting bracket contacts the accumulator body.

NOTE: Do not hold the solenoid valve by the connector when installing the solenoid valve. Be sure to hold the solenoid valve body.

26. Install shift solenoid valve A (black connector) by holding the shift solenoid valve body; make sure the mounting bracket contacts the accumulator body.

NOTE: Do not install shift solenoid valve C before installing shift solenoid valve A. If shift solenoid valve C is installed before installing shift solenoid valve A, it may damage the hydraulic control system.

27. Install shift solenoid valve C (brown connector) by holding the shift solenoid valve body; make sure the mounting bracket contacts the bracket of shift solenoid valve A.
28. Install shift solenoid valve B (brown connector) by holding the shift solenoid valve body; make sure the mounting bracket contacts the accumulator body.
29. Connect the harness terminals to the solenoids:
- RED wire connector to shift solenoid valve A.
 - ORN wire connector to shift solenoid valve B.
 - GRN wire connector to shift solenoid valve C.
 - YEL wire connector to shift solenoid valve D.
30. Install the shift solenoid valve cover, dowel pins, and a new gasket.
31. Install the new solenoid valve body gasket on the solenoid valve cover, and install the ATF pipes with their filter side into the transmission housing. Install the new O-rings over the ATF pipes.
32. Install A/T clutch pressure control solenoid valve A and B.
33. Secure the harness cover with the bolt.
34. Check the connectors for rust, dirt, or oil, clean or repair if necessary, then connect it securely.
35. Apply molybdenum grease to the hole of the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
36. Secure the shift cable bracket with the nuts.
37. Install the battery base bracket and battery base.
38. Install the air cleaner housing and intake air duct.
39. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
40. Do the battery installation procedure (see **INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A TEST

1. Connect the HDS to the DLC (A).

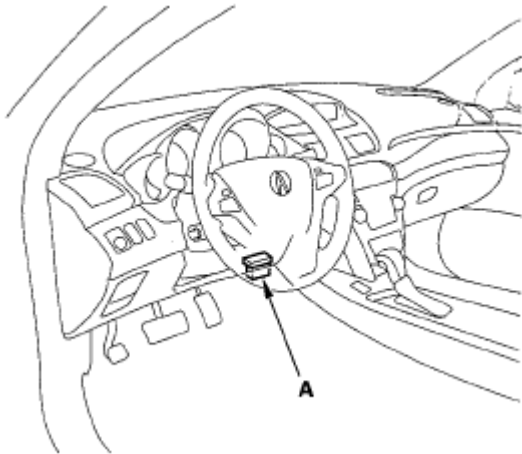


Fig. 207: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid A in the Miscellaneous Test Menu on the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).

3. Test A/T clutch pressure control solenoid valve A with the HDS.
 - If the valve tests OK, the test is complete. Disconnect the HDS.
 - If the valve does not test OK, follow the instructions on the HDS.
 - If the valve does not test OK, and the HDS does not determine the cause, go to step 4.
4. Do the battery removal procedure(see REMOVAL).
5. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
6. Remove the intake air duct and air cleaner housing.
7. Remove the battery base and battery base bracket.
8. Disconnect A/T clutch pressure control solenoid valve A connector.

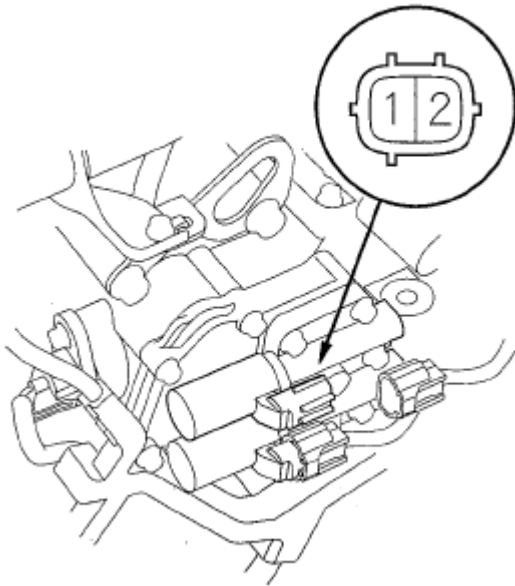


Fig. 208: Identifying A/T Clutch Pressure Control Solenoid Valve A Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure A/T clutch pressure control solenoid valve A resistance at the connector terminals.

Standard: 3-10 ohms

- If the resistance is out of standard, replace A/T clutch pressure control solenoid valve A (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**).
 - If the resistance is within the standard, go to step 12.
10. Connect a jumper wire from the negative battery terminal to the solenoid valve A connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1.
 - If a clicking sound is heard, the valve is OK. Reconnect the connector, and install all removed parts.
 - If no clicking sound is heard, go to step 13.
 11. Remove the nuts securing the shift cable bracket (A).

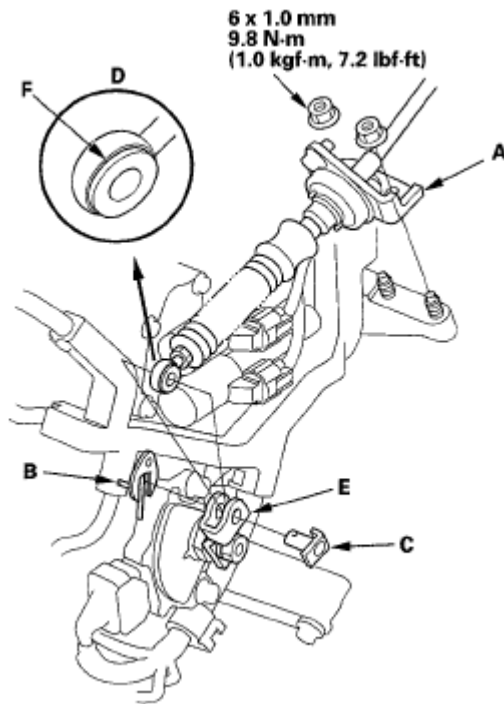


Fig. 209: Identifying Spring Clip/Washer, Bushing, Control Pin, Shift Cable Bracket And Control Level With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
13. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
14. Disconnect the transmission range switch connector (A), input shaft (mainshaft) speed sensor connector (B), output shaft (countershaft) speed sensor connector (C), 3rd clutch transmission fluid pressure switch connector (D), and ATF temperature sensor connector (E).

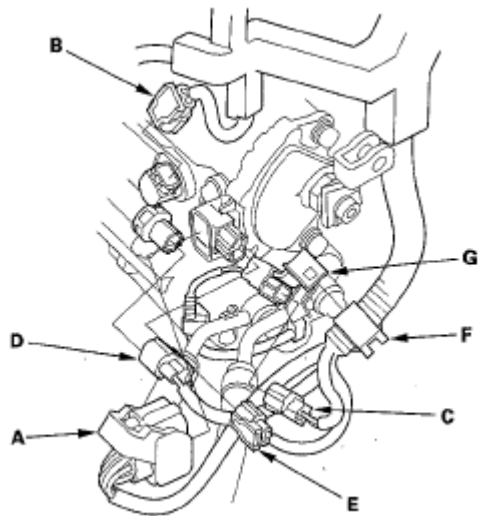


Fig. 210: Identifying Transmission Range Switch Connector And 3rd Clutch Transmission Fluid Pressure Switch Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the harness clamp (F) from the clamp bracket (G).
16. Disconnect A/T clutch pressure control solenoid valve A connector (A), A/T clutch pressure control solenoid valve B connector (B), and shift solenoid harness connector (C).

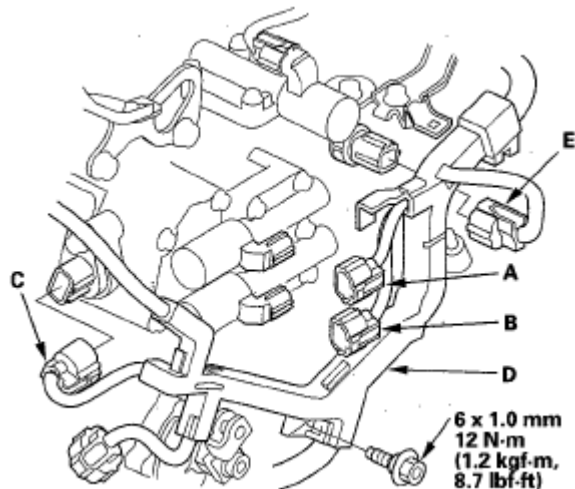


Fig. 211: Identifying A/T Clutch Pressure Control Solenoid Valves Connectors With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the bolt securing the harness cover (D), and disconnect the 4th clutch transmission fluid pressure switch connector (E).
18. Remove the A/T clutch pressure control solenoid valve A and B, ATF pipes (C), gasket (D), and O-rings (E).

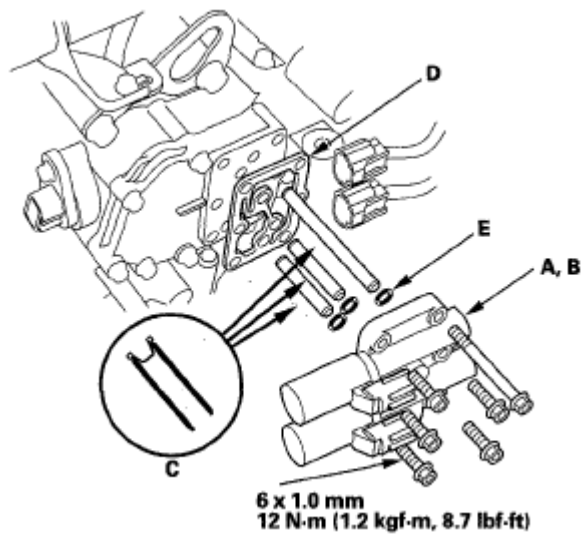


Fig. 212: Identifying A/T Clutch Pressure Control Solenoid Valves And ATF Pipes With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check the fluid passage of the solenoid valve for contamination.
20. Connect a jumper wire from the negative battery terminal to A/T clutch pressure control solenoid valve A connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1. Make sure A/T clutch pressure control solenoid valve A moves.

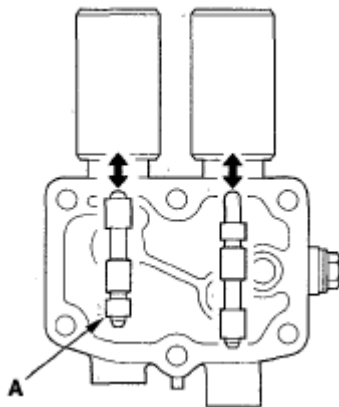


Fig. 213: Identifying A/T Clutch Pressure Control Solenoid Valve A

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Disconnect one of the jumper wires and check for valve movement at the fluid passage in the valve body mounting surface. If the valve binds or moves sluggishly, or if the solenoid valve does not operate, replace A/T clutch pressure control solenoid valves A and B.
22. Clean the mounting surface and fluid passage of the solenoid valve body and solenoid valve cover.
23. Install the new solenoid valve body gasket on the solenoid valve cover, and install the ATF pipes with the filter end in the transmission housing. Install the new O-rings over the ATF pipes.

24. Install A/T clutch pressure control solenoid valve A and B.
25. Secure the harness cover with the bolt.
26. Check the connectors for rust, dirt, or oil, clean or repair if necessary, then connect it securely.
27. Apply molybdenum grease to the hole in the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
28. Secure the shift cable bracket with the nuts.
29. Install the battery base bracket and battery base.
30. Install the air cleaner housing and intake air duct.
31. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket
32. Do the battery installation procedure(see **INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B TEST

1. Connect the HDS to the DLC (A).

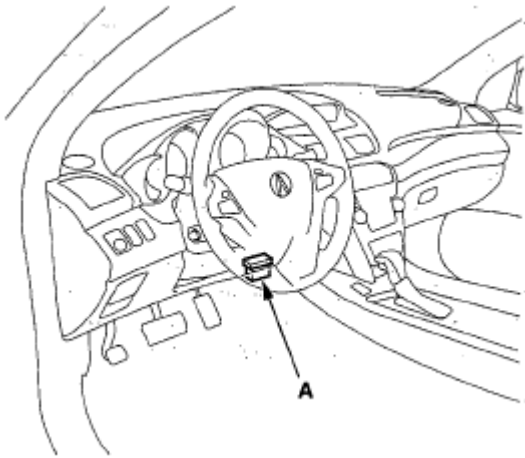


Fig. 214: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid B in the Miscellaneous Test Menu on the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

3. Test A/T clutch pressure control solenoid valve B with the HDS.
 - If the valve tests OK, the test is complete. Disconnect the HDS.
 - If the valve does not test OK, follow the instructions on the HDS.
 - If the valve does not test OK, and the HDS does not determine the cause, go to step 4.
4. Do the battery removal procedure(see **REMOVAL**).

5. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
6. Remove the intake air duct and air cleaner housing.
7. Remove the battery base and battery base bracket.
8. Disconnect A/T clutch pressure control solenoid valve B connector.

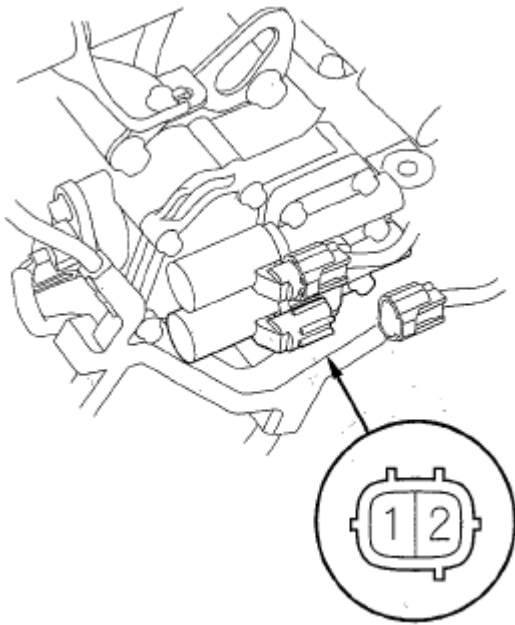


Fig. 215: Identifying A/T Clutch Pressure Control Solenoid Valve B Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure A/T clutch pressure control solenoid valve B resistance at the connector terminals.

Standard: 3-10 ohms

- If the resistance is out of standard, replace A/T clutch pressure control solenoid valve B (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT**).
 - If the resistance is within the standard, go to step 12.
10. Connect a jumper wire from the negative battery terminal to the solenoid valve B connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1.
 - If a clicking sound is heard, the valve is OK. Reconnect the connector, and install all removed parts.
 - If no clicking sound is heard, go to step 13.
 11. Remove the nuts securing the shift cable bracket (A).

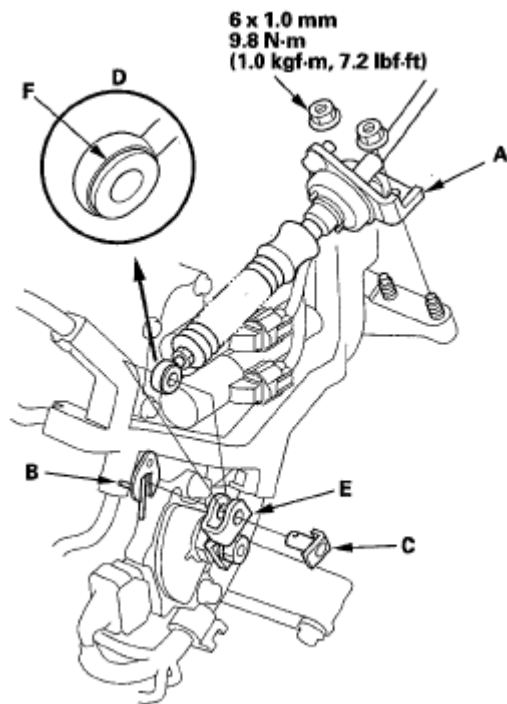


Fig. 216: Identifying Spring Clip/Washer, Bushing, Control Pin, Shift Cable End And Control Lever With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
13. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
14. Disconnect the transmission range switch connector (A), input shaft (mainshaft) speed sensor connector (B), output shaft (countershaft) speed sensor connector (C), 3rd clutch transmission fluid pressure switch connector (D), and ATF temperature sensor connector (E).

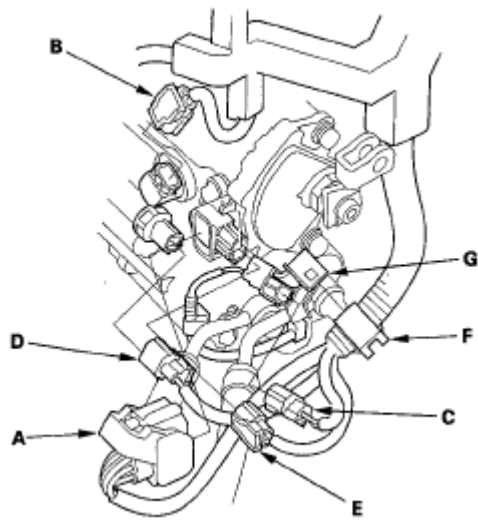


Fig. 217: Identifying Transmission Range Switch Connector And Input Shaft (Mainshaft) Speed Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the harness clamp (F) from the clamp bracket (G).
16. Disconnect A/T clutch pressure control solenoid valve A connector (A), A/T clutch pressure control solenoid valve B connector (B), and shift solenoid harness connector (C).

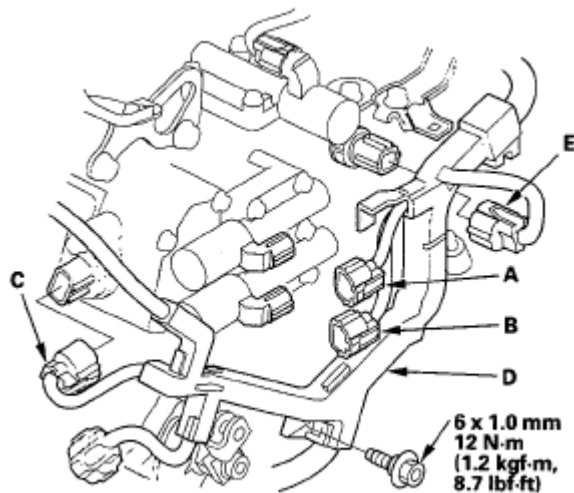


Fig. 218: Identifying A/T Clutch Pressure Control Solenoid Valves Connectors With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the bolt securing the harness cover (D), and disconnect the 4th clutch transmission fluid pressure switch connector (E).
18. Remove A/T clutch pressure control solenoid valve A and B, ATF pipes (C), gasket (D), and O-rings (E).

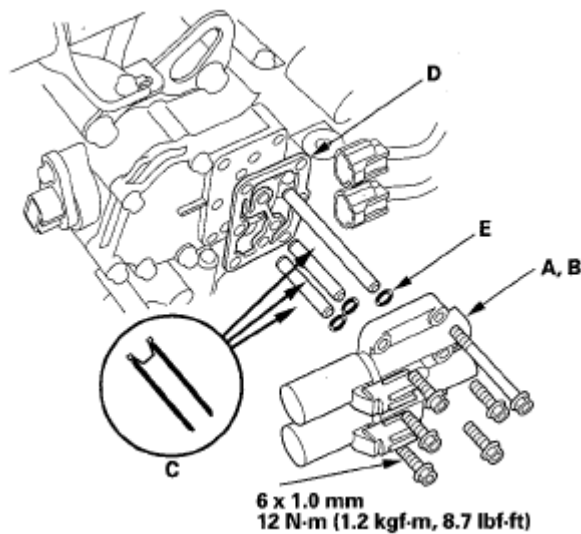


Fig. 219: Identifying A/T Clutch Pressure Control Solenoid Valves And ATF Pipes With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check the fluid passage of the solenoid valve for contamination.
20. Connect a jumper wire from the negative battery terminal to A/T clutch pressure control solenoid valve B connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1. Make sure A/T clutch pressure control solenoid valve B moves.

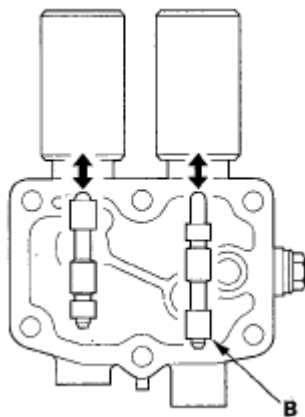


Fig. 220: Identifying A/T Clutch Pressure Control Solenoid Valve B

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Disconnect one of the jumper wires and check valve movement at the fluid passage in valve body mounting surface. If the valve binds or moves sluggishly, or if the solenoid valve does not operate, replace A/T clutch pressure control solenoid valve A and B.
22. Clean the mounting surface and fluid passage of the solenoid valve body and solenoid valve cover.
23. Install the new solenoid valve body gasket on the solenoid valve cover, and install the ATF pipes with the filter end in the transmission housing. Install the new O-rings over the ATF pipes.

24. Install A/T clutch pressure control solenoid valve A and B.
25. Secure the harness cover with the bolt.
26. Check the connectors for rust, dirt, or oil, clean or repair if necessary, then connect it securely.
27. Apply molybdenum grease to the hole of the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
28. Secure the shift cable bracket with the nuts.
29. Install the battery base bracket and battery base.
30. Install the air cleaner housing and intake air duct.
31. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
32. Do the battery installation procedure(see **INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A AND B REPLACEMENT

1. Do the battery removal procedure(see **REMOVAL**).
2. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
3. Remove the intake air duct and air cleaner housing.
4. Remove the battery base and battery base bracket.
5. Remove the nuts securing the shift cable bracket (A).

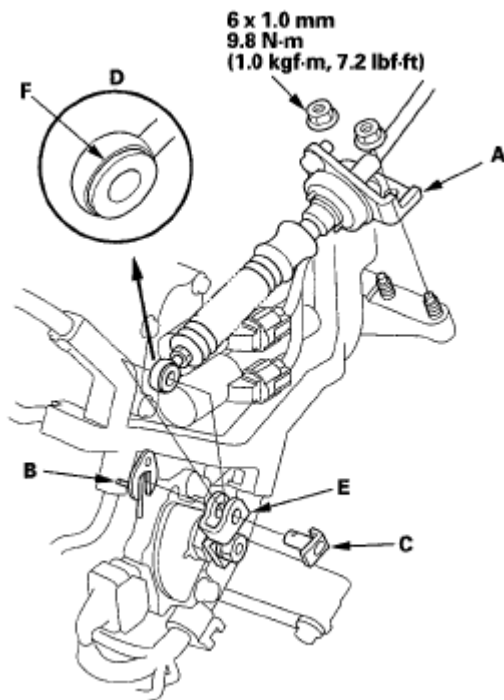


Fig. 221: Identifying Shift Cable Bracket, Bushing, Control Pin, Shift Cable End And Control Lever With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
7. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
8. Disconnect the transmission range switch connector (A), input shaft (mainshaft) speed sensor connector (B), output shaft (countershaft) speed sensor connector (C), 3rd clutch transmission fluid pressure switch connector (D), and ATF temperature sensor connector (E).

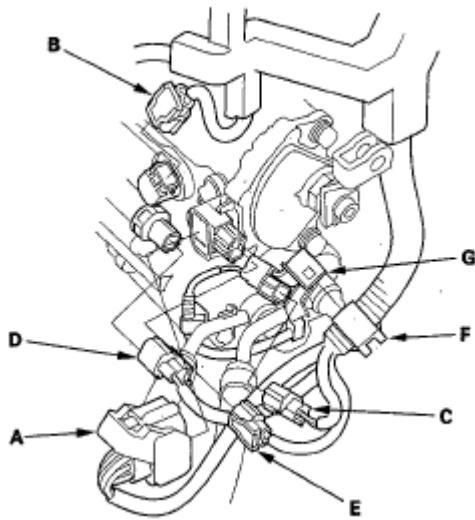


Fig. 222: Identifying Transmission Range Switch Connector And Output Shaft (Countershaft) Speed Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the harness clamp (F) from the clamp bracket (G).
10. Disconnect the A/T clutch pressure control solenoid valve A connector (A), A/T clutch pressure control solenoid valve B connector (B), and shift solenoid harness connector (C).

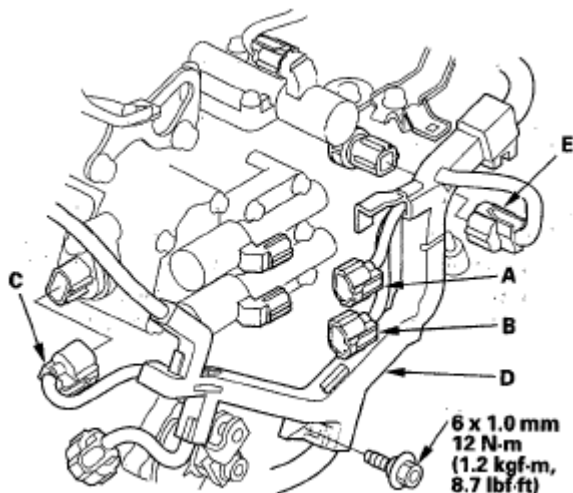


Fig. 223: Identifying A/T Clutch Pressure Control Solenoid Valves Connectors With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the bolt securing the harness cover (D), and disconnect the 4th clutch transmission fluid pressure switch connector (E).
12. Remove A/T clutch pressure control solenoid valve A and B, ATF pipes (C), gasket (D), and O-rings (E).

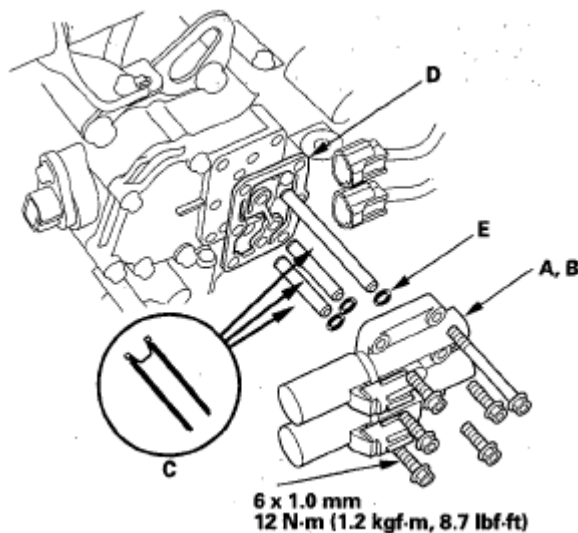


Fig. 224: Identifying A/T Clutch Pressure Control Solenoid Valves And ATF Pipes With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check the fluid passage of the A/T clutch pressure control solenoid valve for dust or dirt, and clean the passage.
14. Install the new solenoid valve body gasket on the solenoid valve cover, and install the ATF pipes with the filter end in the transmission housing. Install the new O-rings over the ATF pipes.
15. Install A/T clutch pressure control solenoid valve A and B.
16. Secure the harness cover with the bolt.
17. Check the connectors for rust, dirt, or oil, clean, then connect it securely.
18. Apply molybdenum grease to the hole of the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
19. Secure the shift cable bracket with the nuts.
20. Install the battery base bracket and battery base.
21. Install the air cleaner housing and intake air duct.
22. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
23. Do the battery installation procedure (see **INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C TEST

1. Connect the HDS to the DLC (A).

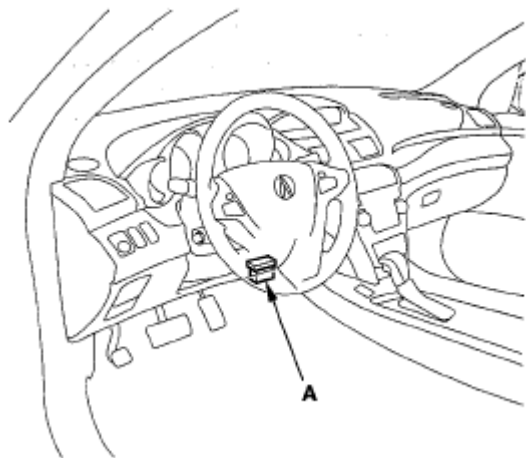


Fig. 225: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select Clutch Pressure Control (Linear) Solenoid C in the Miscellaneous Test Menu on the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

3. Test A/T clutch pressure control solenoid valve C with the HDS.
 - If the valve tests OK, the test is complete. Disconnect the HDS.
 - If the valve does not test OK, follow the instructions on the HDS.
 - If the valve does not test OK, and the HDS does not determine the cause, go to step 4.
4. Do the battery removal procedure (See **REMOVAL**).
5. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
6. Remove the intake air duct and air cleaner housing.
7. Remove the battery base and battery base bracket.
8. Disconnect A/T clutch pressure control solenoid valve C connector.

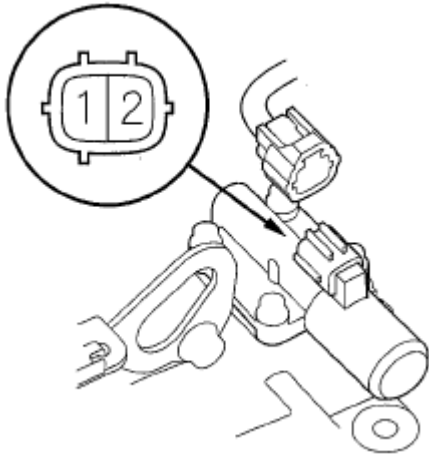


Fig. 226: Identifying A/T Clutch Pressure Control Solenoid Valve C Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure A/T clutch pressure control solenoid valve C resistance at the connector terminals.

Standard: 3-10 ohms

- If the resistance is out of standard, replace A/T clutch pressure control solenoid valve C (see **A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT**).
 - If the resistance is within the standard, go to step 12.
10. Connect a jumper wire from the negative battery terminal to the solenoid valve C connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1.
 - If a clicking sound is heard, the valve is OK. Reconnect the connector, and install all removed parts.
 - If no clicking sound is heard, go to step 13.
 11. Remove A/T clutch pressure control solenoid valve C.

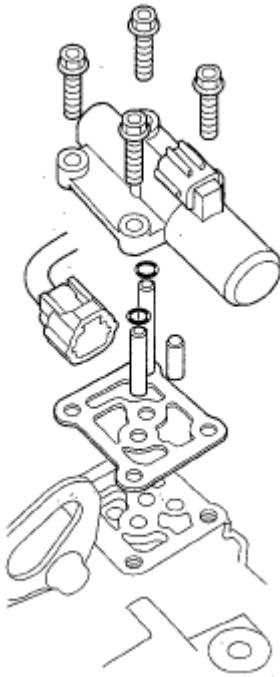


Fig. 227: Identifying A/T Clutch Pressure Control Solenoid Valve C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the ATF joint pipes, O-rings, ATF pipe, and gasket.
13. Check the fluid passage of the solenoid valve for contamination.
14. Connect a jumper wire from the negative battery terminal to A/T clutch pressure control solenoid valve C connector terminal No. 2, and connect another jumper wire from the positive battery terminal to the connector terminal No. 1. Make sure A/T clutch pressure control solenoid valve C moves.

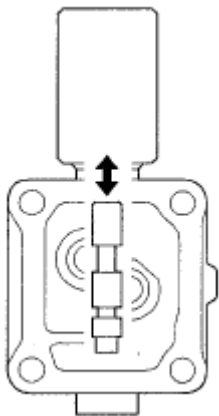


Fig. 228: Identifying A/T Clutch Pressure Control Solenoid Valve C
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Disconnect one of the jumper wires and check valve movement at the fluid passage in valve body mounting surface. If the valve binds or moves sluggishly, or if the solenoid valve does not operate,

replace A/T clutch pressure control solenoid valve C.

16. Clean the mounting surface and fluid passage of the solenoid valve body and transmission housing.
17. Install the 8 x 53 mm ATF joint pipe (A) with the filter end into its mounting hole (B).

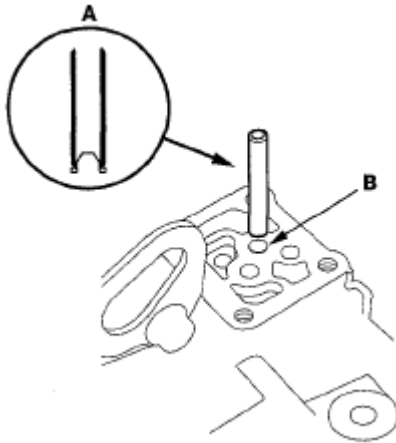


Fig. 229: Identifying ATF Joint Pipe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Check the height (A) of the 8x53 mm ATF joint pipe (B) between the top (C) of the pipe and solenoid valve body mounting surface (D). The height is about 7 mm (0.3 in.) If the height is over 7 mm (0.3 in.), push the pipe until it bottoms in the accumulator body.

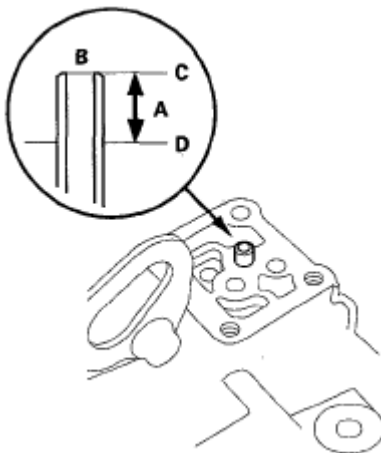


Fig. 230: Identifying ATF Joint Pipe Height

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the new gasket (A) on the transmission housing, and install the 8 x 34.5 mm ATF joint pipe (B) with the filter end into the transmission housing and 8 x 25.2 mm ATF pipe (D).

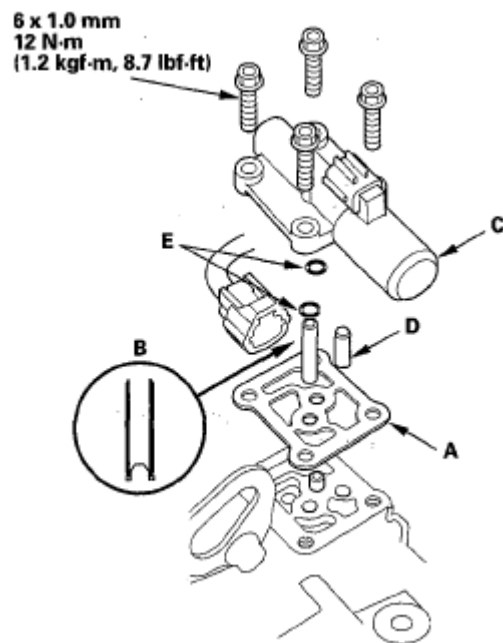


Fig. 231: Identifying ATF Joint Pipe And A/T Clutch Pressure Control Solenoid Valve C With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the new O-rings (E) over the ATF joint pipes.
21. Install A/T clutch pressure control solenoid valve C.
22. Check the connector for rust, dirt, or oil, then connect it securely.
23. Install the battery base bracket and battery base.
24. Install the air cleaner housing and intake air duct.
25. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
26. Do the battery installation procedure(See **INSTALLATION**).

A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE C REPLACEMENT

1. Do the battery removal procedure(See **REMOVAL**).
2. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
3. Remove the intake air duct and air cleaner housing.
4. Remove the battery base and battery base bracket.
5. Disconnect the A/T clutch pressure control solenoid valve C connector.

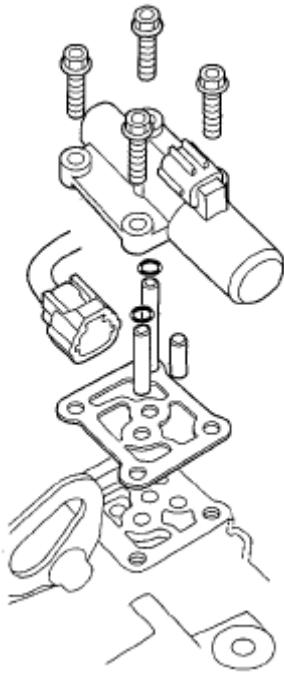


Fig. 232: Identifying A/T Clutch Pressure Control Solenoid Valve C
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove A/T clutch pressure control solenoid valve C.
7. Remove the ATF joint pipes, O-rings, ATF pipe, and gasket.
8. Clean the mounting surface and the fluid passage of the solenoid valve body and transmission housing.
9. Install the 8 x 53 mm ATF joint pipe (A) with the filter end into its mounting hole (B).

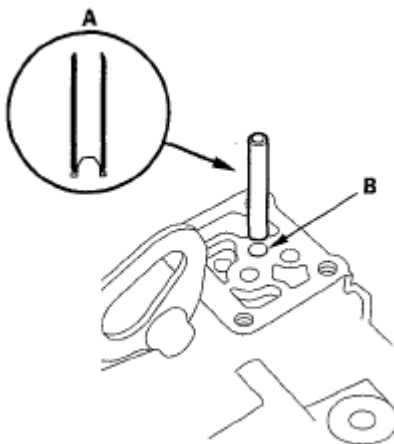


Fig. 233: Identifying ATF Joint Pipe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the height (A) of the 8 x 53 mm ATF joint pipe (B) between the top (C) of the pipe and solenoid valve body mounting surface (D). The height is about 7 mm (0.3 in.) If the height is over 7 mm (0.3 in.),

push the pipe until it bottoms in the accumulator body.

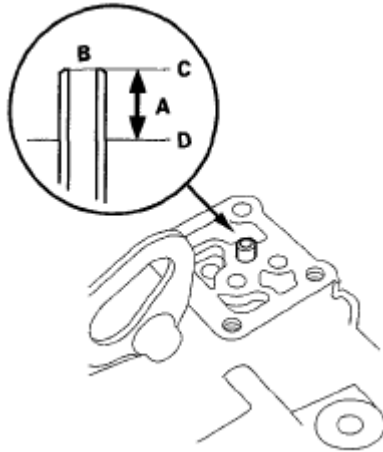


Fig. 234: Identifying ATF Joint Pipe Height

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the new gasket (A) on the transmission housing, and install the 8 x 34.5 mm ATF joint pipe (B) with the filter end into the transmission housing and 8 x 25.2 mm ATF pipe (D).

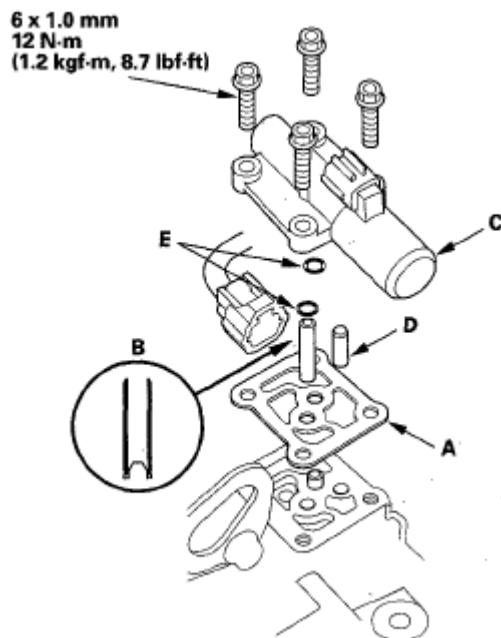


Fig. 235: Identifying ATF Joint Pipe And A/T Clutch Pressure Control Solenoid Valve C With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the new O-rings (E) over the ATF joint pipes.
13. Install A/T clutch pressure control solenoid valve C.

14. Check the connector for rust, dirt, or oil, then connect it securely.
15. Install the battery base bracket and battery base.
16. Install the air cleaner housing and intake air duct.
17. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
18. Do the battery installation procedure (See **INSTALLATION**).

INPUT SHAFT (MAINSHAFT) SPEED SENSOR REPLACEMENT

1. Raise the vehicle up on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the transmission undercover (A) and splash shield (B).

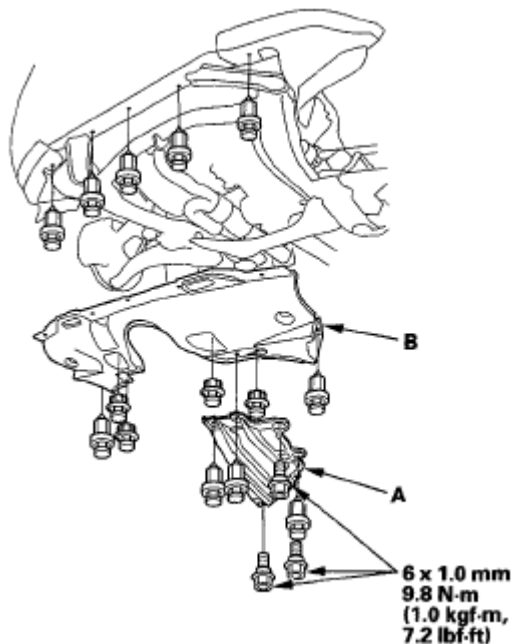


Fig. 236: Identifying Transmission Undercover And Splash Shield With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the damper from the front subframe.

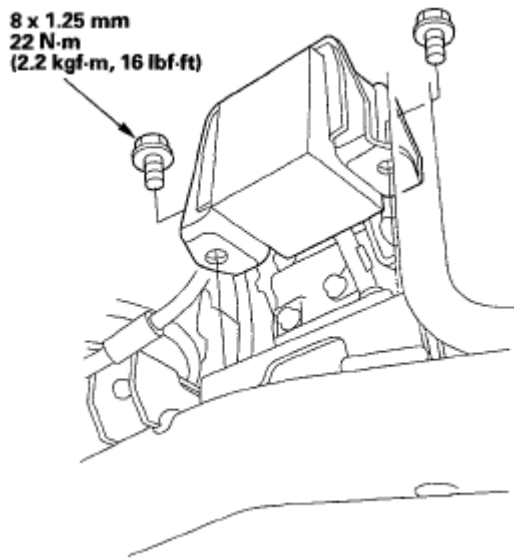


Fig. 237: Identifying Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the input shaft (mainshaft) speed sensor connector, and remove the input shaft (mainshaft) speed sensor (A).

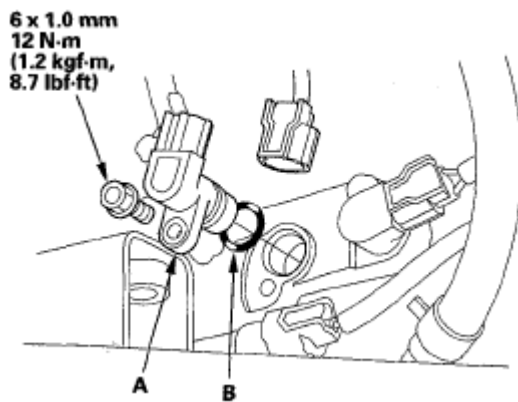


Fig. 238: Identifying Input Shaft (Mainshaft) Speed Sensor And O-Ring With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new O-ring (B) on the new input shaft (mainshaft) speed sensor, then install the input shaft (mainshaft) speed sensor.
6. Check the connector for rust, dirt, or oil, then connect it securely.
7. Install the damper on the front subframe.
8. Install the splash shield and transmission undercover.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR REPLACEMENT

1. Raise the vehicle upon a lift, or apply the parking brake, block both rear wheels, and raise the front of the

vehicle. Make sure it is securely supported.

2. Remove the transmission undercover (A) and splash shield (B).

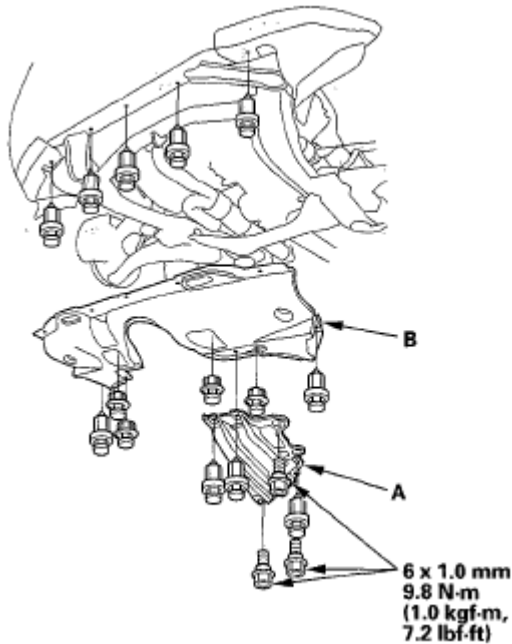


Fig. 239: Identifying Transmission Undercover And Splash Shield With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the damper from the front subframe.

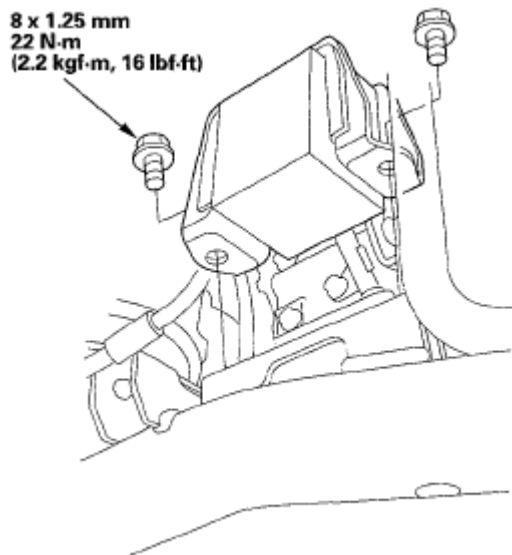


Fig. 240: Identifying Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the output shaft (countershaft) speed sensor connector, and remove the output shaft (countershaft) speed sensor (A) and sensor washer (B).

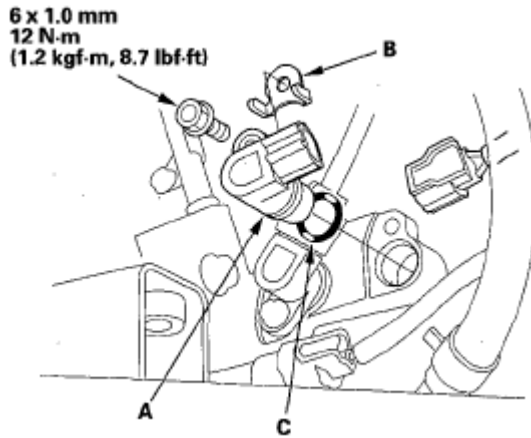


Fig. 241: Identifying Output Shaft (Countershaft) Speed Sensor And Sensor Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new O-ring (C) on the new output shaft (countershaft) speed sensor (B), then install the output shaft (countershaft) speed sensor and sensor washer.
6. Check the connector for rust, dirt, or oil, then connect it securely.
7. Install the damper on the front subframe.
8. Install the splash shield and transmission undercover.

2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT

1. Do the battery removal procedure (See **REMOVAL**).
2. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
3. Remove the intake air duct and air cleaner housing.
4. Remove the battery base and battery base bracket.
5. Disconnect the 2nd clutch transmission fluid pressure switch connector, and remove the switch.

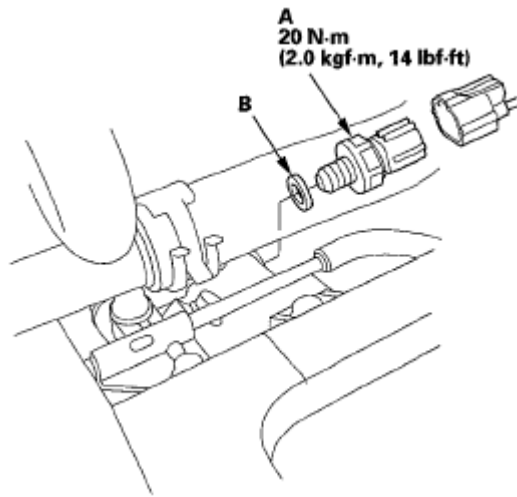


Fig. 242: Identifying 2nd Clutch Transmission Fluid Pressure Switch And Sealing Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the new 2nd clutch transmission fluid pressure switch (A) and a new sealing washer (B), and tighten the switch.
7. Make sure there is no water, oil, dust, or foreign particles inside the connector.
8. Connect the connector securely.
9. Install the battery base bracket and battery base.
10. Install the air cleaner housing and intake air duct.
11. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
12. Do the battery installation procedure (See **INSTALLATION**).

3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT

1. Raise the vehicle up on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the transmission undercover (A) and splash shield (B).

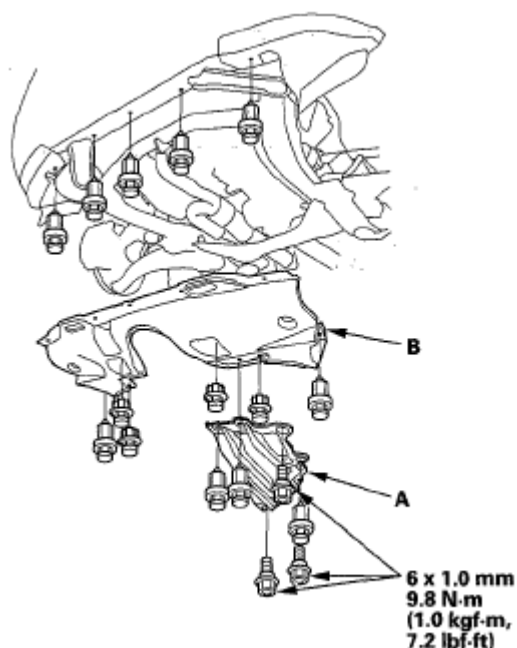


Fig. 243: Identifying Transmission Undercover And Splash Shield With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the damper from the front subframe.

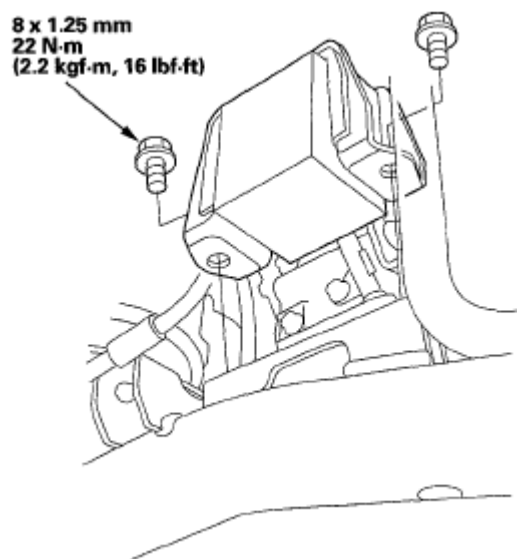


Fig. 244: Identifying Damper With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 3rd clutch transmission fluid pressure switch connector, and remove the 3rd clutch transmission fluid pressure switch (A), and sealing washer (B).

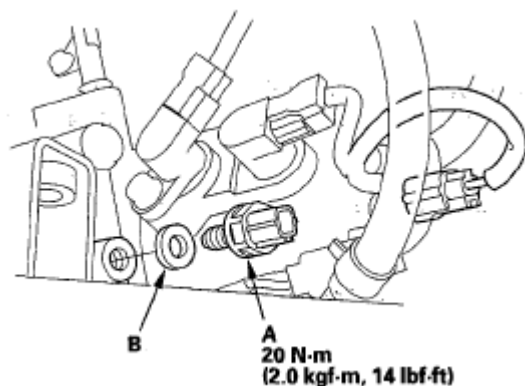


Fig. 245: Identifying 3rd Clutch Transmission Fluid Pressure Switch And Sealing Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new 3rd clutch transmission fluid pressure switch and a new sealing washer, and tighten the switch.
6. Make sure there is no water, oil, dust, or foreign particles inside the connector.
7. Connect the connector securely.
8. Install the damper on the front subframe.
9. Install the splash shield and transmission undercover.

4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH REPLACEMENT

1. Do the battery removal procedure (See **REMOVAL**).
2. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
3. Remove the intake air duct and air cleaner housing.
4. Remove the battery base and battery base bracket.
5. Disconnect the 4th clutch transmission fluid pressure switch connector, and remove the switch.

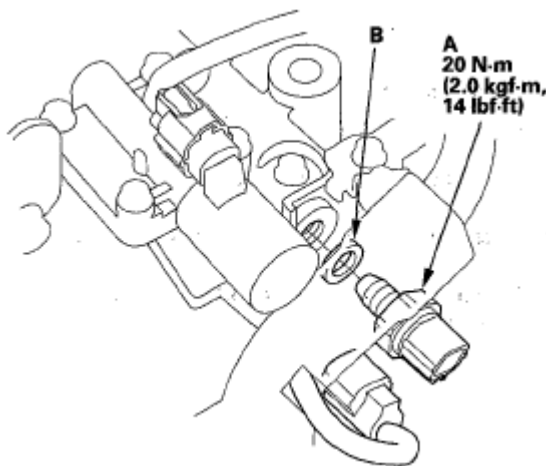


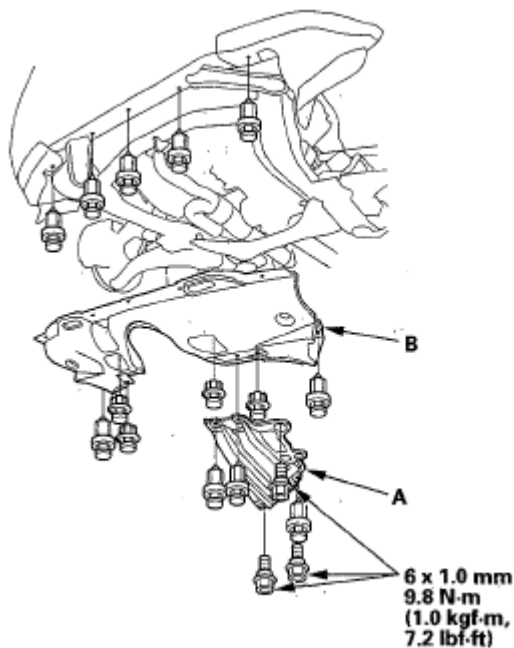
Fig. 246: Identifying 4th Clutch Transmission Fluid Pressure Switch And Sealing Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the new 4th clutch transmission fluid pressure switch (A) and a new sealing washer (B), and tighten the switch.
7. Make sure there is no water, oil, dust, or foreign particles inside the connector.
8. Connect the connector securely.
9. Install the battery base bracket and battery base.
10. Install the air cleaner housing and intake air duct.
11. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
12. Do the battery installation procedure (See **INSTALLATION**).

ATF TEMPERATURE SENSOR REPLACEMENT

1. Raise the vehicle up on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the transmission undercover (A) and splash shield (B).

**Fig. 247: Identifying Transmission Undercover And Splash Shield With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

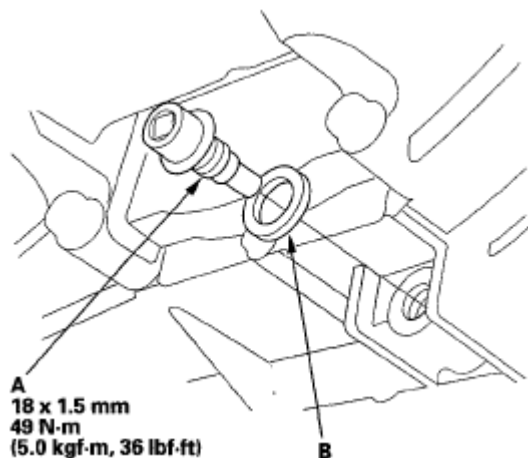


Fig. 248: Identifying Drain Plug And Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the drain plug with a new sealing washer (B).
5. Disconnect the ATF temperature sensor connector (A), then remove the connector from the connector bracket (B).

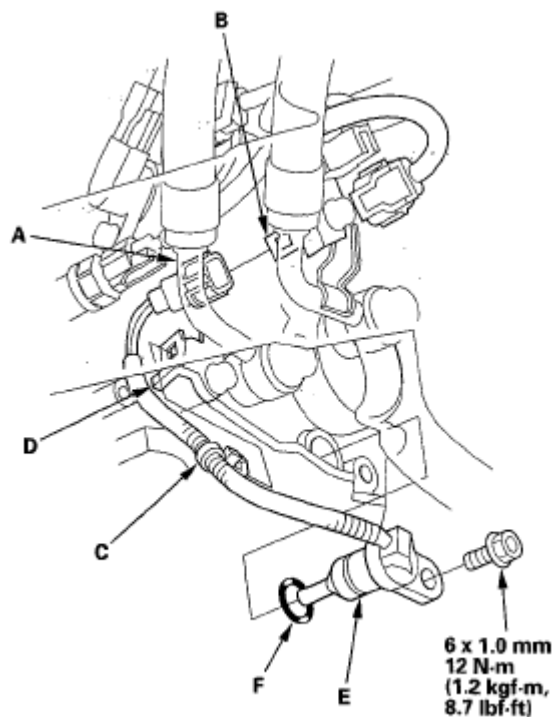


Fig. 249: Identifying ATF Temperature Sensor Connector, ATF Temperature Sensor, Connector Bracket And Harness Clamp With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the harness clamp (C) from its bracket (D).

7. Remove the ATF temperature sensor (E).
8. Install the new O-ring (F) on the new ATF temperature sensor, and install the ATF temperature sensor.
9. Check the connector for rust, dirt, or oil. Connect it securely, and install it on its bracket.
10. Install the harness clamp on its bracket.
11. Refill the transmission with ATF (see step 7 on).
12. Install the splash shield and transmission undercover.

ATF LEVEL CHECK

NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on the level ground.
2. Warm up the engine to normal operating temperature (the radiator fan comes on), then turn the engine off. Do not allow the engine to warm up longer than the time it takes for the radiator fan to come on twice.

NOTE: Check the fluid level within 60-90 seconds after turning the engine off. Higher fluid level may be indicated if the radiator fan comes on twice or more.

3. Remove the dipstick (yellow loop) (A) from the dipstick guide tube, and wipe it with a clean cloth.

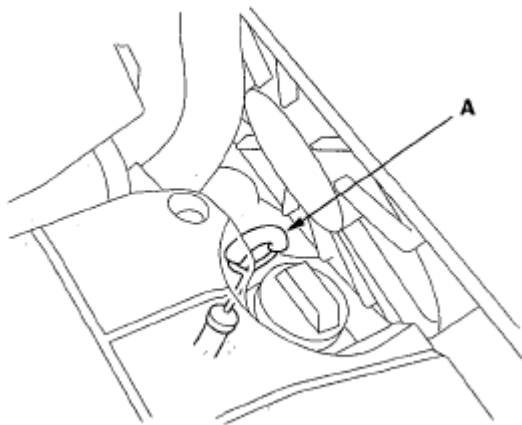


Fig. 250: Identifying Dipstick (Yellow Loop)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Insert the dipstick into the guide tube.
5. Remove the dipstick and check the fluid level. It should be between the upper mark (A) and lower mark (B).

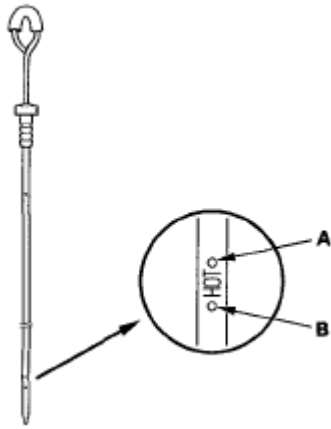


Fig. 251: Identifying Fluid Level

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the level is below the lower mark, check for fluid leaks at the transmission, and hose and line joints. If a problem is found, fix it before filling the transmission.

NOTE: If the vehicle is driven when the ATF level is below the lower mark, one or more of these symptoms may occur:

- Transmission damage.
- Vehicle does not move in any gear.
- Vehicle accelerates poorly, and flares when starting off in forward and reverse positions.
- The engine vibrates at idle.

7. If the level is above the upper mark, drain the ATF to proper level (see step 5 on).

NOTE: If the vehicle is driven when the ATF level is above the upper mark, the vehicle may creep forward while in N, or have shifting problems.

8. If necessary, fill the transmission with the ATF through the dipstick guide tube opening (A) to bring the fluid level midway between the upper mark and lower mark of the dipstick. Do not fill past the upper mark. Always use Acura ATF-Z1 Automatic Transmission Fluid (ATF). Using a non-Acura ATF can affect shift quality.

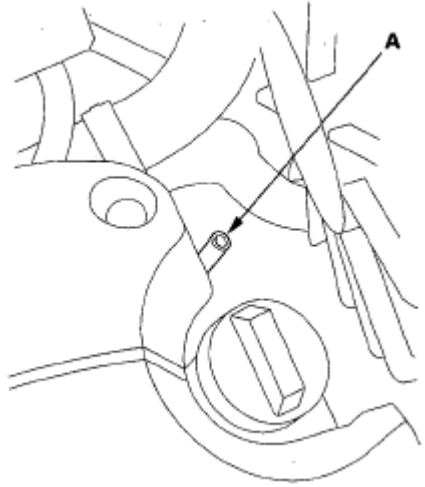


Fig. 252: Identifying Dipstick Guide Tube Opening
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Insert the dipstick back into the dipstick guide tube.

ATF REPLACEMENT

NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on the level ground.
2. Warm up the engine to normal operating temperature (the radiator fan comes on), and turn the engine off.
3. Raise the vehicle up on a lift, apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
4. Remove the transmission undercover.

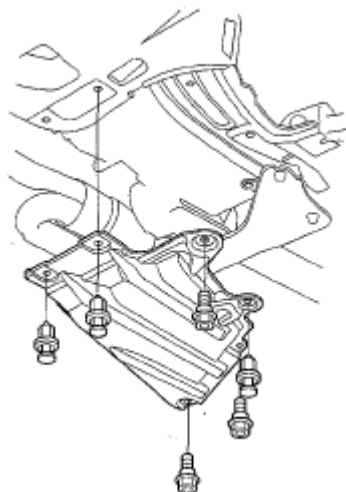


Fig. 253: Identifying Transmission Undercover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the ATF filler bolt and drain plug (A), and drain the automatic transmission fluid (ATF).

NOTE: If a cooler cleaning is done, refer to ATF cooler cleaning (see).

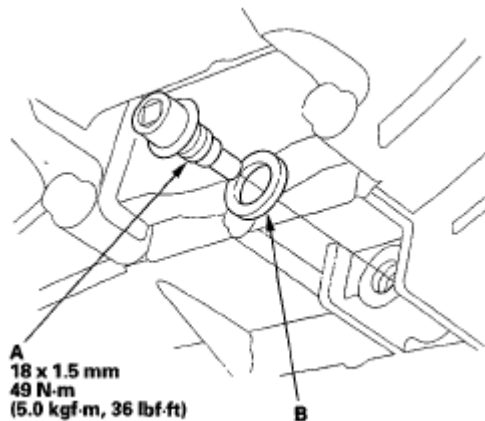


Fig. 254: Identifying Drain Plug And Sealing Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reinstall the drain plug with a new sealing washer (B).
7. Refill the transmission with the recommended fluid into the filler hole (A). Always use Acura ATF-Z1 Automatic Transmission Fluid (ATF). Using a non-Acura ATF can affect shift quality.

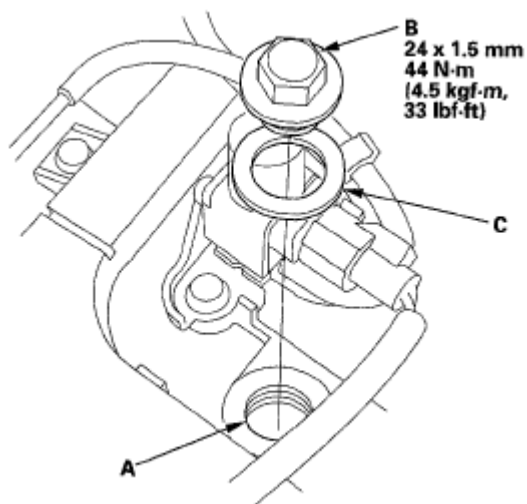


Fig. 255: Identifying ATF Filler Bolt And Sealing Washer With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the ATF filler bolt (B) and a new sealing washer (C).
9. Remove the dipstick (A).

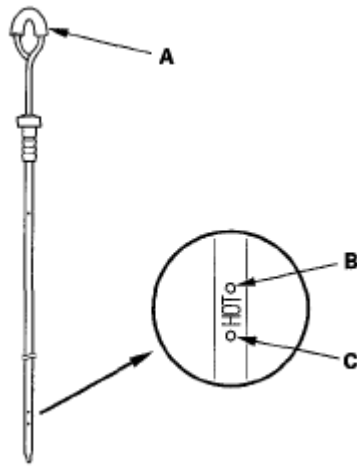


Fig. 256: Identifying Fluid Level

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Make sure the fluid level is between the upper mark (B) and lower mark (C) on the dipstick.
11. Install the transmission undercover.

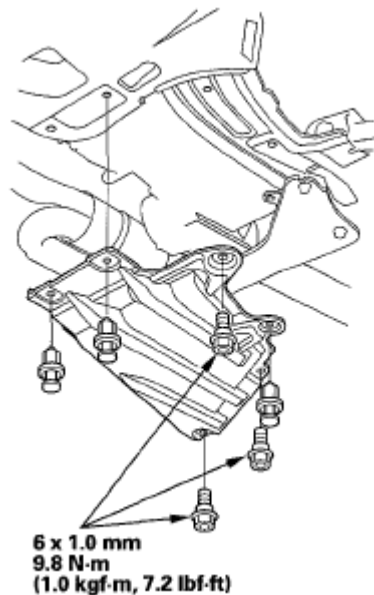


Fig. 257: Identifying Transmission Undercover With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. If the maintenance minder required to replace the ATF, reset the maintenance minder (see **RESETTING THE MAINTENANCE INFORMATION DISPLAY**), and this procedure is complete. If the maintenance minder did not require to replace the ATF, go to step 10 and reset the ATF life with the HDS.
13. Connect the HDS to the DLC (A), and go to the BODY ELECTRICAL. If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT**).

TROUBLESHOOTING).

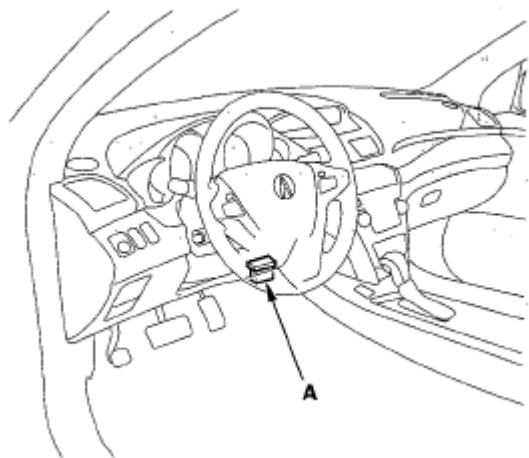


Fig. 258: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Select ADJUSTMENT in the GAUGES MENU with the HDS.
15. Select RESET in the MAINTENANCE MINDER with the HDS.
16. Select MAINTENANCE SUB ITEM 3 RESET, and reset the ATF life with the HDS.

TRANSFER ASSEMBLY FLUID REPLACEMENT

1. Bring the transmission up to normal operating temperature (the radiator fan comes on).
2. Park the vehicle on level ground, and turn the engine off.
3. Raise the vehicle up on a lift, or apply the parking brake, block both rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
4. Remove the transmission undercover.

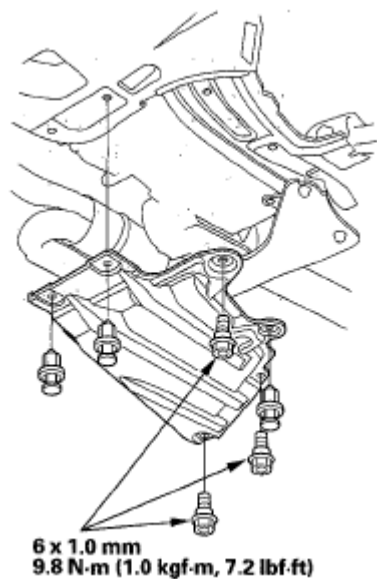


Fig. 259: Identifying Transmission Undercover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the drain plug (A), and drain the transfer fluid (hypoid gear oil).

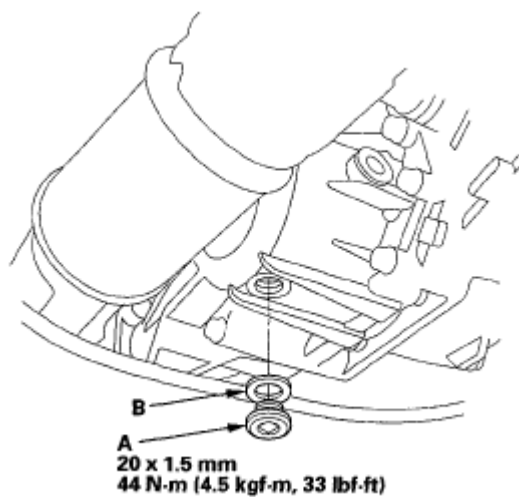


Fig. 260: Identifying Drain Plug And Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reinstall the drain plug with a new sealing washer (B).
7. Remove the filler plug (A) and sealing washer (B).

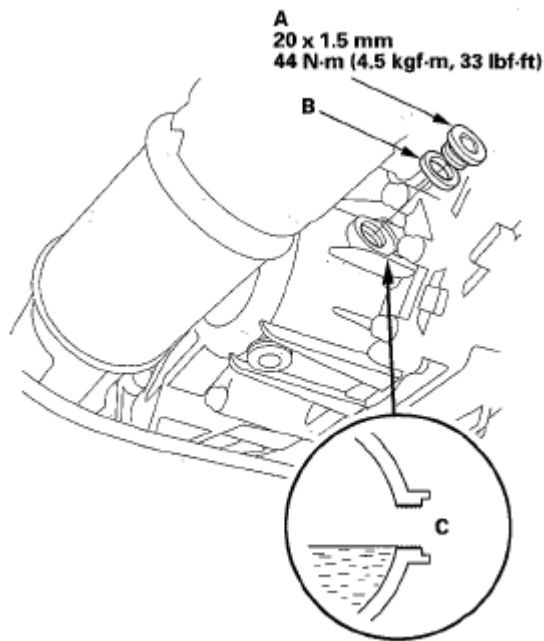


Fig. 261: Identifying Filler Plug And Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Refill the transfer assembly with the recommended fluid (hypoid gear oil) through the filler hole (C) until the fluid flows out. Use an SAE 90 or SAE 80W-90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

Viscosity:

SAE 90: Above 0 °F (-18 °C)

SAE80W-90: Below 0 °F (-18°C)

Transfer Fluid (Hypoid Gear Oil) Capacity:

0.43 L (0.45 US qt) at fluid change

9. Install the filler plug with a new sealing washer.
10. Install the transmission undercover.

TRANSFER ASSEMBLY INSPECTION

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into N.
3. Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C).

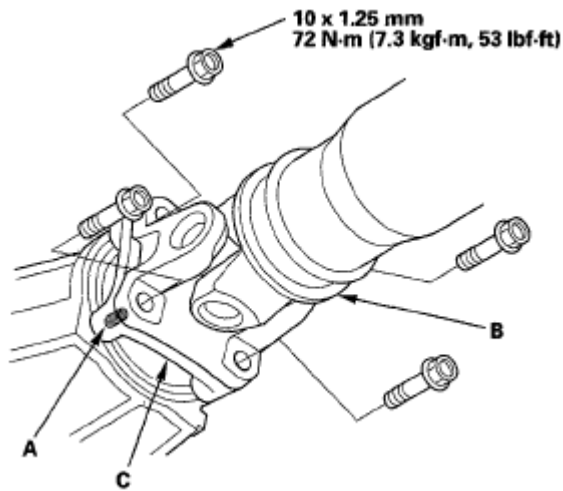


Fig. 262: Identifying Reference Mark Across Propeller Shaft And Transfer Companion Flange With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the propeller shaft from the transfer companion flange.
5. Set a dial indicator (A) on the transfer companion flange (B); position dial indicator tip (C) on the direct extension of the bolt hole center (D).

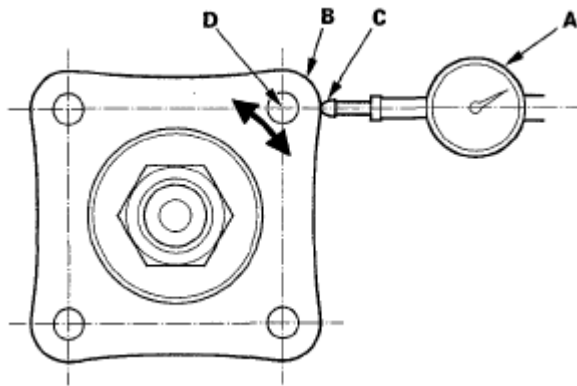


Fig. 263: Identifying Transfer Gear Backlash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the transfer gear backlash.

Standard: 0.06-0.16 mm (0.002-0.006 in.)

7. If the measurement is out of standard, remove the transfer assembly, and adjust the transfer gear backlash (see **REASSEMBLY**).
8. Check for fluid leaks between the mating faces of the transfer assembly and transmission.
9. If there is leak, remove the transfer assembly, remove the transfer cover, and replace the O-ring.
10. Check for fluid leaks between the transfer companion flange and transfer oil seal.

11. If there is leak, remove the transfer assembly from the transmission, and replace the transfer oil seal and O-ring on the transfer output shaft (hypoid gear). If oil seal and O-ring replacement is required, you will need to check and adjust the transfer gear tooth contact, transfer gear backlash, the tapered roller bearing starting torque, and the total starting torque (see **REASSEMBLY**). Do not replace the oil seal with the transfer assembly on the transmission.

TRANSFER ASSEMBLY REMOVAL

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Shift the transmission into N.
3. Remove the transmission undercover.

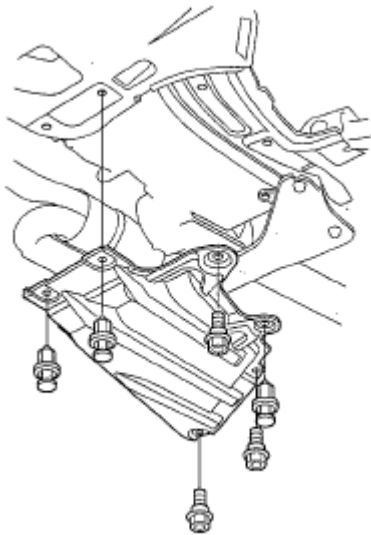


Fig. 264: Identifying Transmission Undercover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

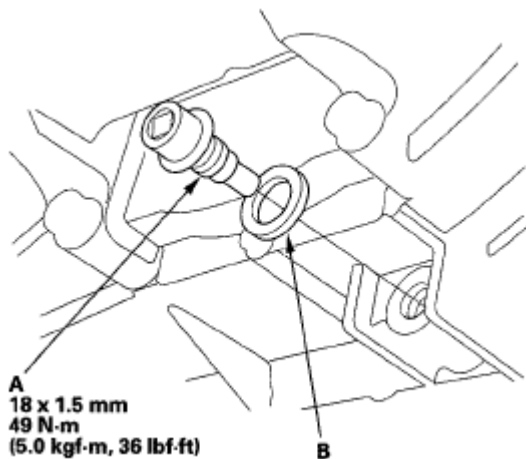


Fig. 265: Identifying Drain Plug And Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reinstall the drain plug with a new sealing washer (B).
6. Remove the front subframe stiffener.

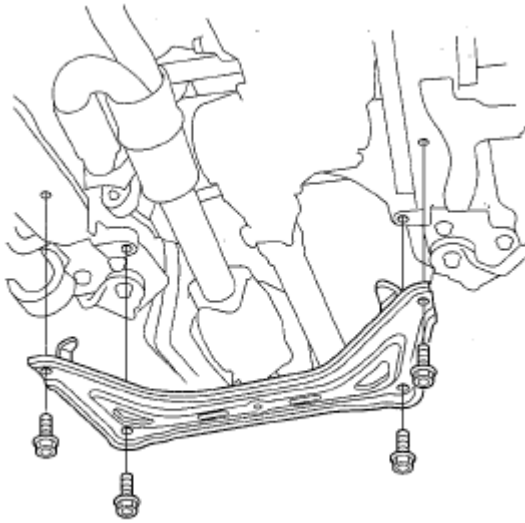


Fig. 266: Identifying Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove exhaust pipe A.

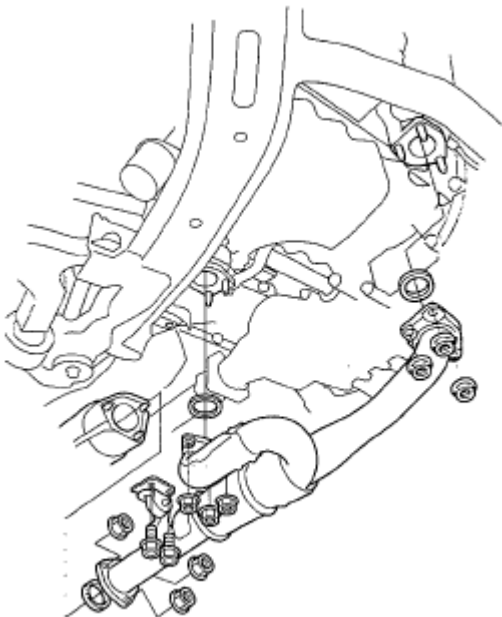


Fig. 267: Identifying Exhaust Pipe A
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolt securing the transfer breather hose bracket (A), and disconnect the breather hose (B) from the breather pipe (C) on the transfer assembly.

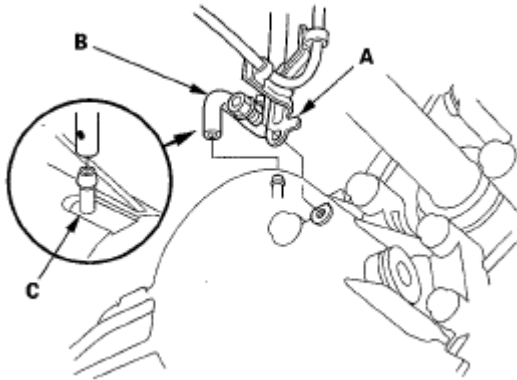


Fig. 268: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C).

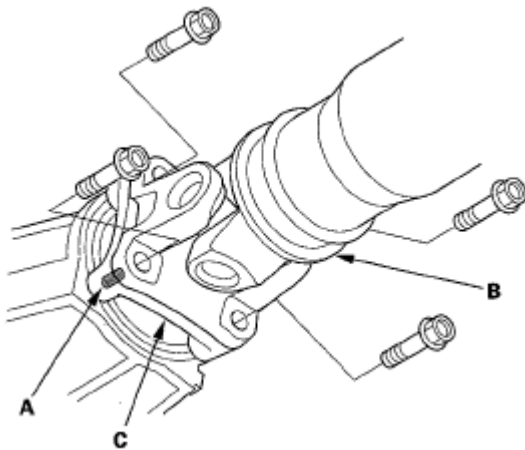


Fig. 269: Identifying Reference Mark Across Propeller Shaft And Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Separate the propeller shaft from the transfer companion flange.
11. Remove the transfer assembly from the transmission.

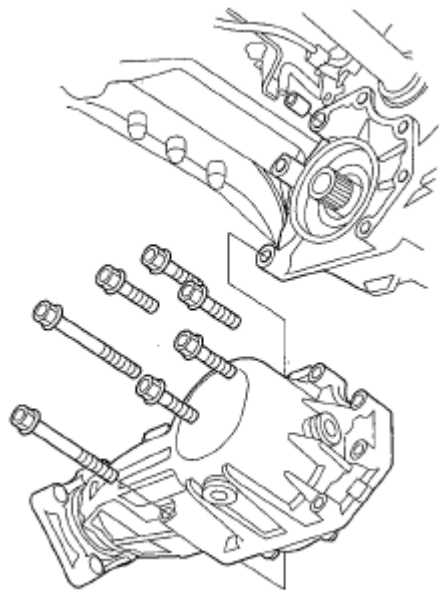


Fig. 270: Identifying Transfer Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER ASSEMBLY INSTALLATION

1. Clean the areas where the transfer assembly contacts the transmission with solvent, and dry with compressed air. Then apply transmission fluid to the contact area.
2. Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

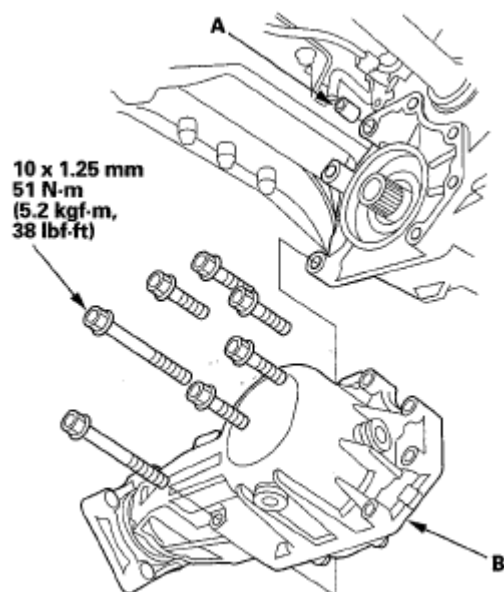


Fig. 271: Identifying Dowel Pin And Transfer Assembly With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark(C).

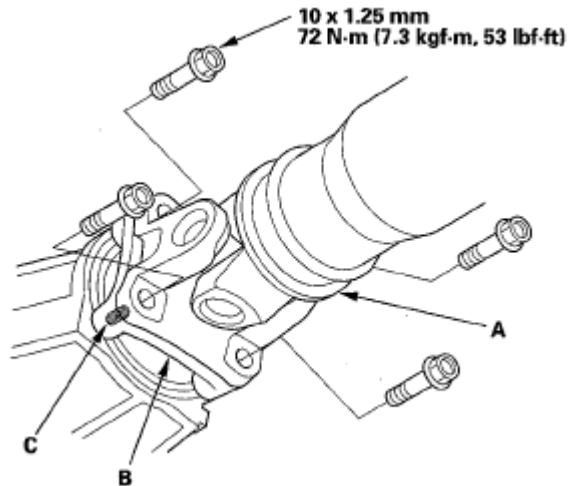


Fig. 272: Identifying Reference Mark Across Propeller Shaft And Transfer Companion Flange With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Secure the transfer breather hose bracket (A) on the transfer assembly with the bolt, and install the breather hose (B) over the breather pipe (C) with the dot (D) facing out.

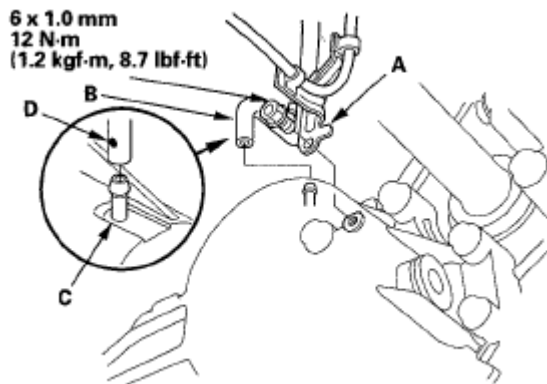


Fig. 273: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install exhaust pipe A with the new self-locking nuts, its mount (B), and new gaskets (C) (D).

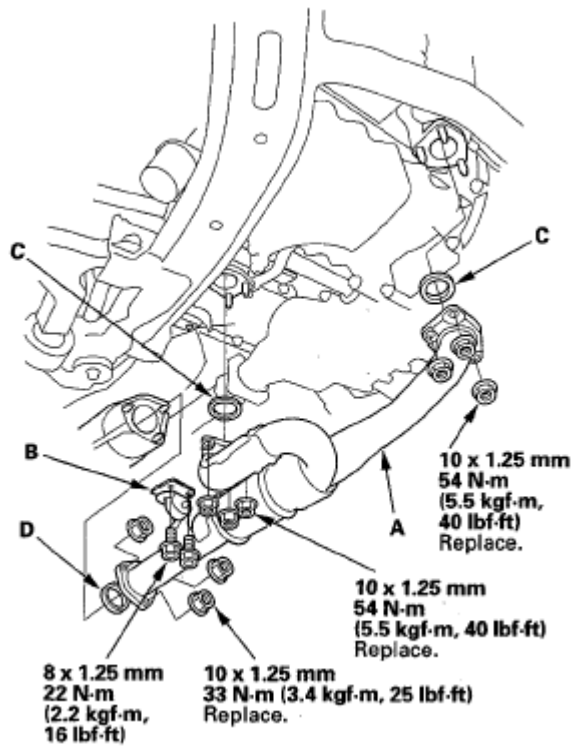


Fig. 274: Identifying Exhaust Pipe Self-Locking Nuts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the front subframe stiffener with the new mounting bolts.

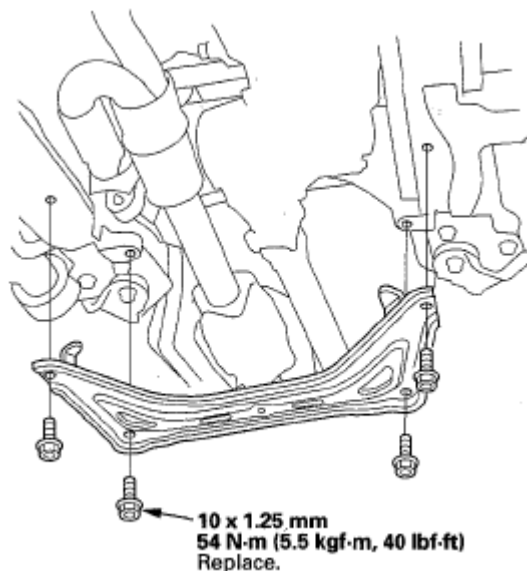


Fig. 275: Identifying Front Subframe Stiffener Mounting Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Refill the transfer assembly with transfer fluid (hypoid gear oil), if necessary (see **TRANSFER ASSEMBLY FLUID REPLACEMENT**).
8. Refill the transmission with ATF (see step 7 on).
9. Install the transmission undercover.

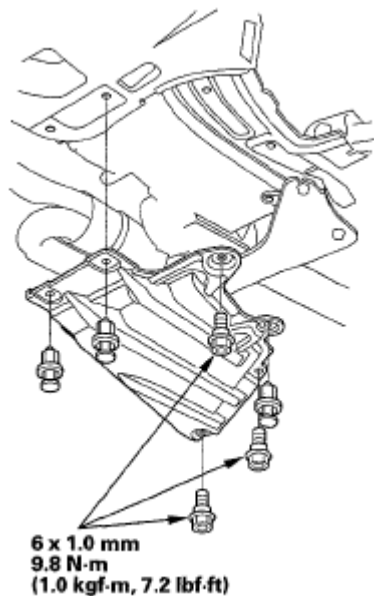


Fig. 276: Identifying Transmission Undercover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER BREATHER HOSE REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove the transfer breather (A) from its bracket (B).

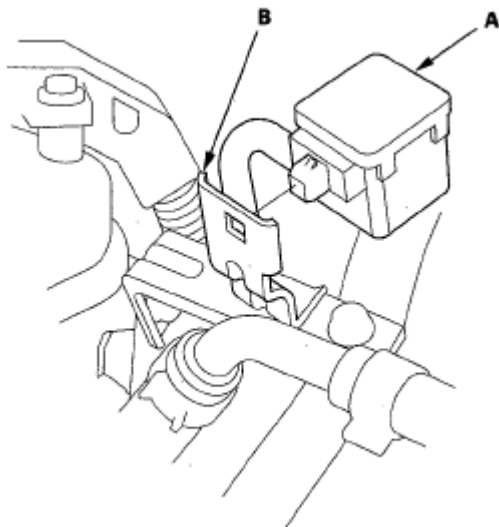


Fig. 277: Identifying Transfer Breather And Bracket
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the breather hose clamp (A) from the hose clamp (B), and remove the hose clamp (C) from the vacuum hose (D).

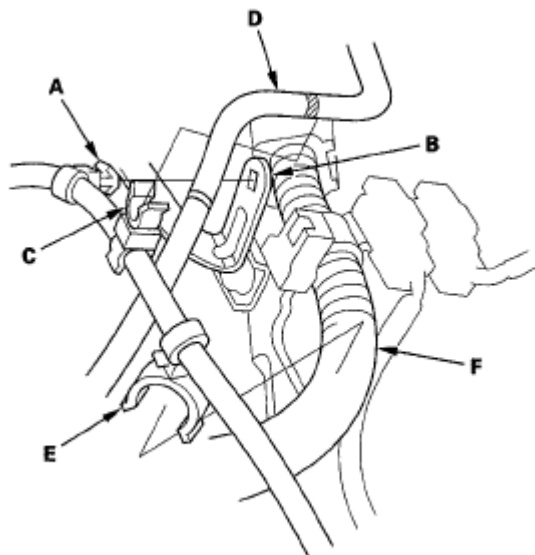


Fig. 278: Identifying Breather Hose Clamp, Hose Clamp, Hose Clamp And Vacuum Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the harness clamp (E) on the breather hose from the engine harness (F).
5. Disconnect the breather hose (A) from the transfer breather pipe (B), and remove the breather hose from the hose clamp (C).

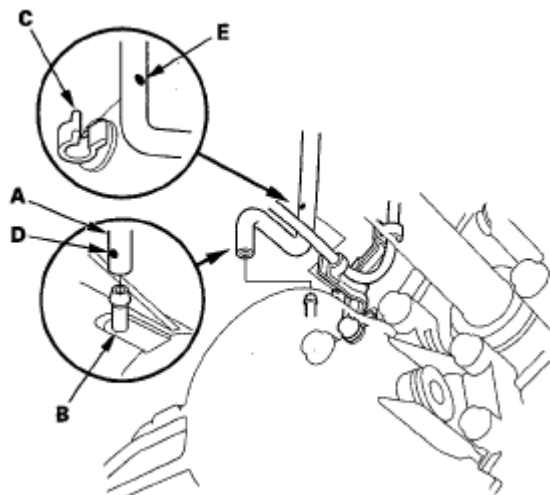


Fig. 279: Identifying Breather Hose, Transfer Breather Pipe And Hose Clamp
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

6. Install the breather hose over the breather pipe with the dot (D) facing out, and install the hose on the hose clamp at the dot (E).
7. Install the breather hose clamp on the hose clamp, and install the hose clamp on the vacuum hose at the mark.
8. Install the harness clamp on the engine harness.
9. Install the transfer breather on its bracket.

TRANSMISSION REMOVAL

Special Tools Required

- Engine support hanger, A and Reds AAR-T-12566
- Engine hanger balancer bar VSB02C000019
- Engine hanger adapter set VSB02C000031
- Front subframe adapter EQS02BMDXSB0

These special tools are available through the American Honda Tool and Equipment Program 1-888-424-6857.

NOTE:

- **Use fender covers to avoid damaging painted surfaces.**
- **Special tool Reds engine support hanger AAR-T-12566 must be used with the side engine mount installed.**

1. Secure the hood in the wide open position with the support rod.
2. Set the wheels in the straight ahead position, and lock the steering wheel.
3. Drain the power steering system fluid from the reservoir (see **FLUID REPLACEMENT**).
4. Do the battery removal procedure(See **REMOVAL**).
5. Remove the intake manifold cover, intake air duct, and air cleaner housing.
6. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
7. Remove the battery base and battery base bracket.
8. Remove the front bulkhead cover.
9. Raise the vehicle on a lift, and make sure it is securely supported. Remove the front wheels.
10. Remove the transmission undercover and splash shield.

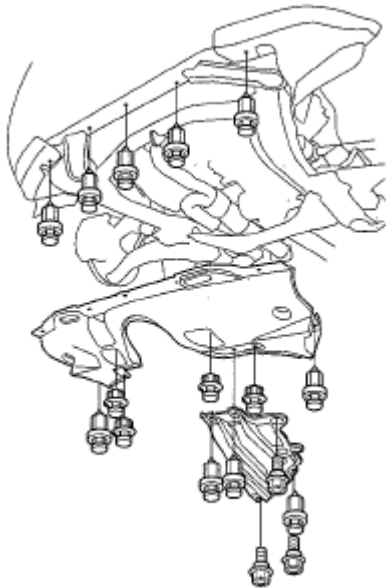


Fig. 280: Identifying Transmission Undercover And Splash Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the drain plug (A), and drain the automatic transmission fluid (ATF).

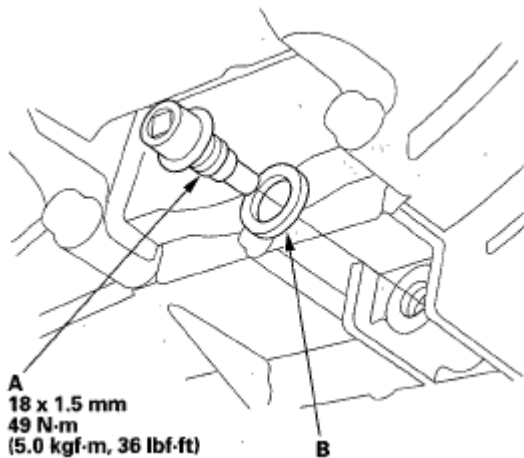


Fig. 281: Identifying Drain Plug And Sealing Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Reinstall the drain plug with a new sealing washer (B).
13. Disconnect the steering joint (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
14. Remove the power steering pump outlet line (A) from the power steering pump, and remove the hose clamp bolt (B).

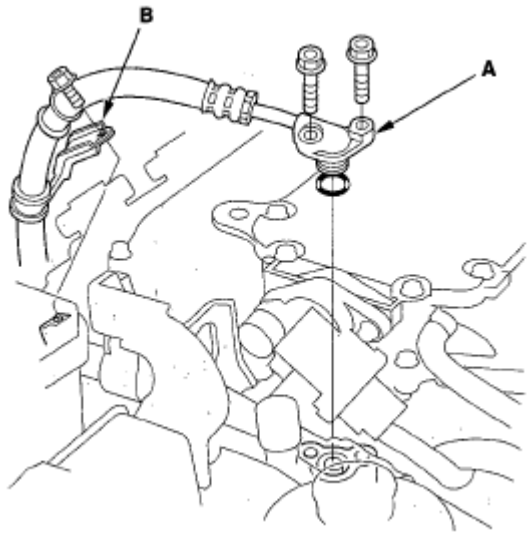


Fig. 282: Identifying Power Steering Pump Outlet Line And Hose Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Disconnect the transmission breather hose (A) from the breather pipe (B) at the transmission housing.

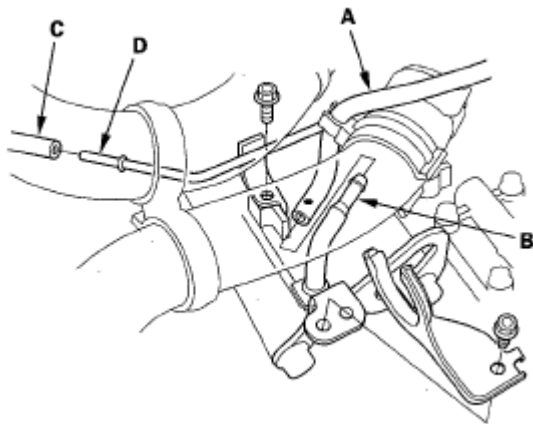


Fig. 283: Identifying Transmission Breather Hose, Vacuum Hose And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Disconnect the vacuum hose (C) from the vacuum line (D), and remove the vacuum line bolt.
17. Disconnect the starter cables (A) from the starter, and remove the harness clamp (B) from the clamp bracket (C).

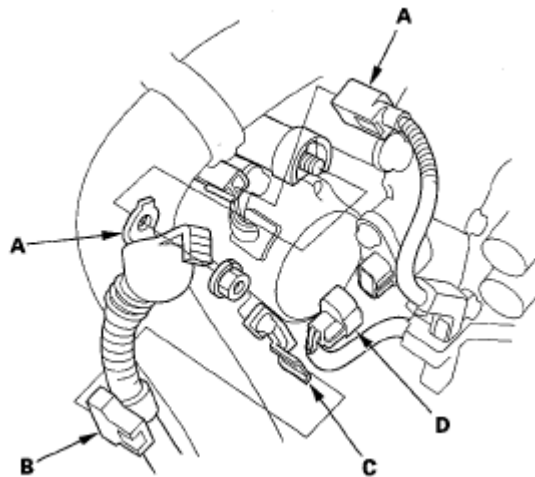


Fig. 284: Identifying Solenoid Harness Connector, Starter Cables, Harness Clamp And Clamp Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Disconnect the solenoid harness connector (D).
19. Remove the dipstick, then remove the starter (A) and gasket (B).

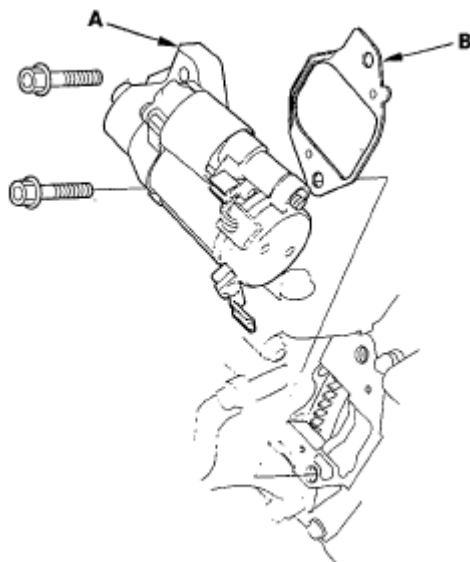


Fig. 285: Identifying Starter And Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the nuts securing the shift cable bracket (A).

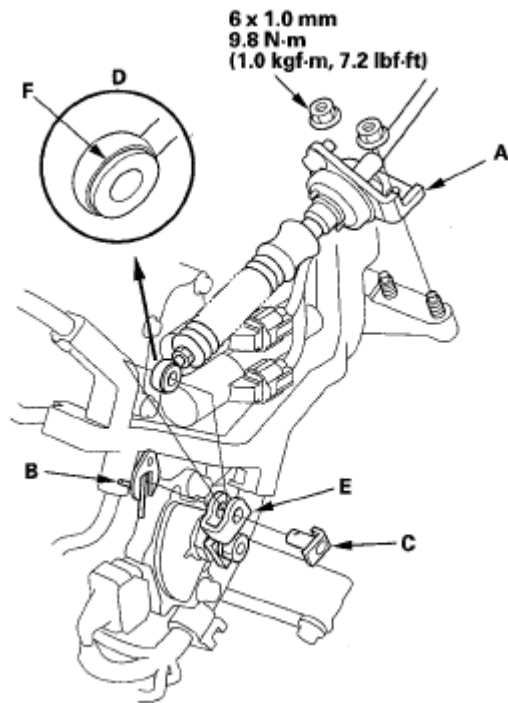


Fig. 286: Identifying Shift Cable Bracket, Spring Clip/Washer, Control Pin, Bushing And Control Lever With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
22. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
23. Disconnect A/T clutch pressure control solenoid valve A connector (A), A/T clutch pressure control solenoid valve B connector (B), and 4th clutch transmission fluid pressure switch connector (C), and remove the harness cover mounting bolt (D).

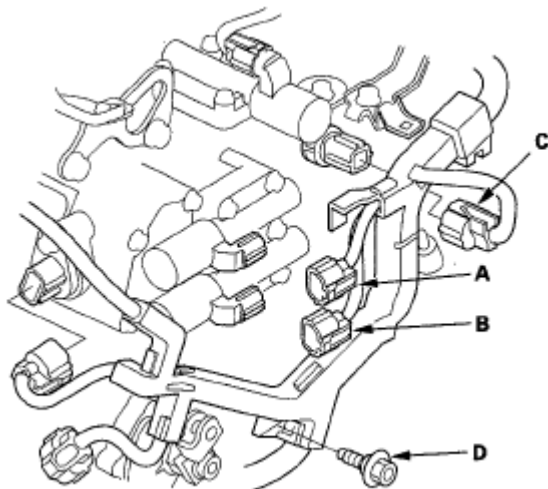


Fig. 287: Identifying A/T Clutch Pressure Control Solenoid Valves Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Disconnect A/T clutch pressure control solenoid valve C connector (A).

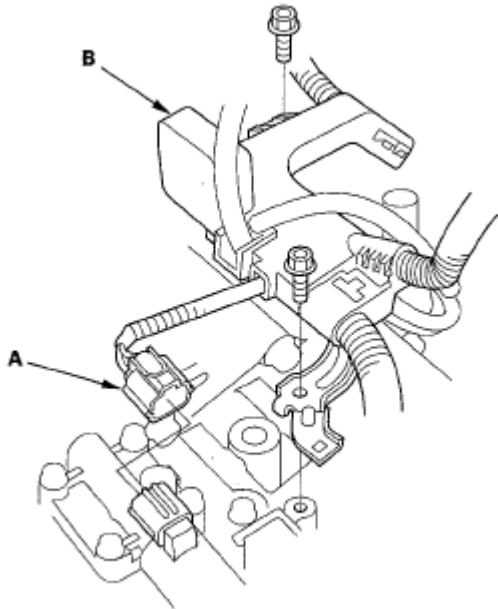


Fig. 288: Identifying A/T Clutch Pressure Control Solenoid Valve C Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the bolts securing the harness cover (B).
26. Disconnect the transmission range switch connector (A), and remove the harness clamp (B) from the clamp bracket (C).

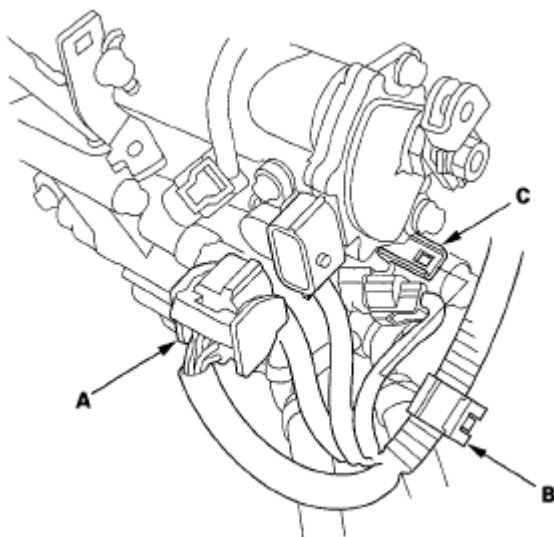


Fig. 289: Identifying Transmission Range Switch Connector, Harness Clamp And Clamp Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Remove the ATF cooler hoses (A) from the ATF cooler lines (B). Turn the ends of the cooler hoses up to prevent ATF from flowing out, then plug the cooler hoses and lines.

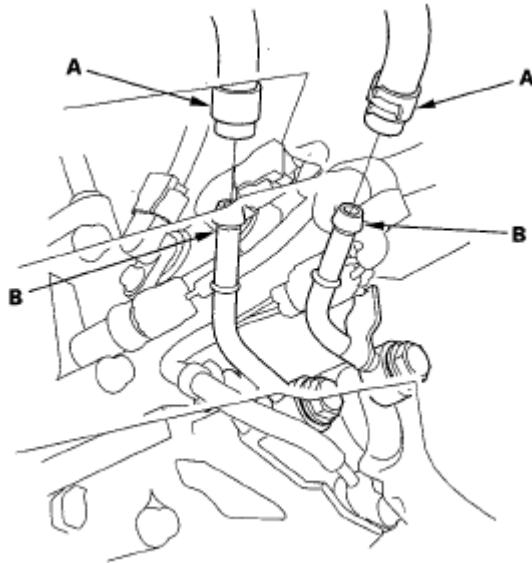


Fig. 290: Identifying ATF Cooler Hoses And ATF Cooler Lines

Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Disconnect the input shaft (mainshaft) speed sensor connector (A), output shaft (countershaft) speed sensor connector (B), ATF temperature sensor connector (C), and 3rd clutch transmission fluid pressure switch connector (D).

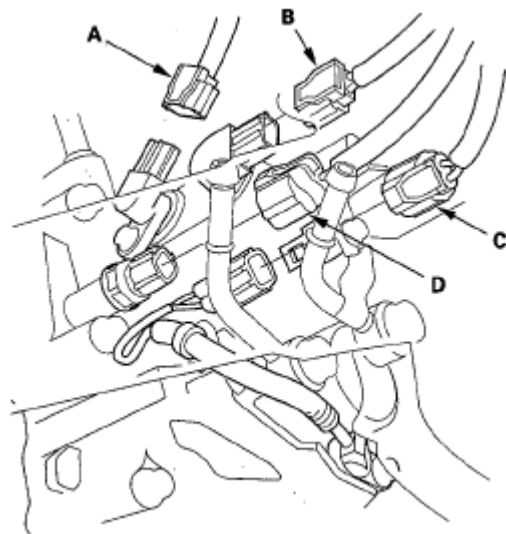


Fig. 291: Identifying Input Shaft (Mainshaft) Speed Sensor Connector And ATF Temperature Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Disconnect the 2nd clutch transmission fluid pressure switch connector (A), and remove the vacuum line bolt (B).

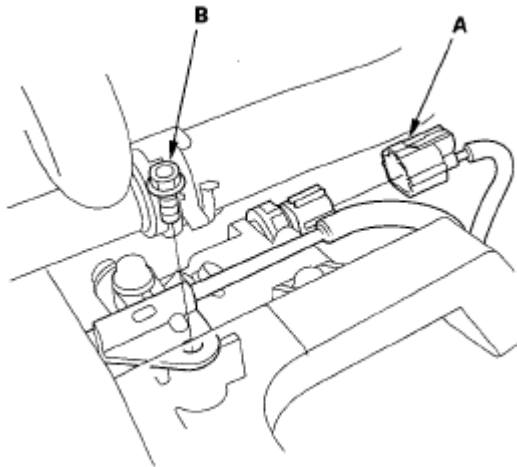


Fig. 292: Identifying 2nd Clutch Transmission Fluid Pressure Switch Connector And Vacuum Line Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Remove the bolt securing the engine mount control solenoid valve mounting bracket.

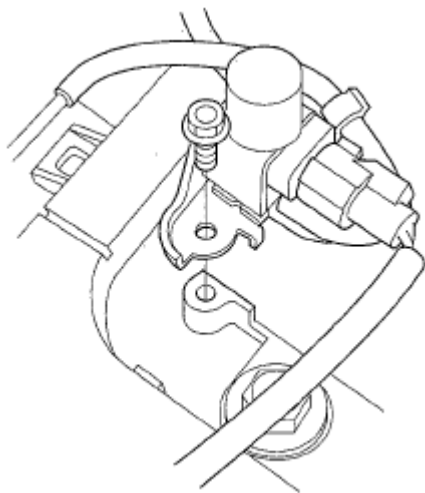


Fig. 293: Identifying Engine Mount Control Solenoid Valve Mounting Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Remove the connector bracket from the engine front cylinder head; use the bracket bolt hole to attach engine hanger balancer bar front arm.

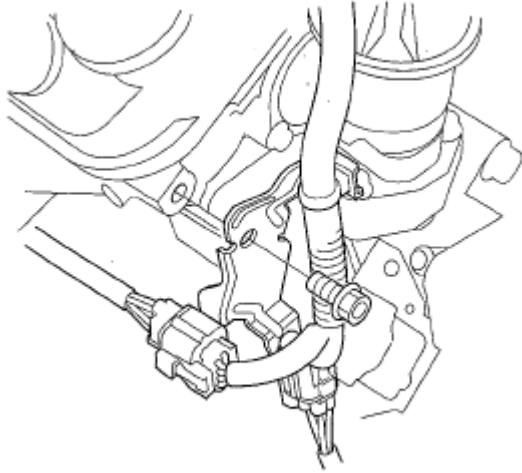


Fig. 294: Identifying Connector Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Remove the transfer breather bracket from the engine rear cylinder head; use the bracket bolt hole to attach engine hanger balancer bar rear arm.

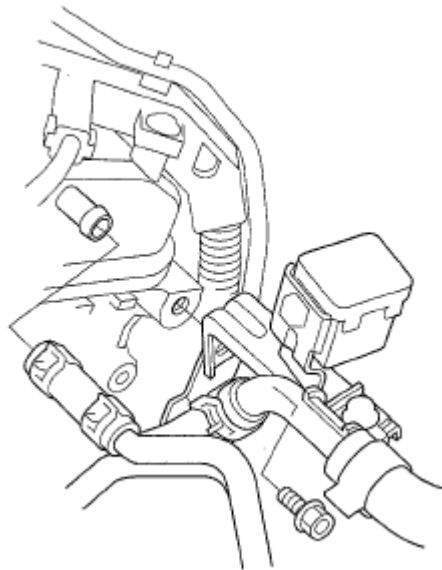


Fig. 295: Identifying Transfer Breather Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Remove the service caps (A) for the front damper flange nuts from the cowl cover (B). Position the engine hanger adapters (VSB02C000031) over the damper flange nuts.

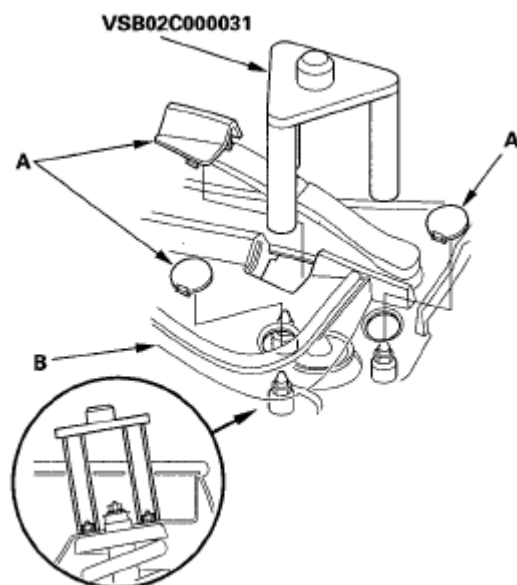


Fig. 296: Identifying Service Caps And Cowl Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Install the engine balance bar (VSB02C000019); attach the front arm (A) to the front cylinder head with a spacer and the 10 mm bolt, and attach the rear arm (B) to the rear cylinder head with the 8 mm bolt.

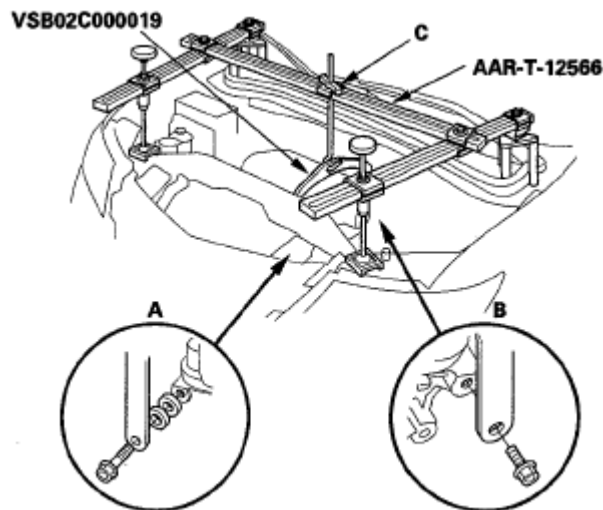


Fig. 297: Identifying Engine Balance Bar
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook to the slotted hole in the engine balance bar. Tighten the wing nut (C) by hand, to lift and support the engine.
36. Remove the front mount stop (A) and front mount bolt (B).

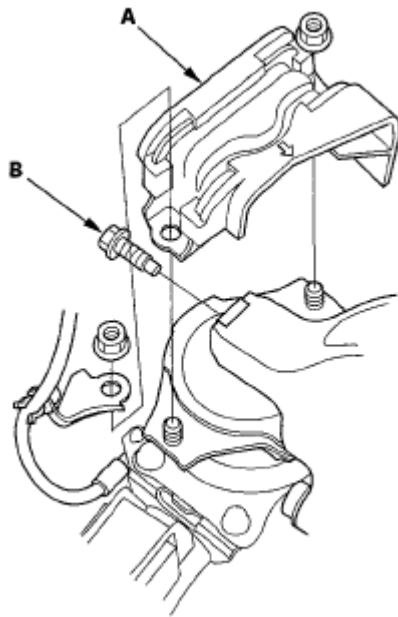


Fig. 298: Identifying Front Mount Stop And Front Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Remove the front subframe stiffener.

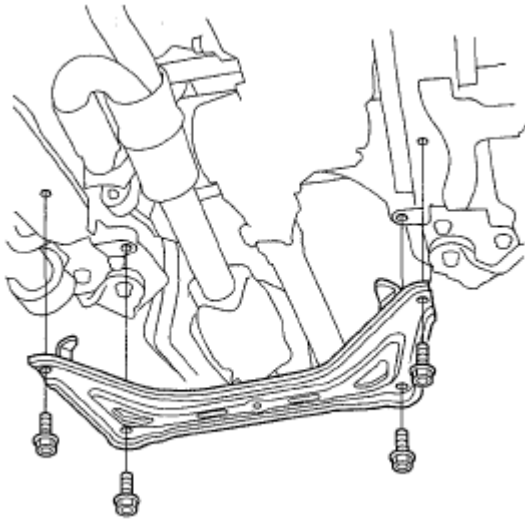


Fig. 299: Identifying Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove exhaust pipe A and its mount (B).

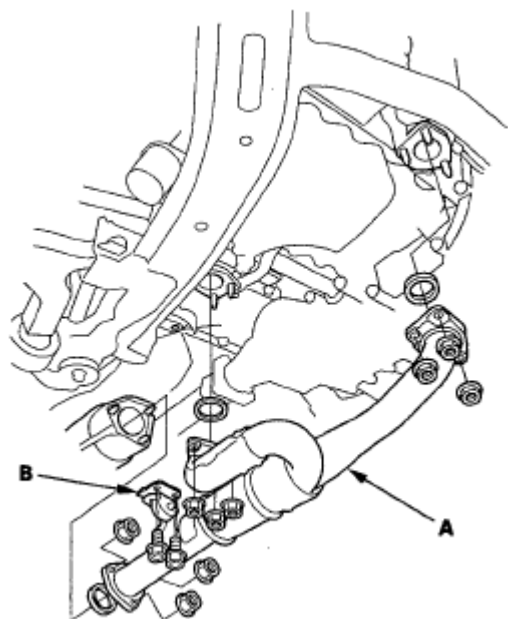


Fig. 300: Identifying Exhaust Pipe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Disconnect the headlight adjuster leveling sensor connector (A) on both lower arms, and remove the harness clamps (B) from the front subframe for models equipped with the headlight adjuster leveling system.

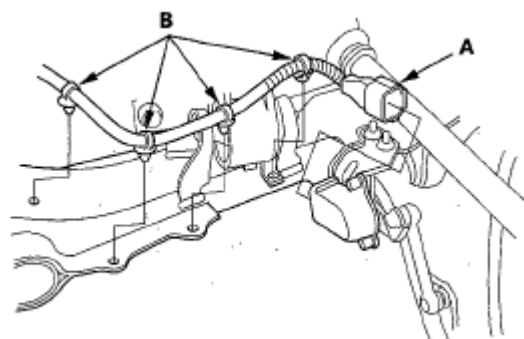


Fig. 301: Identifying Headlight Adjuster Leveling Sensor Connector And Harness Clamps

Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Remove the lock pins (A) and castle nuts (B), and separate the lower arms (C) from the knuckles (D) (see step 5 on **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).

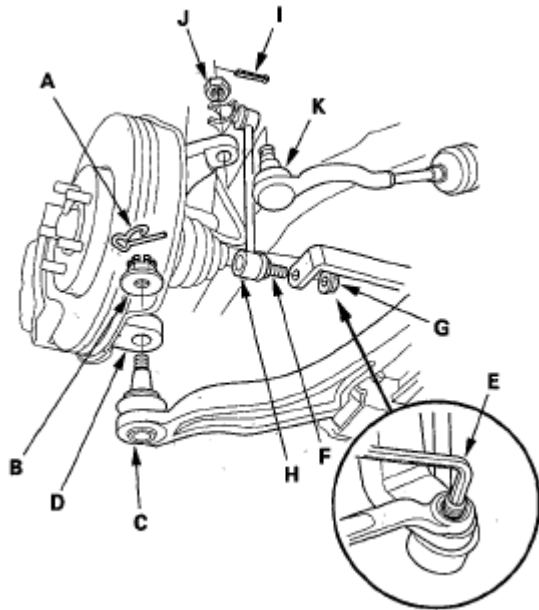


Fig. 302: Identifying Lock Pins, Castle Nuts, Tie-Rod End Ball Joints And Stabilizer Link
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Insert a 6 mm Allen wrench (E) in the top of the ball joint pin (F), and remove the nuts (G), then separate the stabilizer link (H).
42. Remove the cotter pins (I) and nuts (J), and separate the tie-rod end ball joints (K) from the knuckles (see step 3 on **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
43. Remove the bolt securing the transfer breather hose bracket (A), and disconnect the breather hose (B) from the breather pipe (C) on the transfer assembly.

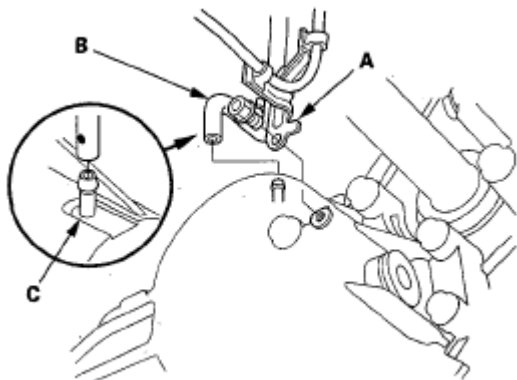


Fig. 303: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Make a reference mark (A) across the propeller shaft (B) and the transfer companion flange (C), and separate the propeller shaft from the transfer companion flange.

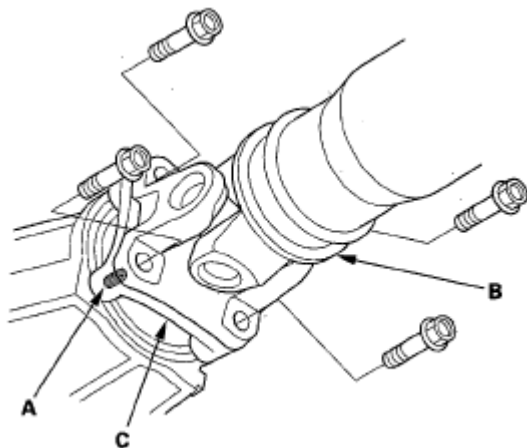


Fig. 304: Identifying Reference Mark Across Propeller Shaft And Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Remove the transfer assembly from the transmission.

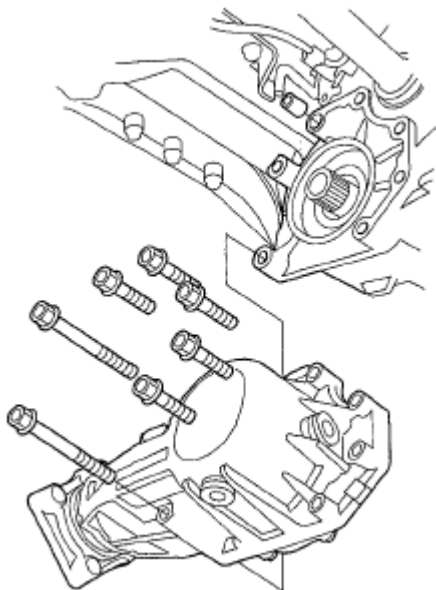


Fig. 305: Identifying Transfer Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Remove the torque converter cover (A), and remove the drive plate bolts (B) (8) while rotating the crankshaft pulley.

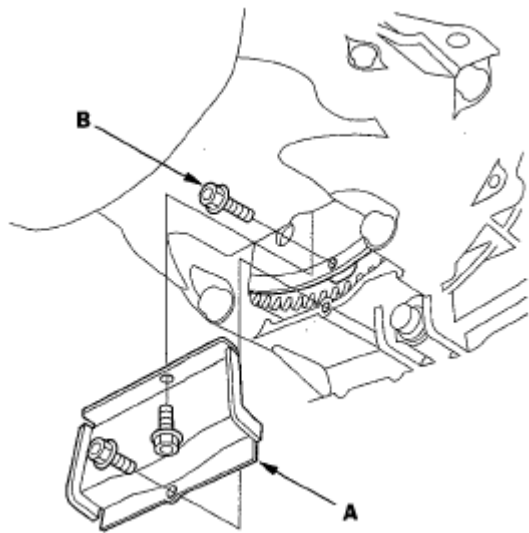


Fig. 306: Identifying Torque Converter Cover And Drive Plate Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Disconnect the power steering pressure switch connector.

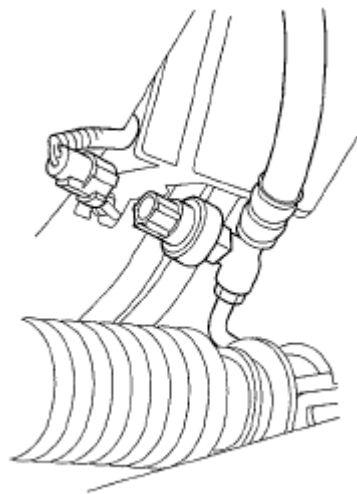


Fig. 307: Identifying Power Steering Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Loosen the hose clamp bolt, then disconnect the power steering fluid hose from the fluid line at the left front of the subframe.

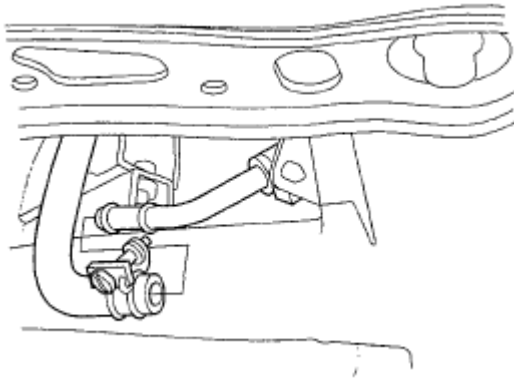


Fig. 308: Identifying Power Steering Fluid Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Remove the transmission lower mount bolt.

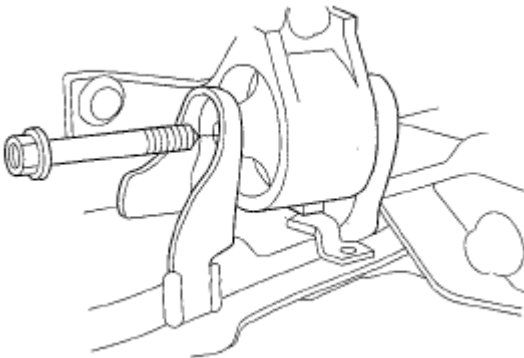


Fig. 309: Identifying Transmission Lower Mount Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Remove the four rear mount bracket bolts.

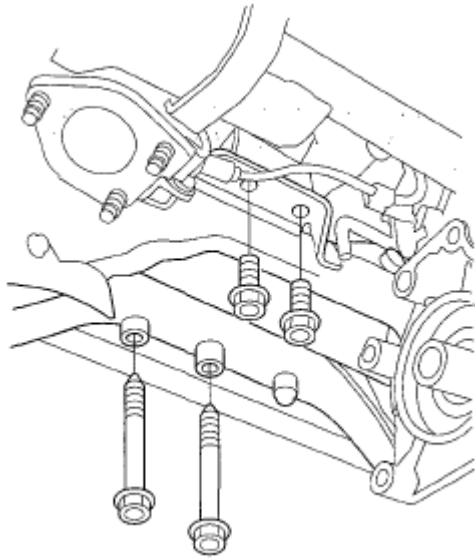


Fig. 310: Identifying Rear Mount Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the bolt securing the power steering fluid line clamp bracket (A) on the rear mount bracket, and turn the bracket away from the rear mount bracket.

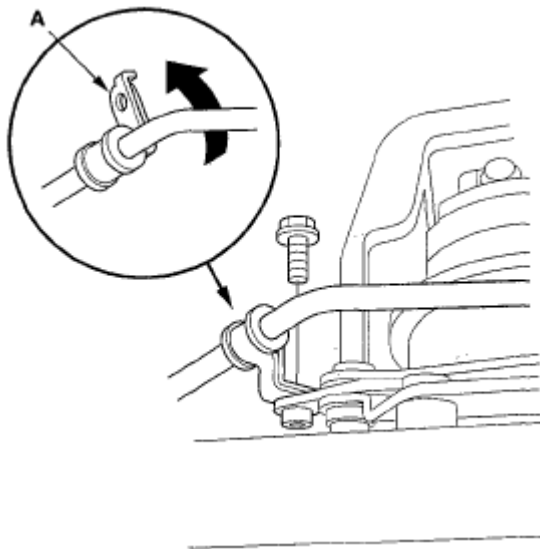


Fig. 311: Identifying Power Steering Fluid Line Clamp Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Loosen the four bolts (A) holding the adjustable arms (B) of the front subframe adapter (EQS02BMDXSB0) to its center plate.

NOTE: The adapter is designed to be used with a commercially available transmission jack.

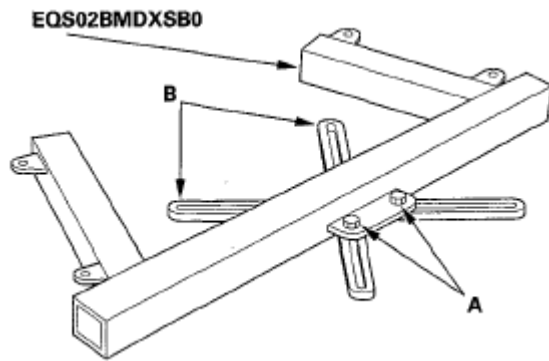


Fig. 312: Identifying Front Subframe Adapter Adjustable Arms Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Line up the slots in the arms with the bolt holes on the corner of the jack base, then attach the adapter (EQS02BMDXB0) to the jack base with the bolts (A) that came with the jack. Tighten the bolts securely.

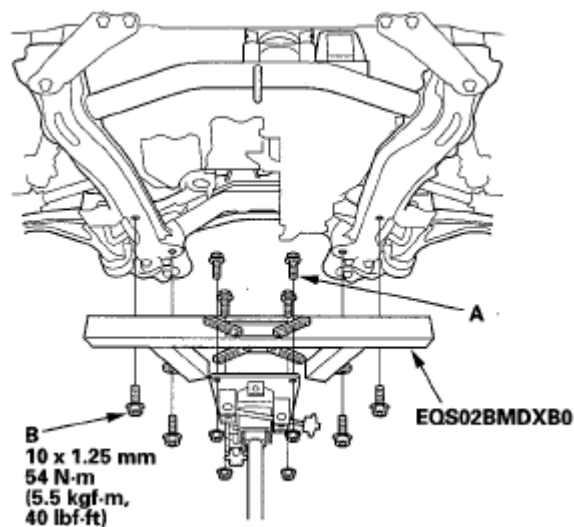


Fig. 313: Identifying Subframe Stiffener Mounting Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Raise the jack to the vehicle height, then attach the adapter to the front subframe using the subframe stiffener mounting bolts (B) and bolt holes.
55. Remove the six bolts securing the front stiffeners (A) and rear stiffeners (B), and four bolts securing the front subframe (C), and lower the front subframe.

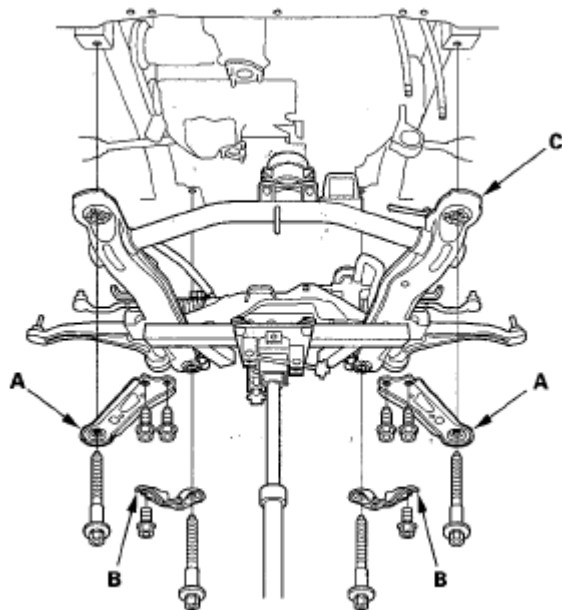


Fig. 314: Identifying Front And Rear Stiffeners Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Remove the transmission lower mount (A).

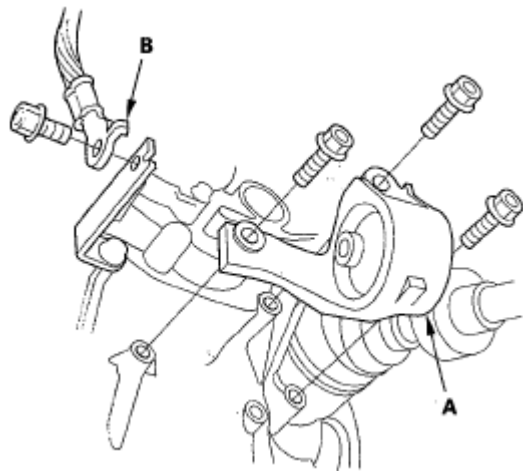


Fig. 315: Identifying Transmission Lower Mount And Transmission Ground Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Remove the transmission ground terminal (B).
58. Remove the driveshafts from the differential and the intermediate shaft. Coat all precision machined surfaces with clean engine oil, then put plastic bags over driveshaft ends.

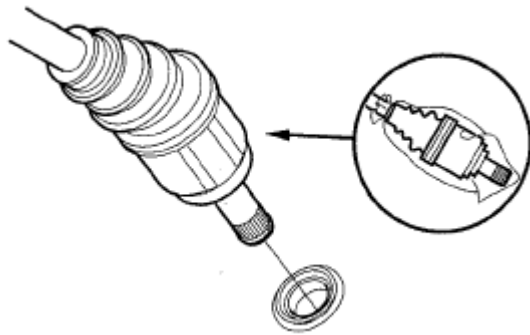


Fig. 316: Identifying Driveshaft Ends With Plastic Bags
Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. Remove the exhaust manifold bracket (A) and heat shield (B).

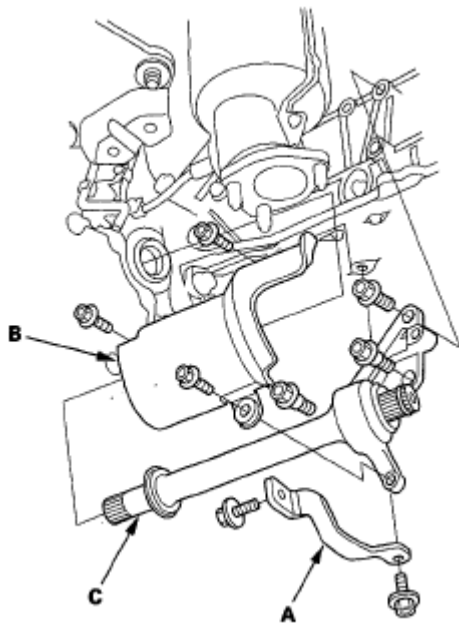


Fig. 317: Identifying Intermediate Shaft, Exhaust Manifold Bracket And Heat Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Remove the intermediate shaft (C). Coat all precision machined surfaces with clean engine oil, then put plastic bags over intermediate shaft ends.
61. Remove the upper transmission housing mounting bolts.

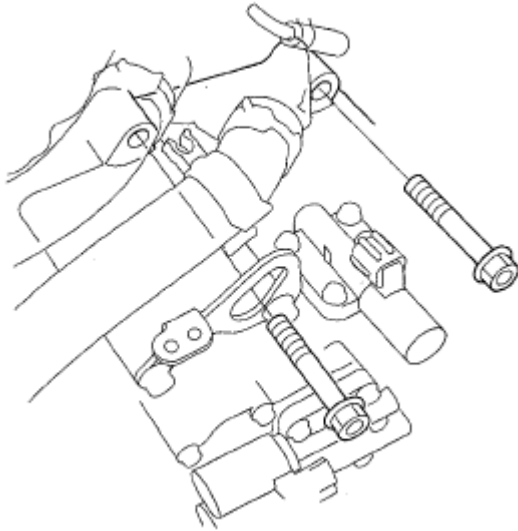


Fig. 318: Identifying Upper Transmission Housing Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Remove the lower transmission housing mounting bolts.

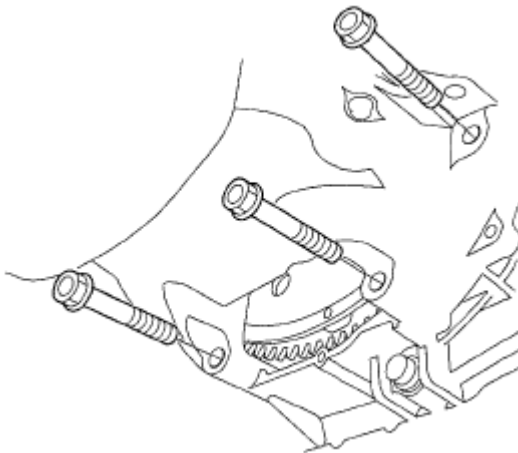


Fig. 319: Identifying Lower Transmission Housing Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Remove the harness clamp bracket (A) from the front mount bracket (B), and remove the mount bracket.

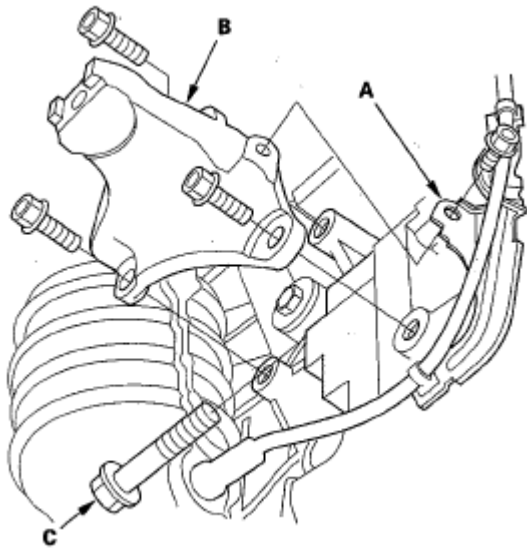


Fig. 320: Identifying Harness Clamp Bracket And Transmission Housing Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Remove the transmission housing mounting bolt (C) using a socket 22 mm in length.
65. Remove the rear transmission housing mounting bolts.

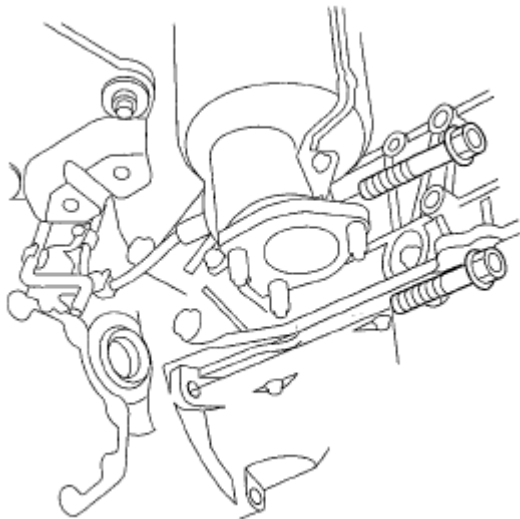


Fig. 321: Identifying Rear Transmission Housing Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Place a jack under the transmission.
67. Lower the transmission by loosening the wing nut of the engine support hanger, and tilt the engine just enough for the transmission to clear its end from the side frame.
68. Slide the transmission away from the engine to remove it from the vehicle.
69. Remove the torque converter and dowel pins.

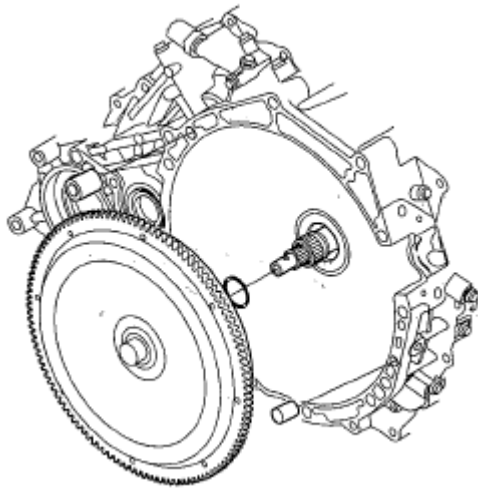


Fig. 322: Identifying Torque Converter And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

70. Remove the drive plate (A) and washer (B) from the engine crankshaft, and replace the drive plate whenever the transmission is removed from the engine.

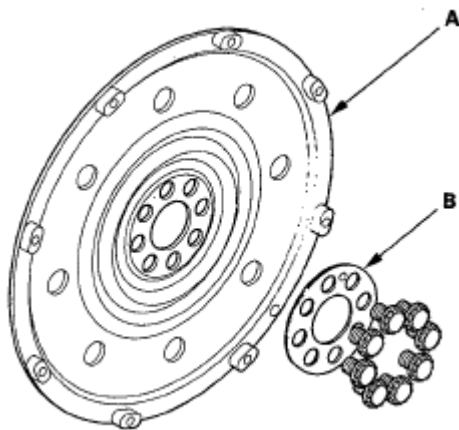


Fig. 323: Identifying Drive Plate And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION INSTALLATION

Special Tools Required

- Engine support hanger, A and Reds AAR-T-12566
- Engine hanger balancer bar VSB02C000019
- Engine hanger adapter set VSB02C000031
- Front subframe adapter EQS02BMDXSB0

These special tools are available through the American Honda Tool and Equipment Program 1-888-424-

6857.

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Clean the ATF cooler (see **ATF COOLER CLEANING**).
2. Install the new drive plate (A) and washer (B) on the engine crankshaft, and tighten the eight bolts in a crisscross pattern in two or more steps.

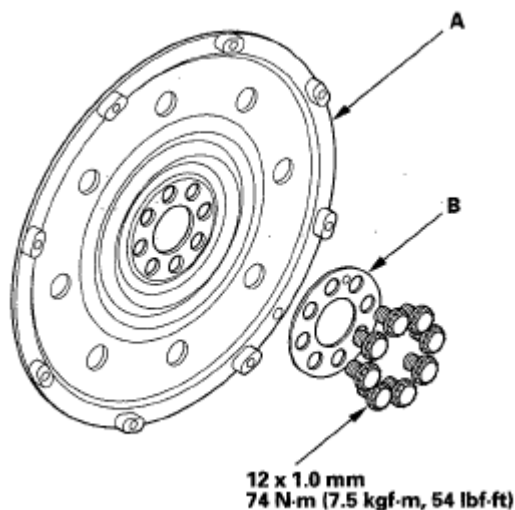


Fig. 324: Identifying Drive Plate And Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the torque converter (A) on the mainshaft (B) with the new O-ring (C).

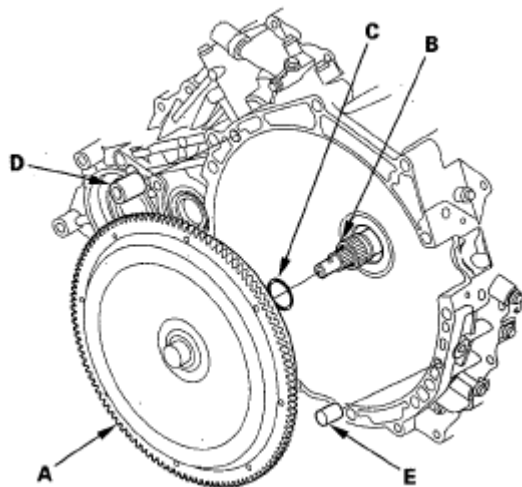


Fig. 325: Identifying Dowel Pin, Torque Converter And Mainshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 14 mm dowel pin (D) and 10 mm dowel pin (E) in the torque converter housing.

5. Place the transmission on the jack, and raise it to engine level.
6. Attach the transmission to the engine, and install the lower transmission housing mounting bolts.

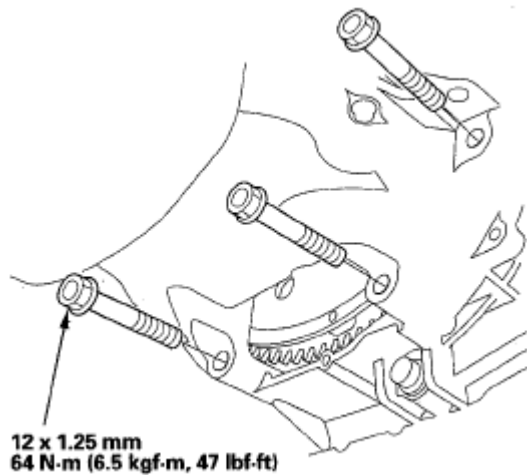


Fig. 326: Identifying Lower Transmission Housing Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the rear transmission housing mounting bolts.

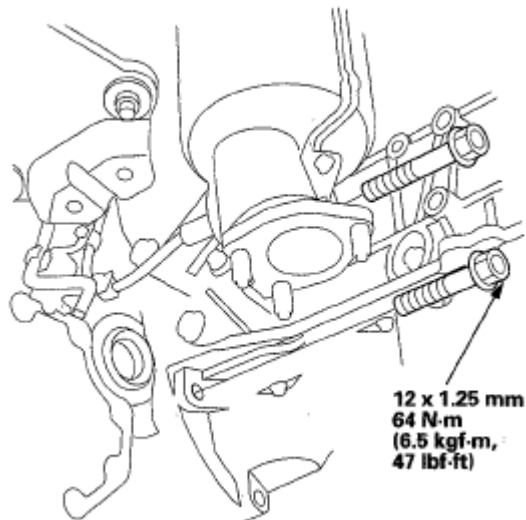


Fig. 327: Identifying Rear Transmission Housing Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the upper transmission housing mounting bolts.

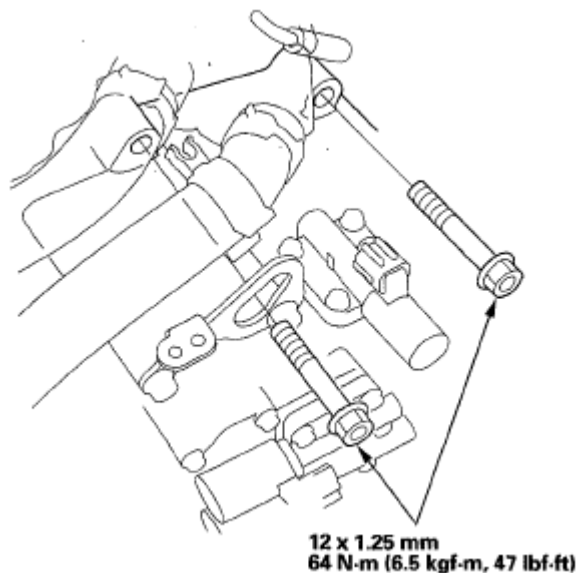


Fig. 328: Identifying Upper Transmission Housing Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the transmission housing mounting bolt (A).

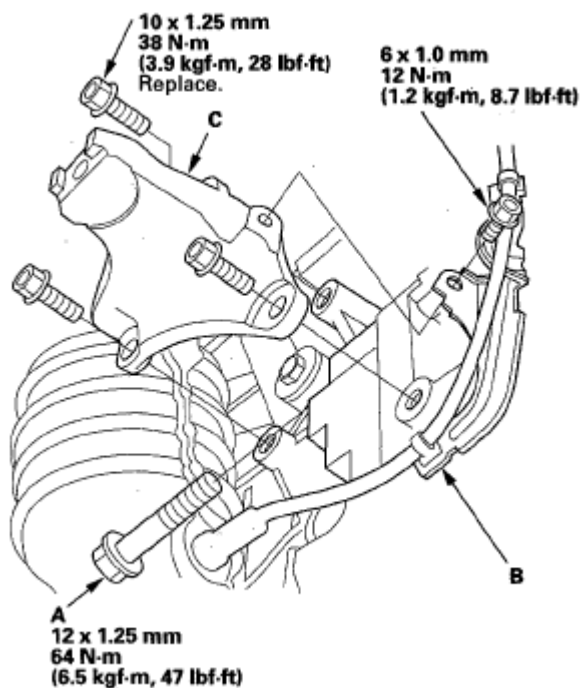


Fig. 329: Identifying Transmission Housing Mounting Bolt And Harness Clamp Bracket With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the front mount bracket (B) with the new mounting bolts.

11. Secure the harness clamp bracket (C) with the bolt.
12. Install the new set ring (A) on the intermediate shaft (B).

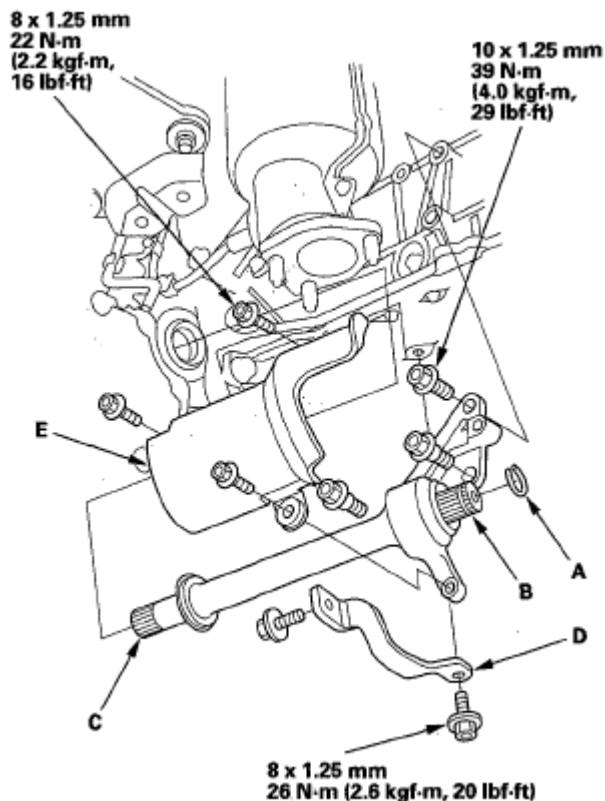


Fig. 330: Identifying Set Ring, Intermediate Shaft, Exhaust Manifold Bracket And Heat Shield With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Clean the areas where the intermediate shaft contacts the transmission (differential) with solvent, and dry with compressed air. Apply ATF to intermediate shaft splines (C), then install the intermediate shaft, be sure not to allow dust or other foreign particles to enter the transmission.
14. Install the exhaust manifold bracket (D) and heat shield (E).
15. Install the new set ring (A) on the left driveshaft (B).

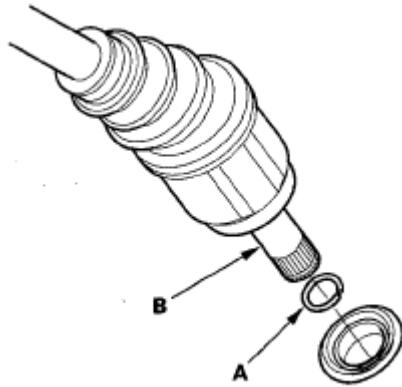


Fig. 331: Identifying Set Ring And Left Driveshaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Clean the areas where the left driveshaft contacts the transmission (differential) with solvent, and dry with compressed air. Then install the left driveshaft, be sure not to allow dust or other foreign particles to enter the transmission. Turn the steering knuckle fully outward, and slide the driveshaft into the differential until you feel its set ring fully engage the side gear.
17. Apply the recommended grease to the right driveshaft inboard-joint splines.
18. Slide the right driveshaft over the intermediate shaft splines until you feel the driveshaft fully engage the intermediate shaft set ring.
19. Install the transmission lower mount (A).

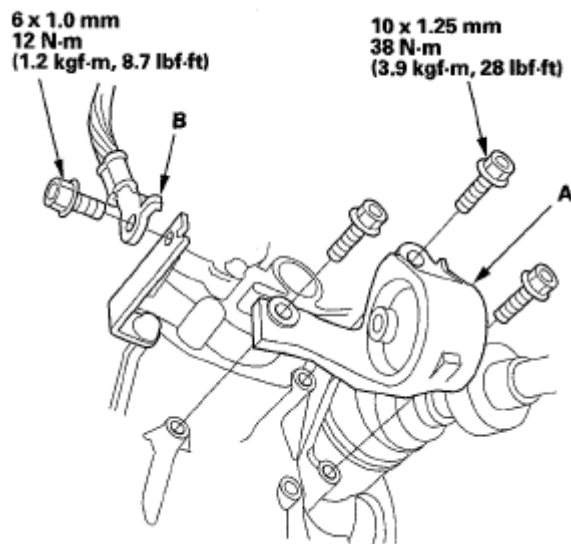


Fig. 332: Identifying Transmission Lower Mount And Transmission Ground Cable With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the transmission ground cable (B).
21. Support the front subframe (A) with the front subframe adapter (EQS02BMDXB0) and a jack, and lift it

up to the body.

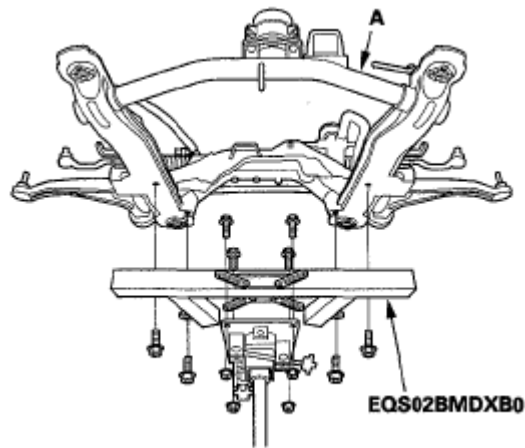


Fig. 333: Identifying Front Subframe With Front Subframe Adapter And Jack
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Loosely install the new subframe mounting bolts: front (A), rear (B), rear stiffeners (C) and mounting bolts (D), and front stiffeners (E) and mounting bolts (F).

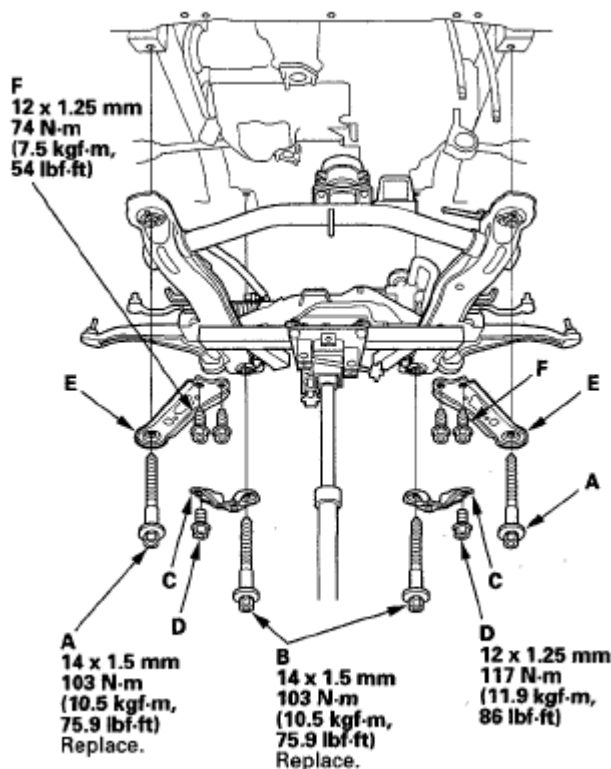


Fig. 334: Identifying Subframe Mounting Bolts And Stiffeners With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Align all reference marks (A) on the front subframe (B) with the body (C), then tighten the bolts on the front subframe to the specified torque.

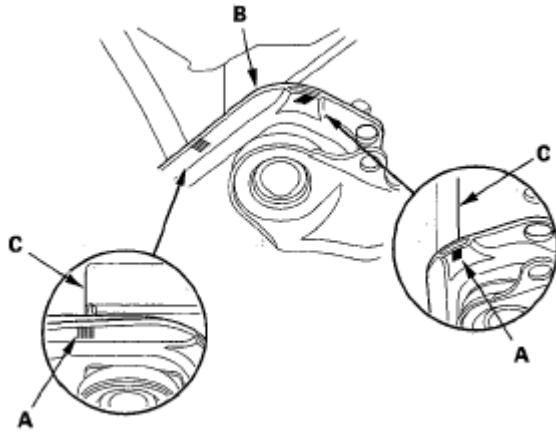


Fig. 335: Identifying Reference Marks On Front Subframe With Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Loosely tighten the left rear subframe mounting bolt in the same manner in step 23.
25. Loosely tighten the right and left front subframe mounting bolts.
26. Loosen the right rear mounting bolt, then tighten the bolt to the specified torque.
27. Tighten the left rear mounting bolt to the specified torque.
28. Tighten the right and left front mounting bolts to the specified torque.
29. Check that the positioning holes and slot are aligned using the frame positioning guide pin.
30. Tighten the rear and front stiffener mounting bolts to the specified torque.
31. Remove the jack and front subframe adapter.
32. Install the two mount bracket bolts (A) on the rear of the bracket, and install the new bolts (B) on the front.

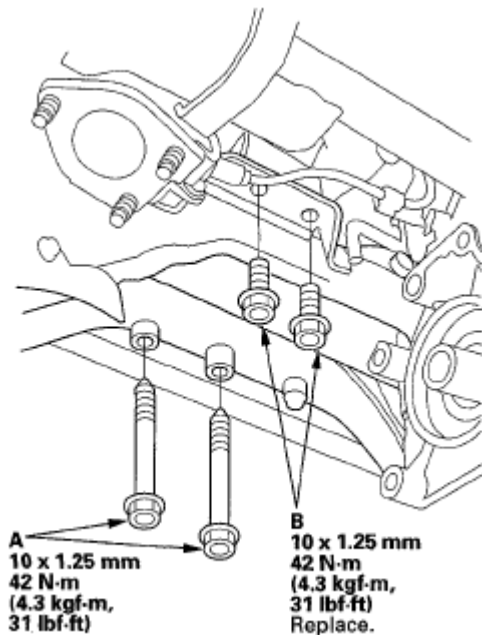


Fig. 336: Identifying Mount Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Install the new transmission lower mount bolt.

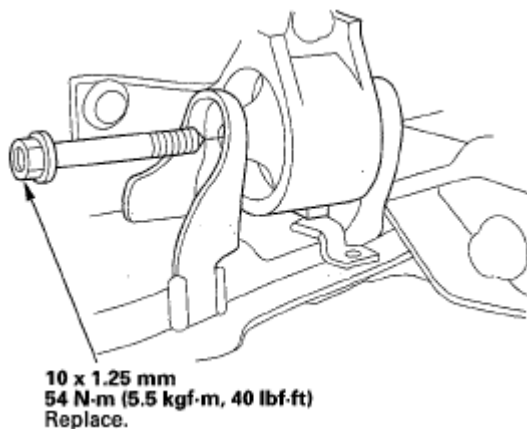


Fig. 337: Identifying Transmission Lower Mount Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Attach the torque converter to the drive plate (A) with eight bolts (B). Rotate the crankshaft pulley as necessary to tighten the bolt to 1/2 of the specified torque, then to the final torque, in a crisscross pattern. After tightening the last bolt, check that the crankshaft rotates freely.

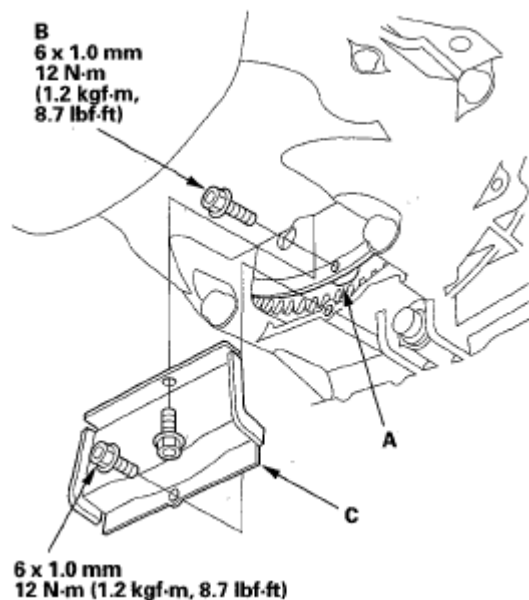


Fig. 338: Identifying Torque Converter Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the torque converter cover (C).
36. Connect the power steering fluid hose (A) to the line (B), and secure the hose with its hose clamp (C).

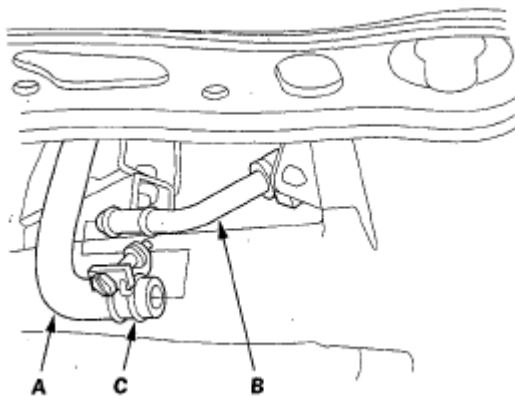


Fig. 339: Identifying Power Steering Fluid Hose And Hose Clamp
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Turn the power steering fluid line clamp bracket (A) to seat on the rear mount bracket (B), and secure the bracket on the rear mount bracket.

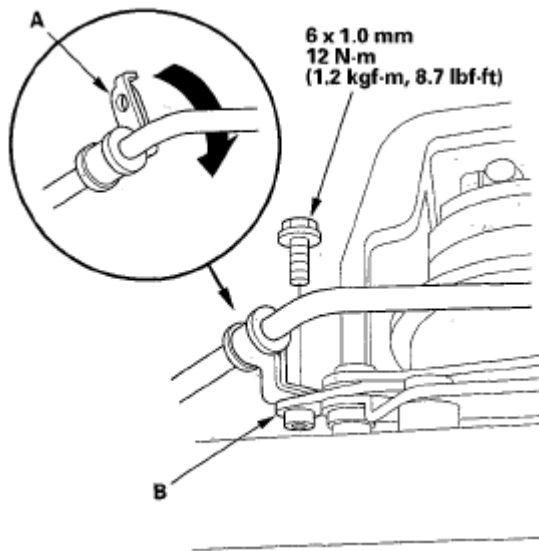


Fig. 340: Identifying Power Steering Fluid Line Clamp Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Connect the power steering pressure switch connector.

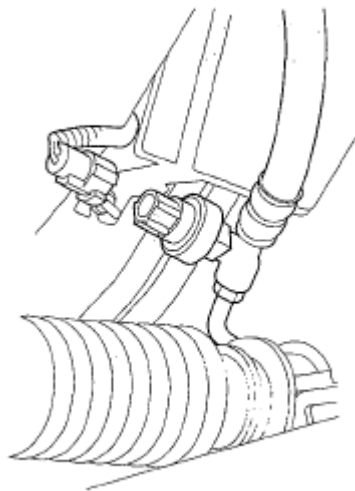


Fig. 341: Identifying Power Steering Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the dowel pin (A) in the transmission, and install the transfer assembly (B) on the transmission.

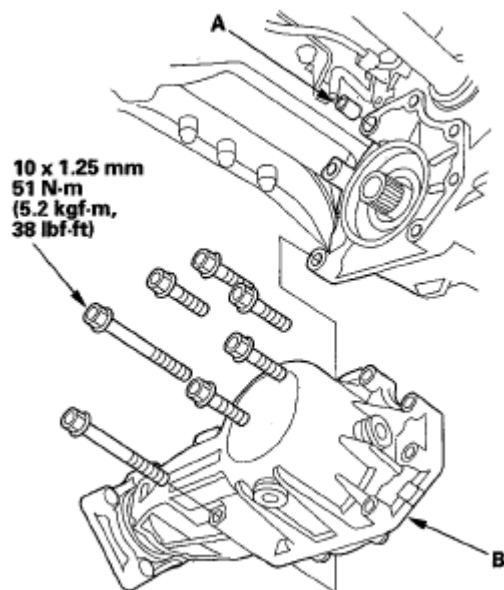


Fig. 342: Identifying Dowel Pin And Transfer Assembly With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Secure the transfer breather hose bracket (A) on the transfer assembly with the bolt, and install the breather hose (B) over the breather pipe (C) with the dot (D) facing out.

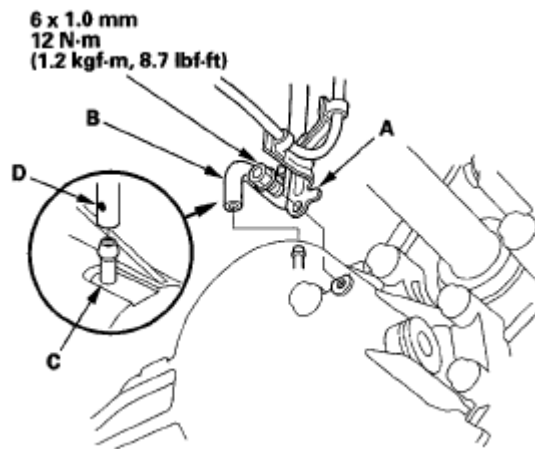


Fig. 343: Identifying Transfer Breather Hose Bracket, Breather Hose And Breather Pipe With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Install the propeller shaft (A) to the transfer companion flange (B) by aligning the reference mark (C).

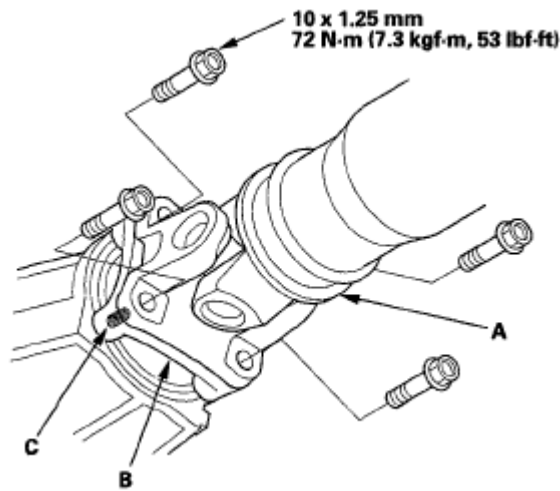


Fig. 344: Identifying Reference Mark On Propeller Shaft And Transfer Companion Flange With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Install the ball joints on each lower arm (A) to each knuckle (B) with new castle nuts (C), and secure the castle nuts with the lock pins (D).

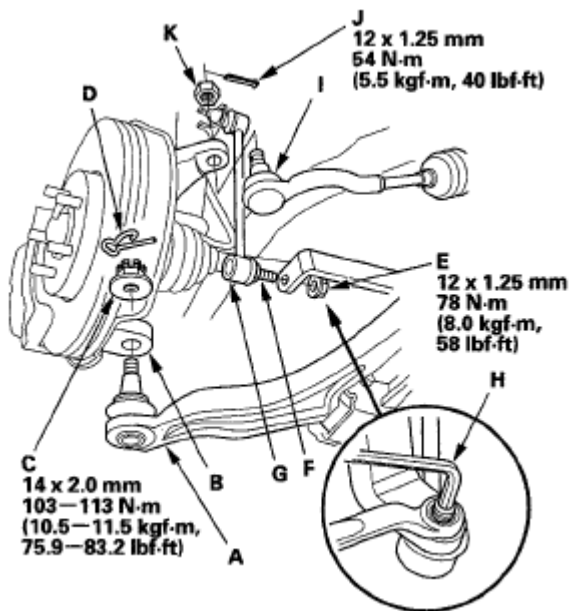


Fig. 345: Identifying Tie-Rod End Ball Joints, Stabilizer Link, Knuckle, Castle Nuts And Lock Pins With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Install the nuts (E) to the ball joint pins (F) on each stabilizer link (G). Insert a 6 mm Allen wrench (H) in the top of the ball joint pins, and tighten the nuts to the specified torque.
44. Install the tie-rod end ball joints (I) to each knuckle with the nuts (J) and new cotter pins (K).

45. Connect the headlight adjuster leveling sensor connector (A) on both lower arms, and install the harness clamps (B) on the front subframe for model equipped with the headlight adjuster leveling system.

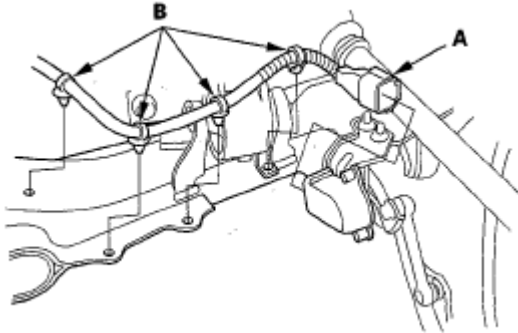


Fig. 346: Identifying Headlight Adjuster Leveling Sensor Connector And Harness Clamps
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install exhaust pipe A with the new self-locking nuts, its mount (B), and new gaskets (C) (D).

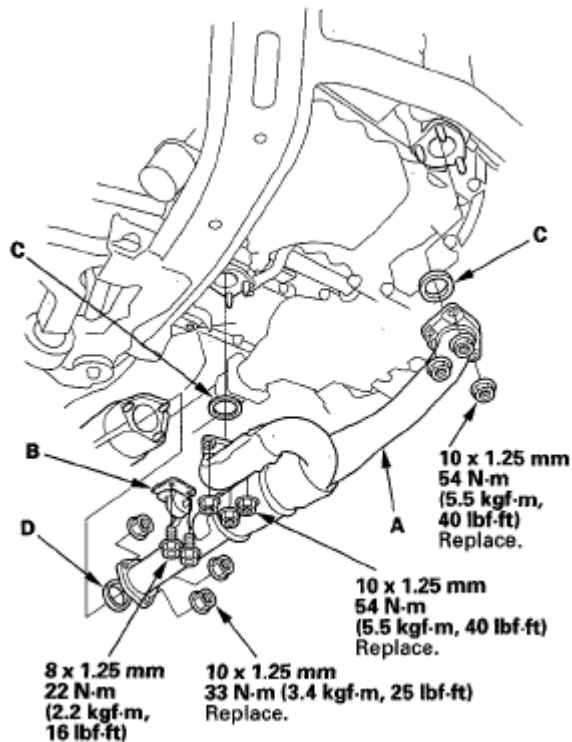


Fig. 347: Identifying Exhaust Pipe And Gaskets With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Install the front subframe stiffener with the new mounting bolts.

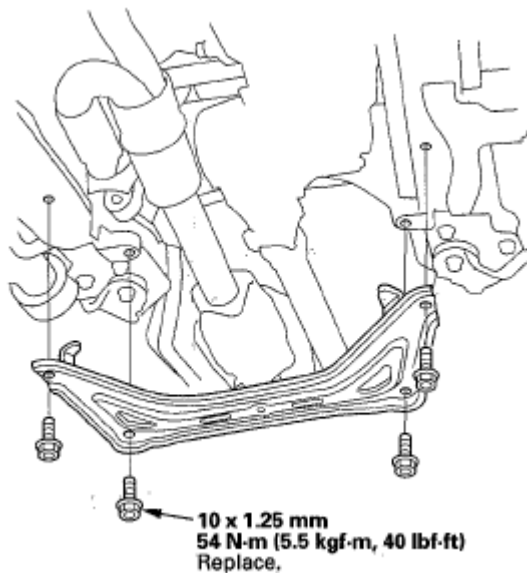


Fig. 348: Identifying Front Subframe Stiffener Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the new front mount bolt, and install the front mount stop (A) with new nuts and vacuum hose clamp (B).

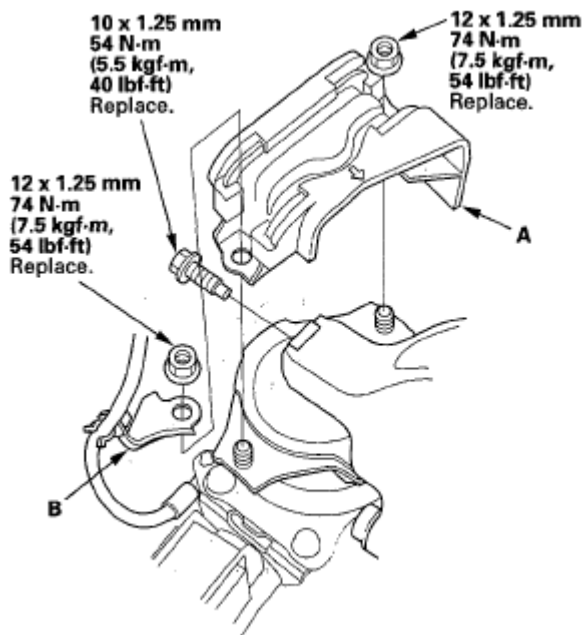


Fig. 349: Identifying Front Mount Stop And Vacuum Hose Clamp With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Remove the engine support hanger, engine support hanger stands, and engine balancer bar.
50. Install the connector bracket on the engine front cylinder head.

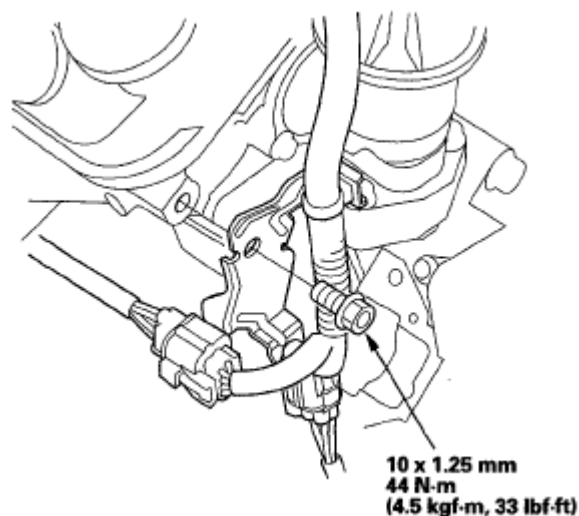


Fig. 350: Identifying Connector Bracket On Engine Front Cylinder Head With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Install the transfer breather bracket on the engine rear cylinder head, and connect the breather hose over the breather pipe.

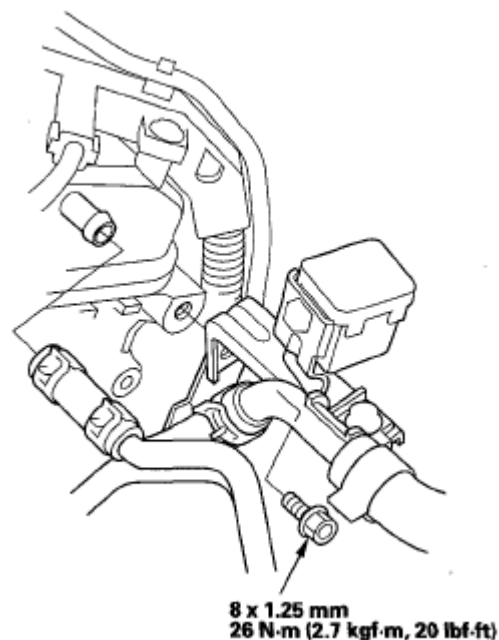


Fig. 351: Identifying Transfer Breather Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Securing the engine mount control solenoid valve mounting bracket (A) with the bolt.

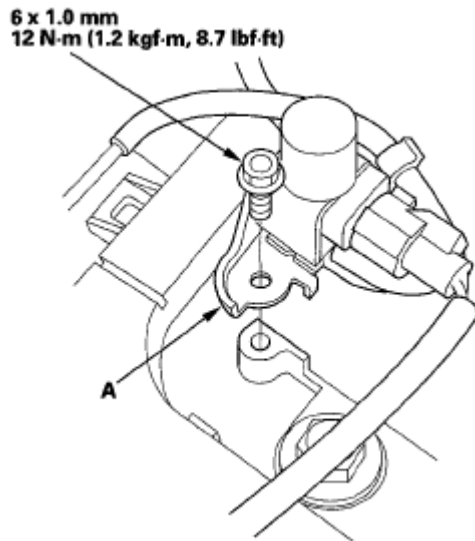


Fig. 352: Identifying Engine Mount Control Solenoid Valve Mounting Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Connect the 2nd clutch transmission fluid pressure switch connector (A), and secure the vacuum line (B) with the bolt.

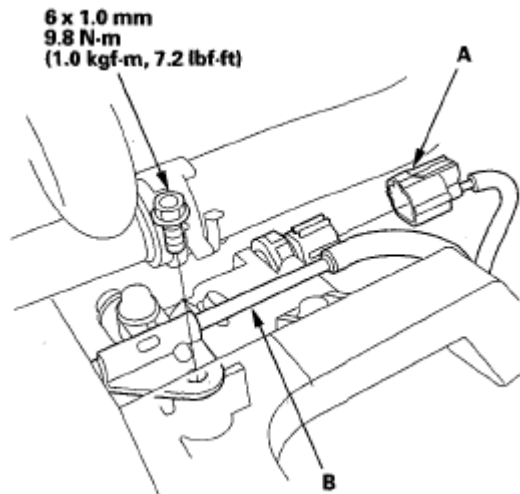


Fig. 353: Identifying 2nd Clutch Transmission Fluid Pressure Switch Connector And Vacuum Line With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Connect the input shaft (mainshaft) speed sensor connector (A), output shaft (countershaft) speed sensor connector (B), ATF temperature sensor connector (C), and 3rd clutch transmission fluid pressure switch connector (D). Do not allow water, fluid, oil, dust, or other foreign particles to enter any of the connectors.

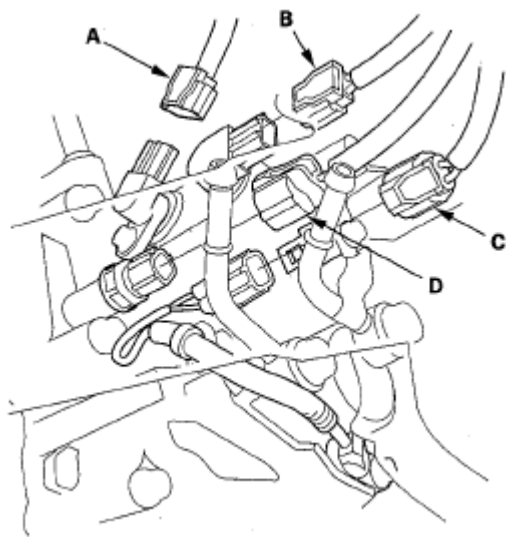


Fig. 354: Identifying Input Shaft (Mainshaft) Speed Sensor Connector And ATF Temperature Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Connect the ATF cooler hoses (A) to the ATF cooler lines (B), and secure the hoses with the clips (C) (see **ATF COOLER HOSE REPLACEMENT**).

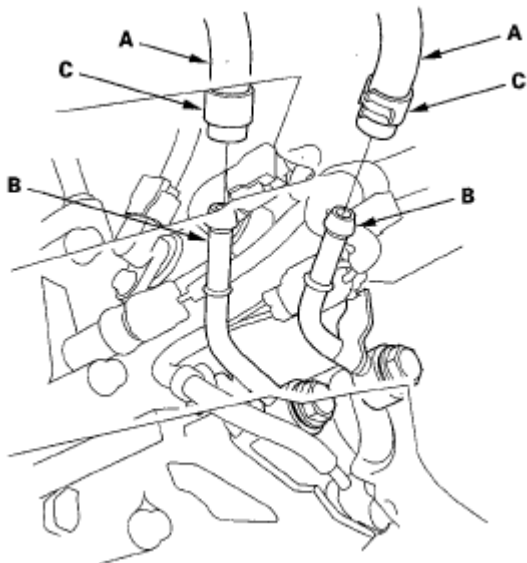


Fig. 355: Identifying ATF Cooler Hoses, ATF Cooler Lines And Hose Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Connect the transmission range switch connector (A), and install the harness clamp (B) on the clamp bracket (C).

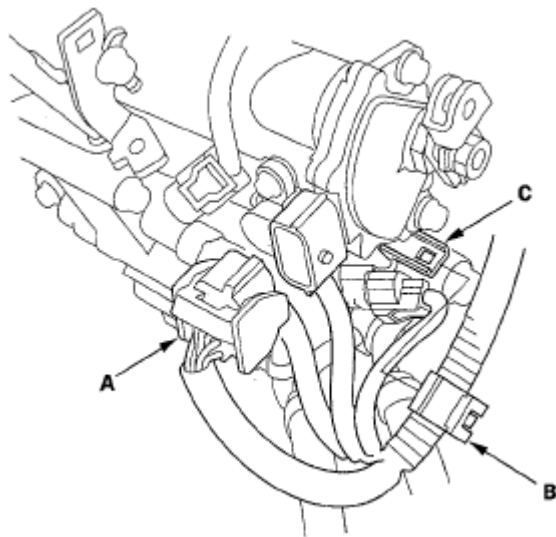


Fig. 356: Identifying Transmission Range Switch Connector And Harness Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Secure the harness cover (A) with the bolts.

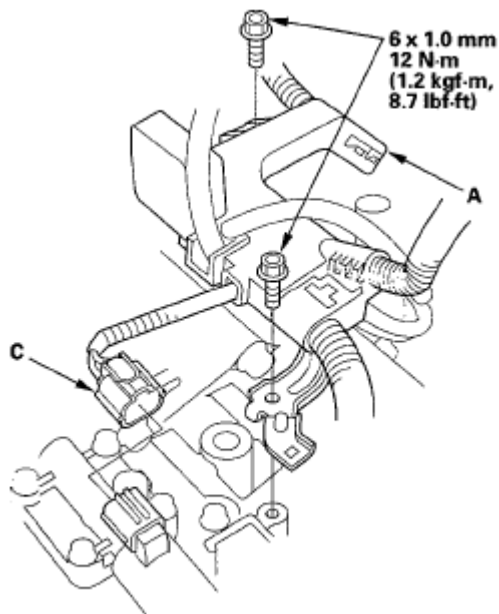


Fig. 357: Identifying Harness Cover Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

58. Connect the A/T clutch pressure control solenoid valve C connector.
59. Secure the harness cover (A) with the bolt.

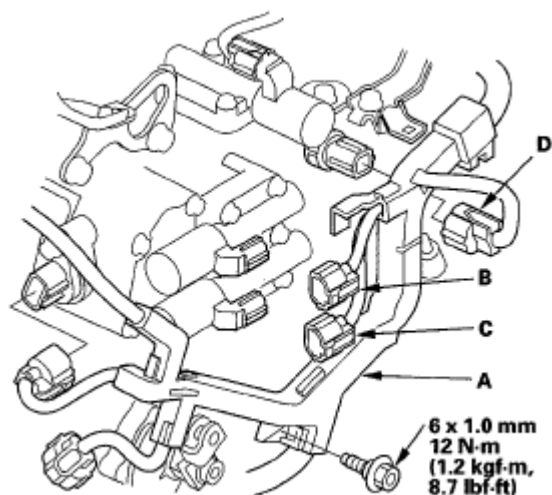


Fig. 358: Identifying Harness Cover Bolt And A/T Clutch Pressure Control Solenoid Valves Connectors With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Connect A/T clutch pressure control solenoid valve A connector (B), A/T clutch pressure control solenoid valve B connector (C), and 4th clutch transmission pressure switch connector (D).
61. Apply molybdenum grease to the hole in the bushing (A) in the shift cable end (B). Attach the shift cable end to the control lever (C), then insert the control pin (D) into the control lever hole through the shift cable end, and secure the control pin with the spring clip/washer (E).

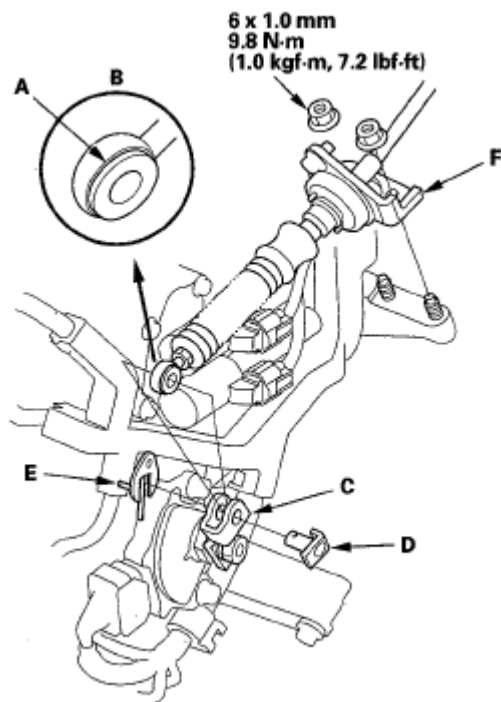


Fig. 359: Identifying Control Pin, Bushing, Control Lever, Spring Clip/Washer And Shift Cable Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Secure the shift cable bracket (F) with the nuts.
63. Install the starter (A) and new gasket (B) (see STARTER REMOVAL AND INSTALLATION).

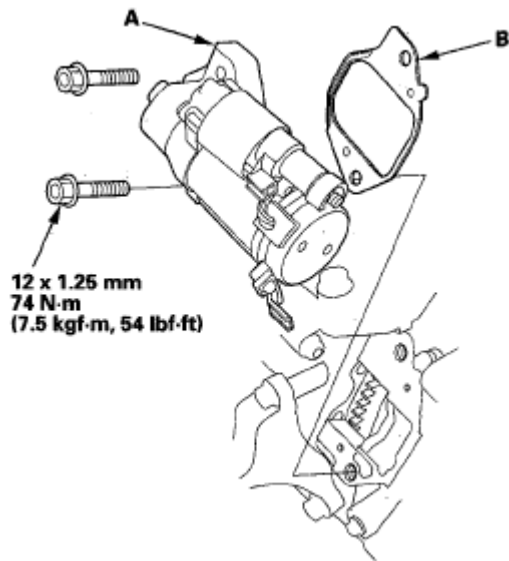


Fig. 360: Identifying Starter And Gasket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Install the starter cables (A), and install the harness clamp (B) on the clamp bracket (C).

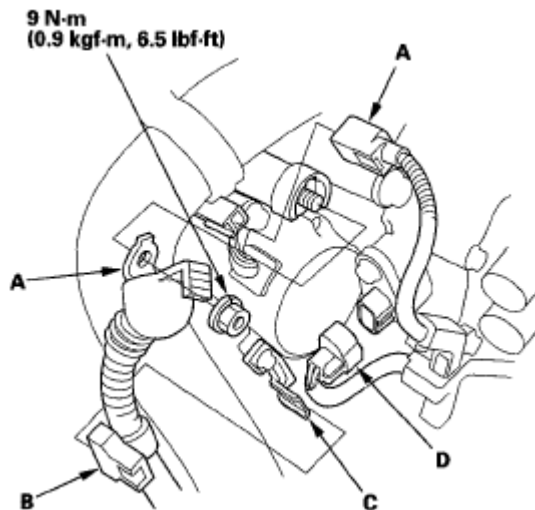


Fig. 361: Identifying Starter Cables, Harness Clamp And Clamp Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Connect the solenoid harness connector (D).

66. Install the transmission breather hose (A) over the breather pipe (B) with the dot (C) facing up.

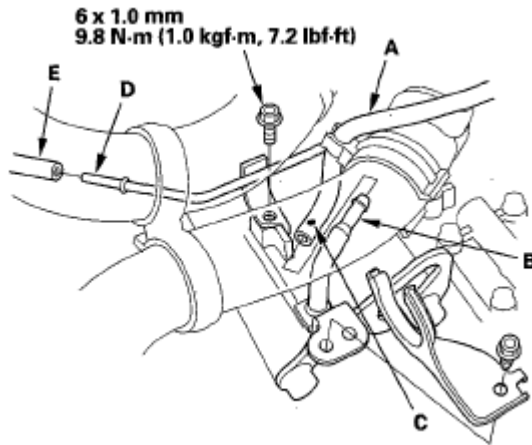


Fig. 362: Identifying Transmission Breather Hose And Breather Pipe With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

67. Secure the vacuum line (D) with the bolt, and connect the vacuum hose (E) to the line.
68. Install the power steering pump outlet line (A) with the new O-ring (B) to the pump, and secure the hose clamp (C) with the bolt.

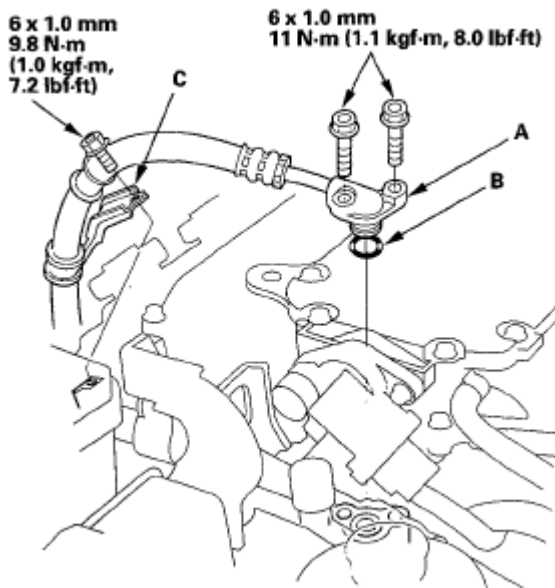


Fig. 363: Identifying Power Steering Pump Outlet Line, O-Ring And Hose Clamp With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

69. Connect the steering joint (see **INSTALLATION**).
70. Refill the power steering fluid reservoir with fluid to the upper level line.

71. Refill the transmission with ATF (see step 7 on).
72. Install the battery base bracket and battery base.
73. Install the air cleaner housing, intake air duct, and intake manifold cover.
74. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
75. Do the battery installation procedure (See **INSTALLATION**).
76. Install the bulkhead cover.
77. Install the splash shield (A) and transmission undercover (B).

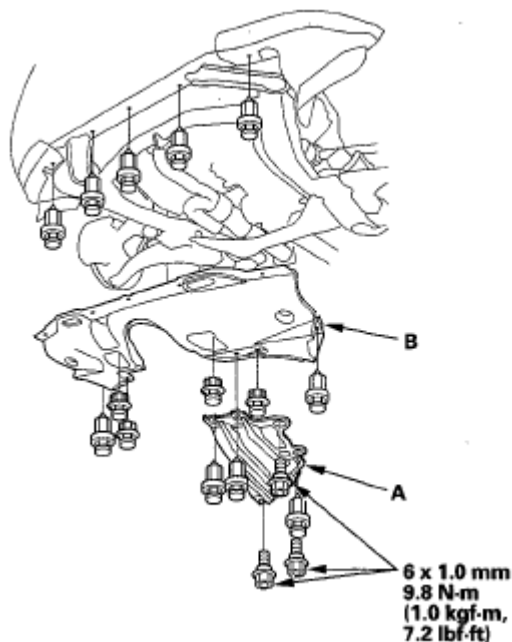


Fig. 364: Identifying Splash Shield And Transmission Undercover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

78. Install the service caps on the cowl cover.
79. Install the front wheels.
80. Set the parking brake, run the engine at fast idle, and turn the steering wheel from lock-to-lock several times to bleed air from the system. Recheck the fluid level, and refill if necessary.
81. Set the parking brake. Start the engine, and shift the transmission through all positions three times. Check the shift lever operation, A/T gear position indicator operation, and shift cable adjustment.
82. Check and adjust the front wheel alignment (see **WHEEL ALIGNMENT**).
83. Check the ATF level (see **ATF LEVEL CHECK**).
84. Road-test vehicle (see **ROAD TEST**).

ATF COOLER CLEANING

Special Tools Required

- ATF cooler cleaner GHTTTCF6H
- Magnetic nonbypass spin-on filter GTHGNBP2

These special tools are available through the American Honda Tool and Equipment Program 1-888-424-6857.

Before installing an overhauled or remanufactured automatic transmission, you must thoroughly clean the ATF cooler to prevent system contamination. Failure to do so could cause a repeat automatic transmission failure.

The cleaning procedure involves heated ATF-Z1 delivered under high pressure (100 psi). Check the security of all hoses and connections. Always wear safety glasses or a face shield, along with gloves and protective clothing. If you get ATF in your eyes or on your skin, rinse with water immediately.

WARNING:

- Improper use of the ATF cooler cleaner can result in burns and other serious injuries.
- Always wear eye protection and protective clothing, and follow all instructions in this manual.

1. Check the fluid in the cooler cleaner tank. (The fluid level should be 4.5 inches from the top of the filler neck.) Adjust the level if needed; do not overfill. Use only Acura ATF-Z1; do not use any additives.

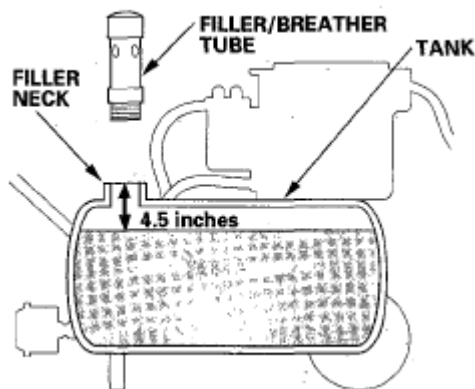


Fig. 365: Identifying Fluid In Cooler Cleaner Tank
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Plug the cooler cleaner into a 110 V grounded electrical outlet.

NOTE:

Make sure the outlet has no other appliances (light fixtures, drop lights, extension cords) plugged into it. Also, never plug the cooler cleaner into an extension cord or drop light; you could damage the unit.

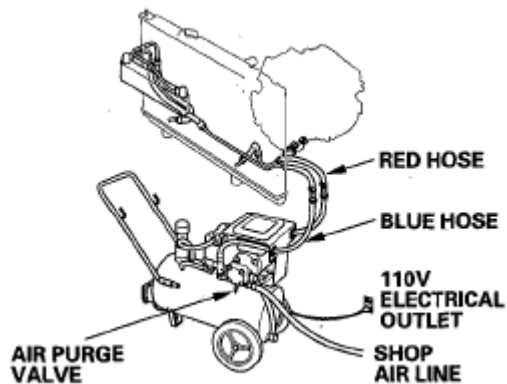


Fig. 366: Identifying Air Purge Valve, Red Hose And Blue Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Flip the HEAT toggle switch to ON; the green indicator above the toggle switch comes on. Wait 1 hour for the cooler cleaner to reach its operating temperature. (The cooler cleaner is ready to use when the temperature gauge reads 140° to 150°F.)

NOTE: If the red indicator above the HEAT toggle switch comes on, the fluid level in the tank is too low for the tank heater to work (see step 1 of this procedure).

4. Select the appropriate pair of fittings, and attach them to the radiator, to the hoses, or to the banjo bolts for flow through the ATF cooler cleaner.

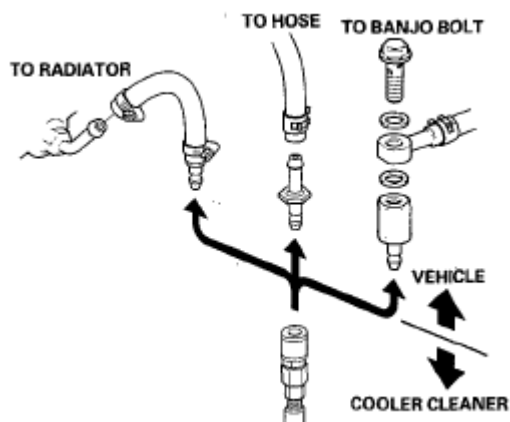


Fig. 367: Identifying Fittings, Hose And Banjo Bolt
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the red hose to the cooler outlet line (the line that normally goes to the external filter on the transmission).
6. Connect the blue hose to the cooler inlet line.
7. Connect a shop air hose (regulated to 100 to 125 psi) to the air purge valve.

NOTE: The quick-connect fitting has a one-way check valve to keep ATF from entering your shop's air system. Do not remove or replace the fitting. Attach the coupler provided with the cooler cleaner to your shop air line if your coupler is not compatible.

8. Flip the MOTOR toggle switch to ON; the green indicator above the toggle switch comes on. Let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically to cause agitation and improve the cleaning process. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.

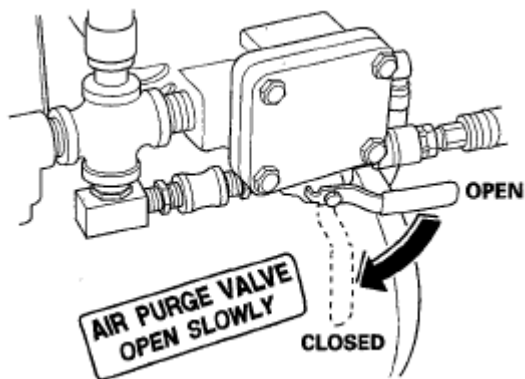


Fig. 368: Identifying Air Purge Valve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. With the air purge valve open, flip the MOTOR toggle switch to OFF; the green indicator goes off. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
10. Disconnect the red and blue hoses from the ATF cooler. Now connect the red hose to the cooler inlet line.
11. Now connect the blue hose to the cooler outlet line.
12. Flip the MOTOR toggle switch to ON, and let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.

13. With the air purge valve open, flip the MOTOR toggle switch to OFF. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual ATF, then close the valve.
14. Disconnect the red and blue hoses from the ATF cooler lines.
15. Connect the red and blue hoses to each other.
16. Disconnect the shop air from the air purge valve. Disconnect and stow the coupler if used.

17. Disconnect and stow the fittings from the ATF cooler inlet and outlet lines.
18. Unplug the cooler cleaner from the 110 V outlet.

Tool Maintenance

Follow these instructions to keep the ATF cooler cleaner working properly:

- Replace the two magnetic nonbypass spin-on filters once a year or when you notice a restriction in the ATF flow.
- Check the level and condition of the fluid in the tank before each use.
- Replace the ATF in the tank when it looks dark or dirty.

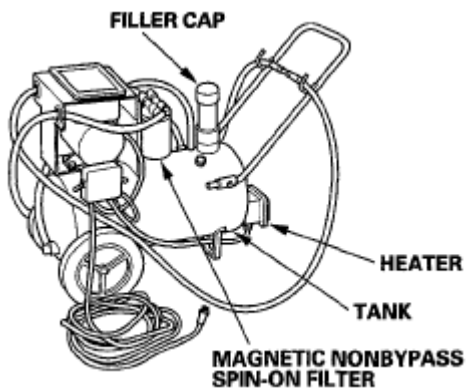


Fig. 369: Identifying Filler Cap, Heater, Tank And Magnetic Nonbypass Spin-On Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ATF COOLER HOSE REPLACEMENT

1. Slide the ATF cooler hoses (A) over the ATF cooler lines (B) until the hose ends contact with the bulge (C) of the ATF cooler line, and secure the hoses with the clips (D) at 2-4 mm (0.1-0.2 in.) (E) from the hose end.

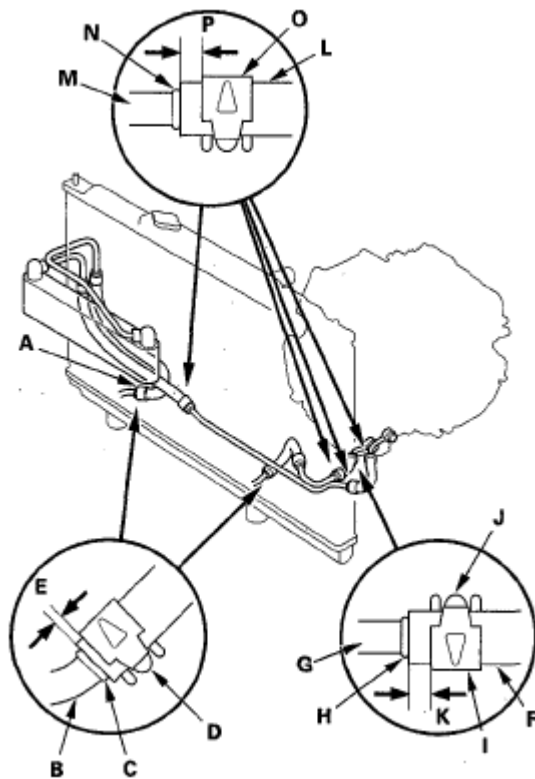


Fig. 370: Identifying ATF Cooler Hoses, ATF Cooler Lines And Hoses Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slide the ATF cooler outlet hose (F) over the ATF cooler outlet line (G) at the transmission until the hose end contacts with the bulge (H) of the ATF cooler line. Secure the hose with the clip (I) facing tab (J) up at 6-8 mm (0.2-0.3 in.) (K) from the hose end.
3. Slide the ATF cooler hoses (L) over the ATF cooler lines (M) until the hose ends contact with the bulge (N) of the ATF cooler line, and secure the hoses with the clips (O) at 6-8 mm (0.2-0.3 in.) (P) from the hose end.

ATF COOLER REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove the transmission undercover (A) and splash shield (B).

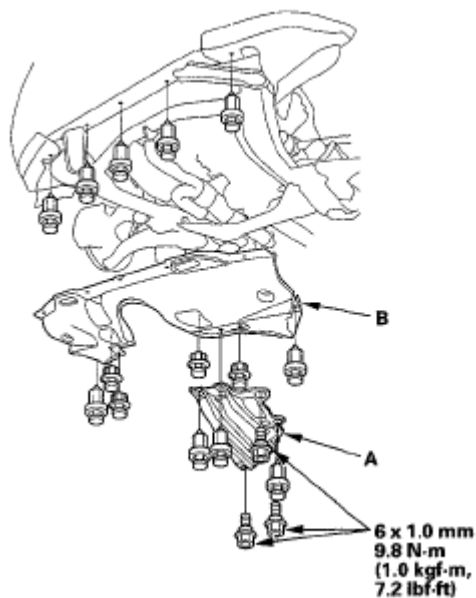


Fig. 371: Identifying Transmission Undercover And Splash Shield With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the front bulkhead cover, and remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
4. Remove the hose clamp (A), and remove the ATF cooler inlet hose (B) and outlet hose (C) from the hose clamps (D), then disconnect the hoses from the ATF cooler lines.

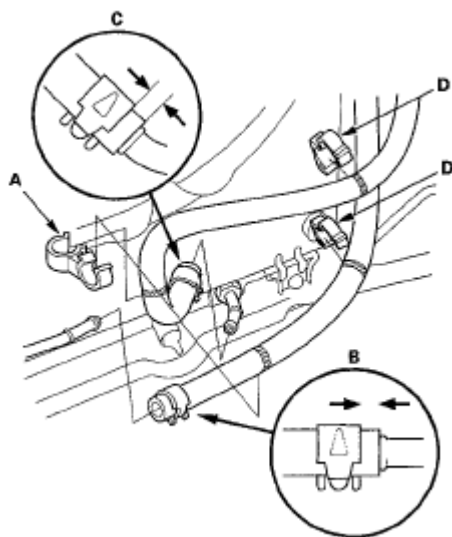


Fig. 372: Identifying ATF Cooler Inlet Hose, Outlet Hose And Hose Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the power steering fluid hose clamp (A) from the ATF cooler mounting bracket.

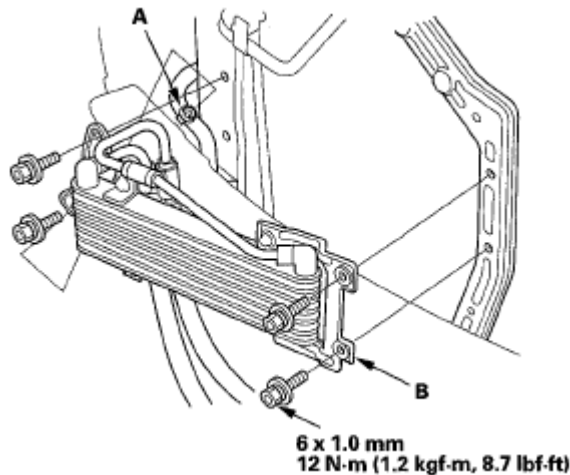


Fig. 373: Identifying Power Steering Fluid Hose Clamp And ATF Cooler With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the ATF cooler (B), and replace it. Install the new ATF cooler.
7. Install the power steering fluid hose clamp on the bracket.
8. Slide the ATF cooler inlet hose over the ATF cooler line until the hose end contacts with the bulge, and secure the hose with the clip at 6-8 mm (0.2-0.3 in.) from the hose end.
9. Slide the ATF cooler outlet hose over the ATF cooler line until the hose end contacts with the bulge, and secure the hose with the clip at 2-4 mm (0.1-0.2 in.) from the hose end.
10. Secure the cooler hoses with the hose clamps at the marks on the hoses.
11. Install the hose clamp at the mark.
12. Install the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**), and install the front bulkhead cover.
13. Install the splash shield and transmission undercover.
14. Check the ATF level (see **ATF LEVEL CHECK**).

SHIFT LEVER REMOVAL

1. Remove passenger's center console trim (see step 6 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the beverage holder inner case (see step 10 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Shift the transmission into R.
4. Remove the nut securing the shift cable end.

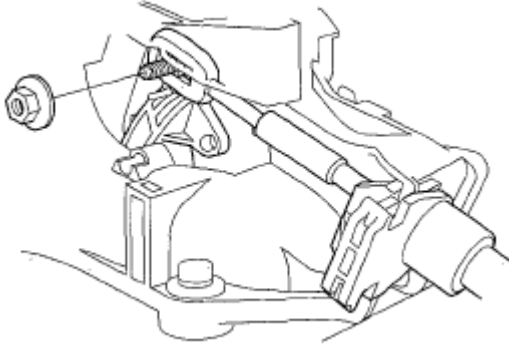


Fig. 374: Identifying Shift Cable End Nut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the holder lock release (A), and pull out the socket holder (B) to remove the shift cable (C) from the shift lever bracket base (D). Do not remove the shift cable by pulling the shift cable guide (E) and damper (F).

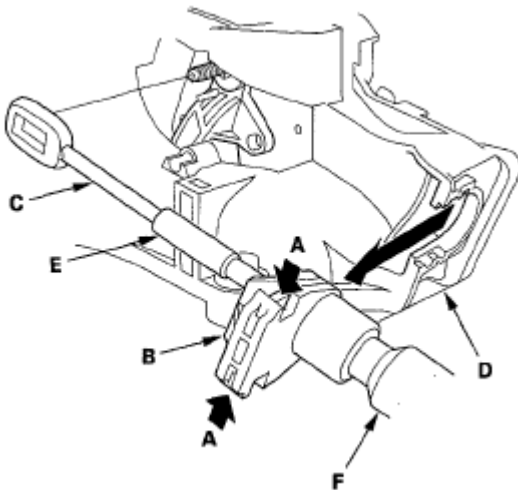


Fig. 375: Identifying Pulling Out Socket Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the center console (see [CENTER CONSOLE REMOVAL/INSTALLATION](#)).
7. Disassemble the center console by removing the following:
 - Console armrest (see [CONSOLE ARMREST REMOVAL/INSTALLATION](#))
 - Center console latch panel (see [CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION](#))
 - Center console panel (see [CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION](#))
 - Center console beverage holder (see [CENTER CONSOLE BEVERAGE HOLDER REPLACEMENT](#))
 - Center console box (see [CENTER CONSOLE BOX REPLACEMENT](#))

8. Remove the shift lever assembly from the console frame.

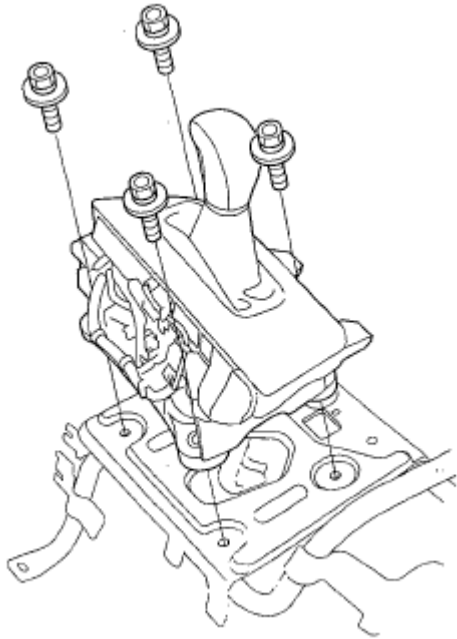


Fig. 376: Identifying Shift Lever Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LEVER INSTALLATION

1. Install the shift lever assembly on the console frame.

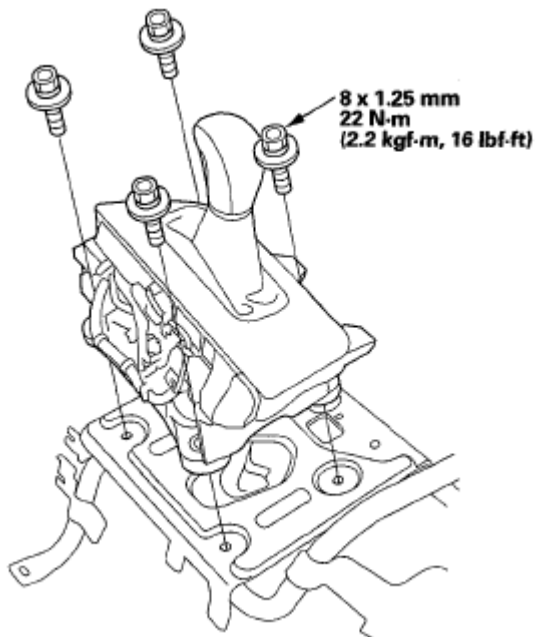


Fig. 377: Identifying Shift Lever Assembly With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Assemble the center console by installing the following:
 - Center console box (see **CENTER CONSOLE BOX REPLACEMENT**)
 - Center console beverage holder (see **CENTER CONSOLE BEVERAGE HOLDER REPLACEMENT**)
 - Center console panel (see **CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION**)
 - Center console latch panel (see **CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION**)
 - Console armrest (see **CONSOLE ARMREST REMOVAL/INSTALLATION**)
3. Install the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
4. Install the shift cable on the shift lever, and adjust the shift cable (see step 6 on).
5. Install the beverage holder inner case (see step 10 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
6. Install the passenger's center console trim (see step 6 of **CENTER CONSOLE REMOVAL/INSTALLATION**).

SHIFT LEVER KNOB REPLACEMENT

1. Grasp the shift lever boot ring, and slip it out of the shift lever knob cover.



Fig. 378: Identifying Shift Lever Boot Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screws (A), and remove the shift lever knob (B).

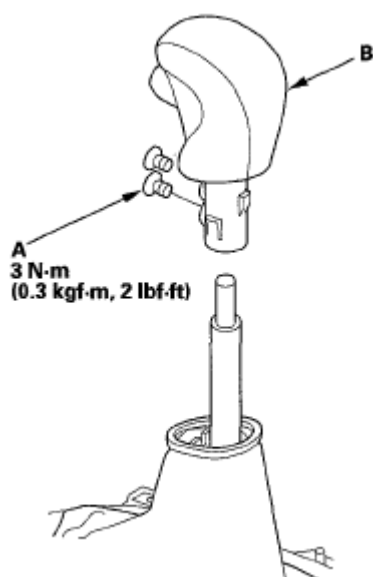


Fig. 379: Identifying Shift Lever Knob Screws With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Apply non-hardening thread lock sealant to the screw threads.
4. Install the new shift lever knob, and secure it with the screws.
5. Slide the shift lever boot ring over the shift lever knob until it snaps on.

SHIFT LEVER DISASSEMBLY/REASSEMBLY

Apply silicon grease to movable joints of the shift lock mechanism and shift lever.

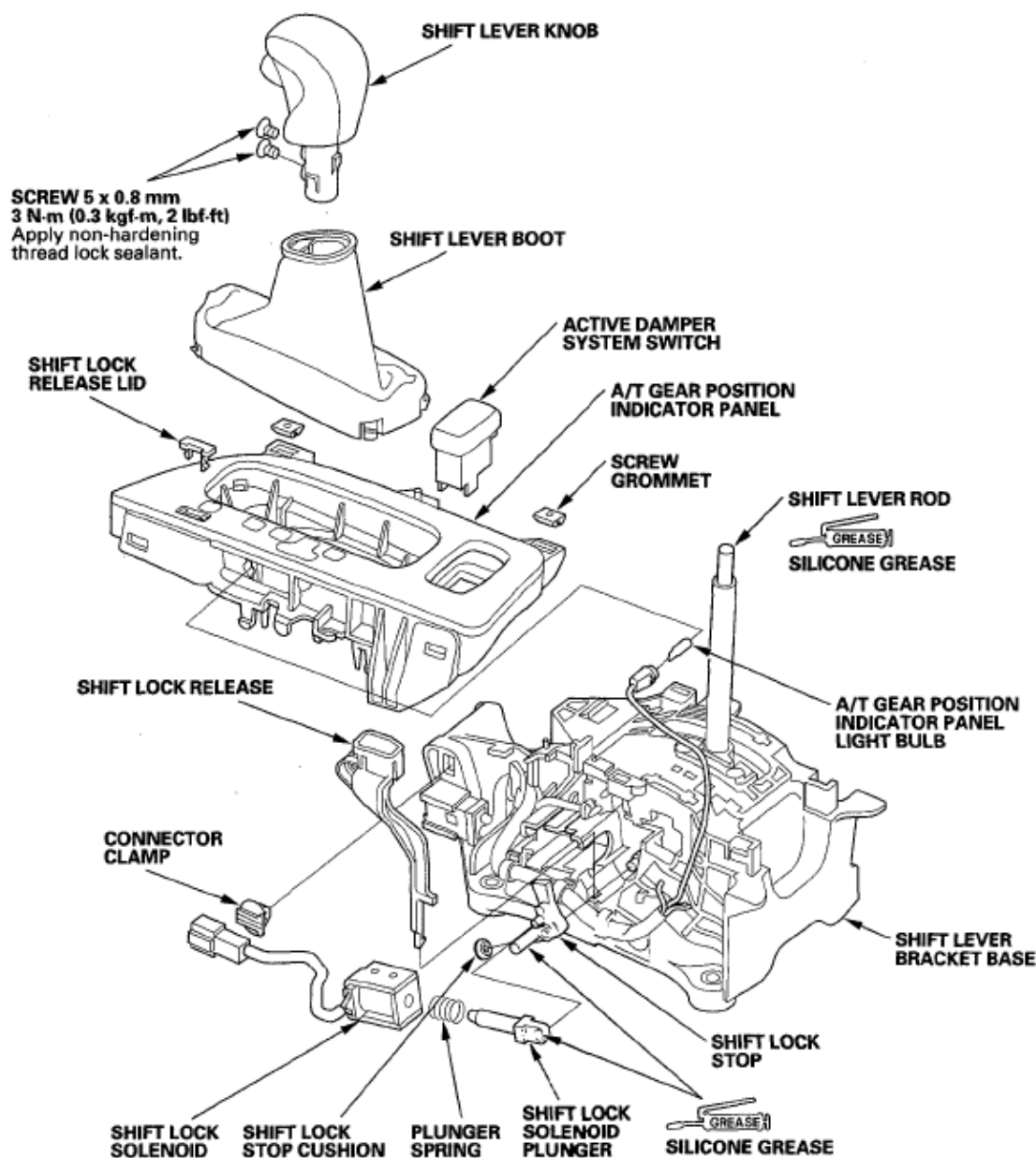


Fig. 380: Exploded View Of Shift Lever Assembly With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LEVER BRACKET BASE REPLACEMENT

NOTE: Refer to the SHIFT LEVER DISASSEMBLY/REASSEMBLY (see) during the following procedures.

1. Remove the shift lever (see SHIFT LEVER REMOVAL).
2. Grasp the shift lever boot ring, and slip it out of the shift lever knob cover.



Fig. 381: Identifying Shift Lever Boot Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws (A), and remove the shift lever knob(B).

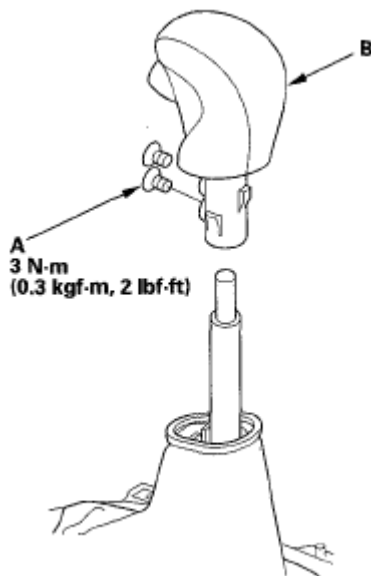


Fig. 382: Identifying Shift Lever Knob Screws With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the A/T gear position indicator panel light socket from the indicator panel, and remove the indicator panel from the shift lever bracket base.
5. Remove the shift lock release.
6. Remove the shift lock solenoid and harness connector.
7. Remove the shift lock stop and stop cushion as an assembly.
8. Replace the shift lever bracket base.
9. Apply silicone grease to mounting pin of the shift lock stop, and install the shift lock stop and stop

cushion over the pin.

10. Apply silicone grease to joint of the shift lock solenoid plunger and shift lock stop.
11. Install the shift lock solenoid plunger and plunger spring in the shift lock solenoid.
12. Install the shift lock solenoid by aligning the joint of the shift lock solenoid plunger with the tip of the shift lock stop, then push the shift lock solenoid into the shift lever securely.
13. Install the shift lock release.
14. Install the A/T gear position indicator panel light bulb in its socket.
15. Install the A/T gear position indicator panel on the shift lever bracket base, and install the indicator panel light socket in the indicator panel.
16. Apply non-hardening thread lock sealant to the screw threads, install the shift lever knob, and secure it with the screws.
17. Slide the shift lever boot ring over the shift lever knob until it snaps on.
18. Install the shift lever (see **SHIFT LEVER INSTALLATION**).

SHIFT LEVER BOOT AND A/T GEAR POSITION INDICATOR PANEL REPLACEMENT

1. Remove the shift lever (see **SHIFT LEVER REMOVAL**).
2. Grasp the shift lever boot ring, and slip it out of the shift lever knob cover.



Fig. 383: Identifying Shift Lever Boot Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws (A), and remove the shift lever knob(B).

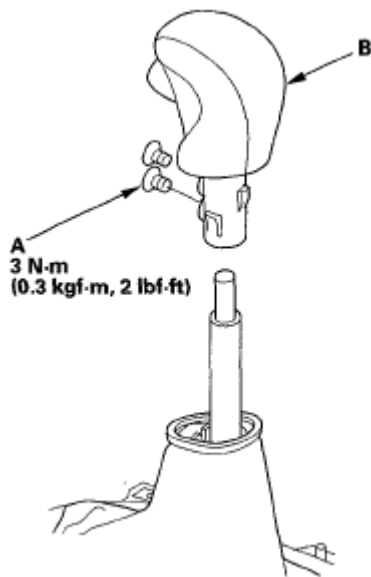


Fig. 384: Identifying Shift Lever Knob Screws With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the A/T gear position indicator panel light socket from the indicator panel, and remove the indicator panel from the shift lever bracket base.
5. Release the lock tabs retaining the shift lever boot using a screwdriver.

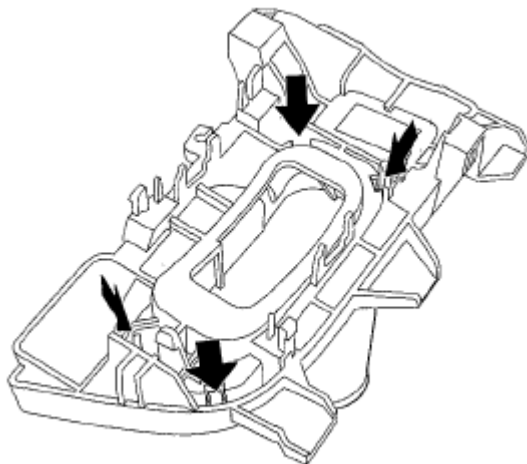


Fig. 385: Identifying Lock Tabs Retaining Shift Lever Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Replace the shift lever boot or A/T gear position indicator panel, and install the boot in the indicator panel.

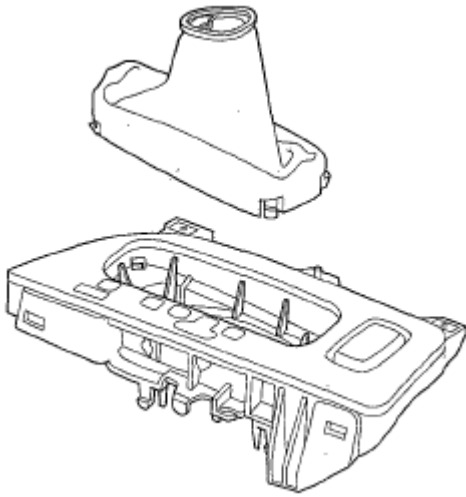


Fig. 386: Identifying Shift Lever Boot

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the A/T gear position indicator panel on the shift lever bracket base, and install the indicator panel light socket in the indicator panel.
8. Apply non-hardening thread lock sealant to the screw threads, install the shift lever knob, and secure it with the screws.
9. Slide the shift lever boot ring over the shift lever knob until it snaps on.
10. Install the shift lever (see **SHIFT LEVER INSTALLATION**).

SHIFT CABLE REPLACEMENT

1. Raise the vehicle on a lift, and make sure it is supported securely.
2. Remove passenger's center console trim (see step 6 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Remove the beverage holder inner case (see step 10 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
4. Shift the transmission into R.
5. Remove the nut securing the shift cable end.

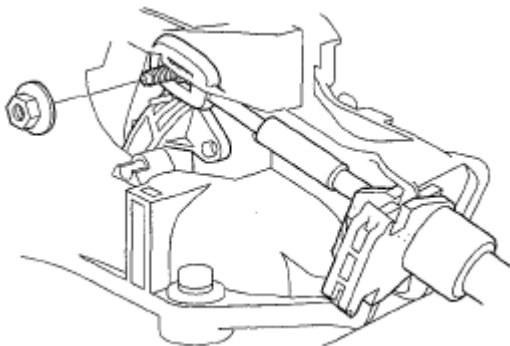
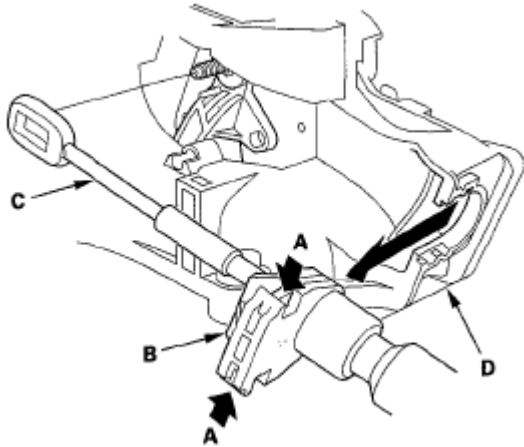


Fig. 387: Identifying Shift Cable End Nut**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

6. Press the holder lock release (A), and pull out the socket holder (B) to remove the shift cable (C) from the shift lever bracket base (D).

**Fig. 388: Identifying Out Socket Holder****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

7. Do the battery removal procedure (See **REMOVAL**).
8. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
9. Remove the intake air duct and air cleaner housing.
10. Remove the battery base and battery base bracket.
11. Remove the nuts securing the shift cable bracket (A).

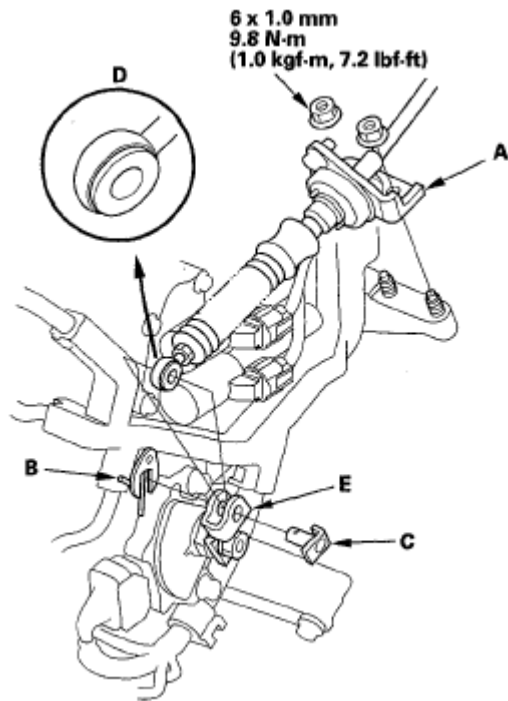


Fig. 389: Identifying Shift Cable Bracket, Spring Clip/Washer, Control Pin And Control Lever With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
13. Remove the heat shield under the shift cable grommet.
14. Remove the drain hose clamp (A) from the shift cable bracket (B).

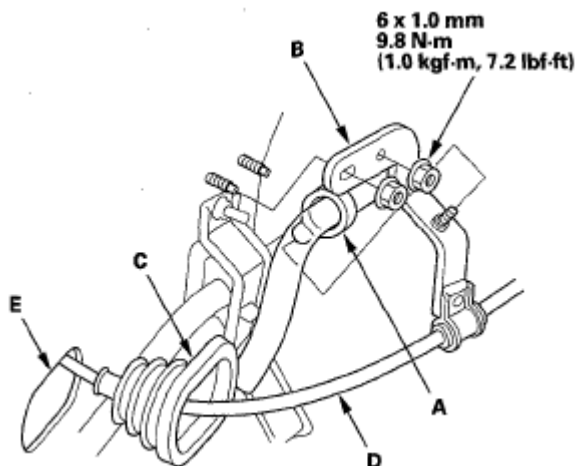


Fig. 390: Identifying Drain Hose Clamp, Shift Cable Grommet And Shift Cable Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the nuts securing the shift cable bracket.
16. Remove the shift cable grommet (C), and pull out the shift cable (D).
17. Insert the new shift cable through the grommet hole (E), and install the grommet in its hole. Do not bend the shift cable excessively.
18. Install the shift cable bracket, and install the drain hose clamp on the bracket.
19. Install the heat shield.
20. Apply molybdenum grease to the hole in the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
21. Secure the shift cable bracket with the nuts.
22. Install the battery base bracket and battery base.
23. Install the air cleaner housing and intake air duct.
24. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
25. Do the battery installation procedure (See **INSTALLATION**).
26. Install the shift cable on the shift cable, and adjust the shift cable (see step 6 on).

SHIFT CABLE ADJUSTMENT

1. Remove passenger's center console trim (see step 6 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the beverage holder inner case (see step 10 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Shift the transmission into R.
4. Remove the nut securing the shift cable end.

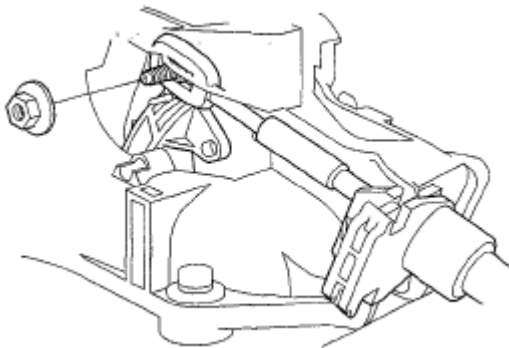


Fig. 391: Identifying Shift Cable End Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the holder lock release (A), and pull out the socket holder (B) to remove the shift cable (C) from the shift lever bracket base (D). Do not remove the shift cable by pulling the shift cable guide (E) and damper (F).

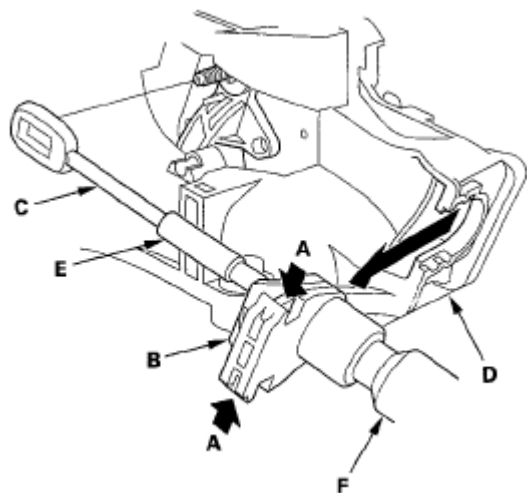


Fig. 392: Identifying Pulling Out Socket Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Push the shift cable (A) until it stops, then release it. Pull the shift cable back one step so that the shift position is in R. Do not hold the shift cable guide (B) and damper (C) to adjust the shift cable.

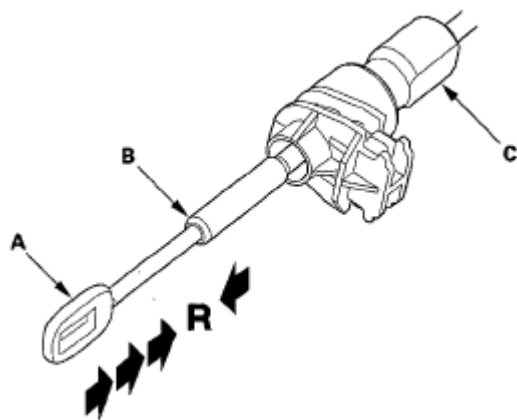


Fig. 393: Identifying Shift Cable

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch to ON (II), and check that the R indicator light comes on.
8. Turn the ignition switch to LOCK (0).
9. Place the shift lever in R, then insert a tapered tip 6.0 mm (0.24 in.) pin (A) through the positioning hole (B) on the shift lever bracket base, through the positioning hole (C) on the shift lever, and into the positioning small hole (D) on the shift lever bracket base. The shift lever is secured in R.

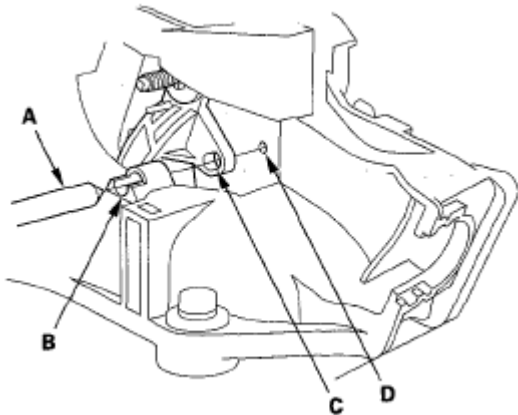


Fig. 394: Identifying Positioning Hole On Shift Lever And Shift Lever Bracket Base
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Align the socket holder (A) on the shift cable (B) with the slot in the bracket base (C), then slide the holder into the base. Install the shift cable end (D) over the mounting stud (E) by aligning its square hole (F) with the square fitting (G) at the bottom of the stud. Push the holder until it snaps securely in place. Do not install the shift cable by holding the shift cable guide (H) and damper (I).

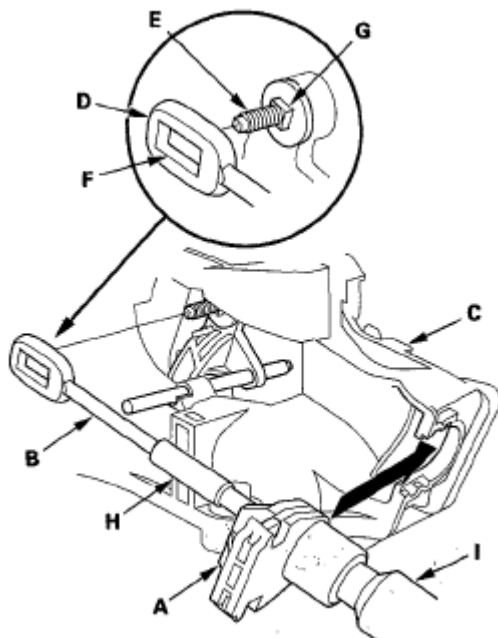
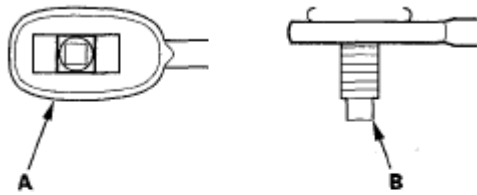


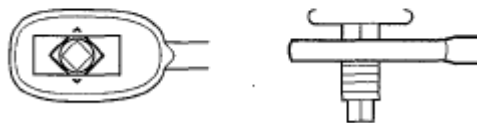
Fig. 395: Identifying Socket Holder Into Bracket Base
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check that the shift cable end (A) is properly installed on the mounting stud (B).

Properly Installed:



Improperly Installed:



Cable end rides on the bottom of the mounting stud.

Fig. 396: Identifying Proper Installation Position Of Shift Cable End
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. If improperly installed, remove the shift cable from the bracket base, and reinstall the shift cable. Do not install the shift cable end on the mounting stud while the shift cable is on the bracket base.
13. Install and tighten the nut.

8 x 1.25 mm
22 N·m (2.2 kgf·m, 16 lbf·ft)

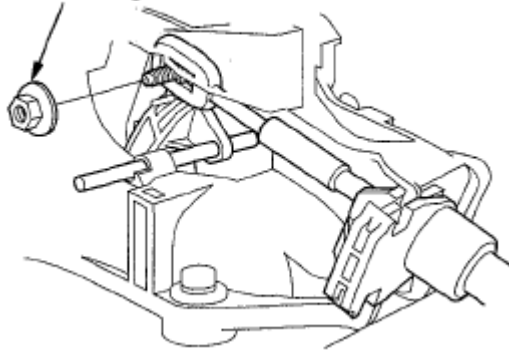


Fig. 397: Identifying Shift Cable End Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the 6.0 mm (0.24 in.) pin that was installed to hold the shift lever.
15. Turn the ignition switch to ON (II). Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
16. Shift to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back to P.
17. Install the beverage holder inner case (see step 10 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
18. Install the passenger's center console trim (see step 6 of **CENTER CONSOLE REMOVAL/INSTALLATION**).

A/T GEAR POSITION INDICATOR

COMPONENT LOCATION INDEX

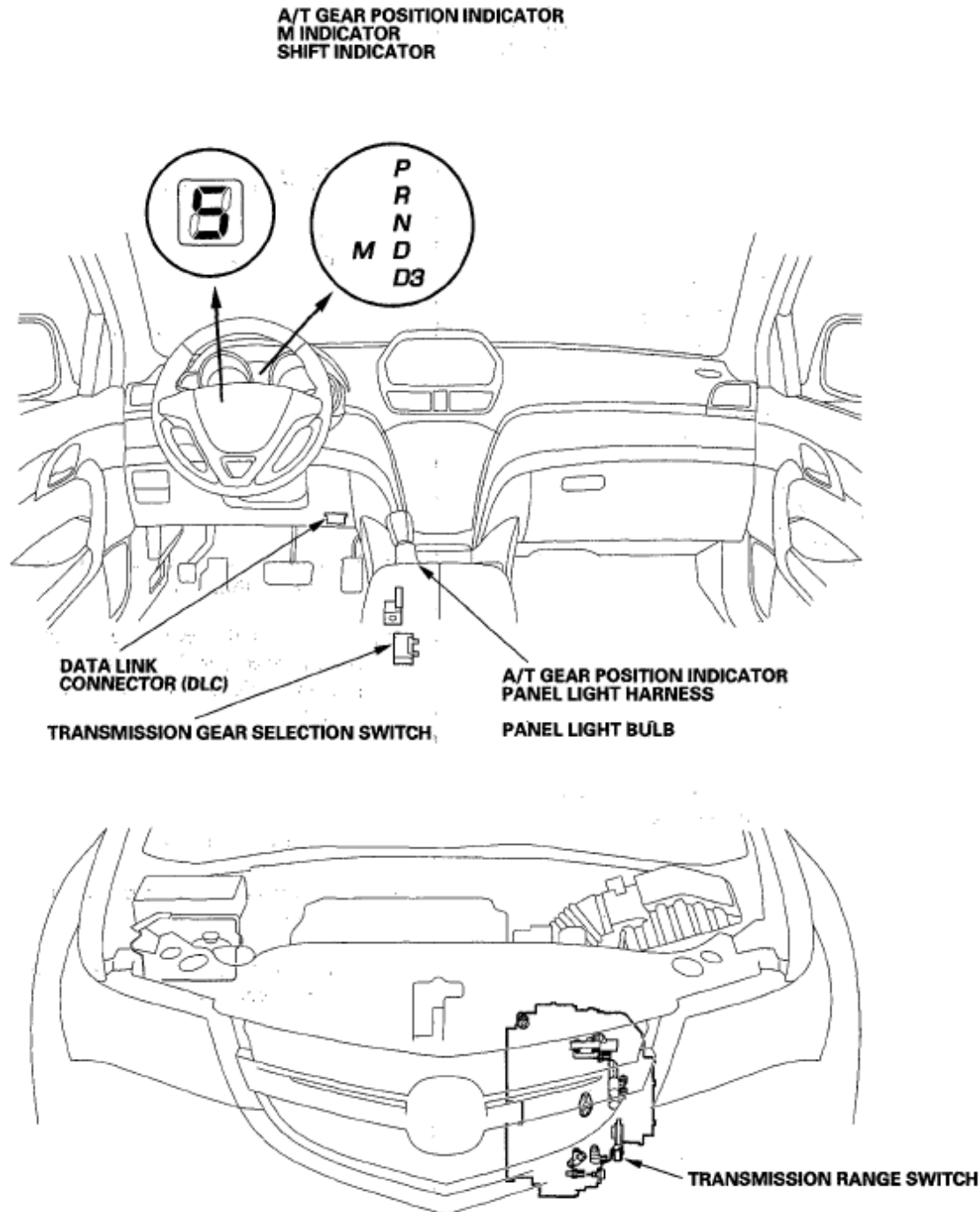


Fig. 398: Identifying A/T Gear Position Indicator Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

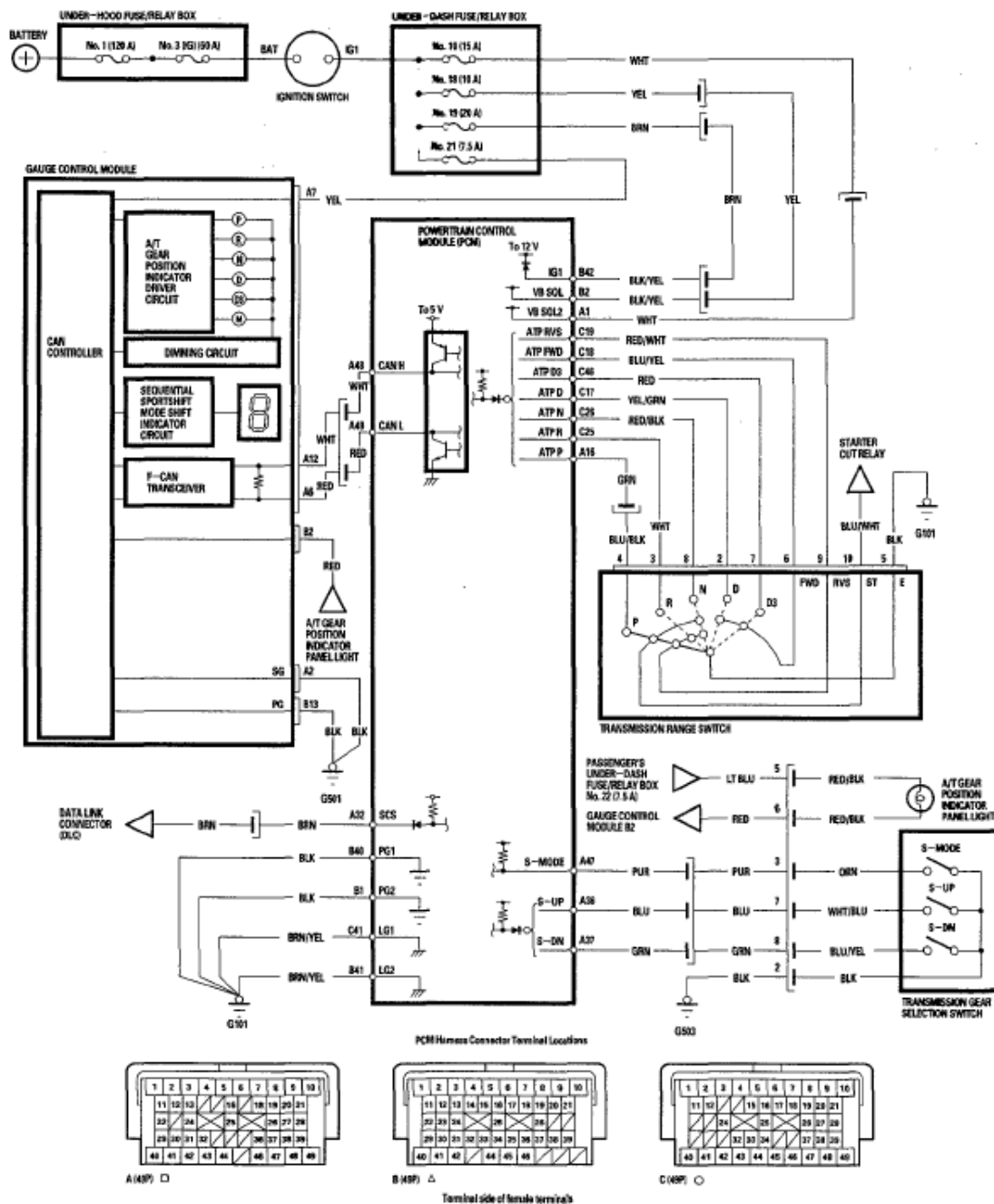


Fig. 399: A/T Gear Position Indicator Circuit Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION RANGE SWITCH TEST

1. Do the battery removal procedure (See **REMOVAL**).
2. Remove the battery hold-down bracket, and remove the battery cover, battery, and battery tray.

3. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
4. Remove the intake air duct and air cleaner housing.
5. Remove the battery base and battery base bracket.
6. Disconnect the transmission range switch connector.

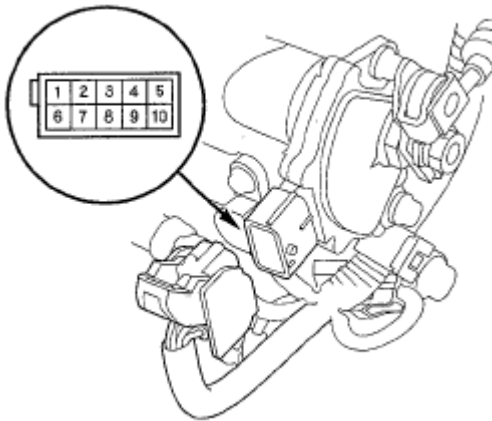


Fig. 400: Identifying Transmission Range Switch Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check for continuity between terminals at the transmission range switch connector. There should be continuity between the terminals in the following table for each transmission range switch position.

Transmission Range Switch Connector

Transmission Range Switch Connector										
Position/Connector Terminal/Signal Connections										
	1	2	3	4	5	6	7	8	9	10
	-	D	R	P	GND	ATP FWD	D3	N	ATP RVS	ATP NP
P				○	○	—			○	○
R			○	—	○				○	
N					○	—		○	○	○
D		○	—		○	○				
D3					○	○	○			

Fig. 401: Checking For Continuity Between Terminals In Each Switch Position
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. The transmission range switch test is finished if the test results are OK. Reinstall all removed components.

If there is no continuity between any terminals, check the transmission range switch installation. If the switch installation is OK, replace the switch (see **TRANSMISSION RANGE SWITCH**

REPLACEMENT).

9. Install the under-hood subfuse box from its bracket, and install the bracket from the battery base.
10. Do the battery installation procedure (See **INSTALLATION**

TRANSMISSION RANGE SWITCH REPLACEMENT

1. Do the battery removal procedure (See **REMOVAL** .
2. Remove the under-hood subfuse box from its bracket, and remove the bracket from the battery base.
3. Remove the intake air duct and air cleaner housing.
4. Remove the battery base and battery base bracket.
5. Remove the nuts securing the shift cable bracket (A).

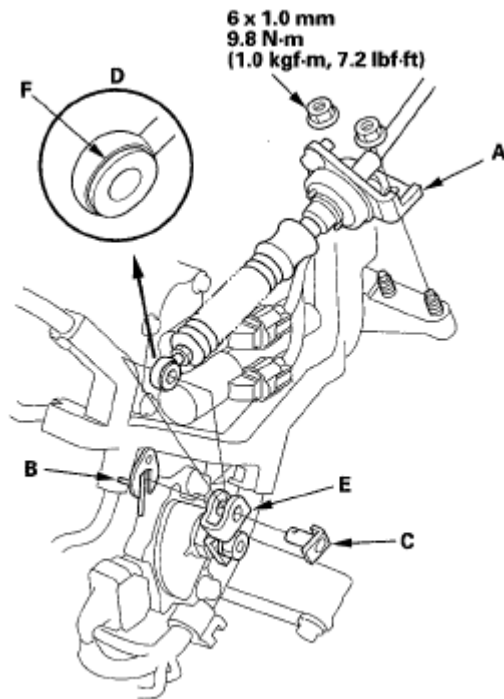


Fig. 402: Identifying Shift Cable Bracket, Spring Clip/Washer, Control Pin, Bushing And Control Lever With Torque Specificaiton

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the spring clip/washer (B) and control pin (C), then separate the shift cable end (D) from the control lever (E).
7. Check the bushing (F) in the shift cable end for a proper fit and wear. If the bushing is loose or worn, replace the shift cable (see **SHIFT CABLE REPLACEMENT**).
8. Disconnect the transmission range switch connector.
9. Pry the lock tab of the lock washer (A) on the control lever (B), and remove the nut (C), lock washer, spring washer (D) and control lever.

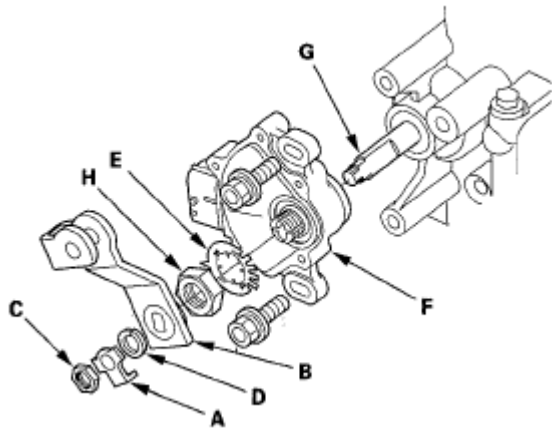


Fig. 403: Identifying Lock Washer, Transmission Range Switch, Control Lever, Spring Washer And Control Lever

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pry the lock tabs of the lock washer (E) on the transmission range switch (F), hold the control shaft (G) with a 6.0 mm wrench, and loosen the locknut (H).
11. Remove the locknut and lock washer, then remove the transmission range switch (two bolts).
12. Set the new transmission range switch (A) to the N position. The transmission range switch clicks in the N position, and the control shaft hole (B) aligns with the N position line (C).

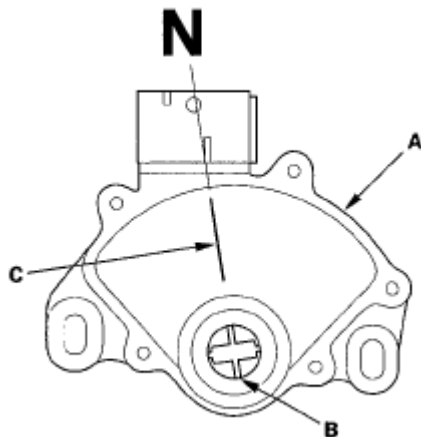


Fig. 404: Identifying Transmission Range Switch And Control Shaft Hole

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Move the control shaft from P to N by turning the control shaft with a 6.0 mm wrench.

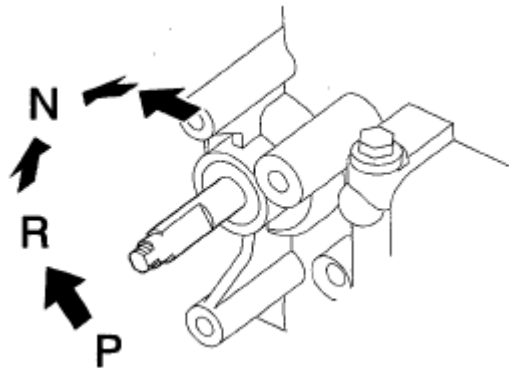


Fig. 405: Identifying Control Shaft From P Position To N Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the transmission range switch (A) gently over the control shaft (B), and install the bolts loosely.

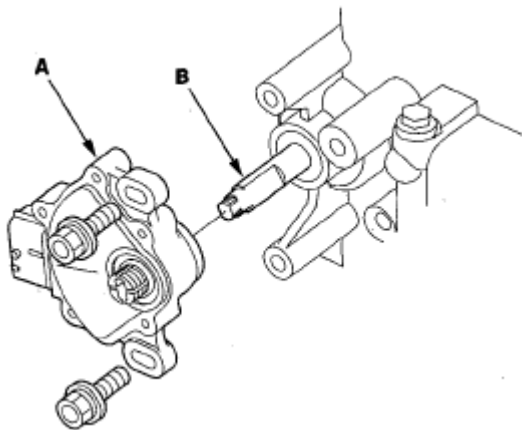


Fig. 406: Identifying Transmission Range Switch And Control Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the new lock washer (A) over the control shaft (B) while aligning the tab (C) of the lock washer with the N positioning line (D) on the transmission range switch (E). Then install the locknut (F).

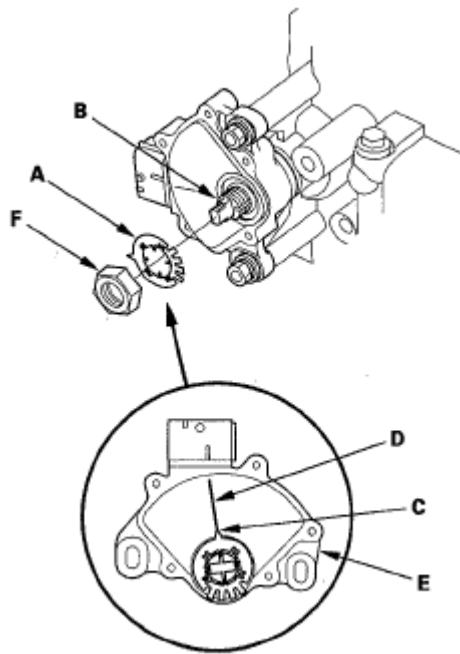


Fig. 407: Identifying Lock Washer, Transmission Range Switch, Locknut And Control Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Push the locknut against the transmission housing to seat the transmission range switch into the control shaft, and tighten the locknut (A) to 12 N.m (1.2 kgf.m, 8.7 lbf.ft) while holding the control shaft (B) with a 6.0 mm wrench (C), then bend the lock tabs (D) of the lock washer against the locknut.

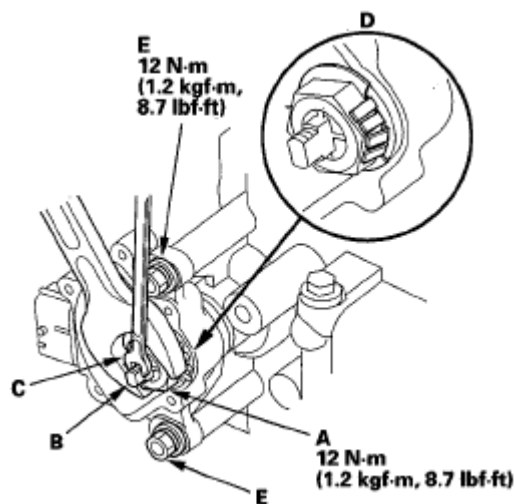


Fig. 408: Identifying Locknut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Tighten the bolts (E) to 12 N.m (1.2 kgf.m, 8.7 lbf.ft) securing the transmission range switch.
18. Install the control lever (A), spring washer (6), lock washer (C), and locknut (D) on the control shaft (E).

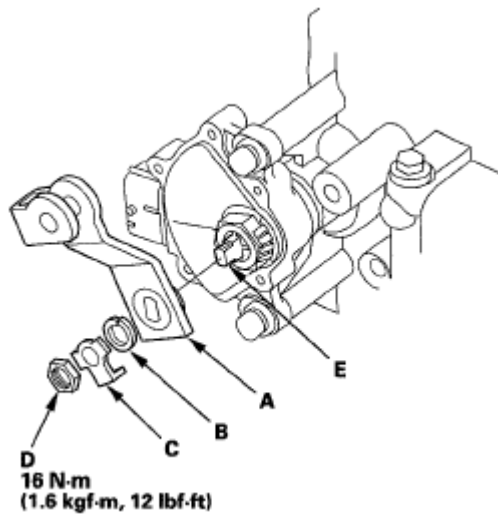


Fig. 409: Identifying Control Lever, Spring Washer, Lock Washer, Locknut And Control Shaft With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check the connectors for rust, dirt, or oil, clean or repair if necessary, then connect the connector securely.
20. Apply molybdenum grease to the hole in the bushing in the shift cable end. Attach the shift cable end to the control lever, then insert the control pin into the control lever hole through the shift cable end, and secure the control pin with the spring clip/ washer.
21. Secure the shift cable bracket with the nuts.
22. Install the battery base bracket and battery base.
23. Install the air cleaner housing and intake air duct.
24. Install the under-hood subfuse box on the battery base, and install the subfuse box on its bracket.
25. Do the battery installation procedure (See **INSTALLATION**).
26. Turn the ignition switch to ON (II). Move the shift lever through all positions, and check the transmission range switch synchronization with the A/T gear position indicator.
27. Check that the engine will start in P and N, and will not start in any other shift lever position.
28. Check that the back-up lights come on when the shift lever is in R.
29. Allow all wheels to rotate freely, then start the engine, and check the shift lever operation.

TRANSMISSION GEAR SELECTION SWITCH TEST

1. Remove the driver's center console trim (see step 5 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the transmission gear selection switch/ park pin switch/A/T gear position indicator panel light harness connector.

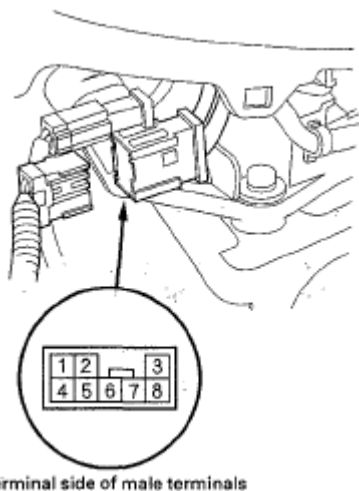


Fig. 410: Identifying Transmission Gear Selection Switch Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between connector terminals No. 3 and No. 2.

There should be continuity when the shift lever is in M, and no continuity when the shift lever is in any position other than M.

4. Check for continuity between connector terminals No. 7 and No. 2.

There should be continuity when the shift lever is pushed toward the upshift position (+), and no continuity with the shift lever released to N.

5. Check for continuity between connector terminals No. 8 and No. 2.

There should be continuity when the shift lever is pulled toward the downshift position (-), and no continuity with the shift lever released to N. :

6. If the switch fails to work properly, replace the transmission gear selection switch and shift lever bracket base as an assembly (see **SHIFT LEVER BRACKET BASE REPLACEMENT**). The transmission gear selection switch, park pin switch, and A/T gear position indicator panel light harness are not available separately from the shift lever bracket base.
7. Install the driver's center console trim (see step 5 of **CENTER CONSOLE REMOVAL/INSTALLATION**).

TRANSMISSION GEAR SELECTION SWITCH REPLACEMENT

NOTE: The transmission gear selection switch is not available separately from the shift lever bracket base; replace the transmission gear selection switch (including park pin switch and A/T gear position indicator panel light harness) and select lever bracket base as an assembly.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Replace the transmission gear selection switch and shift lever bracket base assembly (see **SHIFT LEVER BRACKET BASE REPLACEMENT**).

A/T GEAR POSITION INDICATOR PANEL LIGHT HARNESS REPLACEMENT

NOTE: The A/T gear position indicator panel light harness is not available separately from the shift lever bracket base; replace the A/T gear position indicator panel light harness (including transmission gear selection switch and park pin switch) and select lever bracket base as an assembly.

Replace the A/T gear position indicator panel light harness and shift lever bracket base assembly (see **SHIFT LEVER BRACKET BASE REPLACEMENT**).

A/T GEAR POSITION INDICATOR PANEL LIGHT BULB REPLACEMENT

1. Remove the shift lever (see **SHIFT LEVER REMOVAL**).
2. Remove the A/T gear position indicator panel light socket from the indicator panel.
3. Remove the indicator panel light bulb from the socket, and replace the bulb with a new one.
4. Install the new bulb in the socket, and install the socket in the indicator panel.
5. Install the shift lever (see **SHIFT LEVER INSTALLATION**).

A/T INTERLOCK SYSTEM

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

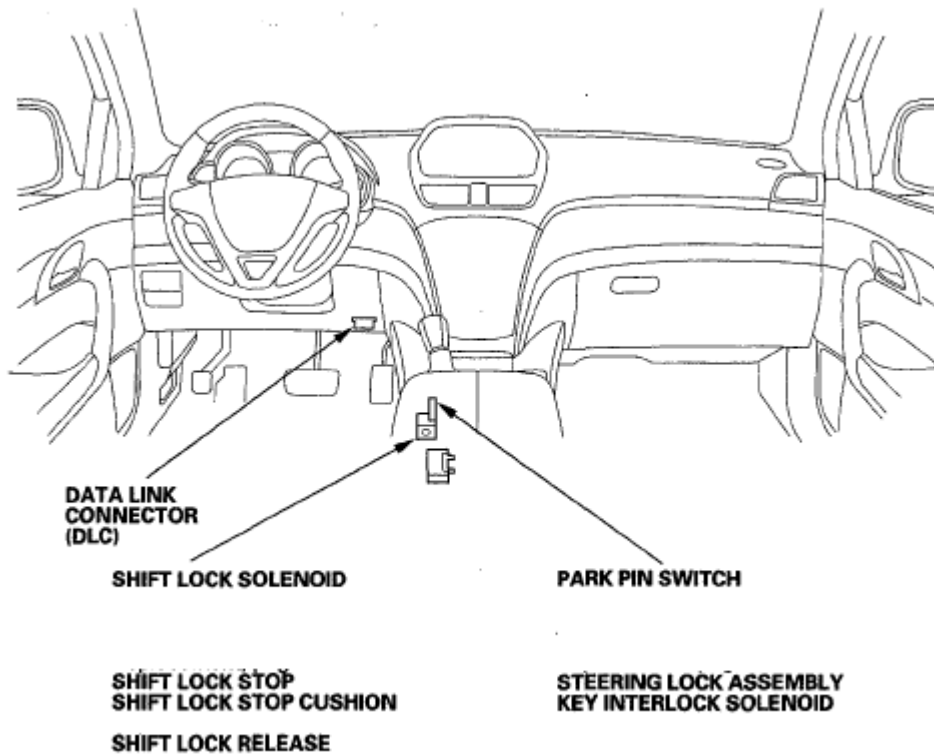


Fig. 411: Identifying A/T Interlock System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

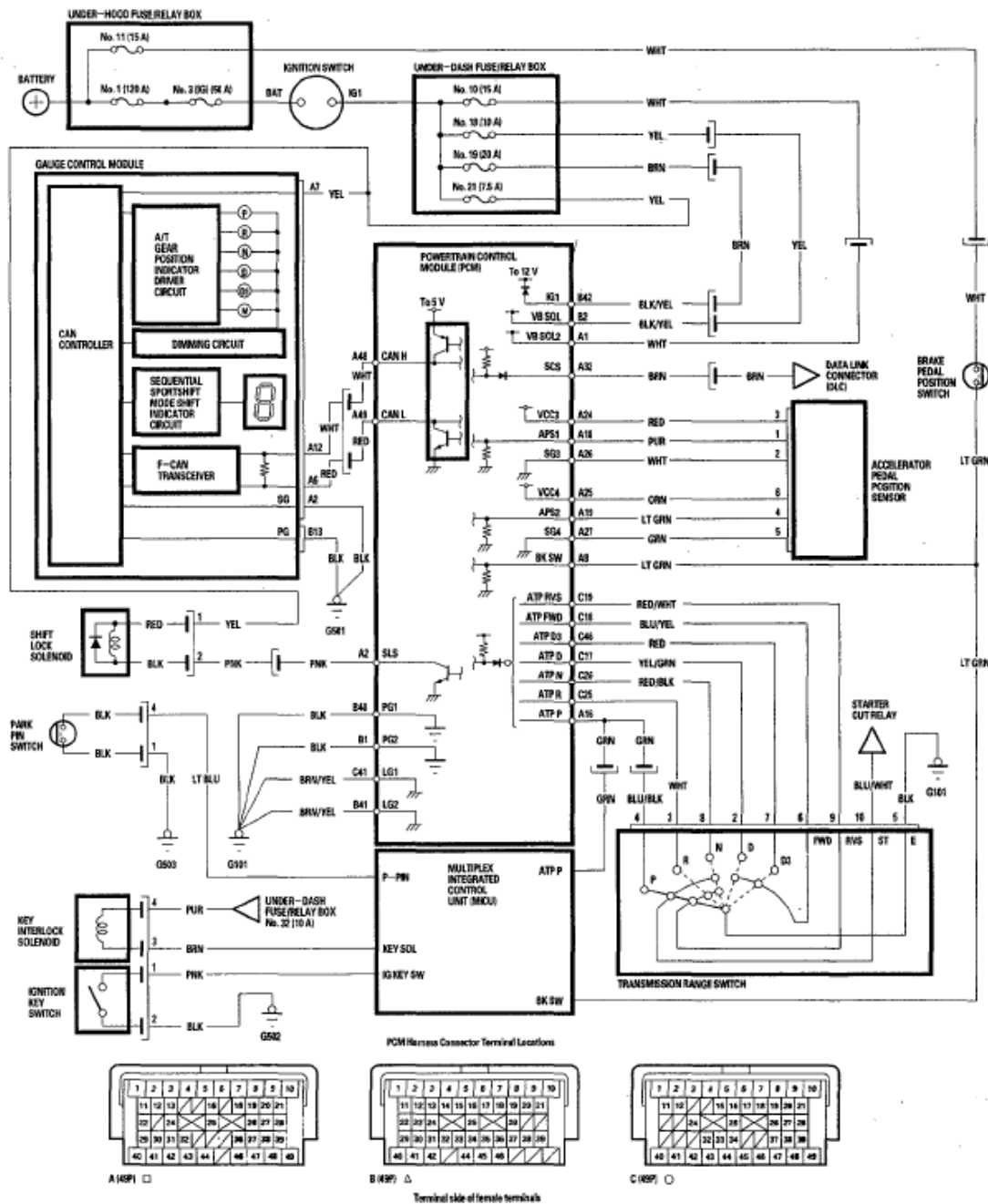


Fig. 412: A/T Interlock System Circuit Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING

1. Connect the HDS to the DLC.
2. Select Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).

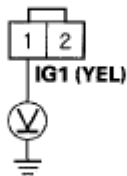
Does the shift lock solenoid work properly ?

YES - Go to step 14.

NO - Go to step 3.

3. Remove driver's center console trim (see step 4 of CENTER CONSOLE REMOVAL/INSTALLATION).
4. Disconnect the shift lock solenoid connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between shift lock solenoid connector terminal No. 1 and body ground.

SHIFT LOCK SOLENOID CONNECTOR



Wire side of female terminals

Fig. 413: Identifying Voltage Between Shift Lock Solenoid Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

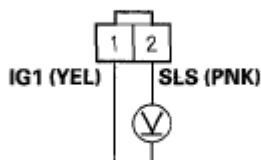
Is there battery voltage?

YES - Go to step 7.

NO - Check for a blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair open or short in the wire between the shift lock solenoid connector terminal No. 1 and the under-dash fuse/relay box.

7. Shift the shift lever into P, and press the brake pedal. Do not press the accelerator.
8. Measure the voltage between shift lock solenoid connector terminals No. 1 and No. 2 while pressing the brake pedal.

SHIFT LOCK SOLENOID CONNECTOR



Wire side of female terminals

Fig. 414: Identifying Voltage Between Shift Lock Solenoid Connector Terminals No 1 And No 2
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

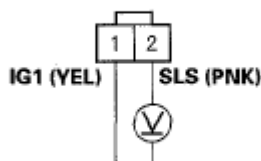
Is there battery voltage?

YES - Go to step 9.

NO - Go to step 10.

9. Release the brake pedal, and measure the voltage between shift lock solenoid connector terminals No. 1 and No. 2. The shift lever must be in P.

SHIFT LOCK SOLENOID CONNECTOR



Wire side of female terminals

Fig. 415: Identifying Voltage Between Shift Lock Solenoid Connector Terminals No 1 And No 2
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short in the wire between PCM connector terminal A2 and the shift lock solenoid.

NO - Check the shift lock mechanism. If the mechanism is OK, replace the shift lock solenoid (see **SHIFT LOCK SOLENOID TEST**).

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P).

13. Check for continuity between PCM connector terminal A2 and shift lock solenoid connector terminal No. 2.

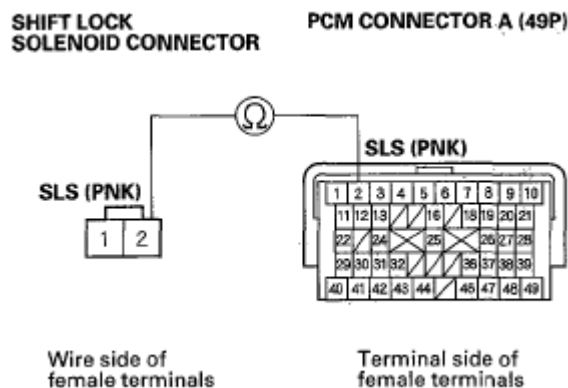


Fig. 416: Identifying Continuity Between PCM Connector Terminal A2 And Shift Lock Solenoid Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**) and recheck.

NO - Repair open in the wire between PCM connector terminal A2 and the shift lock solenoid.

14. Press the brake pedal.

Are the brake lights ON?

YES - Go to step 15.

NO - Repair faulty brake light circuit.

15. Turn the ignition switch to LOCK (0).
16. Jump the SCS line with the HDS.
17. Disconnect PCM connector A (49P).
18. Measure the voltage between PCM connector terminal A8 and body ground while pressing the brake pedal and when the brake pedal is released.

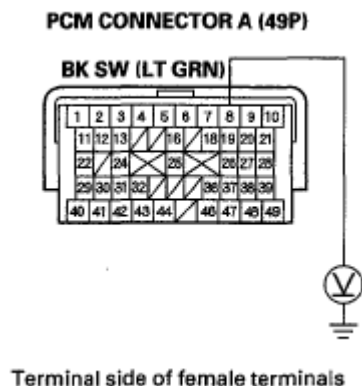


Fig. 417: Identifying Voltage Between PCM Connector Terminal A8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage while the brake pedal is pressed, and no voltage when the pedal is released?

YES - Go to step 20.

NO - Go to step 19.

19. Check for continuity between PCM connector terminal A8 and brake pedal position switch 4P connector terminal No. 2.

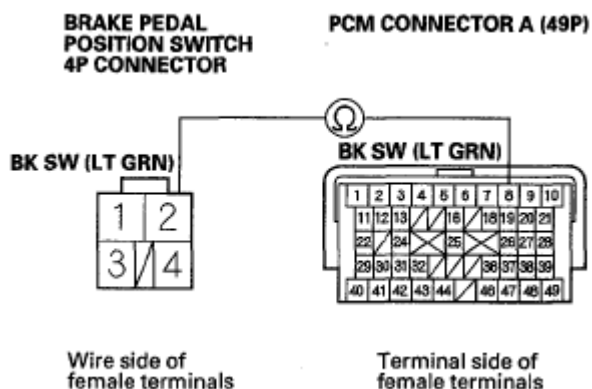


Fig. 418: Identifying Continuity Between PCM Connector Terminal A8 And Brake Pedal Position Switch Terminal 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

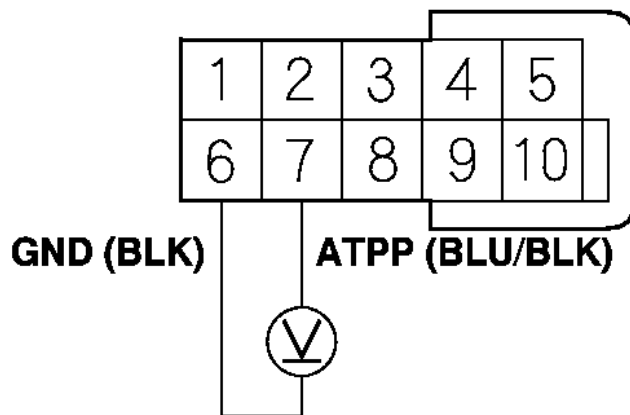
YES - Substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**) and recheck.

NO - Repair open in the wire between PCM connector terminal A8 and the brake pedal position switch.

20. Connect PCM connector A (49P).

21. Disconnect the transmission range switch connector.
22. Turn the ignition switch to ON (II).
23. Measure the voltage between transmission range switch connector terminals No. 6 and No. 7.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

Fig. 419: Identifying Voltage Between Transmission Range Switch Connector Terminals No 6 And No 7

Courtesy of AMERICAN HONDA MOTOR CO., INC.

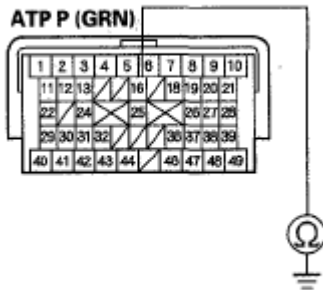
Is there battery voltage?

YES - Go to step 28.

NO - Go to step 24.

24. Turn the ignition switch to LOCK (0).
25. Disconnect PCM connector A (49P).
26. Check for continuity between PCM connector terminal A16 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 420: Identifying Continuity Between PCM Connector Terminal A16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

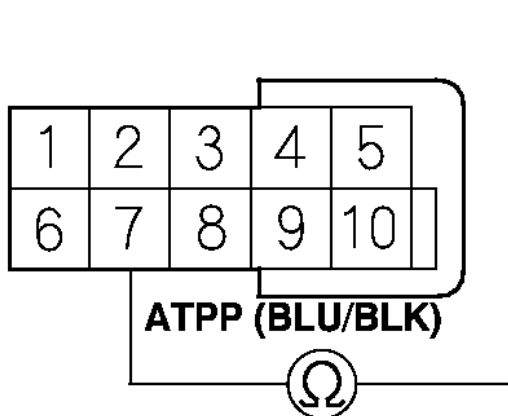
Is there continuity?

YES - Repair short in the wire between PCM connector terminal A16 and the transmission range switch connector.

NO - Go to step 27.

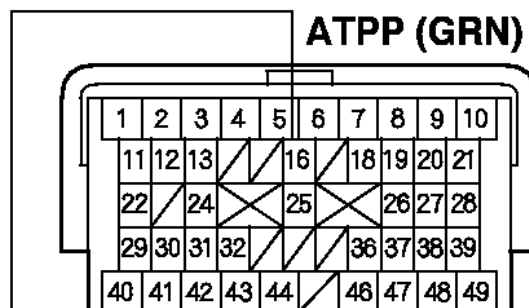
27. Check for continuity between PCM connector terminal A16 and transmission range switch connector terminal No. 7.

TRANSMISSION RANGE SWITCH CONNECTOR



Wire side of female terminals

PCM CONNECTOR A (49P)



Terminal side of female terminals

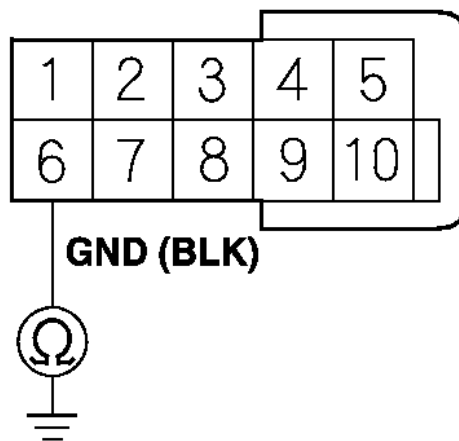
Fig. 421: Identifying Continuity Between PCM Connector Terminal A16 And Transmission Range

Switch Connector Terminal No. 7

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Go to step 28.**NO** - Repair open in the wire between PCM connector terminal A16 and the transmission range switch connector.

28. Check for continuity between transmission range switch connector terminal No. 6 and body ground.

TRANSMISSION RANGE SWITCH CONNECTOR

Wire side of female terminals

Fig. 422: Identifying Continuity Between Transmission Range Switch Connector Terminal 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**) and recheck.**NO** - Repair open in the wire between transmission range switch connector terminal No. 6 and ground (G101), or repair poor ground (G101).

29. Test the transmission range switch (see **TRANSMISSION RANGE SWITCH TEST**).

Is the switch OK?

YES - Go to step 30.

NO - Replace the transmission range switch (see **TRANSMISSION RANGE SWITCH REPLACEMENT**).

30. Connect the HDS to the DLC.

31. Check the accelerator pedal position sensor 1 in the data list with the HDS. Do not press the accelerator.

Is the accelerator pedal position sensor 1 opening 11 % and above, or the sensor 1 voltage 0.90 V and above?

YES - Check the throttle body (see **THROTTLE BODY TEST**).

NO - Substitute a known-good PCM (see **HOW TO SUBSTITUTE THE PCM**) and recheck.

KEY INTERLOCK SYSTEM CIRCUIT TROUBLESHOOTING

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repair or service.

1. Turn the ignition switch to ACCESSORY (I). The shift lever must be in P.
2. Disconnect the steering lock assembly connector.
3. Check if the ignition switch can be turned to LOCK (0).

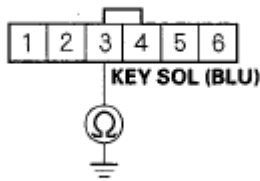
Can the ignition switch be turned to LOCK (0)?

YES - Go to step 4.

NO - Replace the ignition key cylinder/steering lock assembly (see **STEERING COLUMN INSPECTION**).

4. Turn the ignition switch to LOCK (0).
5. Shift the shift lever into any position other than P.
6. Check for continuity between steering lock assembly connector terminal No. 3 and body ground.

STEERING LOCK ASSEMBLY CONNECTOR



Wire side of female terminals

Fig. 423: Identifying Continuity Between Steering Lock Assembly Connector Terminal No 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

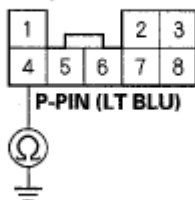
Is there continuity?

YES - Repair short in the wire between the key interlock solenoid and the MICU.

NO - Go to step 7.

7. Remove driver's center console trim (see step 5 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
8. Disconnect transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector.
9. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminal No. 4 and body ground.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Wire side of female terminals

Fig. 424: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminal 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

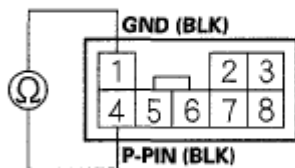
Is there continuity?

YES - Repair short in the wire between transmission gear selection switch/park pin switch/ A/T gear position indicator panel light connector terminal No. 4 and the MICU.

NO - Go to step 10.

10. Shift the shift lever into P.
11. Check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminals No. 1 and No. 4. Do not push the shift lever button.

**TRANSMISSION GEAR SELECTION SWITCH/
PARK PIN SWITCH/A/T GEAR POSITION
INDICATOR PANEL LIGHT CONNECTOR**



Terminal side of female terminals

Fig. 425: Identifying Continuity Between Transmission Gear Selection Switch Connector Terminals No 1 And No 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

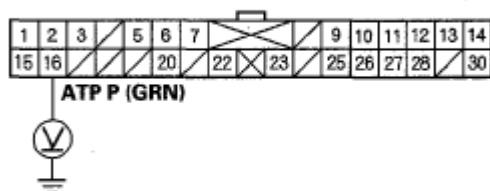
Is there continuity?

YES - Replace the park pin switch (see **PARK PIN SWITCH TEST**) and shift lever bracket base (see **SHIFT LEVER BRACKET BASE REPLACEMENT**). The park pin switch, transmission gear selection switch, and A/T gear position indicator panel light harness are not available separately from the shift lever bracket base.

NO - Go to step 12.

12. Disconnect the multiplex integrated control unit 30P connector.
13. Turn the ignition switch to ON (II).
14. Measure the voltage between multiplex integrated control unit 30P connector terminal No. 16 and body ground.

**MULTIPLEX INTEGRATED CONTROL UNIT
30P CONNECTOR**



Wire side of female terminals

Fig. 426: Identifying Voltage Between Multiplex Integrated Control Unit 30P Connector Terminal

16 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the shift lever is in any position other than P, and no voltage when the shift lever is in P?

YES - Substitute a known-good multiplex integrated control unit (MICU) and recheck.

NO - Repair open or short in the wire between the MICU and the transmission range switch.

SHIFT LOCK SOLENOID TEST

1. Connect the HDS to the DLC (A).

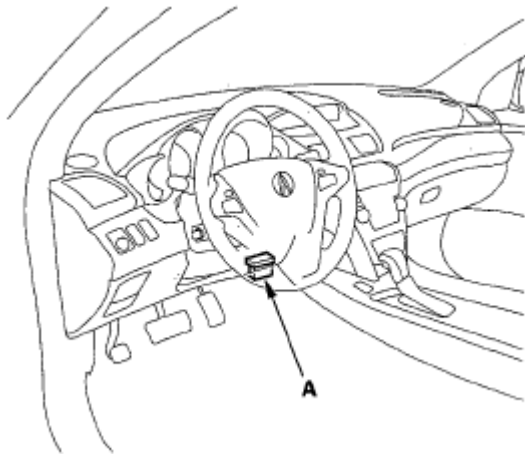


Fig. 427: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Select the Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.

NOTE: If the HDS does not communicate with the PCM, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

3. Check that the shift lever can be moved out of P when the Shift Lock Solenoid is: ON. Move the shift lever back in P, and make sure it locks with the Shift Lock Solenoid is: OFF.
4. Check that the shift lock releases when the shift lock release is pushed, and check that it locks when the shift lock release is released.
5. If the shift lock solenoid does not work properly, perform shift lock system troubleshooting (see **SHIFT LOCK SYSTEM CIRCUIT TROUBLESHOOTING**).

SHIFT LOCK SOLENOID REPLACEMENT

1. Remove the shift lever (see **SHIFT LEVER REMOVAL**).
2. Remove the shift lock release (A).

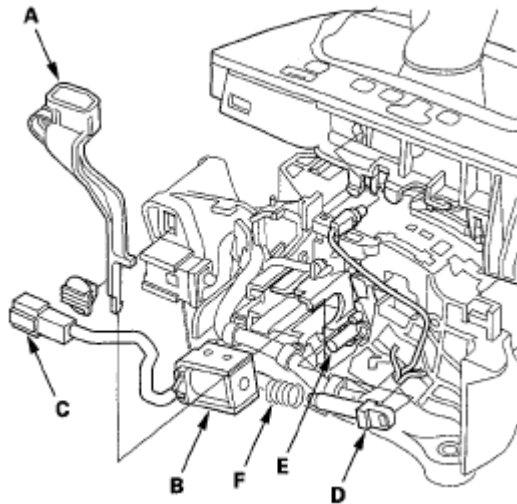


Fig. 428: Identifying Shift Lock Solenoid, Shift Lock Release, Shift Lock Solenoid Plunger And Harness Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the shift lock solenoid (B) and harness connector (C), and replace the shift lock solenoid.
4. Apply silicone grease to joint of the new shift lock solenoid plunger (D) and shift lock stop (E).
5. Install the shift lock solenoid plunger and plunger spring (F) in the shift lock solenoid.
6. Install the new shift lock solenoid by aligning the joint of the shift lock solenoid plunger with the tip of the shift lock stop, then push the shift lock solenoid into the shift lever bracket base securely.
7. Install the shift lock solenoid connector on the shift lever bracket base.
8. Install the shift lock release.
9. Install the shift lever (see **SHIFT LEVER INSTALLATION**).

SHIFT LOCK STOP, SHIFT LOCK STOP CUSHION REPLACEMENT

1. Remove the shift lock solenoid (see **SHIFT LOCK SOLENOID TEST**).
2. Remove the shift lock stop (A) and stop cushion (B), and replace the shift lock stop or stop cushion.

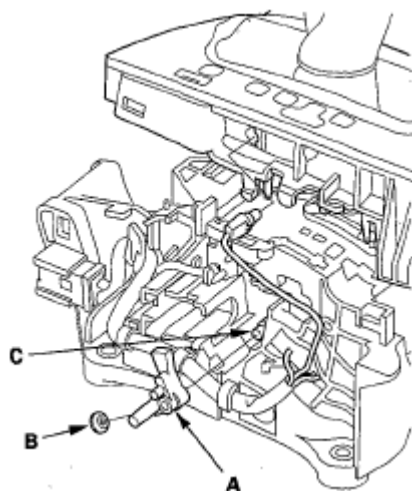


Fig. 429: Identifying Shift Lock Stop And Stop Cushion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the shift lock stop cushion on the shift lock stop.
4. Apply silicone grease to the pin (C) on the shift lever bracket base, and install the shift lock stop over the pin.
5. Install the shift lock solenoid (see **SHIFT LOCK SOLENOID TEST**).

SHIFT LOCK RELEASE REPLACEMENT

1. Remove the shift lever (see **SHIFT LEVER REMOVAL**).
2. Remove the shift lock release, and replace it.

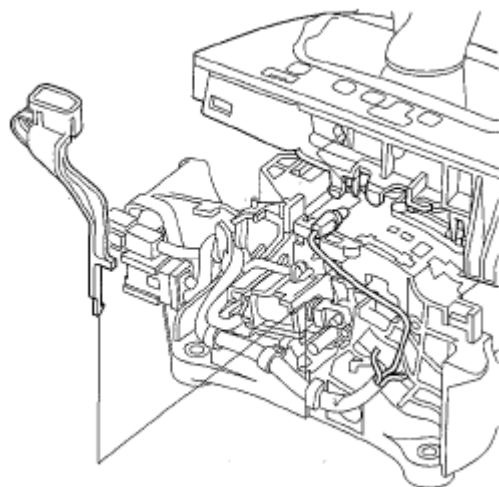


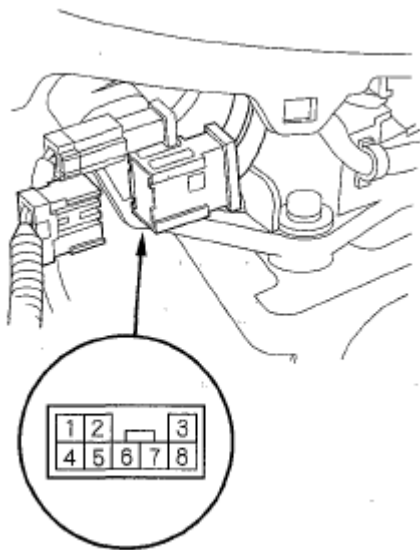
Fig. 430: Identifying Shift Lock Release
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the shift lock release.

4. Install the shift lever (see **SHIFT LEVER INSTALLATION**).

PARK PIN SWITCH TEST

1. Remove the driver's center console trim (see step 5 of **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the transmission gear selection switch/ park pin switch/A/T gear position indicator panel light connector.



Terminal side of male terminals

Fig. 431: Identifying Transmission Gear Selection Switch Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Shift the shift lever into P, and check for continuity between transmission gear selection switch/park pin switch/A/T gear position indicator panel light connector terminals No. 1 and No. 4.

There should be no continuity.

4. Shift out of P, and check for continuity between connector terminals No. 1 and No. 4.

There should be continuity.

5. If the park pin switch fails the test, replace the park pin switch and shift lever bracket base as an assembly (see **SHIFT LEVER BRACKET BASE REPLACEMENT**). The park pin switch, transmission gear selection switch, and A/T gear position indicator panel light harness are not available separately from the shift lever bracket base.
6. Install the driver's center console trim (see step 5 of **CENTER CONSOLE REMOVAL/INSTALLATION**).

PARK PIN SWITCH REPLACEMENT

NOTE: The park pin switch is not available separately from the shift lever bracket base; replace the park pin switch (including the transmission gear selection switch and A/T gear position indicator panel light harness) and select lever bracket base as an assembly.

Replace the park pin switch and shift lever bracket base assembly (see **SHIFT LEVER BRACKET BASE REPLACEMENT**).

TRANSMISSION DISASSEMBLY

Special Tools Required

Mainshaft holder set 07GAB-PF50101

1. Remove the ATF dipstick (D) and the dipstick tube (E).

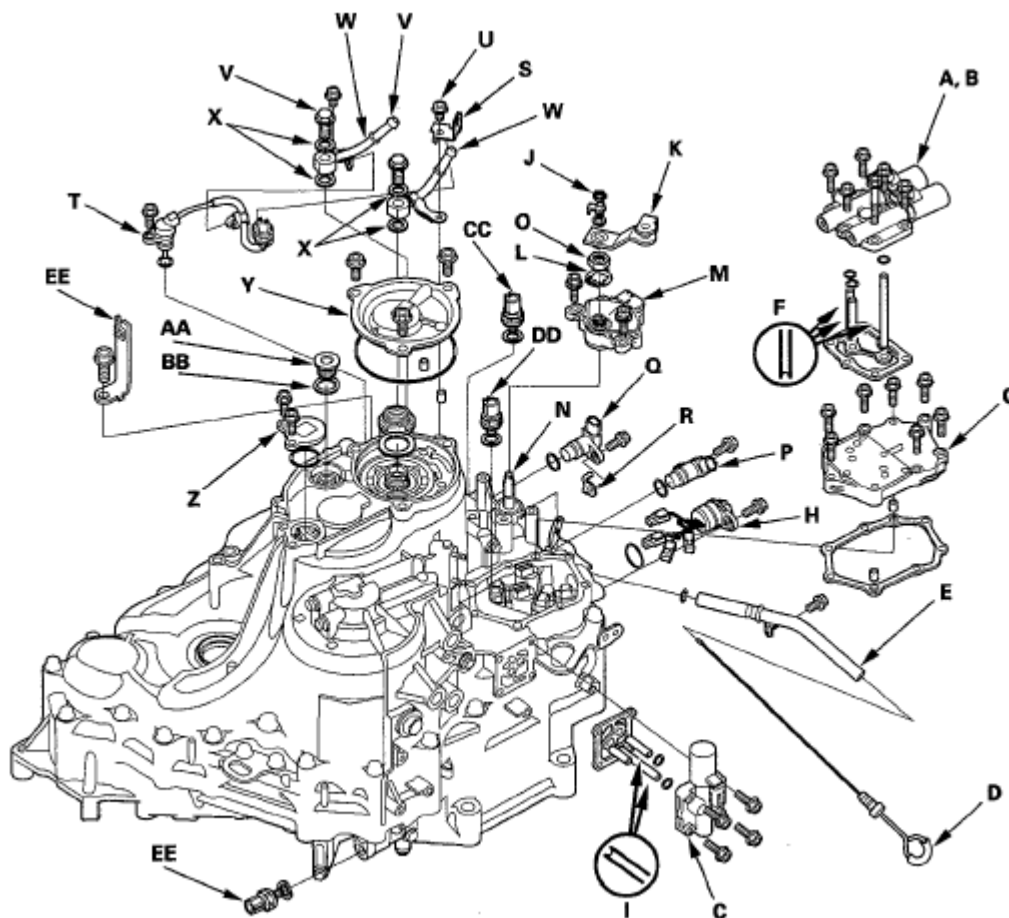


Fig. 432: Disassembling View Of Transmission
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove A/T clutch pressure control solenoid valve A and B (six bolts), ATF feed pipes (F) (three), O-

rings (three), and gasket.

3. Remove the solenoid valve cover (G) (seven bolts), dowel pins (two), and gasket.
4. Disconnect the solenoid valve connectors, then remove the solenoid harness connector (H).
5. Remove A/T clutch pressure control solenoid valve C (four bolts), ATF feed pipes (I) (three), O-rings (two), and gasket.
6. Pry the lock tab of the lock washer (J) on the control lever (K), and remove the nut, lock washer, spring washer, and control lever.
7. Pry up the lock tabs of the lock washer (K) on the transmission range switch (L), hold the selector control shaft (M) with a 6.0 mm wrench, and loosen the locknut (N).
8. Remove the locknut and lock washer, then remove the transmission range switch (two bolts).
9. Remove the input shaft (mainshaft) speed sensor (O), output shaft (countershaft) speed sensor (P), and sensor washer (Q).
10. Remove the ATF temperature sensor connector from the connector bracket (R) and the harness clamp from the clamp bracket, then remove the ATF temperature sensor (S).
11. Remove the connector bracket (R) and 6.0 mm bolt (T), then remove the line bolts (U), ATF cooler lines (V), and sealing washers (W).
12. Remove the end cover (X) (three bolts), snap ring cap (Y) (two bolts), sealing plug (Z), and washer (AA).
13. Remove the 3rd clutch transmission fluid pressure switch (BB) and sealing washer.
14. Remove the 4th clutch transmission fluid pressure switch (CC) and sealing washer.
15. Remove the 2nd clutch transmission fluid pressure switch (DD) and sealing washer.
16. Remove the transmission ground terminal (EE).
17. Slip the mainshaft holder onto the mainshaft.

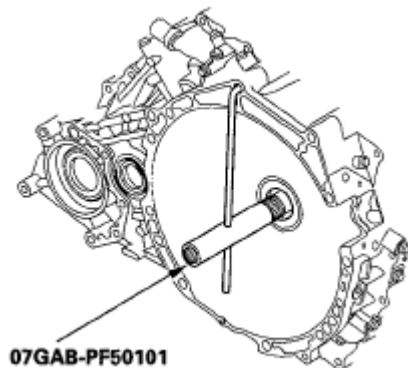


Fig. 433: Identifying Mainshaft Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Cut the lock tab(A) of the mainshaft locknut (B) using a chisel (C).

NOTE: Keep all of the chiseled particles out of the transmission.

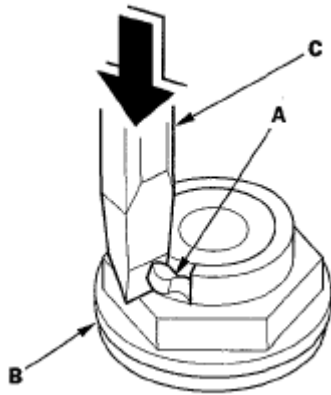


Fig. 434: Cutting Lock Tab Of Mainshaft Locknut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the locknut (A) from the mainshaft (B).

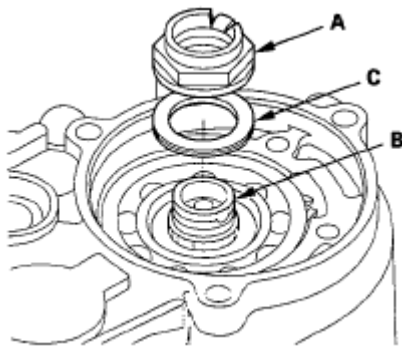


Fig. 435: Identifying Mainshaft Locknut And Lock Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Pry the lock washer (C), and remove it.
21. Remove the transmission housing mounting bolts (A) (23 bolts), special bolt (B), transmission hanger (C), and ground terminal bracket (D).

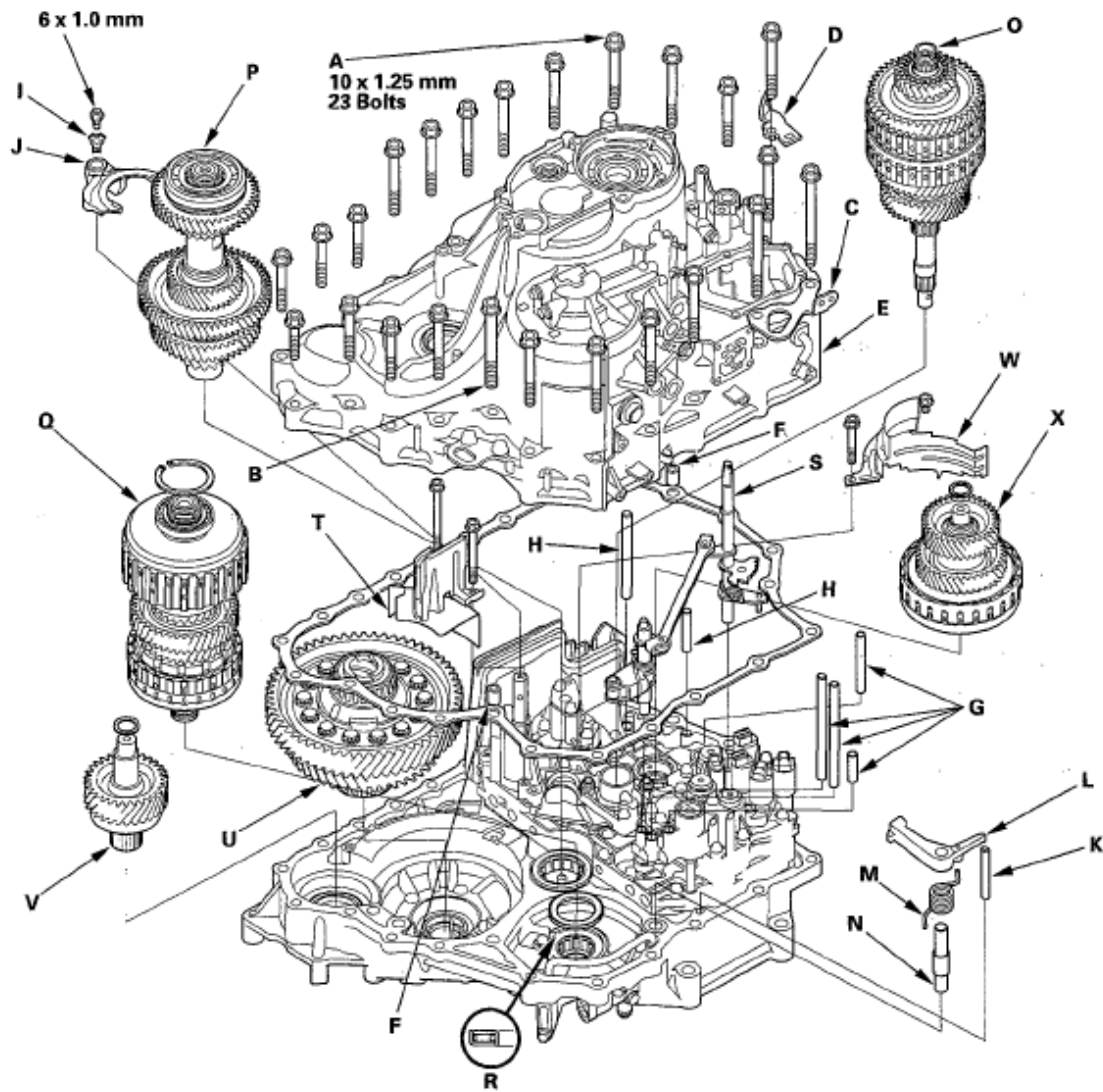


Fig. 436: Disassembling View Of Transmission
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. While expanding the snap ring of the countershaft bearing using the snap ring pliers, lift the transmission housing.

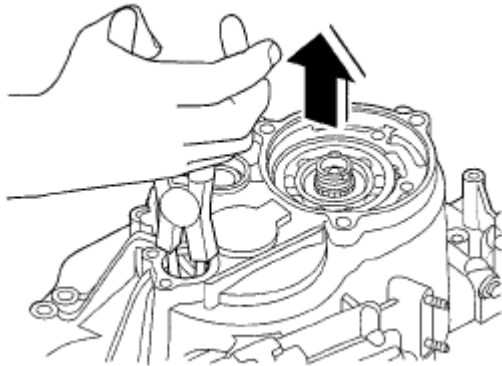


Fig. 437: Expanding Countershaft Bearing Snap Ring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Release the pliers, and remove the transmission housing (E), two dowel pins (F), and gasket.
24. Remove the ATF feed pipes (G) (four) from the accumulator body.
25. Remove the ATF feed pipes (H) (two) from the torque converter housing.
26. Remove the mainshaft holder from the mainshaft.
27. Pry back the lock tab of the lock washer (I) on the shift fork (J), then remove the bolt and the lock washer.
28. Unlock the detent spring from the detent arm.

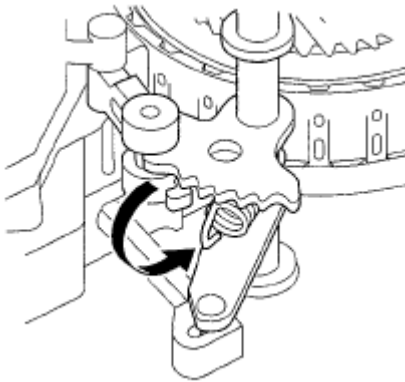


Fig. 438: Identifying Detent Spring From Detent Arm
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Remove the park pawl stop (K), park pawl (L), pawl spring (M), and pawl shaft (N).
30. Remove the mainshaft (O), countershaft (P), shift fork (J), and secondary shaft (Q) together, and remove the needle bearing (R) from the torque converter housing.



31. Remove the selector control shaft and park lever link (S).
32. Remove the baffle plate (T).
33. Remove the differential assembly (U).
34. Remove the transfer output shaft (V).
35. Remove the baffle plate (W).
36. Remove the intermediary shaft (X).
37. Remove the ATF strainer (A) (one bolt).

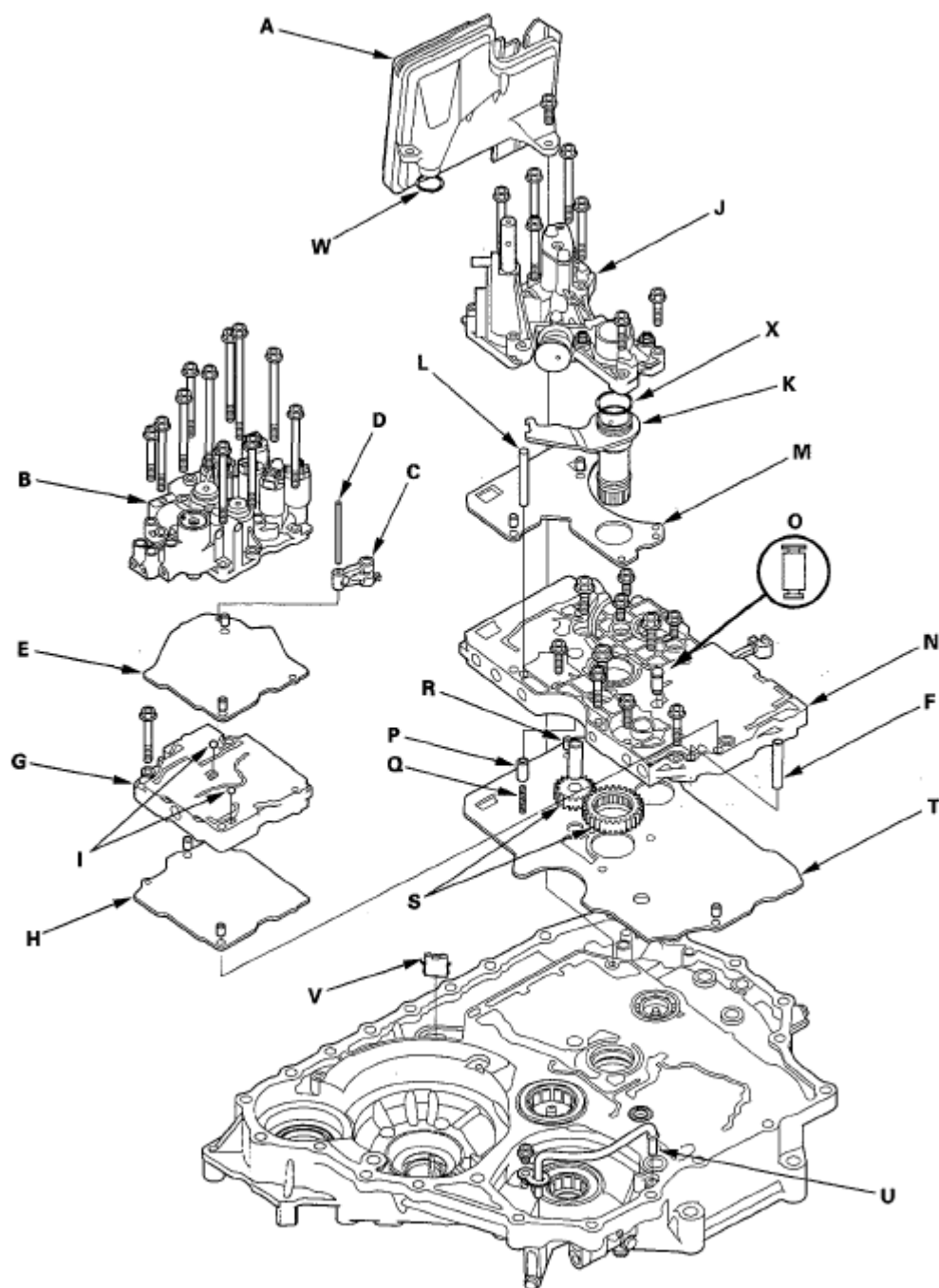


Fig. 440: Disassembling View Of Transmission

Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove the accumulator body (B) (11 bolts), dowel pins (two), detent arm (C), arm shaft (D), and separator plate (E).
39. Remove the ATF feed pipe (F) from the main valve body.
40. Remove the secondary valve body (G) (one bolt), dowel pins (two), and separator plate (H). Do not let the check balls (I) (two) fall out.

41. Remove the regulator valve body (J) (seven bolts), stator shaft (K), stator shaft stop (L), dowel pins (two), and separator plate (M).
42. Remove the main valve body (N) (8 mm: three bolts, 6 mm: seven bolts). Do not let the lubrication check valve (O) fall out.
43. Remove the torque converter check valve (P) and valve spring (Q).
44. Remove the ATF pump driven gear shaft (R), then remove the ATF pump gears (S).
45. Remove the dowel pins (two) and main separator plate (T).
46. Remove the ATF passage pipe (U).
47. Remove the ATF magnet (V), clean it, then reinstall.
48. Remove the O-ring (W) from the ATF strainer, and replace the new O-ring when reassembling the transmission.
49. Remove the O-ring (X) from the stator shaft, and replace the new O-ring when reassembling the transmission.
50. Clean the inlet opening (A) of the ATF strainer (B) thoroughly with compressed air, then check that it is good condition and the inlet opening is not clogged.

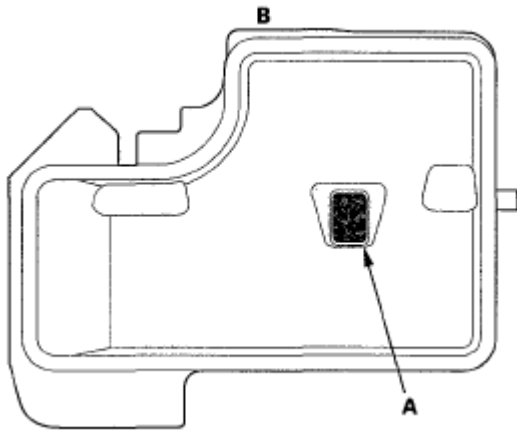


Fig. 441: Identifying Inlet Opening Of ATF Strainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Test the ATF strainer by pouring clean ATF through the inlet opening, and replace if it is clogged or damaged.

TRANSMISSION HOUSING

REVERSE IDLER GEAR REMOVAL/ INSTALLATION

1. Remove the reverse idler gear assembly (A) from the transmission housing.

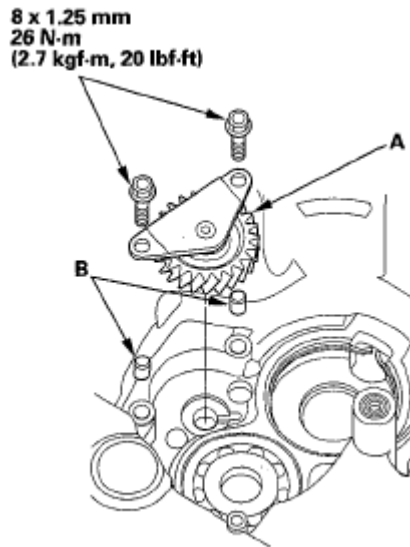


Fig. 442: Identifying Reverse Idler Gear Assembly And Dowel Pins With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the reverse idler gear assembly with the two dowel pins (B) in the transmission housing.

REVERSE IDLER GEAR DISASSEMBLY/ INSPECTION/REASSEMBLY

1. Remove the snap ring (A), then remove the thrust washer (B), reverse idler gear (C), needle bearings (D), and thrust washer (E) from the reverse idler gear shaft/holder (F).

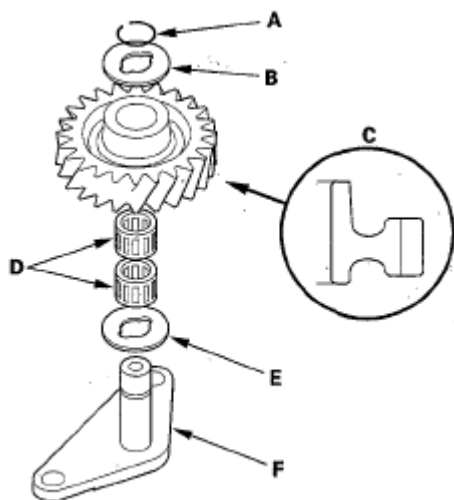


Fig. 443: Identifying Thrust Washer, Reverse Idler Gear, Needle Bearings And Reverse Idler Gear Shaft/Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the reverse idler gear and gear shaft for excessive wear and damage.
3. Inspect the needle bearings for galling and rough movement.

4. Install the thrust washer and needle bearings over the gear shaft.
5. Install the reverse idler gear in the direction shown.
6. Install the thrust washer, then install the snap ring to secure the idler gear.

SECONDARY SHAFT ATF FEED PIPE CAP REMOVAL

1. Cover the tip of the 1st-hold clutch ATF feed pipe with a shop rag.
2. Apply air pressure to the ATF feed pipe hole of the 1st-hold clutch pressure circuit, and remove the ATF feed pipe cap from the transmission housing.

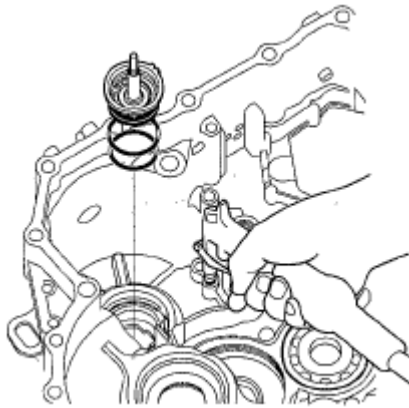


Fig. 444: Identifying ATF Feed Pipe Cap From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT ATF FEED PIPE CAP INSTALLATION

1. Install the new O-rings (A) on the ATF feed pipe cap (B).

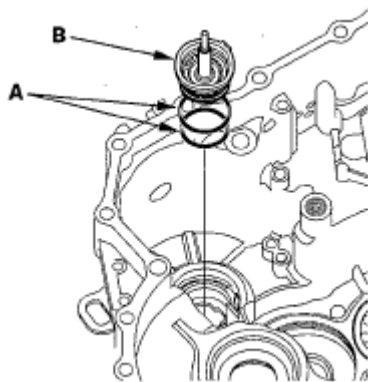


Fig. 445: Identifying O-Rings On ATF Feed Pipe Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ATF feed pipe cap in the transmission housing. Do not pinch the O-rings.

SECONDARY SHAFT ATF FEED PIPE CAP, FEED PIPE REPLACEMENT

1. Remove the ATF feed pipe cap from the transmission housing (see **SECONDARY SHAFT ATF FEED PIPE CAP REMOVAL**).
2. Remove the snap ring (A) from the feed pipe cap (B), then remove the feed pipe guide (C), O-rings (D) (E), and 1st clutch ATF feed pipe (F).

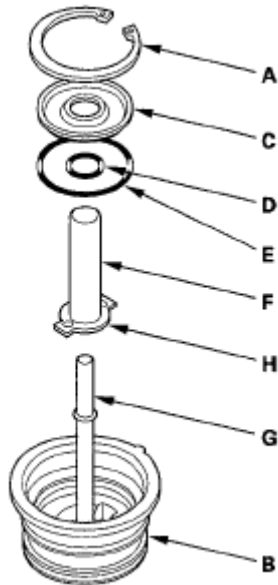


Fig. 446: Identifying Feed Pipe Cap, Feed Pipe Guide And 1st Clutch ATF Feed Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the 1st clutch ATF feed pipe or 1st-hold clutch ATF feed pipe/ATF feed pipe cap assembly. The 1st-hold clutch ATF feed pipe/ATF feed pipe cap is not available separately.
4. Install the new O-ring (D) over the 1st clutch ATF feed pipe, then install the feed pipe over the 1st-hold clutch ATF feed pipe (G) while aligning the feed pipe tabs (H) with the guide in the cap.
5. Install the new O-ring (E) in the cap and feed pipe guide, then secure the guide with the snap ring.

ATF FILTER REMOVAL/INSPECTION/ INSTALLATION

1. Remove the three 6.0 mm bolts securing the ATF filter cover (A) and ATF pipe (B).

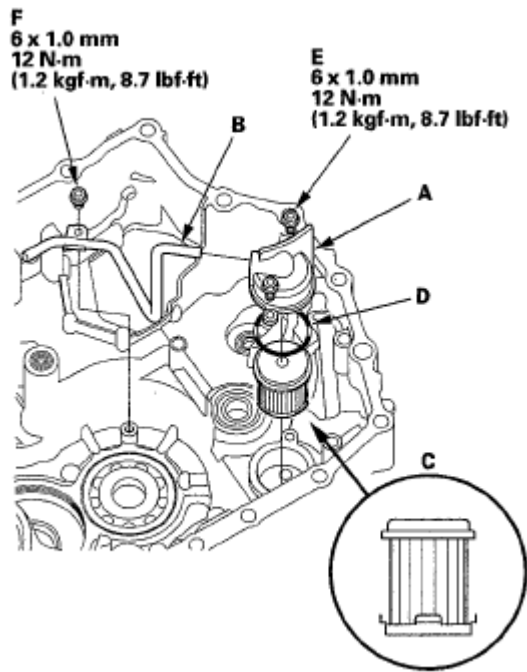


Fig. 447: Identifying ATF Filter Cover, ATF Filter, ATF Pipe And ATF Filter Cover Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the ATF pipe from the ATF filter cover, and remove the ATF filter (C) from the cover.
3. Clean the ATF filter, then check that it is in good condition, and is not clogged. Replace the ATF filter if it is clogged or damaged.
4. Install the ATF filter with the new O-ring (D) in the filter cover, and, install the ATF pipe in the cover, then install them in the transmission housing.
5. Secure the ATF filter cover with the two bolts (E), then secure the ATF pipe with the bolt (F).

MAINSHAFT BEARING REMOVAL

Special Tools Required

- Driver 07749-0010000
 - Attachment, 78 x 80 mm 07NAD-PX40100
1. To remove the mainshaft bearing, expand the snap ring with the snap ring pliers, then push the bearing out. Do not remove the snap ring unless it's necessary to clean the groove in the housing.

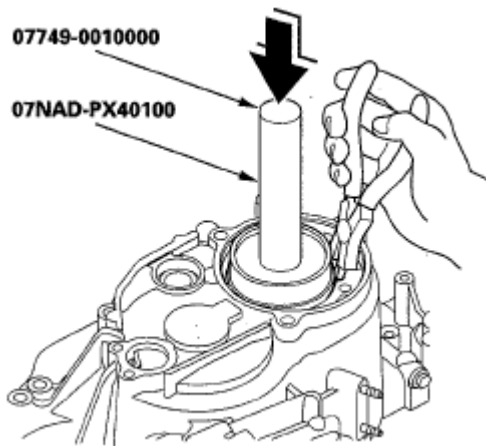


Fig. 448: Identifying Snap Ring With Snap Ring Pliers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINSHAFT BEARING INSTALLATION

Special Tools Required

- Driver 07749-0010000
- Attachment, 78 x 80 mm 07NAD-PX40100

1. Install the bearing in the direction shown.

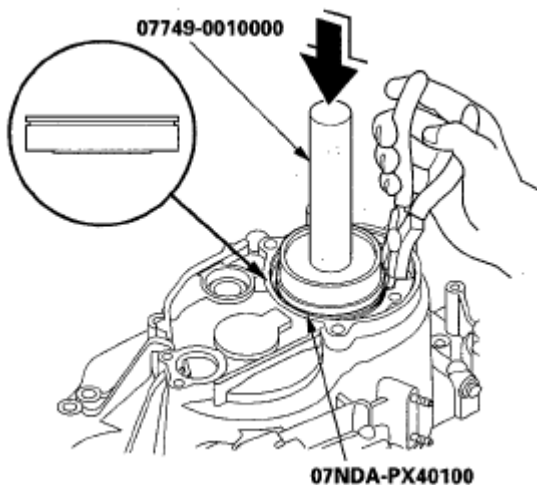


Fig. 449: Identifying Mainshaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Expand the snap ring with the snap ring pliers, and insert the bearing part-way into the housing.
3. Release the pliers, then push the bearing down into the housing until the snap ring snaps in place around it.

4. After installing the bearing, check that the snap ring (A) is seated in the bearing and housing groove, and that the ring end gap (B) is 0-7 mm (0-0.28 in.).

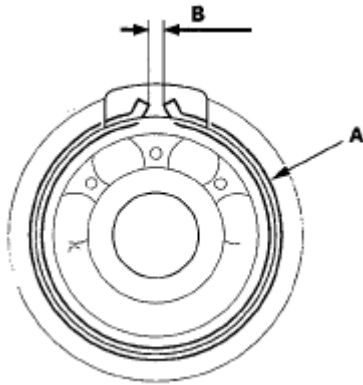


Fig. 450: Identifying Ring End Gap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIARY SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing remover shaft set, 20 mm 07936-3710600
 - Bearing remover shaft handle 07936-3710100
 - Sliding hammer weight 07741-0010201
 - Driver 07749-0010000
 - Attachment, 37 x 40 mm 07746-0010200
1. Remove the intermediary shaft bearing from the transmission housing using the bearing remover shaft set (20 mm), the bearing shaft handle, and the sliding hammer weight.

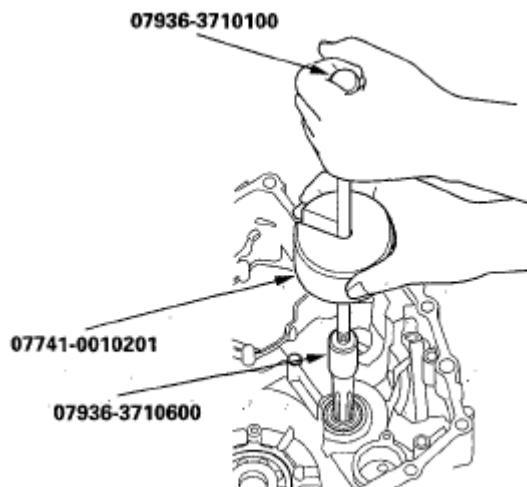


Fig. 451: Identifying Intermediary Shaft Bearing From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing until it bottoms in the transmission housing using the driver and the attachment (37 x 40 mm).

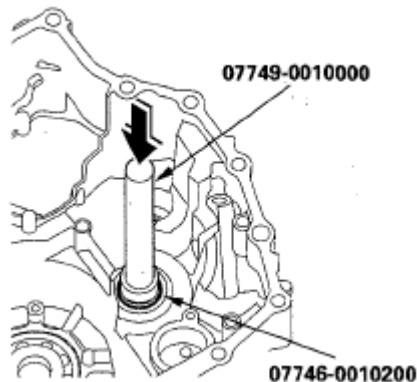


Fig. 452: Identifying Intermediary Shaft Bearing Into Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARK LEVER SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing remover shaft, 10 mm 07936-GE00100
 - Bearing remover head, 10 mm 07936-GE00200
 - Sliding hammer weight 07741-0010201
 - Driver 07749-0010000
 - Attachment, 22 x 24 mm 07746-0010800
1. Remove the park lever shaft bearing from the transmission housing using the bearing remover head (10 mm), the bearing remover shaft (10 mm), and the sliding hammer weight.

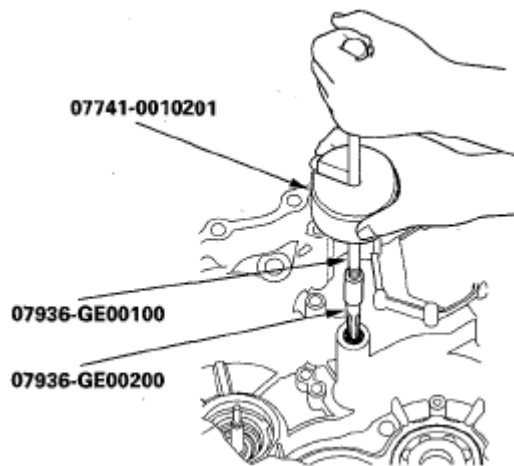


Fig. 453: Identifying Park Lever Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing until it bottoms in the transmission housing using the driver and the attachment (22 x 24 mm).

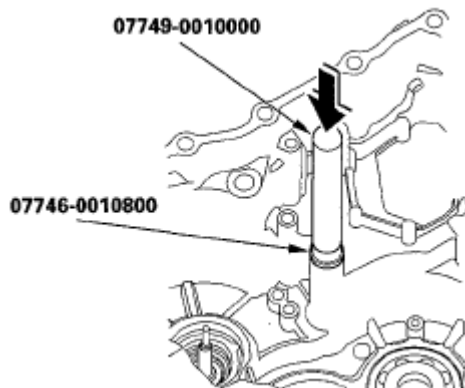


Fig. 454: Identifying Park Lever Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing remover shaft, 10 mm 07936-GE00100
- Bearing remover head, 10 mm 07936-GE00200
- Sliding hammer weight 07741-0010201
- Driver 07749-0010000
- Attachment, 22 x 24 mm 07746-0010800

1. Remove the control shaft bearing from the transmission housing using the bearing remover head (10

mm), the bearing remover shaft (10 mm), and the sliding hammer weight.

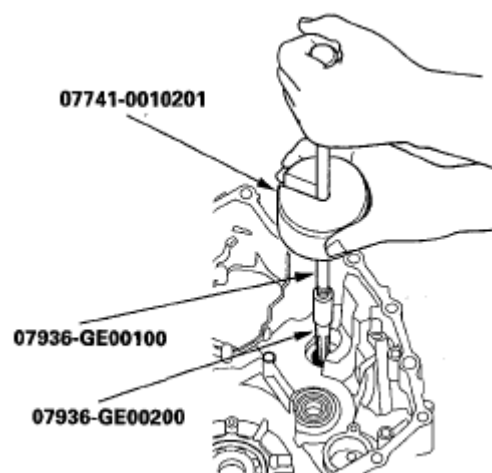


Fig. 455: Identifying Selector Control Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing in the transmission housing using the driver and the attachment (22 x 24 mm).

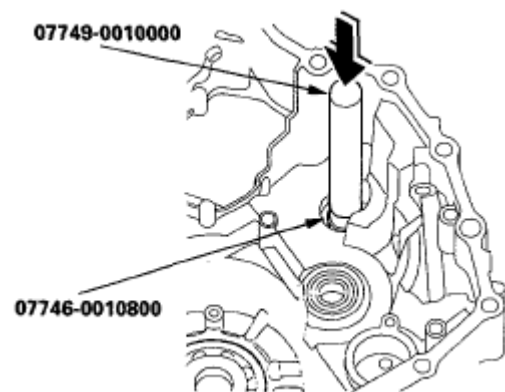


Fig. 456: Identifying Selector Control Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELECTOR CONTROL SHAFT OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 22 x 24 mm 07746-0010800

1. Remove the oil seal from the transmission housing.

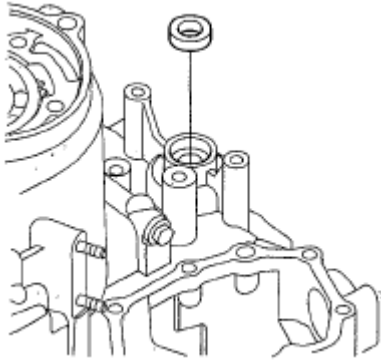


Fig. 457: Identifying Selector Control Shaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal in the transmission housing using the driver and the attachment (22 x 24 mm).

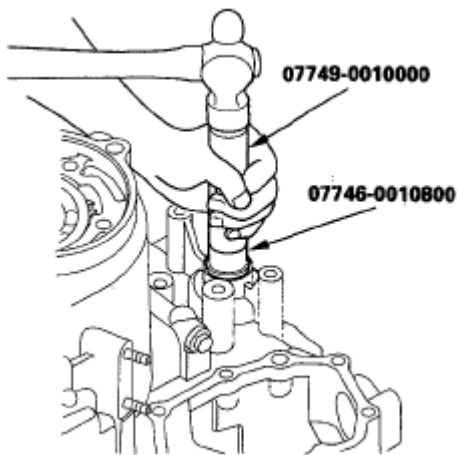


Fig. 458: Identifying Selector Control Shaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE BODY

VALVE BODY REPAIR

NOTE: Valve body repair is only necessary if one or more of the valves in a valve body do not slide smoothly in their bores. Use this procedure to free the valves.

1. Soak a sheet of #600 abrasive paper in ATF for about 30 minutes. :
2. Carefully tap the valve body so the sticking valve drops out of its bore. It may be necessary to use a small screwdriver to pry the valve free. Be careful not to scratch the bore with the screwdriver.
3. Inspect the valve for any scuff marks. Use the ATF-soaked # 600 paper to polish off any burrs that are on the valve, then wash the valve in solvent and dry it with compressed air.
4. Roll up half of the ATF-soaked #600 paper and insert it in the valve bore of the sticking valve. Twist the

paper slightly, so that it unrolls and fits the bore tightly, then polish the bore by twisting the paper as you push it in and out.

NOTE: The valve body is aluminum and doesn't require much polishing to remove any burrs.

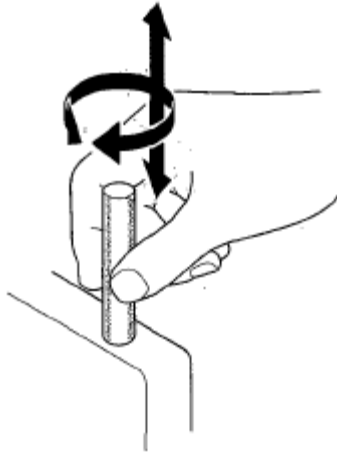


Fig. 459: Identifying ATF-Soaked Paper In Valve Bore Of Sticking Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the #600 paper. Thoroughly wash the entire valve body in solvent, then dry it with compressed air.
6. Coat the valve with ATF, then drop it into its bore. It should drop to the bottom of the bore under its own weight. If not, repeat steps 4 and 5, then retest. If the valve still sticks, replace the valve body.

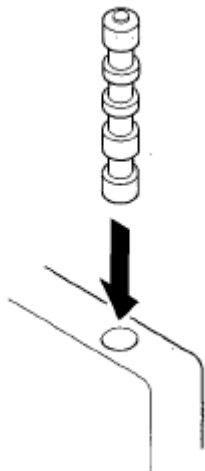


Fig. 460: Identifying Valve Into Valve Bore
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve, and thoroughly clean it and the valve body with solvent. Dry all parts with compressed air, then reassemble using ATF as a lubricant.

VALVE BODY VALVE INSTALLATION

1. Coat all parts with ATF before assembly.
2. Install the valves and springs in the sequence shown for the main valve body (see **MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), secondary valve body (see **SECONDARY VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), regulator valve body (see **REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY**), and accumulator body (see **ACCUMULATOR BODY DISASSEMBLY; INSPECTION, AND REASSEMBLY**). Refer to the following valve cap illustrations, and install each valve cap so the end shown facing up will be facing the outside of the valve body, then secure the valve cap with the valve cap clip.

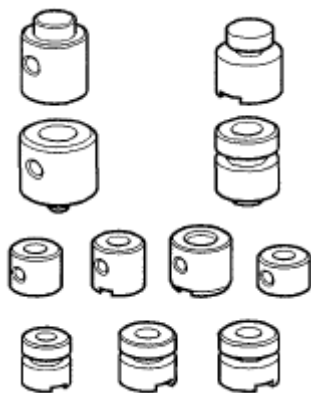


Fig. 461: Identifying Valve Cap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the valve (A) and valve spring (B) in the valve body. Push the valve spring in with a screwdriver, then install the spring seat (C).

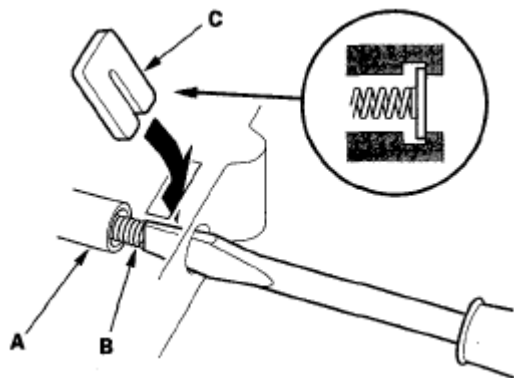


Fig. 462: Identifying Spring Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly in solvent, and dry them with compressed air. Blow out all passages.
2. Inspect the main valve body for scoring and damage.
3. Check all valves for free movement. If any fail to slide freely, refer to **VALVE BODY REPAIR** (see).
4. Coat all parts with ATF during assembly.
5. Replace the filter with a new one, and install it and the lubrication check valve in the direction shown.

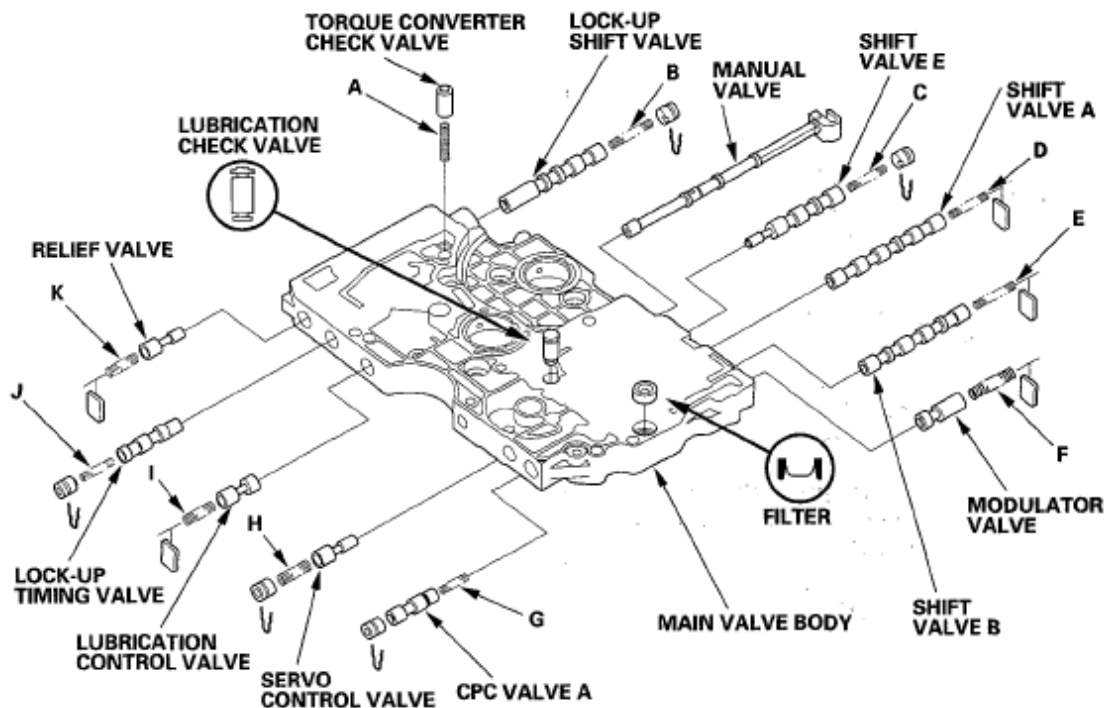


Fig. 463: Exploded View Of Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE SPRING SPECIFICATIONS

VALVE SPRING SPECIFICATIONS

Valve Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	Torque converter check valve spring	1.1 (0.043)	8.6(0.339)	34.3(1.350)	10.1
B	Lock-up shift valve spring	1.0(0.039)	6.6 (0.260)	35.5(1.398)	18.2
C	Shift valve E spring	0.7 (0.028)	6.6 (0.260)	42.4(1.669)	17.6
D	Shift valve A spring	0.9 (0.035)	6.6 (0.260)	50.5(1.988)	23.3
E	Shift valve B spring	0.8(0.031)	6.6 (0.260)	49.1 (1.933)	21.7
F	Modulator valve spring	1.6(0.063)	10.4(0.409)	33.5(1.319)	9.8
G	CPC valve A spring	0.7 (0.028)	6.1 (0.240)	17.8(0.701)	7.9
H	Servo control valve spring	0.9 (0.035)	9.6 (0.378)	30.2(1.189)	8.4
I	Lubrication control valve spring	0.9 (0.035)	8.7 (0.343)	25.0 (0.984)	7.2
J	Lock-up timing valve spring	0.6 (0.024)	6.6 (0.260)	30.9(1.217)	11.1

K	Relief valve spring	1.0(0.039)	9.6 (0.378)	28.1 (1.106)	7.7
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ATF PUMP INSPECTION

1. Install the ATF pump drive gear (A), driven gear (B), and ATF pump driven gear shaft (C) in the main valve body (D). Lubricate all parts with ATF, and install the ATF pump driven gear with its grooved and chamfered side facing up.

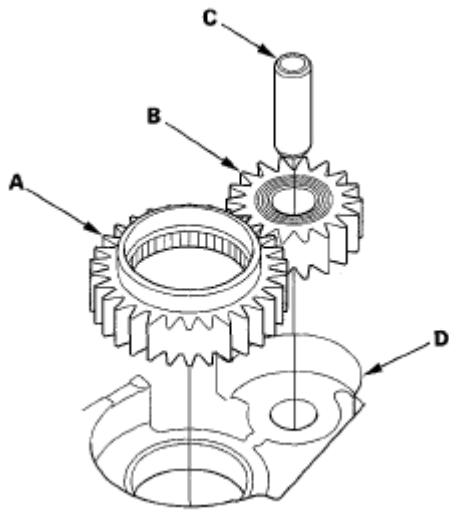


Fig. 464: Identifying ATF Pump Drive Gear, ATF Pump Driven Gear Shaft And Main Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the side clearance of the ATF pump drive gear (A) and driven gear (B).

ATF Pump Gears Side (Radial) Clearance

Standard (New):

ATF Pump Drive Gear:

0.210-0.265 mm (0.0083-0.00104 in.)

ATF Pump Driven Gear:

0.070-0.125 mm (0.0028-0.0050 in.)

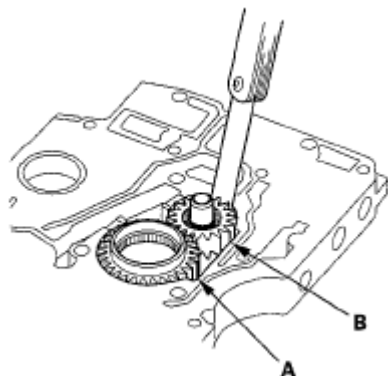


Fig. 465: Identifying Side Clearance Of ATF Pump Drive Gear And Driven Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ATF pump driven gear shaft. Measure the thrust clearance between the ATF pump driven gear (A) and the valve body (B) with a straight edge (C) and a feeler gauge (D).

ATF Pump Drive/Driven Gear Thrust (Axial) Clearance:

Standard (New): 0.03-0.06 mm (0.001-0.002 in.)

Service Limit: 0.07 mm (0.003 in.)

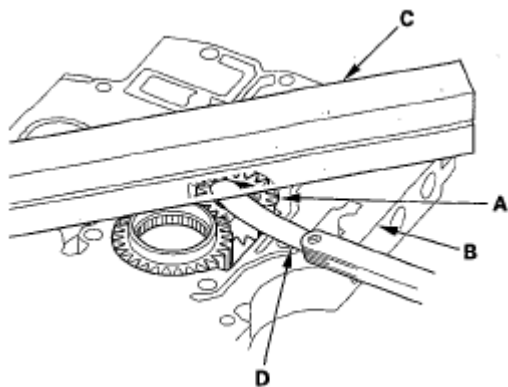


Fig. 466: Identifying Thrust Clearance Between ATF Pump Driven Gear And Valve Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly insolvent, and dry them with compressed air. Blow out all passages.
2. Do not use a magnet to remove the check balls, it may magnetize the check balls.
3. Inspect the secondary valve body for scoring and damage.
4. Check all valves for free movement. If any fail to slide freely, refer to **VALVE BODY REPAIR** (see).
5. Coat all parts with ATF during assembly.

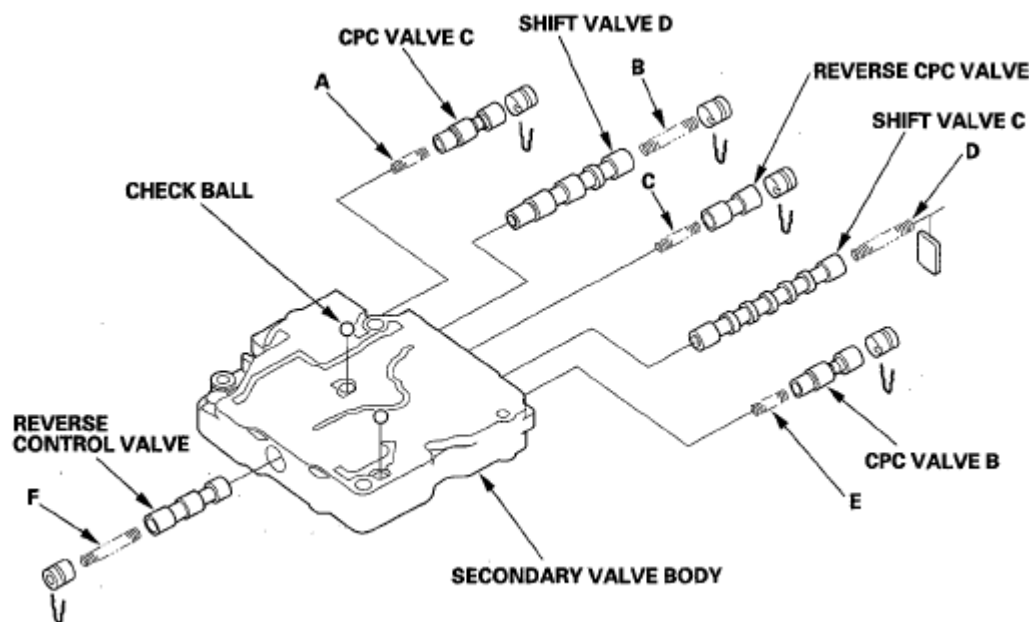


Fig. 467: Exploded View Of Secondary Valve Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE SPRING SPECIFICATIONS

VALVE SPRING SPECIFICATIONS

Valve Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	CPC valve C spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9
B	Shift valve D spring	0.7 (0.028)	6.6 (0.260)	42.4 (1.669)	17.6
C	Reverse CPC valve spring	0.8 (0.031)	6.1 (0.240)	24.4 (0.961)	14.6
D	Shift valve C spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7
E	CPC valve B spring	0.7 (0.028)	6.1 (0.240)	17.8 (0.701)	7.9
F	Reverse control valve spring	0.8 (0.031)	6.6 (0.260)	49.1 (1.933)	21.7

REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly in solvent, and dry them with compressed air. Blow out all passages.
2. Inspect the regulator valve body for scoring and damage.
3. Hold the regulator spring cap in place while removing the stop bolt. The regulator spring cap is spring loaded. Once the stop bolt is removed, release the spring cap slowly so it does not pop out.
4. Check all valves for free movement. If any fail to slide freely, refer to **VALVE BODY REPAIR** (see).
5. Coat all parts with ATF during assembly.
6. Align the hole in the regulator spring cap with the stop bolt hole, then press the spring cap into the valve body, and tighten the stop bolt.
7. Install the servo valve with the new O-ring, and 3rd accumulator piston with the new O-ring.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

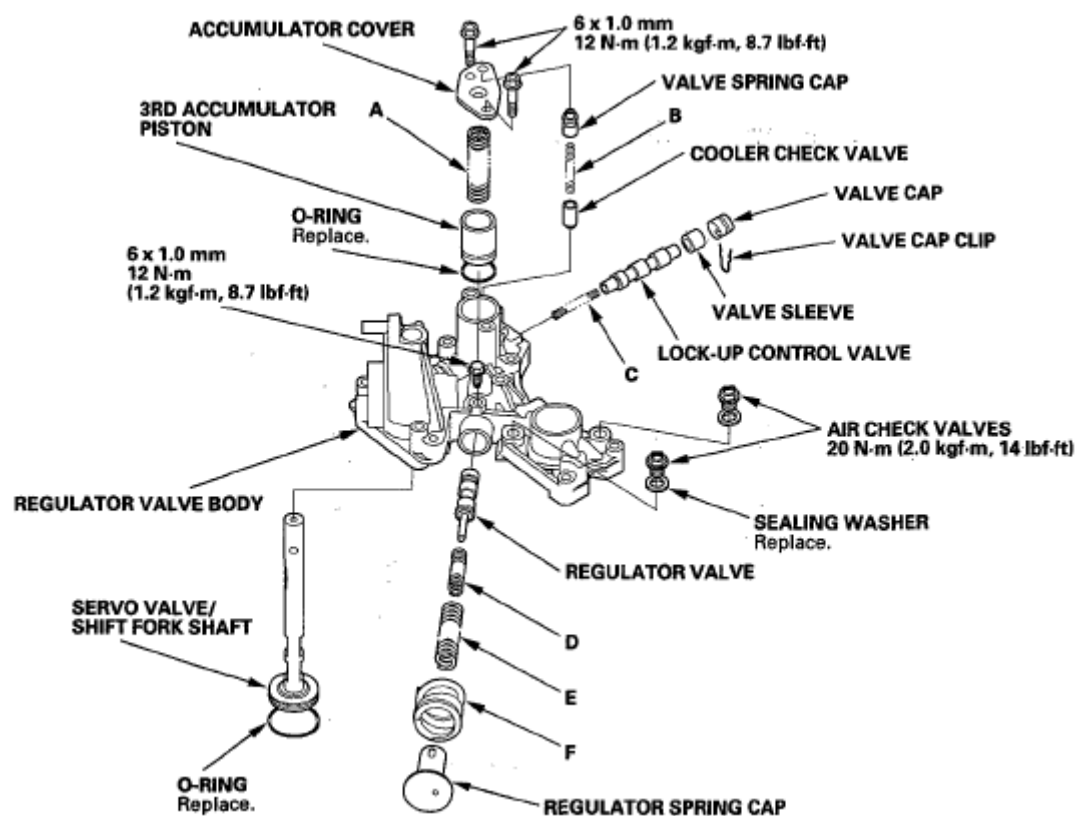


Fig. 468: Exploded View Of Regulator Valve Body With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE SPRING SPECIFICATIONS

VALVE SPRING SPECIFICATIONS

Valve Springs		Standard (New)-Unit: mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	3rd accumulator spring	3.1 (0.122)	19.6 (0.772)	41.4 (1.630)	5.5
B	Cooler check valve spring	0.9 (0.035)	6.7 (0.264)	31.5 (1.240)	14.2
C	Lock-up control valve spring	0.7 (0.028)	6.6 (0.260)	42.9 (1.689)	14.2
		0.8 (0.031)	6.6 (0.260)	44.3 (1.744)	25.5
D	Regulator valve spring B	1.4 (0.055)	8.8 (0.346)	44.0 (1.732)	12.0
E	Regulator valve spring A	1.85 (0.073)	14.7 (0.579)	86.9 (3.421)	16.2
F	Stator reaction spring	5.5 (0.217)	37.4 (1.472)	30.3 (1.193)	2.1

ACCUMULATOR BODY DISASSEMBLY; INSPECTION, AND REASSEMBLY

1. Clean all parts thoroughly in solvent, and dry them with compressed air. Blowout all passages.
2. Inspect the accumulator body for scoring and damage.
3. Coat all parts with ATF during assembly.

4. Replace the O-rings with new ones.

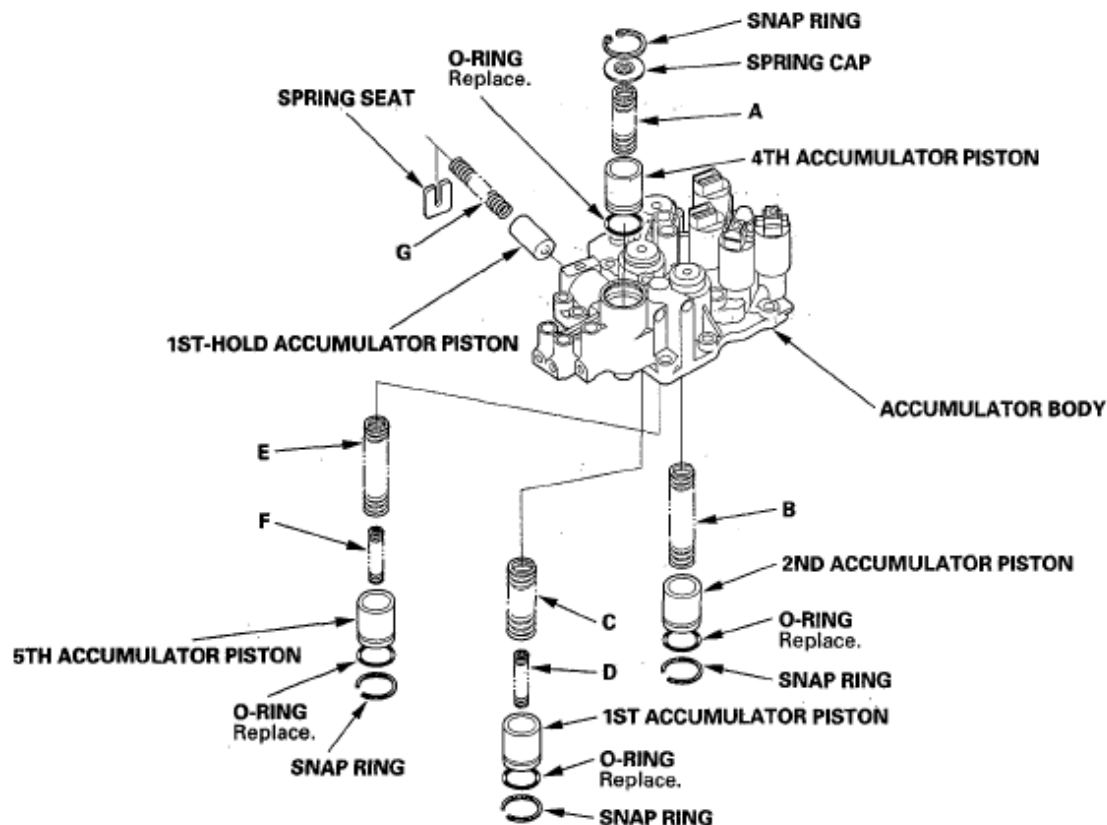


Fig. 469: Exploded View Of Accumulator Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE SPRING SPECIFICATIONS

VALVE SPRING SPECIFICATIONS

Valve Springs		Standard: (New)-Unit mm (in.)			
		Wire Diameter	O.D.	Free Length	No. of Coils
A	4th accumulator spring	3.3 (0.130)	19.6 (0.772)	39.1 (1.539)	5.8
B	2nd accumulator spring	3.1 (0.122)	19.6 (0.772)	53.4 (2.102)	7.5
C	1st accumulator spring A	2.3 (0.091)	19.6 (0.772)	60.8 (2.394)	9.5
D	1st accumulator spring B	2.5 (0.098)	12.8 (0.504)	46.0 (1.811)	9.5
E	5th accumulator spring A	2.4 (0.094)	19.6 (0.772)	65.5 (2.579)	12.0
F	5th accumulator spring B	2.6 (0.102)	13.2 (0.520)	50.5 (1.988)	10.1
G	1st-hold accumulator spring	2.0 (0.079)	13.1 (0.516)	42.9 (1.689)	9.8

SHIFT SOLENOID VALVE REMOVAL AND INSTALLATION

NOTE: Do not hold the solenoid valve connector to remove and install the shift

solenoid valve. Be sure to hold the solenoid valve body.

1. Remove the mounting bolts, then remove the solenoid valves by holding the solenoid valve body.
2. Install the new O-rings (E) on each shift solenoid valve.

NOTE: If you are installing a new shift solenoid valve, it comes with new O-rings already installed.

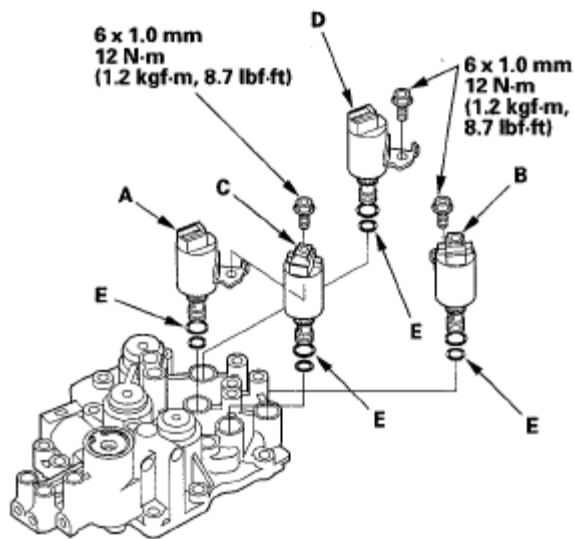


Fig. 470: Identifying Shift Solenoid Valves And O-Rings With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install shift solenoid valve D (black connector) by holding the shift solenoid valve body; be sure the mounting bracket contacts the accumulator body.
4. Install shift solenoid valve A (black connector) by holding the shift solenoid valve body; be sure the mounting bracket contacts the accumulator body.
5. Install shift solenoid valve C (brown connector) by holding the shift solenoid valve body; be sure to position the mounting bracket on top of the bracket of shift solenoid valve A.

NOTE: Do not install shift solenoid valve C before installing shift solenoid valve A. If shift solenoid valve C is installed before installing shift solenoid valve A, it may damage the hydraulic control system.

6. Install shift solenoid valve B (brown connector) by holding the shift solenoid valve body; be sure the mounting bracket contacts the accumulator body.

TORQUE CONVERTER HOUSING

MAINSHAFT BEARING AND OIL SEAL REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
 - Sliding hammer weight 07741-0010201
 - Driver 07749-0010000
 - Attachment, 62 x 68 mm 07746-0010500
 - Attachment, 72 x 75 mm 07746-0010600
1. Remove the mainshaft bearing and oil seal using the adjustable bearing remover and the sliding hammer weight.

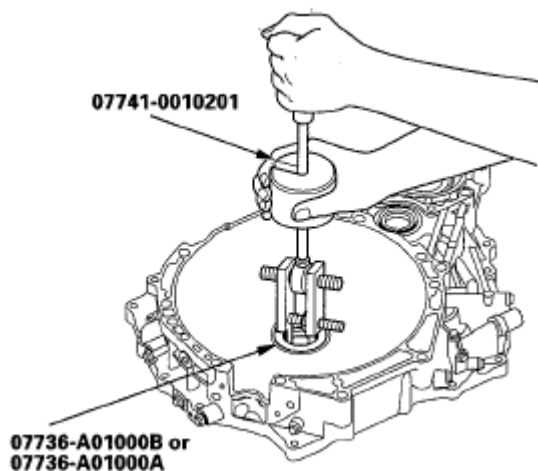


Fig. 471: Identifying Mainshaft Bearing And Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new mainshaft bearing until it bottoms in the housing using the driver (07749-0010000) and the attachment (62 x 68 mm).

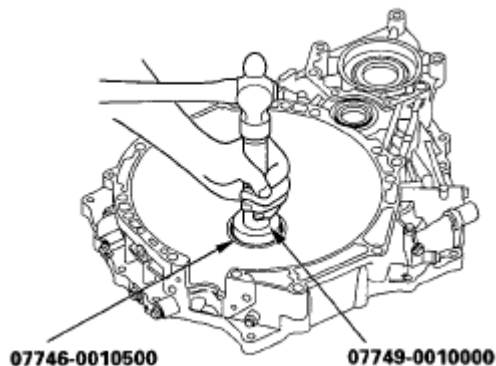
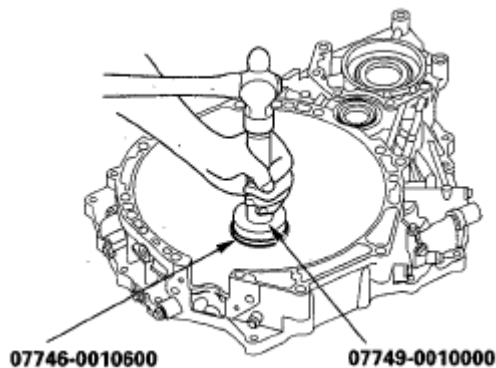


Fig. 472: Identifying Mainshaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal flush to the housing using the driver and the attachment (72 x 75 mm).

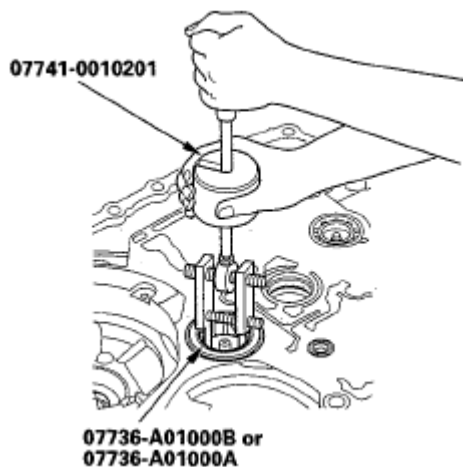
**Fig. 473: Identifying Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
 - Sliding hammer weight 07741-0010201
 - Driver 07749-0010000
 - Attachment, 78 x 80 mm 07NAD-PX40100
1. Remove the countershaft bearing from the torque converter housing using the adjustable bearing remover and the sliding hammer weight.

**Fig. 474: Identifying Countershaft Bearing From Torque Converter Housing**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ATF guide plate (A) into the housing, then install the new bearing (B) in the direction shown.

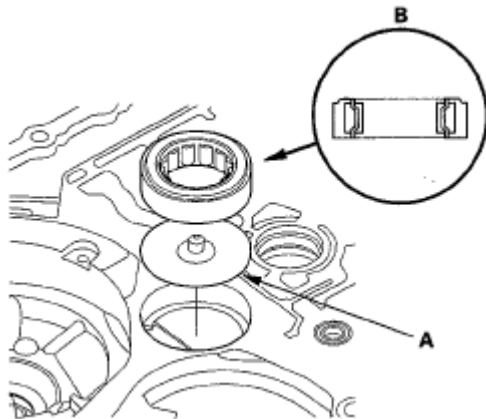


Fig. 475: Identifying ATF Guide Plate And Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the bearing (A) in the housing using the driver and the attachment (78 x 80 mm); install the bearing outer notch-cut (B) in depth (C) of 0-0.03 mm (0-0.001 in.) below the housing surface (D).

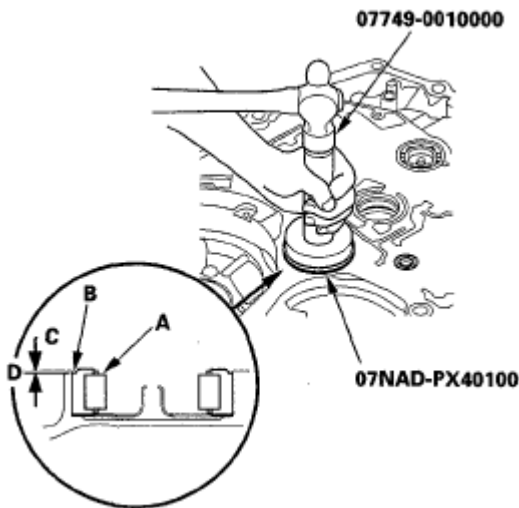


Fig. 476: Identifying Countershaft Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
- Bearing remover shaft set, 30 mm 07936-8890300
- Bearing remover shaft handle 07936-3710100
- Sliding hammer weight 07741-0010201
- Driver 07749-0010000

- Attachment, 37 x 40 mm 07746-0010200
- Attachment, 62 x 68 mm 07746-0010500

1. Remove the bolt, then remove the lock washer (A) and bearing set plate (B).

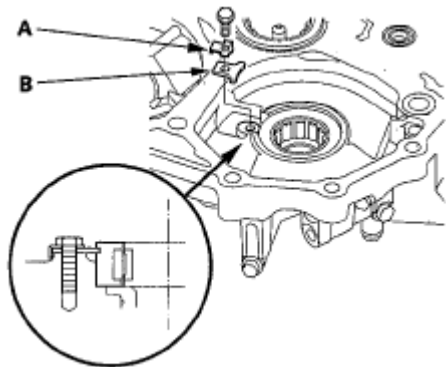


Fig. 477: Identifying Lock Washer And Bearing Set Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the secondary shaft bearing from the torque converter housing using the adjustable bearing remover and the sliding hammer weight.

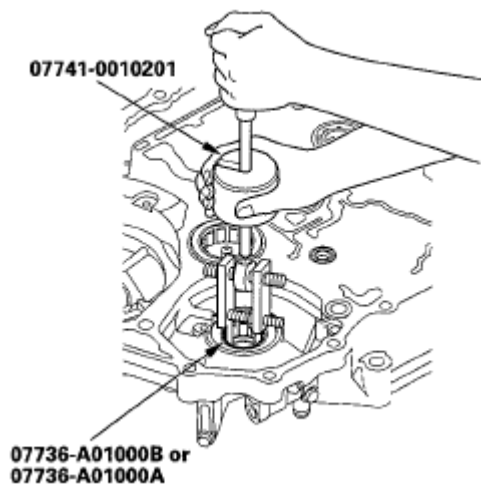


Fig. 478: Identifying Secondary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the ATF guide collar from the torque converter housing.

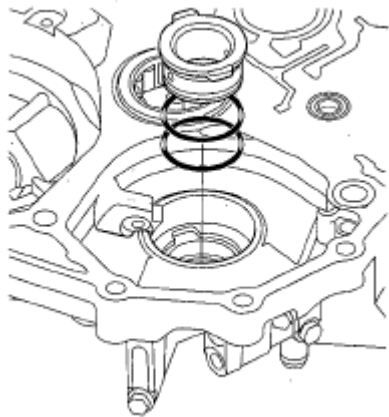


Fig. 479: Identifying ATF Guide Collar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the 29 x 39 x 9.5 mm secondary shaft bearing from the torque converter housing using the bearing remover shaft set (30 mm), the bearing remover shaft handle, and the sliding hammer weight.

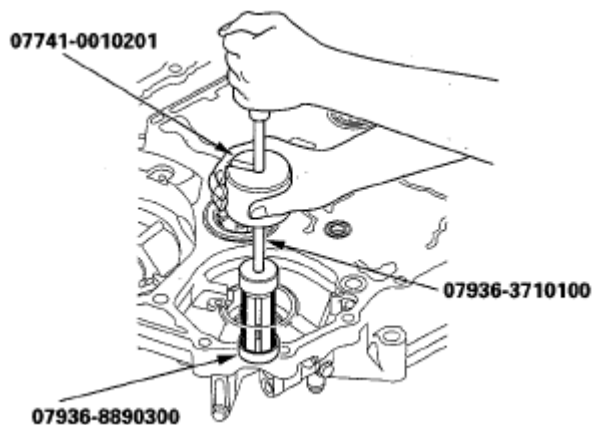


Fig. 480: Identifying Secondary Shaft Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the 29x39 x 9.5 mm bearing into the torque converter housing using the driver and the attachment (37 x 40 mm).

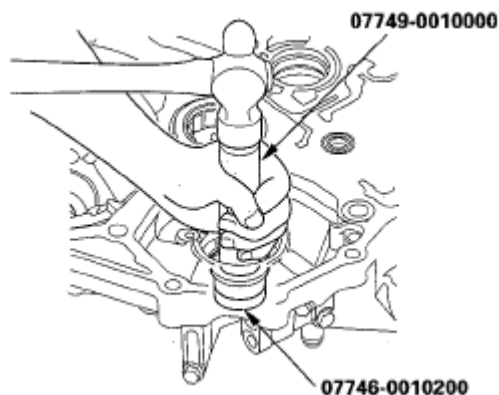


Fig. 481: Identifying Secondary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the new O-rings (A) on the ATF guide collar (B), then install the guide collar in the torque converter housing.

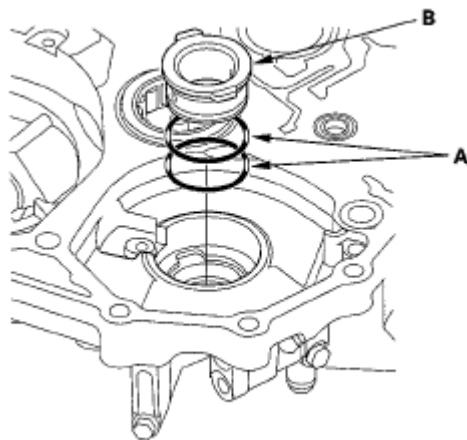


Fig. 482: Identifying O-Rings And ATF Guide Collar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the bearing in the direction shown in the housing using the driver and the attachment (62x68 mm).

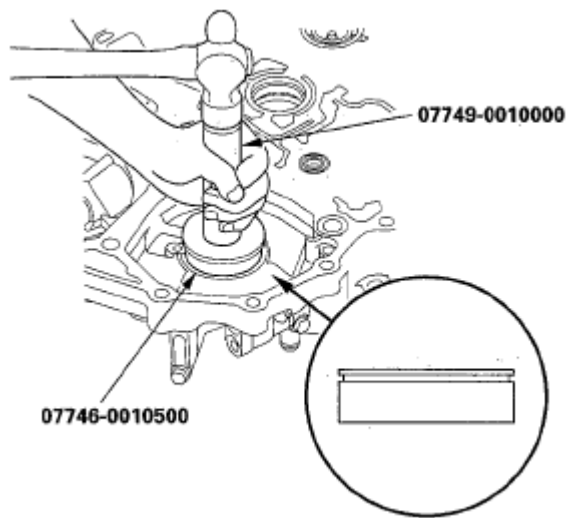


Fig. 483: Identifying Secondary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check that the bearing groove aligns with the set plate mounting surface, then install the set plate (A) by aligning it with the bearing groove.

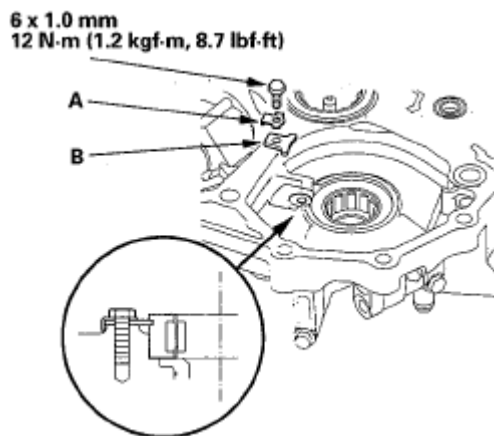


Fig. 484: Identifying Set Plate And Lock Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the new lock washer (B) and bolt, then bend the lock tab of the lock washer against the bolt head.

INTERMEDIARY SHAFT BEARING REPLACEMENT

Special Tools Required

- Adjustable bearing puller, 25-40 mm 07736-A01000B or 07736-A01000A
- Sliding hammer weight 07741-0010201
- Driver 07749-0010000

- Attachment, 52 x 55 mm 07746-0010400
1. Remove the intermediary shaft bearing from the torque converter housing using the adjustable bearing remover and the sliding hammer weight.

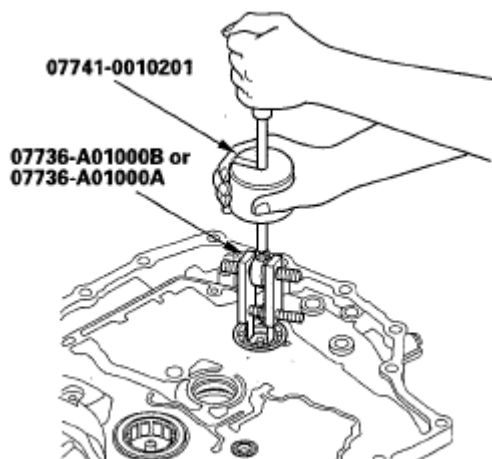


Fig. 485: Identifying Intermediary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ATF guide plate (A), then install the new bearing (B) in the housing.

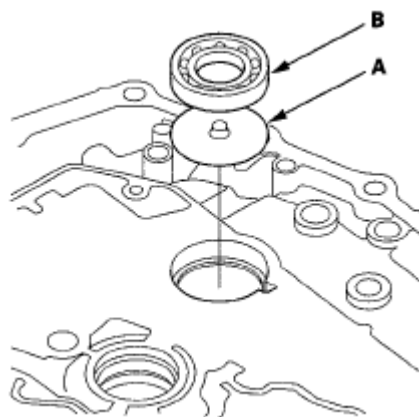


Fig. 486: Identifying ATF Guide Plate And Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive the bearing into the housing using the driver and the attachment (52 x 55 mm).

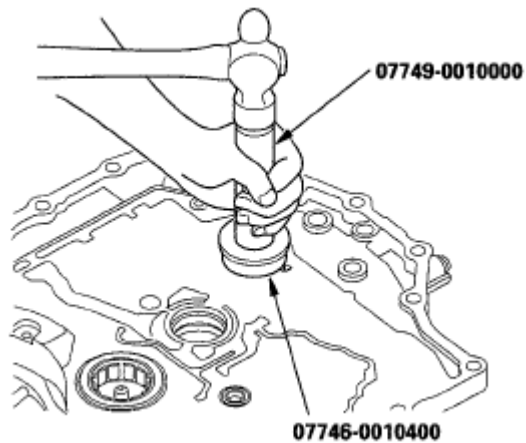


Fig. 487: Identifying Intermediary Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARK LEVER SHAFT BEARING REPLACEMENT

Special Tools Required

- Bearing remover shaft set, 12 mm 07936-1660101
 - Sliding hammer weight 07741-0010201
 - Driver 07749-0010000
 - Attachment, 22 x 24 mm 07746-0010800
1. Remove the park lever shaft bearing from the torque converter housing using the bearing remover shaft set (12 mm) and the sliding hammer weight.

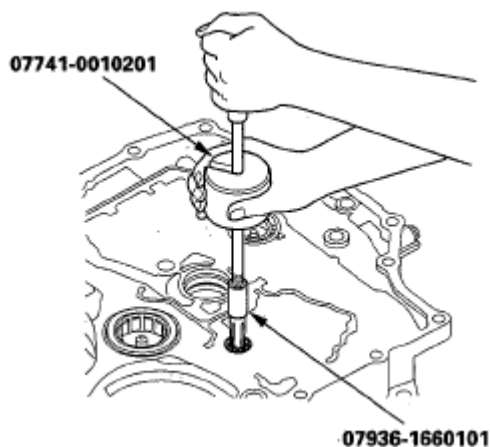


Fig. 488: Identifying Park Lever Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing until it bottoms in the housing using the driver and the attachment (22 x 24 mm).

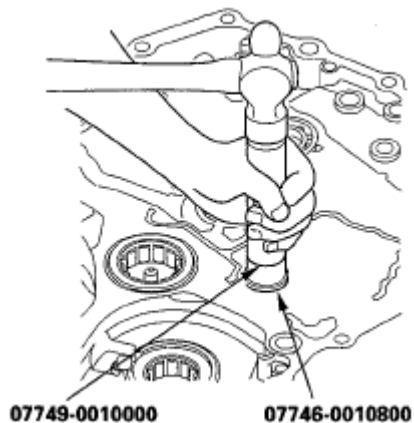


Fig. 489: Identifying Park Lever Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SHAFTS AND CLUTCHES

MAINSHAFT DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Remove the thrust needle bearing (A), mainshaft 5th gear (B), needle bearing (C), thrust needle bearing (D), mainshaft 5th gear collar (E), 4th/5th clutch (F), and O-rings (G) from the mainshaft (H).

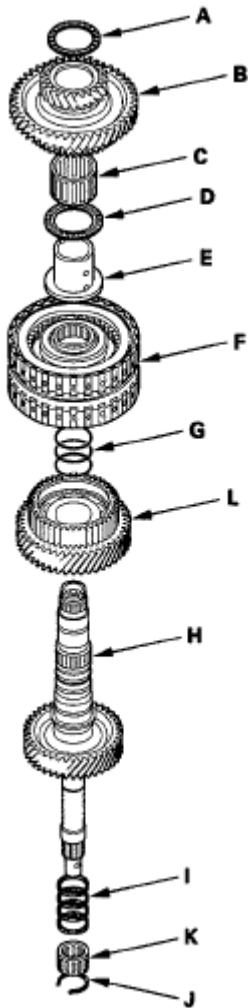


Fig. 490: Identifying Mainshaft 5th Gear, Needle Bearing, Mainshaft 5th Gear Collar And 4th/5th Clutch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the condition of the sealing rings (I). If the sealing rings are worn, distorted, or damaged, remove the set ring (J) and needle bearing (K), and replace the sealing rings with new ones.
3. Inspect the thrust needle bearing and needle bearing for wear and rough movement.
4. Inspect the splines for excessive wear and damage.
5. Inspect the 4th gear for wear and damage, and inspect the 4th gear bearing for wear and rough rotation.
6. Replace the mainshaft 4th gear (L) if the 4th gear is worn or damaged, or the bearing is worn or damaged.
7. Check the shaft bearing surfaces for scoring and excessive wear.
8. Lubricate all parts with ATF during reassembly.
9. Wrap the shaft splines with tape to prevent O-ring damage, install the new O-rings on the mainshaft, then remove the tape.
10. Install the 4th/5th clutch.
11. Install the mainshaft 5th gear collar, thrust needle bearing, needle bearing, mainshaft 5th gear, and thrust

needle bearing.

MAINSHAFT 4TH GEAR REPLACEMENT

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Remove the mainshaft 4th gear (A) with the press. Place a shaft protector (B) between the press and mainshaft (C) to prevent damaging the mainshaft.

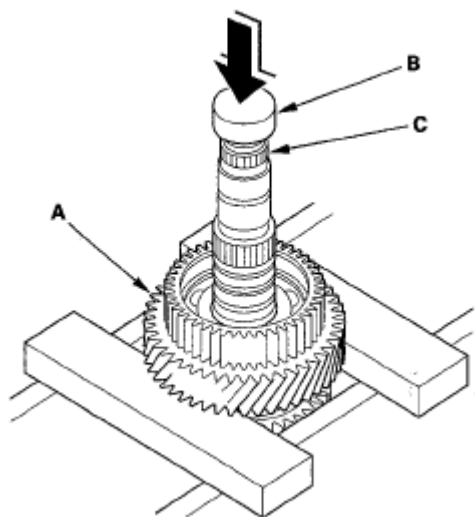


Fig. 491: Identifying Mainshaft 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slide the new mainshaft 4th gear (A) over the mainshaft (B), then press it into place using the driver (40 mm I.D.) and the press.

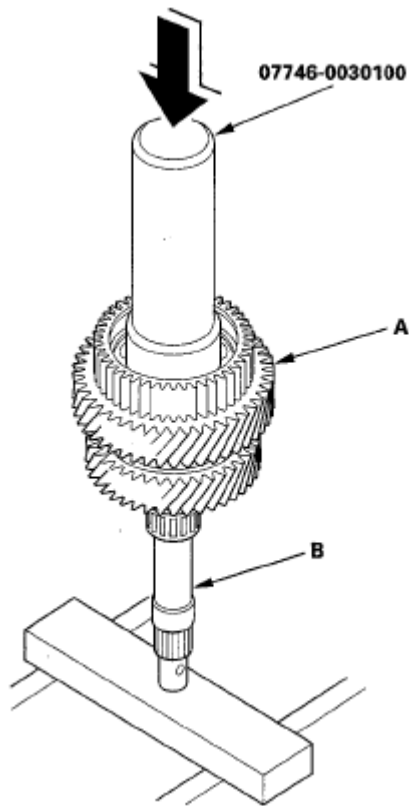


Fig. 492: Identifying Mainshaft 4th Gear

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COUNTERSHAFT DISASSEMBLY

Exploded View

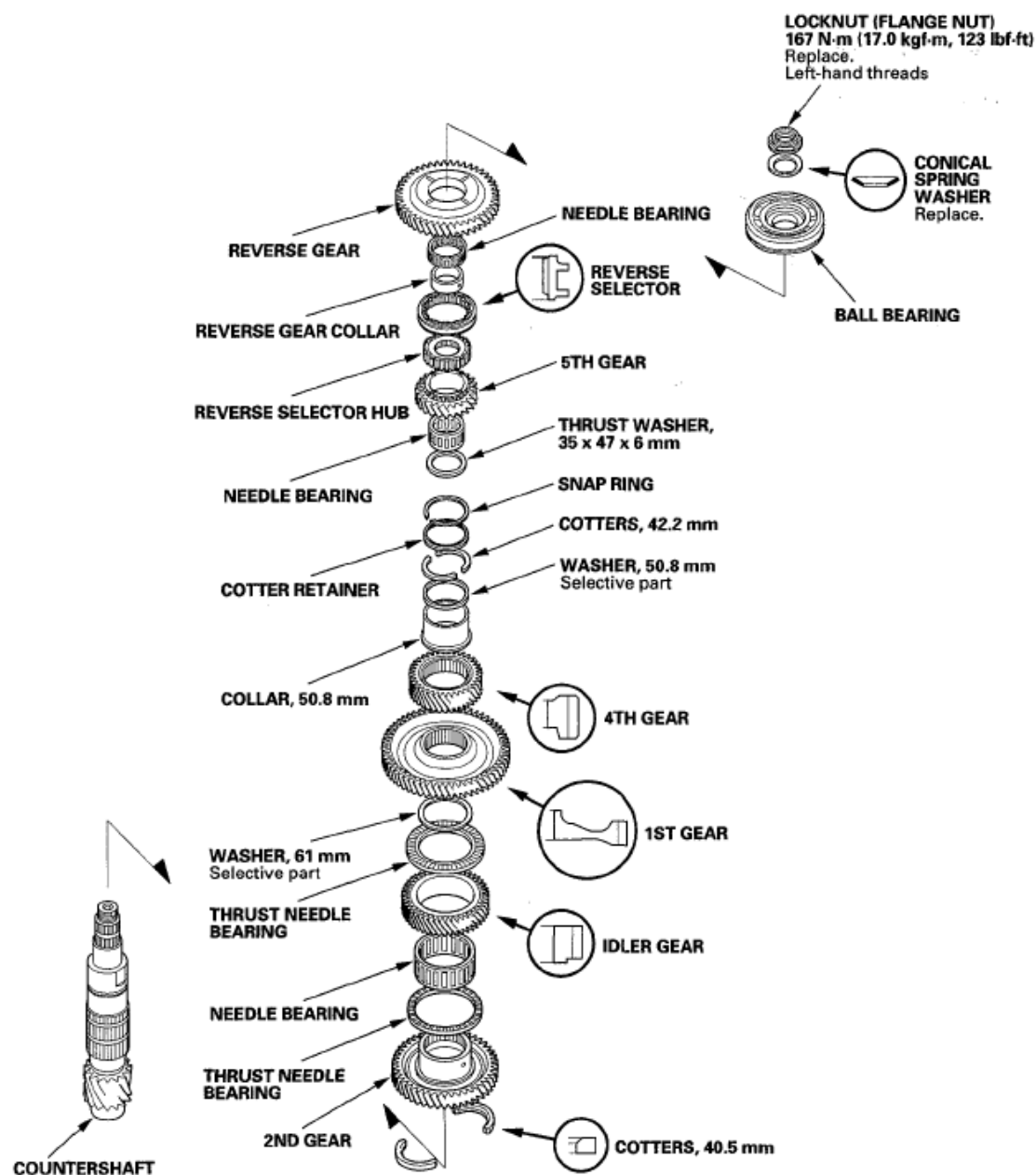


Fig. 493: Exploded View Of Countershaft With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Refer to the Exploded View as needed during the following procedure.

1. Cut the lock tab (A) off the countershaft locknut (B) using a chisel (C).

NOTE: Keep all of the chiseled particles out of the countershaft.

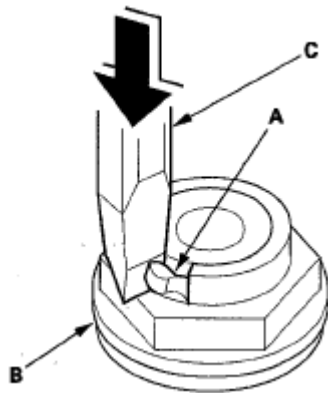


Fig. 494: Identifying Lock Tab Of Countershaft Locknut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Hold the countershaft securely with a wrench and a vise, loosen the locknut, and remove it. The locknut has left-hand threads.

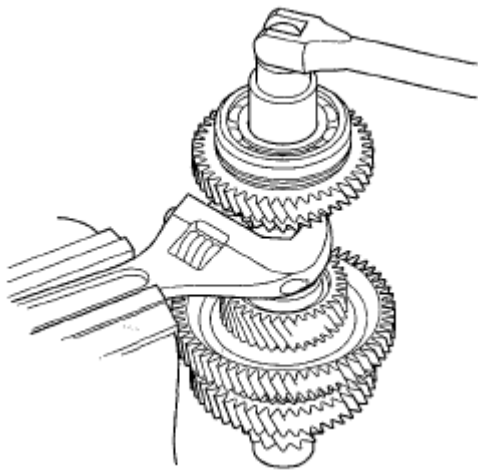


Fig. 495: Identifying Countershaft Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place the countershaft 5th gear (A) on press bases (B), and place a shaft protector (C) between the countershaft (D) and the press to prevent damaging the countershaft.

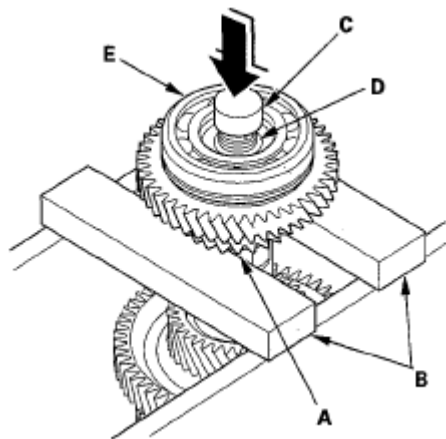


Fig. 496: Identifying Countershaft Out Of Press-Fitted Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Support the bottom of the countershaft with one hand, then press the countershaft out of the press-fitted bearing (E) and the press-fitted reverse selector hub. Some reverse selector hubs are not press-fitted, and the countershaft out of the press-fitted bearing.
5. Remove the remaining parts from the countershaft.
6. Inspect the bearing for galling and rough movement.
7. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
8. Check the idler gear axial clearance and 4th gear axial clearance (see **COUNTERSHAFT IDLER GEAR AND 4TH GEAR AXIAL CLEARANCE INSPECTION**).

COUNTERSHAFT IDLER GEAR AND 4TH GEAR AXIAL CLEARANCE INSPECTION

1. Install the 40.5 mm cotters (A), 2nd gear (B), thrust needle bearing (C), needle bearing (D), idler gear (E), thrust needle bearing (F), 61 mm washer (G), 1st gear (H), 4th gear (I), 50.8 mm collar (J), 50.8 mm washer (K), 42.2 mm cotters (L), cotter retainer (M), and snap ring (N) on the countershaft (O). Install the 40.5 mm cotters, idler gear, 1st gear, and 4th gear in the direction shown.

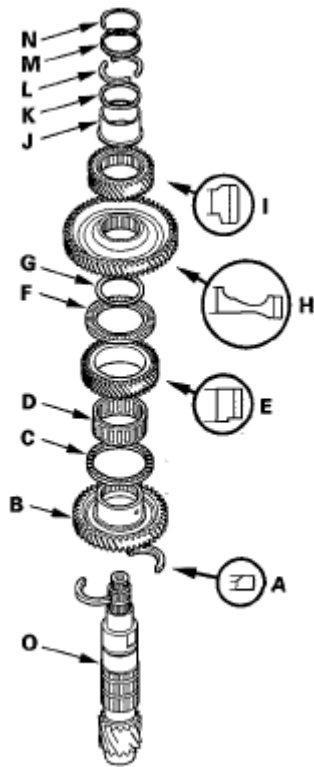


Fig. 497: Identifying 2nd Gear, Thrust Needle Bearing, Idler Gear, Cotter Retainer, Snap Ring And Countershaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Insert a feeler gauge blade (A) as thick as possible between the 50.8 mm collar (B) and 50.8 mm washer (C).

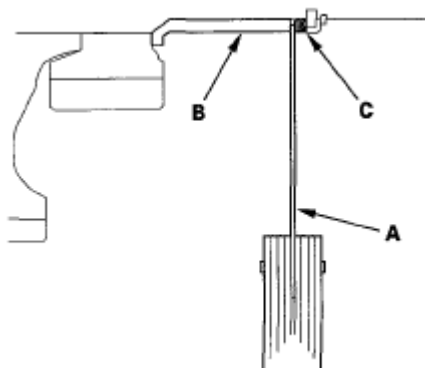


Fig. 498: Identifying Feeler Gauge Blade Between Collar And Washer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the dial indicator (A) on the idler gear (B).

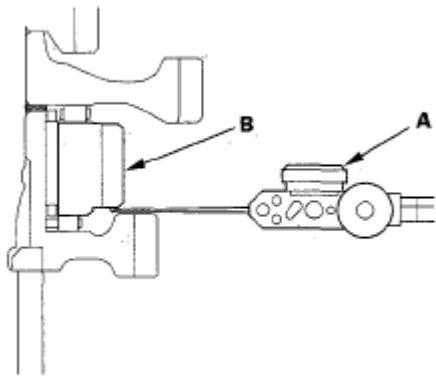


Fig. 499: Identifying Dial Indicator On Idler Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the idler gear axial clearance in at least three places while moving the idler gear. Use the average as the actual clearance.

Standard: 0.005-0.040 mm (0.0002-0.0016 in.)

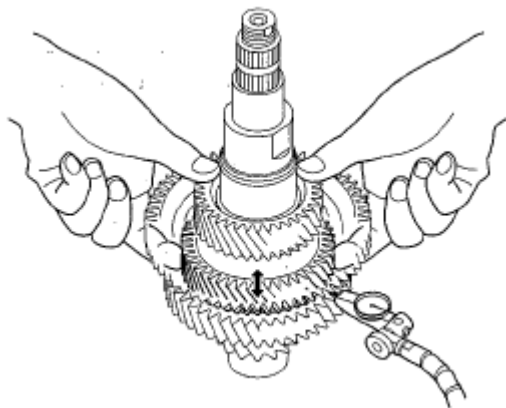


Fig. 500: Identifying Idler Gear Axial Clearance
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the measurement is out of standard, remove the 61 mm washer and measure its thickness.
6. From the table below, select the proper washer. Then install the washer and recheck the clearance.

WASHER, 61 mm

WASHER THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	90582-RJF-T00	1.525 mm (0.0600 in.)
B	90583-RJF-T00	1.505 mm (0.0593 in.)
C	90584-RJF-T00	1.485 mm (0.0585 in.)
D	90585-RJF-T00	1.465 mm (0.0577 in.)

E	90586-RJF-T00	1.445 mm (0.0569 in.)
F	90587-RJF-T00	1.425 mm (0.0561 in.)
G	90588-RJF-T00	1.405 mm (0.0553 in.)

7. Measure the clearance between the 50.8 mm collar (A) and the 50.8 mm washer (B) with a feeler gauge (C) in at least three places. Use the average as the actual clearance.

Standard: 0.005-0.040 mm (0.0002-0.0016 in.) A B

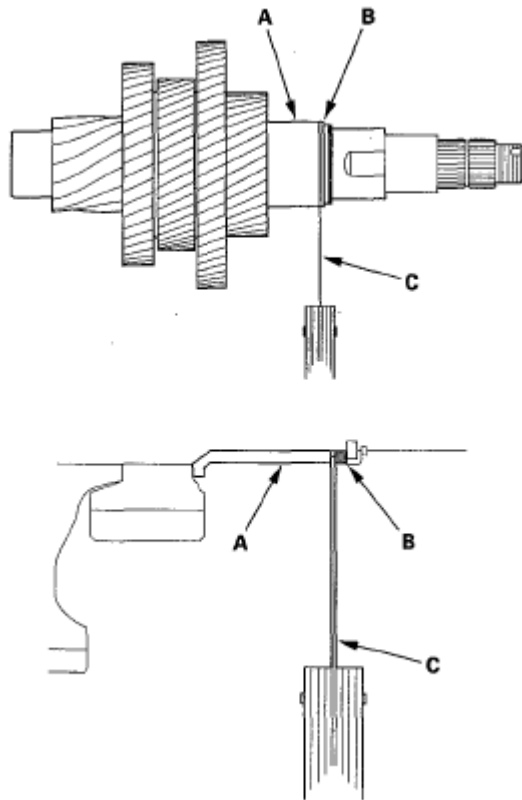


Fig. 501: Identifying Clearance Between Collar And Washer With Feeler Gauge
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the measurement is out of standard, remove the 50.8 mm washer and measure its thickness.
 9. From the table below, select the proper washer. Then install the washer and recheck the clearance.

WASHER, 50.8 mm

WASHER THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	90519-RJF-T00	1.91 mm (0.0752 in.)
B	90520-RJF-T00	1.93 mm (0.0760 in.)
C	90521-RJF-T00	1.95 mm (0.0768 in.)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

D	90522-RJF-T00	1.97 mm (0.0776 in.)
E	90523-RJF-T00	1.99 mm (0.0783 in.)
F	90524-RJF-T00	2.01 mm (0.0791 in.)
G	90525-RJF-T00	2.03 mm (0.0799 in.)
H	90526-RJF-T00	2.05 mm (0.0807 in.)
I	90527-RJF-T00	2.07 mm (0.0815 in.)
J	90528-RJF-TOO	2.09 mm (0.0823 in.)
K	90529-RJF-T00	2.11 mm (0.0831 in.)
L	90530-RJF-T00	2.13 mm (0.0839 in.)
M	90531-RJF-T00	2.15 mm (0.0846 in.)
N	90532-RJF-T00	2.17 mm (0.0854 in.)
O	90533-RJF-T00	2.19 mm (0.0862 in.)
P	90534-RJF-T00	2.21 mm (0.0870 in.)
Q	90535-RJF-T00	2.23 mm (0.0878 in.)
R	90536-RJF-TOO	2.25 mm (0.0886 in.)
S	90537-RJF-T00	2.27 mm (0.0894 in.)
T	90538-RJF-T00	2.29 mm (0.0902 in.)
U	90539-RJF-T00	2.31 mm (0.0909 in.)
V	90540-RJF-T00	2.33 mm (0.0917 in.)
W	90541-RJF-T00	2.35 mm (0.0925 in.)
X	90542-RJF-T00	2.37 mm (0.0933 in.)
Y	90543-RJF-T00	2.39 mm (0.0941 in.)
Z	90544-RJF-T00	2.41 mm (0.0949 in.)
AA	90545-RJF-T00	2.43 mm (0.0957 in.)
AB	90546-RJF-T00	2.45 mm (0.0965 in.)

COUNTERSHAFT REASSEMBLY

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Install the 40.5 mm cotters (A), 2nd gear (B), thrust needle bearing (C), needle bearing (D), idler gear (E), thrust needle bearing (F), 61 mm washer (G), 1st gear (H), 4th gear (I), 50.8 mm collar (J), 50.8 mm washer (K), 42.2 mm cotters (L), cotter retainer (M), and snap ring (N) on the countershaft (O). Install the 40.5 mm cotters, idler gear, 1st gear, and 4th gear in the direction shown.

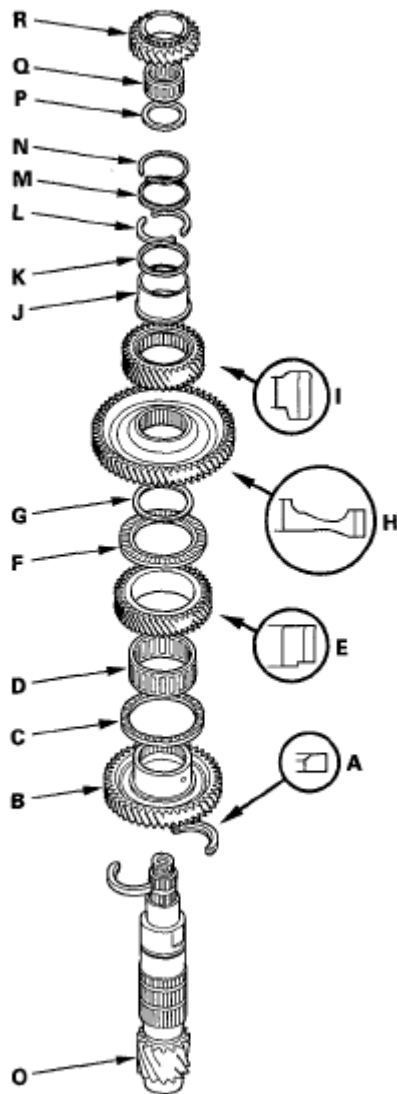


Fig. 502: Identifying 2nd Gear, Thrust Needle Bearing, Idler Gear, Cotter Retainer, Snap Ring And Countershaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the thrust washer (P), needle bearing (Q) and 5th gear (R).
3. Slide the reverse selector hub (A) over the countershaft (B), then press it into place using the driver (40 mm I. D.) and the press.

NOTE: Some reverse selector hubs are not press-fitted, and can be installed without using the driver and a press.

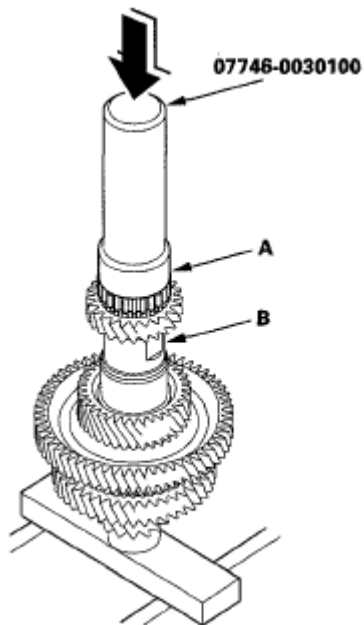


Fig. 503: Identifying Reverse Selector Hub

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the reverse selector, reverse gear collar, needle bearing, and reverse gear over the reverse selector hub.
5. Install the ball bearing (A) over the countershaft, then press it into place using the driver (40 mm I.D.) and the press.

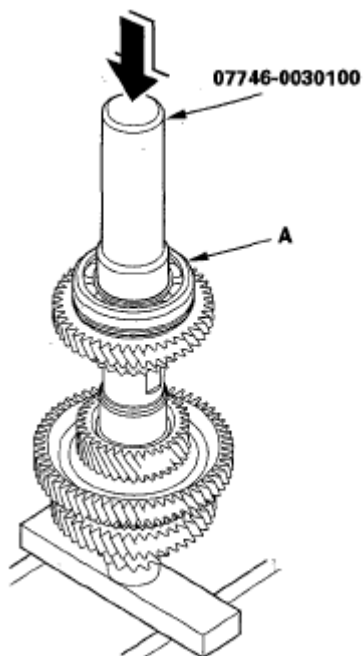


Fig. 504: Identifying Ball Bearing Over Countershaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the conical spring washer (A) in the direction shown, and install the new locknut (B).

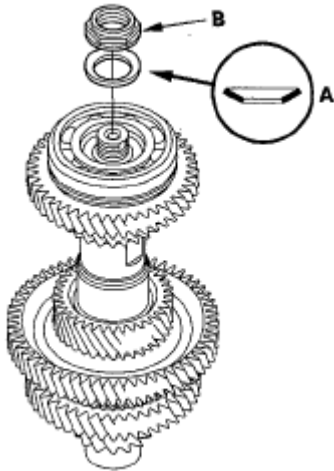


Fig. 505: Identifying Conical Spring Washer And Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Hold the countershaft securely with a wrench and a vise, and tighten the locknut to 167 N.m (17.0 kgf.m, 123 lbf.ft).

NOTE:

- Use a torque wrench to tighten the locknut. Do not use an impact wrench.
- The locknut has left-hand threads.

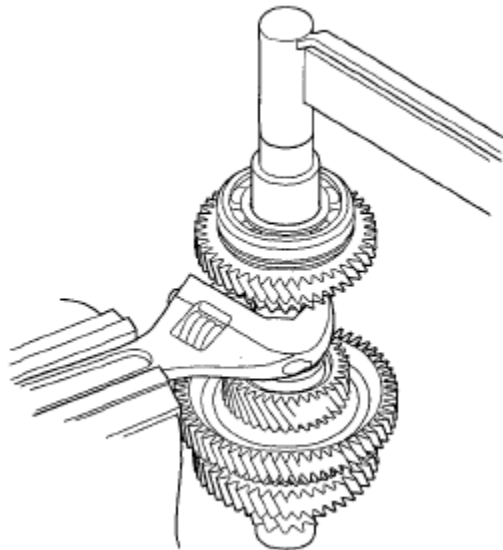


Fig. 506: Tightening Countershaft Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Stake the locknut into its shaft in depth (A) of 0.7-1.3 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

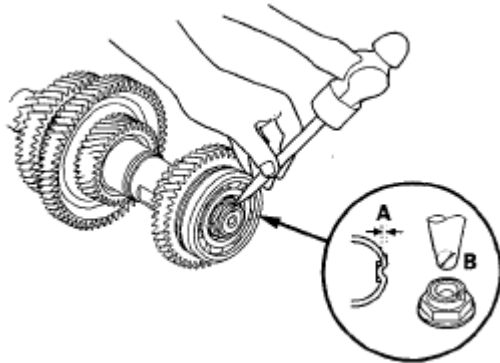


Fig. 507: Staking Countershaft Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT DISASSEMBLY

Exploded View

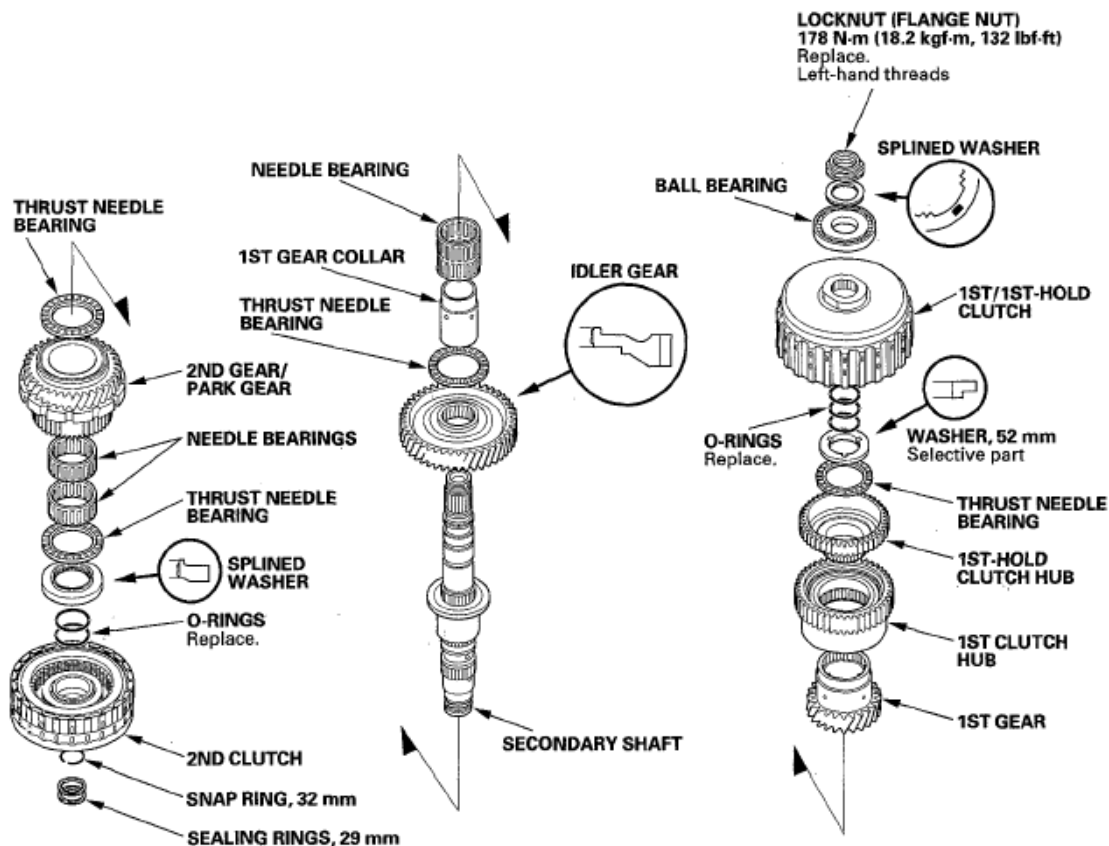


Fig. 508: Exploded View Of Secondary Shaft With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Wrench, 40 x 42 mm 07XAA-002010A

NOTE: Refer to the Exploded View as needed during the following procedure.

1. Cut the lock tab (A) off the secondary shaft locknut (B) using a chisel (C).

NOTE: Keep all of the chiseled particles out of the secondary shaft.

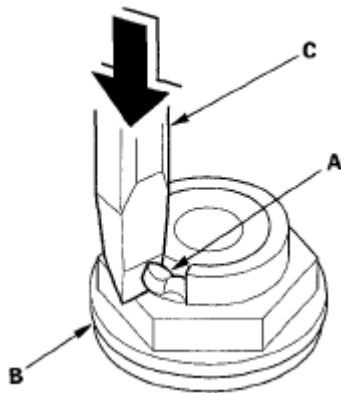


Fig. 509: Identifying Lock Tab Of Secondary Shaft Locknut Using Chisel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Place a V-block (A) on a vise (B), and put the secondary shaft (C) on the V-block and vise.

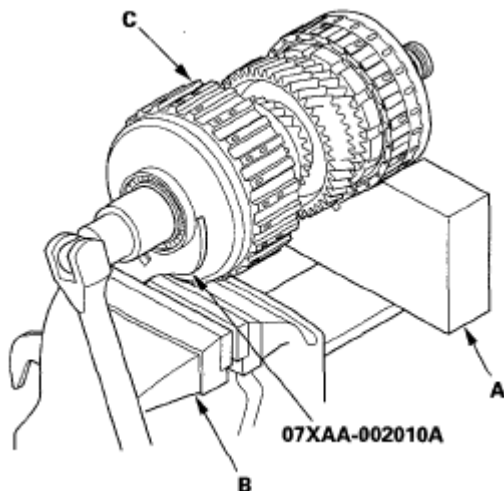


Fig. 510: Identifying Secondary Shaft Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Attach the wrench (40 x 42 mm) onto the 1st clutch guide, and secure the wrench (40 x 42 mm) with the vise to hold the secondary shaft. Loosen the locknut, and remove it. Remove any burrs from splines on

the shaft and splined washer.

4. Place the idler gear (A) on press bases (B), and place a shaft protector (C) between the secondary shaft (D) and the press to prevent damaging the secondary shaft.

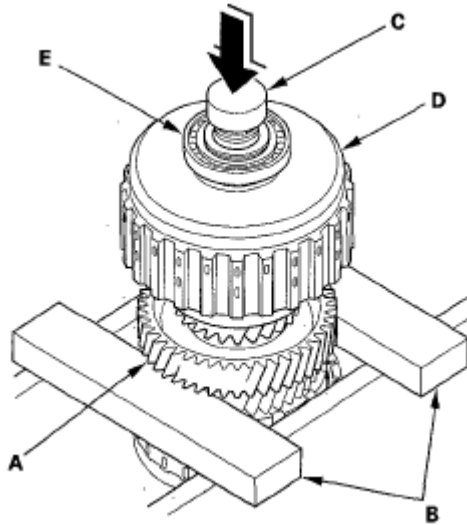


Fig. 511: Identifying Secondary Shaft Out Of Press-Fitted Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Support the bottom of the secondary shaft with one hand, then press the secondary shaft out of the press-fitted bearing (E), and the secondary shaft out of the press-fitted bearing.
6. Remove the 1st/1st-hold clutch, 52 mm washer, thrust needle bearing, 1st gear assembly, needle bearings, 1st gear collar, thrust needle bearing, and idler gear.
7. Remove the 32 mm snap ring, and remove the 2nd clutch, splined washer, thrust needle bearing, needle bearing, 2nd gear/park gear, and thrust needle bearing.
8. Inspect the bearings for galling and rough movement.

NOTE: The needle bearing (A) on the 1st gear collar contains the only two no-roller cavities (B); this is normal.

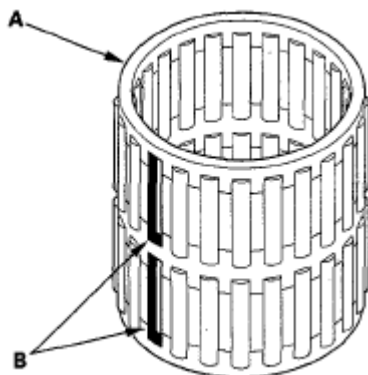


Fig. 512: Identifying No-Roller Cavities Of Needle Bearing

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
10. Check the 1st gear axial clearance (see **SECONDARY SHAFT 1ST GEAR AXIAL CLEARANCE INSPECTION**), 1st gear one-way clutch (see **1st Gear One-way Clutch Inspection**), and secondary shaft installation height (see **SECONDARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT**).

SECONDARY SHAFT 1ST GEAR AXIAL CLEARANCE INSPECTION

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
 - Attachment, 30 mm I.D. 07746-0030300
1. Install the idler gear (A), thrust needle bearing (B), 1st gear collar (C), needle bearing (D), 1st gear assembly (E), thrust needle bearing (F), 52 mm washer (G), and 1st/1st-hold clutch (H) on the secondary shaft (I). Install the idler gear and 52 mm washer in the direction shown. Do not install the O-rings during inspection.

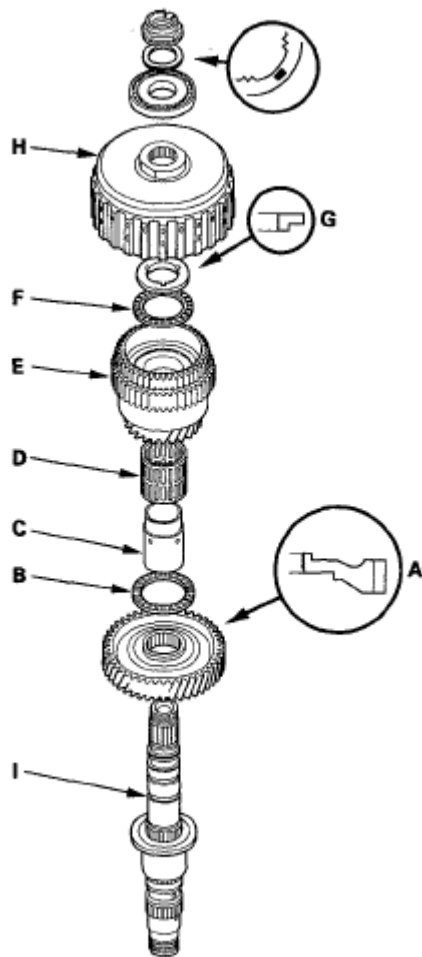


Fig. 513: Identifying Idler Gear, Secondary Shaft, 1st Gear Collar, Needle Bearing And 1st Gear Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the ball bearing (A) over the 1st/1st-hold clutch guide using the driver (40 mm I.D.), the attachment (30 mm I.D.), and the press.

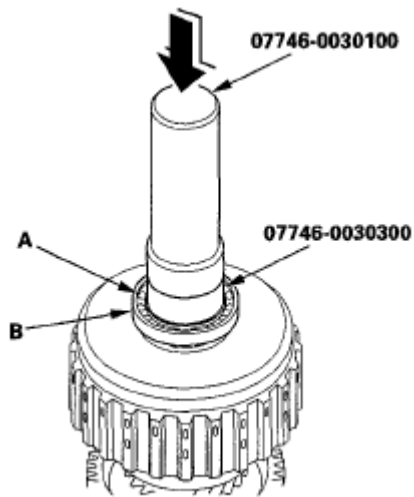


Fig. 514: Identifying Ball Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the splined washer with the marked side up over the ball bearing in the same manner as installing the ball bearing using the driver (40 mm I.D.), the attachment (30 mm I.D.), and the press.
4. Install the old locknut and tighten it to 29 N.m (3.0 kgf.m, 22 lbf.ft).
5. Set the dial indicator (A) on the 1st clutch hub (B).

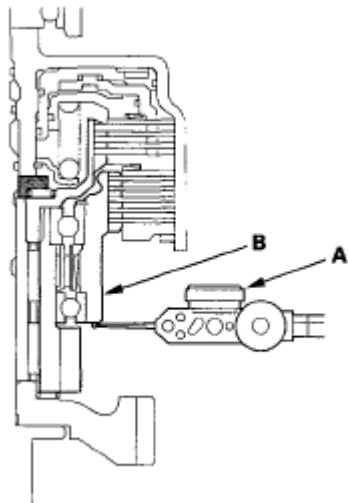


Fig. 515: Identifying Dial Indicator On 1st Clutch Hub

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Measure the 1st gear axial clearance in at least three places while moving the 1st gear. Use the average as the actual clearance.

Standard: 0.100-0.145 mm (0.004-0.006 in.)

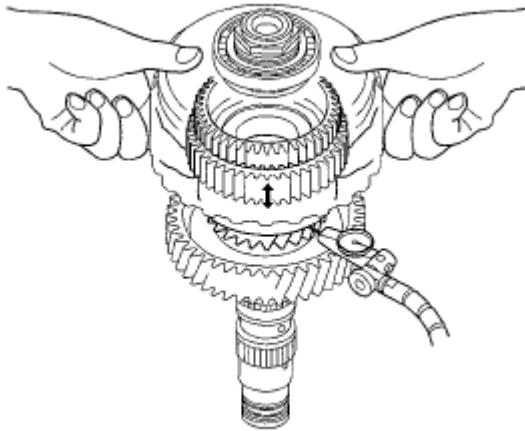


Fig. 516: Identifying 1st Gear Axial Clearance
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If the measurement is out of standard, remove the washer and measure its difference.

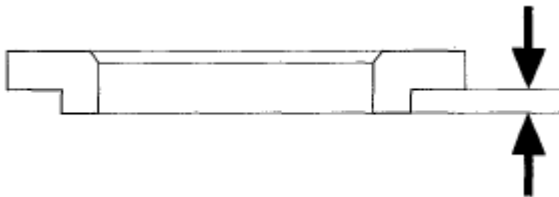


Fig. 517: Identifying 1st Gear Axial Clearance
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Select and install a new washer, then recheck the clearance.

WASHER, 52 mm

WASHER THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	90502-RWE-000	2.705 mm (0.107 in.)
B	90503-RWE-000	2.680 mm (0.106 in.)
C	90504-RWE-000	2.655 mm (0.105 in.)
D	90505-RWE-000	2.630 mm (0.104 in.)
E	90506-RWE-000	2.605 mm (0.103 in.)
F	90507-RWE-000	2.580 mm (0.102 in.)
G	90508-RWE-000	2.555 mm (0.101 in.)
H	90509-RWE-000	2.530 mm (0.100 in.)
I	90510-RWE-000	2.505 mm (0.099 in.)
J	90511-RWE-000	2.480 mm (0.098 in.)
K	90512-RWE-000	2.455 mm (0.097 in.)

L	90513-RWE-000	2.430 mm (0.096 in.)
M	90514-RWE-000	2.405 mm (0.095 in.)

1ST GEAR ONE-WAY CLUTCH INSPECTION

1. Hold the 1st-hold clutch hub (A), and turn the 1st gear (B) in the direction shown to be sure it turns freely. Also make sure the 1st gear locks in the opposite direction.

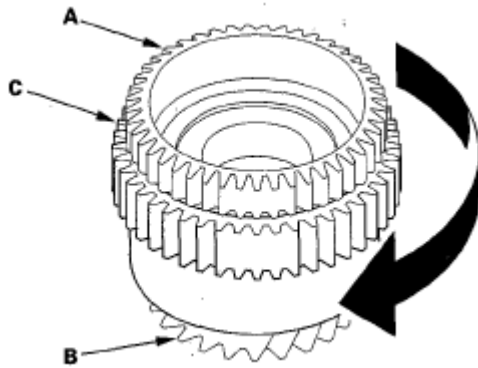


Fig. 518: Identifying 1st Gear One-Way Clutch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If any problem occurs on the 1st gear one-way clutch, replace the 1st clutch hub (C). The 1st gear one-way clutch is not available separately from the 1st clutch hub.
3. Also check the 1st gear and the 1st-hold clutch hub for wear and damage. If the 1st gear and 1st-hold clutch hub are worn or damaged, replace the damaged part, refer to **1st Clutch Hub Replacement** (see).

1ST CLUTCH HUB REPLACEMENT

Special Tools Required

- Driver 07749-0010000
 - Driver attachment 07947-6340500
 - Attachment, 78 x 90 mm 07GAD-SD40101
1. Remove the 1st-hold clutch hub (A) from 1st gear (B) using the driver, the driver attachment, and the press.

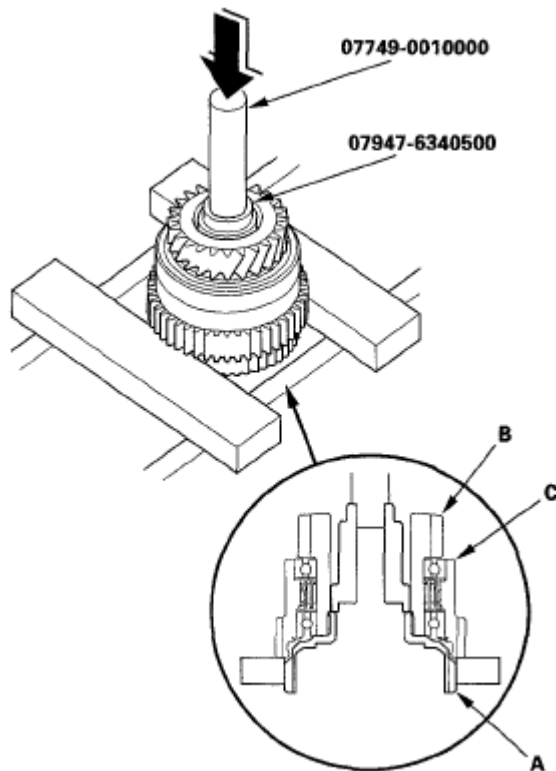


Fig. 519: Identifying 1st-Hold Clutch Hub From 1st Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the 1st clutch hub (C) from 1st gear.
3. Install the new 1st clutch hub (A) over 1st gear (B), and install the 1st-hold clutch hub (C) in 1st gear.

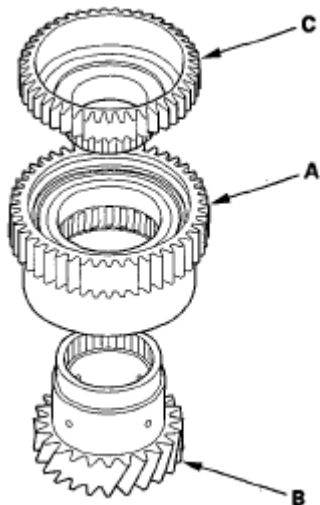


Fig. 520: Identifying 1st Clutch Hub, 1st Gear And 1st-Hold Clutch Hub
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 1st-hold clutch hub (A) in 1st gear (B) using the driver, the attachment (78 x 90 mm), and the press.

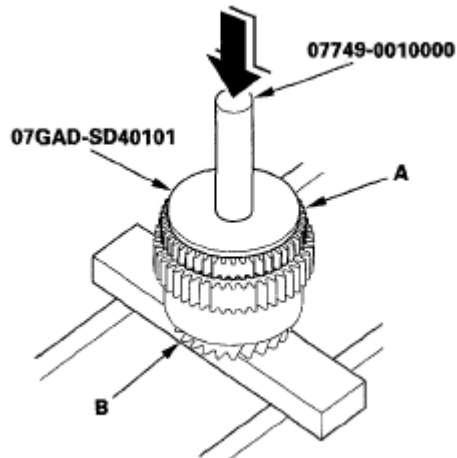


Fig. 521: Identifying 1st-Hold Clutch Hub In 1st Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT REASSEMBLY

Special Tools Required

- Driver, 40 mm I.D. 07746-0030100
 - Attachment, 30 mm I.D. 07746-0030300
 - Wrench, 40 x 42 mm 07XAA-002010A
1. Install the thrust needle bearing (A), needle bearings (B), 2nd gear/park gear (C), thrust needle bearing (D), and splined washer (E) in the direction shown on the secondary shaft (F).

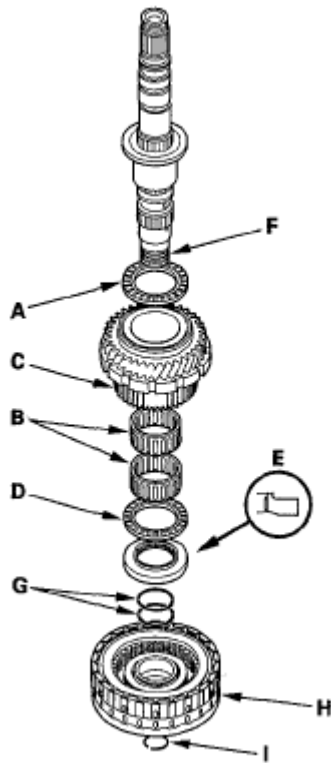


Fig. 522: Identifying 2nd Gear/Park Gear, Thrust Needle Bearing, Splined Washer And Secondary Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Wrap the shaft splines with tape, and install the new O-rings (G) in the 2nd clutch Oaring grooves, then remove the tape.

NOTE: To prevent damaging the O-rings, be sure to install the O-rings after installing the splined washer.

3. Install the 2nd clutch (H) on the secondary shaft, and secure the 2nd clutch with the snap ring (I).
4. Install the idler gear (A) in the direction shown, thrust needle bearing (B), 1st gear collar (C), needle bearing (D), 1st gear assembly (E), thrust needle bearing (F), and 52 mm washer (G) in the direction shown on the secondary shaft (H).

NOTE: The needle bearing contains the only two no-roller cavities (I); this is normal.

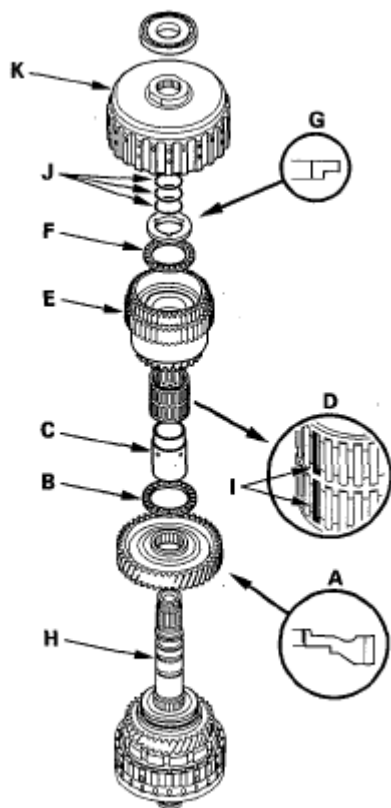


Fig. 523: Identifying Idler Gear, 1st Gear Collar, Needle Bearing, 1st Gear Assembly And Secondary Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Wrap the shaft splines with tape, and install the new O-rings (J) in 1st/1st-hold clutch O-ring grooves, then remove the tape.

NOTE: To prevent damaging the O-rings, be sure to install the O-rings after installing the 1st gear collar and 52 mm washer.

6. Install the 1st/1st-hold clutch (K).
7. Install the ball bearing (A) over the 1st/1st-hold clutch guide (B) using the driver (40 mm I.D.), the attachment (30 mm I.D.), and the press.

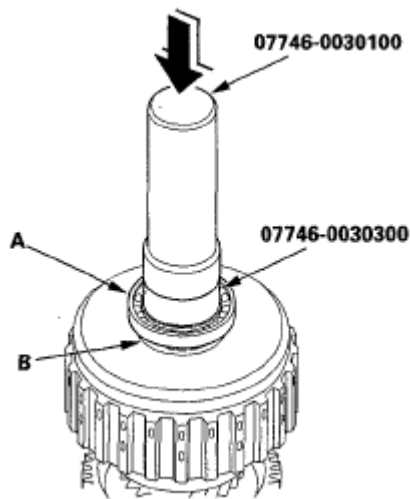


Fig. 524: Identifying Ball Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the new splined washer (A) with the marked side (B) up over the ball bearing using the driver (40 mm I.D.), the attachment (30 mm I.D.), and the press.

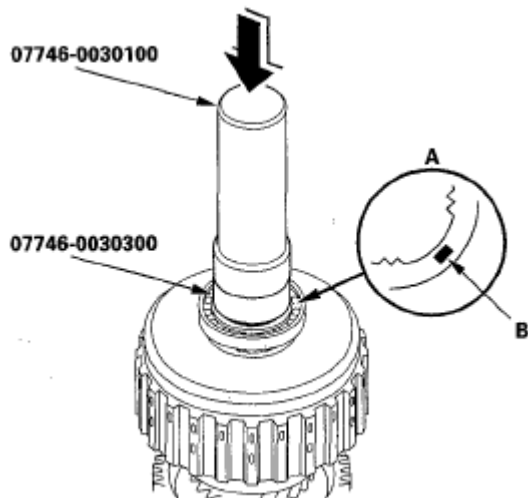


Fig. 525: Identifying Splined Washer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the new locknut.

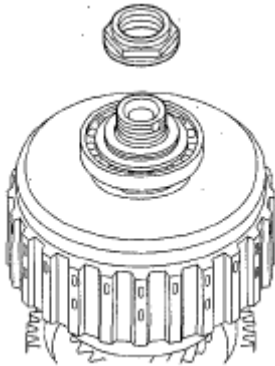


Fig. 526: Identifying Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Place a V-block (A) on a vise (B), and put the secondary shaft (C) on the V-block and the vise.

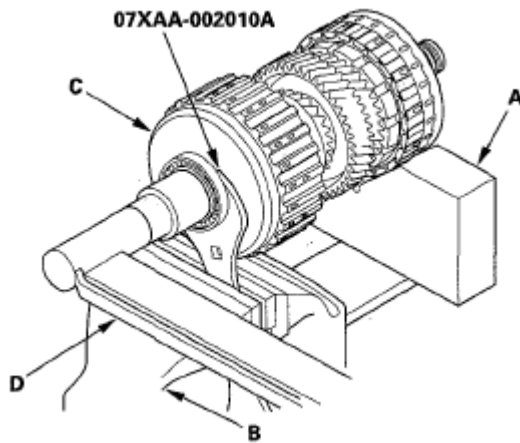


Fig. 527: Identifying Secondary Shaft On V-Block And Vise

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Attach the wrench (40 x 42 mm) onto the top of the 1st clutch guide, and secure the wrench (40 x 42 mm) with the vise to hold the secondary shaft. Tighten the locknut to 178 N.m (18.2 kgf.m, 132 lbf.ft) with the torque wrench (D).

NOTE:

- Use a torque wrench to tighten the locknut. Do not use an impact wrench.
- The locknut has left-hand threads.

12. Stake the locknut to a depth (A) of 0.7-1.3 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

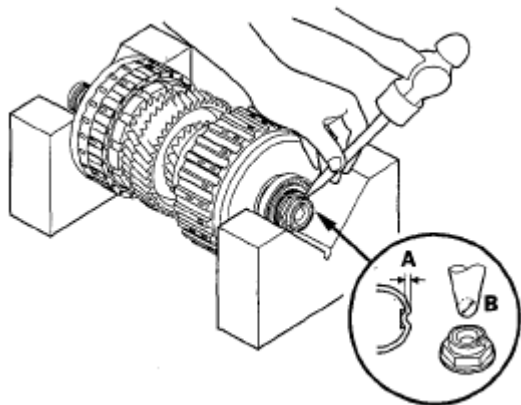


Fig. 528: Identifying Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECONDARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

1. Install the thrust needle bearing (A) in the torque converter housing (B) in the direction shown, and install the secondary shaft assembly (C).

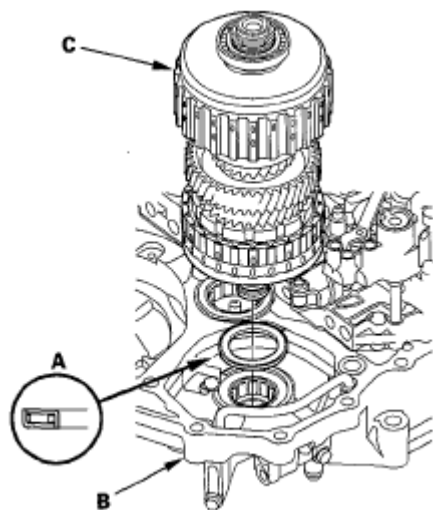


Fig. 529: Identifying Thrust Needle Bearing, Torque Converter Housing And Secondary Shaft Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new gasket (A) on the torque converter housing.

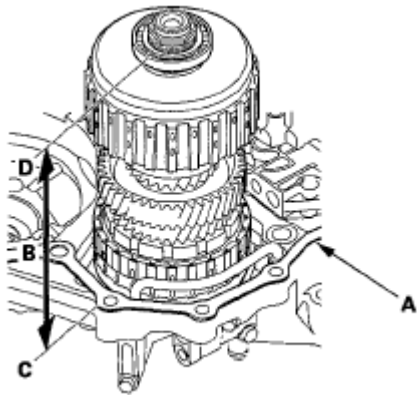


Fig. 530: Identifying Gasket On Torque Converter Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Shaft Cutaway View D

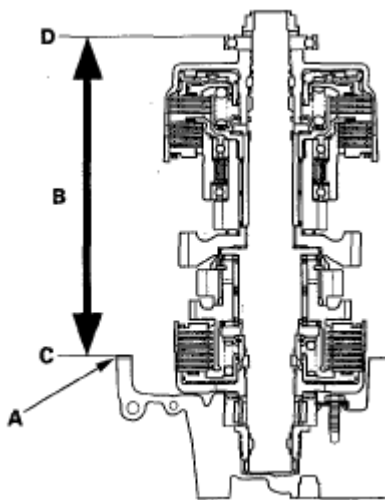
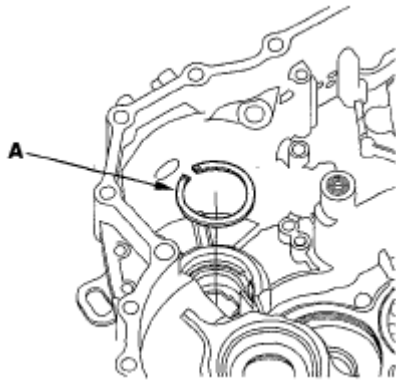


Fig. 531: Identifying Secondary Shaft Installation Height
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the height (B) of the secondary shaft installation between the surface (C) of the gasket and the top of the ball bearing outer race (D), then note the measurement.
4. Remove the 65 mm thrust shim (A) from the transmission housing, and measure its thickness.

**Fig. 532: Identifying Thrust Shim**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Calculate the thickness of the 65 mm thrust shim using the formula.

Formula:

65 mm Thrust Shim Thickness

= Secondary Shaft Installation Height Standard - Measurement

Secondary Shaft Installation Height Standard:

228.04-228.13 mm (8.9779-8.9815 in.)

6. Select the 65 mm thrust shim from the following table.

THRUST SHIM, 65 mm

THRUST SHIM THICKNESS SPECIFICATION

No.	Part Number	Thickness
0A	90460-RDK-000	0.80 mm (0.031 in.)
A	90461-RDK-010	0.84 mm (0.033 in.)
B	90462-RDK-010	0.88 mm (0.035 in.)
C	90463-RDK-010	0.92 mm (0.036 in.)
D	90464-RDK-010	0.96 mm (0.038 in.)
E	90465-RDK-010	1.00 mm (0.039 in.)
F	90466-RDK-010	1.04 mm (0.041 in.)
G	90467-RDK-010	1.08 mm (0.043 in.)
H	90468-RDK-010	1.12 mm (0.044 in.)
I	90469-RDK-010	1.16 mm (0.046 in.)
J	90470-RDK-010	1.20 mm (0.047 in.)
K	90471-RDK-010	1.24 mm (0.049 in.)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

L	90472-RDK-010	1.28 mm (0.050 in.)
M	90473-RDK-010	1.32 mm (0.052 in.)
N	90474-RDK-010	1.36 mm (0.054 in.)
O	90475-RDK-010	1.40 mm (0.055 in.)
P	90476-RDK-010	1.44 mm (0.057 in.)
Q	90477-RDK-010	1.48 mm (0.058 in.)
R	90478-RDK-010	1.52 mm (0.060 in.)
S	90479-RDK-010	1.56 mm (0.061 in.)
T	90480-RDK-010	1.60 mm (0.063 in.)
U	90481-RDK-000	1.64 mm (0.065 in.)
V	90482-RDK-000	1.68 mm (0.066 in.)
W	90483-RDK-000	1.72 mm (0.068 in.)
X	90484-RDK-000	1.76 mm (0.069 in.)
Y	90485-RDK-000	1.80 mm (0.071 in.)
Z	90486-RDK-000	1.84 mm (0.072 in.)
AA	90487-RDK-000	1.88 mm (0.074 in.)
AB	90488-RDK-000	1.92 mm (0.076 in.)
AC	90489-RDK-000	1.96 mm (0.077 in.)
AD	90490-RDK-000	2.00 mm (0.079 in.)
AE	90491-RDK-000	2.04 mm (0.080 in.)
AF	90492-RDK-000	2.08 mm (0.082 in.)
AG	90493-RDK-000	2.12 mm (0.083 in.)
AH	90494-RDK-000	2.16 mm (0.085 in.)
AI	90495-RDK-000	2.20 mm (0.087 in.)
AJ	90496-RDK-000	2.24 mm (0.088 in.)
AK	90497-RDK-000	2.28 mm (0.090 in.)
AL	90498-RDK-000	2.32 mm (0.091 in.)
AM	90499-RDK-000	0.76 mm (0.030 in.)

7. Install the thrust shim in the transmission housing.

INTERMEDIARY SHAFT DISASSEMBLY, INSPECTION, AND REASSEMBLY

1. Remove the 26.5 mm washer, snap ring, cotter retainer, and cotters from the intermediary shaft.

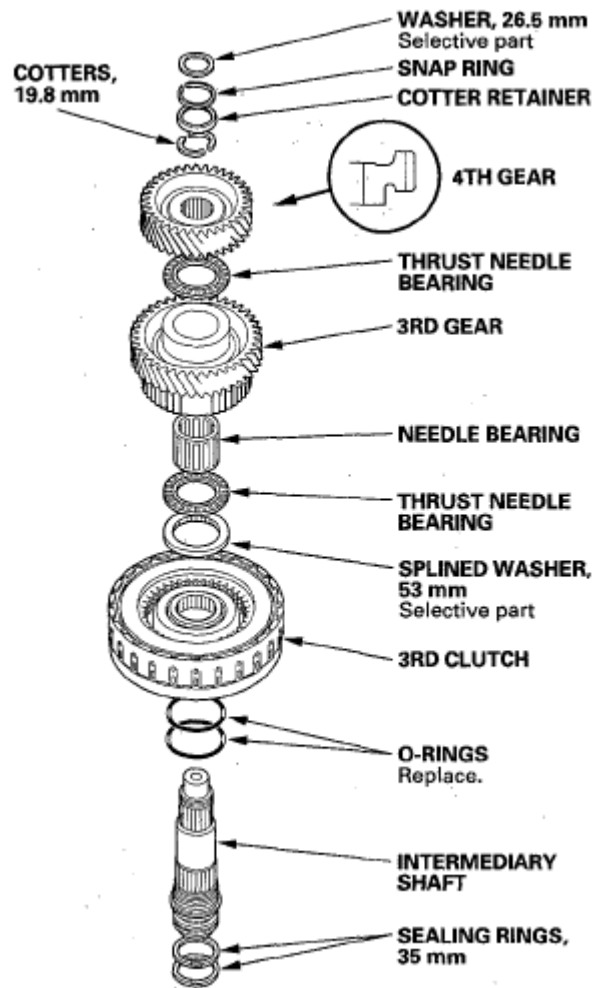


Fig. 533: Identifying Intermediary Shaft Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the intermediary shaft 4th gear using the press (see **INTERMEDIARY SHAFT 4TH GEAR REMOVAL**), and disassemble the shaft and gears.
3. Inspect the bearings for galling and rough movement.
4. Check the shaft bearing surfaces for scoring and excessive wear, and check the shaft splines for excessive wear and damage.
5. Check the sealing rings for excessive wear and damage.
6. Check the 3rd gear axial clearance (see **INTERMEDIARY SHAFT 3RD GEAR AXIAL CLEARANCE INSPECTION**), and intermediary shaft installation height (see **INTERMEDIARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT**).
7. Before installing the O-rings, wrap the shaft splines with tape to prevent damaging the O-rings.
8. Lubricate all parts with ATF, and reassemble the shaft and gears.
9. Install the press-fitted 4th gear using the driver (40 mm I.D.) and the press (see **INTERMEDIARY SHAFT 4TH GEAR REMOVAL**) in the direction shown.

INTERMEDIARY SHAFT 4TH GEAR REMOVAL

1. Place 4th gear (A) on press bases (B), and place a shaft protector (C) between the intermediary shaft (D) and the press to prevent damaging the intermediary shaft.

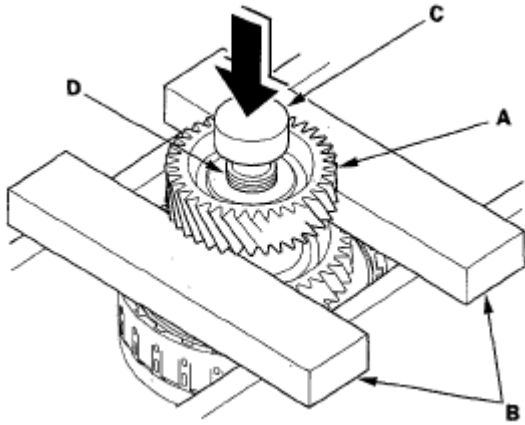


Fig. 534: Identifying 4th Gear On Press Bases
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Support the bottom of the intermediary shaft with one hand, then press the intermediary shaft out of the press-fitted gear, and the intermediary shaft out of the press-fitted gear.
3. Remove the remaining parts from the intermediary shaft.

INTERMEDIARY SHAFT 4TH GEAR INSTALLATION**Special Tools Required**

Driver, 40 mm I.D. 07746-0030100

1. Wrap the shaft splines with tape, and install the new O-rings in the 3rd clutch O-ring grooves, then remove the tape.
2. Install the 3rd clutch, 53 mm splined washer, thrust needle bearing, needle bearing, 3rd gear, and thrust needle bearing on the intermediary shaft.
3. Install 4th gear (A) using the driver (40 mm I.D.) and the press.

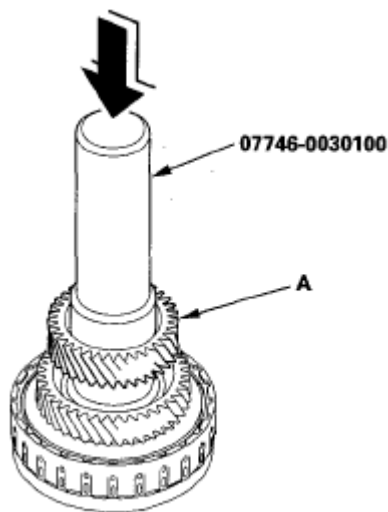


Fig. 535: Identifying Intermediary Shaft 4th Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 19.8 mm cotters, cotter retainer, and snap ring.
5. Install the 26.5 mm washer on the top of the intermediary shaft.

INTERMEDIARY SHAFT 3RD GEAR AXIAL CLEARANCE INSPECTION

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Install the 3rd clutch (A), the original thickness 53 mm splined washer (B), thrust needle bearing (C), needle bearing (D), 3rd gear (E), and thrust needle bearing (F) on the intermediary shaft (G). Do not install the O-rings during inspection.

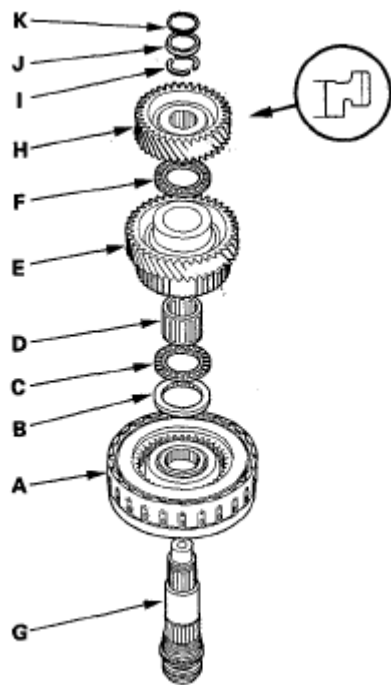


Fig. 536: Identifying 3rd Clutch, Splined Washer, Thrust Needle Bearing, Needle Bearing And 3rd Gear

Courtesy of AMERICAN HONDA MOTOR CO., INC.

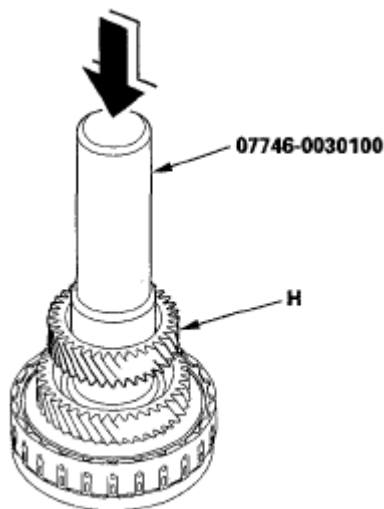


Fig. 537: Identifying Intermediary Shaft 4th Gear

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install 4th gear (H) using the driver (40 mm I.D.) and the press.
3. Install the cotters (I), cotter retainer (J), and snap ring (K).
4. Set the dial indicator (A) on 3rd gear (B).

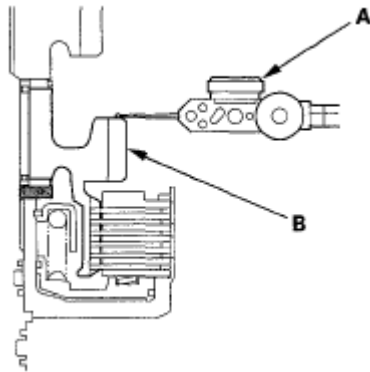


Fig. 538: Identifying Dial Indicator On 3rd Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the 3rd gear axial clearance in at least three places while moving 3rd gear. Use the average as the actual clearance.

Standard: 0.005-0.045 mm (0.0002-0.0018 in.)

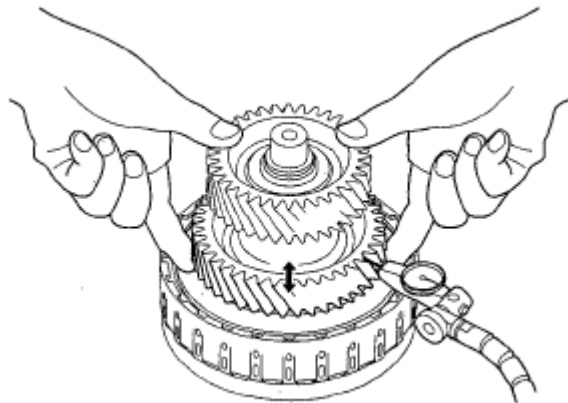


Fig. 539: Identifying 3rd Gear Axial Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the clearance is out of standard, remove the splined washer and measure its thickness.
7. Select and install a new splined washer, then recheck the clearance.

SPLINED WASHER, 53 mm

SPLINED WASHER THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	90546-RDK-000	3.995 mm (0.1573 in.)
B	90547-RDK-000	4.015 mm (0.1581 in.)
C	90548-RDK-000	4.035 mm (0.1589 in.)
D	90549-RDK-000	4.055 mm (0.1596 in.)

E	90550-RDK-000	4.075 mm (0.1604 in.)
F	90551-RDK-000	4.095 mm (0.1612 in.)
G	90552-RDK-000	4.115 mm (0.1620 in.)
H	90553-RDK-000	4.135 mm (0.1628 in.)
I	90554-RDK-000	4.155 mm (0.1636 in.)
J	90555-RDK-000	4.175 mm (0.1644 in.)
K	90556-RDK-000	4.195 mm (0.1652 in.)
L	90557-RDK-000	4.215 mm (0.1659 in.)
M	90558-RDK-000	4.235 mm (0.1667 in.)
N	90559-RDK-000	4.255 mm (0.1675 in.)

INTERMEDIARY SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

1. Install the intermediary shaft (A) in the torque converter housing, and install the original thickness 26.5 mm washer (B) on the intermediary shaft.

Intermediary Shaft installation Height:

Standard:

137.285-137.385 mm (5.40491-5.40885 in.)

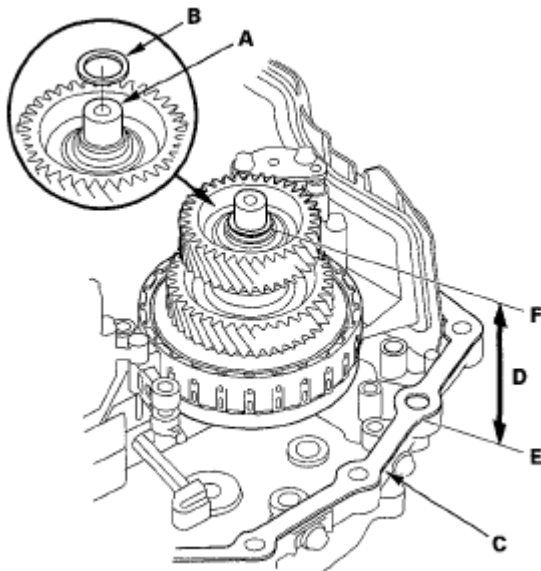


Fig. 540: Identifying Intermediary Shaft In Torque Converter Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Intermediary Shaft Cutaway View

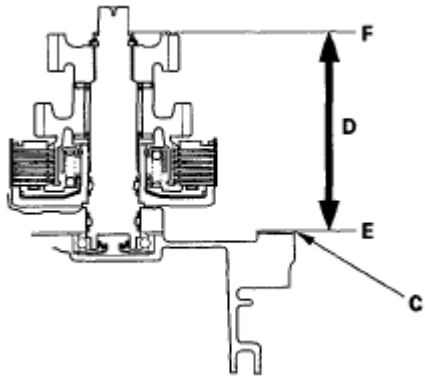


Fig. 541: Identifying Intermediary Shaft Cutaway View
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new gasket (C) on the torque converter housing.
3. Measure the height (D) of the intermediary shaft installation between the surface (E) of the gasket and the surface of the 26.5 mm washer (F).
4. If the measurement is out of standard, remove the 26.5 mm washer and measure its thickness.
5. Select and install a new washer, then recheck the installation height.

WASHER, 26.5 mm

WASHER THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	90564-RDK-000	1.05 mm (0.041 in.)
B	90565-RDK-000	1.13 mm (0.044 in.)
C	90566-RDK-000	1.21 mm (0.048 in.)
D	90567-RDK-000	1.29 mm (0.051 in.)
E	90568-RDK-000	1.37 mm (0.054 in.)
F	90569-RDK-000	1.45 mm (0.057 in.)
G	90570-RDK-000	1.53 mm (0.060 in.)
H	90571-RDK-000	1.61 mm (0.063 in.)
I	90572-RDK-000	1.69 mm (0.067 in.)
J	90573-RDK-000	1.77 mm (0.070 in.)
K	90574-RDK-000	1.85 mm (0.073 in.)
L	90575-RDK-000	1.93 mm (0.076 in.)
M	90576-RDK-000	2.01 mm (0.079 in.)
N	90577-RDK-000	2.09 mm (0.082 in.)
O	9G578-RDK-000	0.97 mm (0.038 in.)

CLUTCH DISASSEMBLY

Special Tools Required

- Clutch spring compressor attachment 07LAE-PX40100 or 07HAE-PL50101
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A

1. Remove the snap ring (A) with a screwdriver (B).

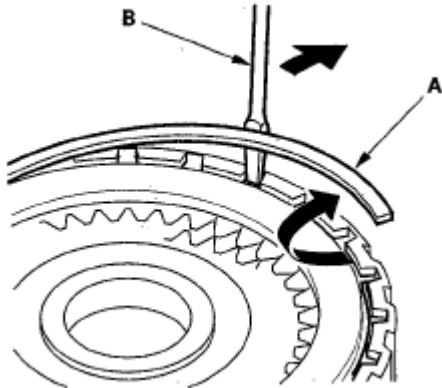


Fig. 542: Removing Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the 1st clutch end plate (A), 1st clutch discs (B) (5), 1st clutch wave-plates (C) (5) > disc spring (D), 1st-hold clutch plate B (E), 1st-hold clutch discs (F) (3), 1st-hold clutch wave-plates (G) (2), and 1st-hold clutch flat-plate (H) from the 1st/1st-hold clutch drum (I).

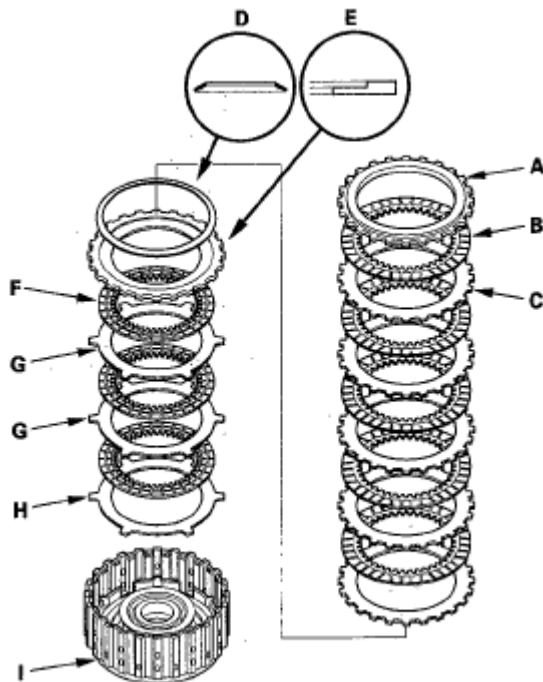


Fig. 543: Identifying Clutch Plates

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make reference marks on the clutch wave-plates.
4. Remove the clutch end plate (A), clutch discs (B) (7), clutch wave-plates (C) (3), and clutch flat-plates (D) (4) from the 2nd clutch drum (E).

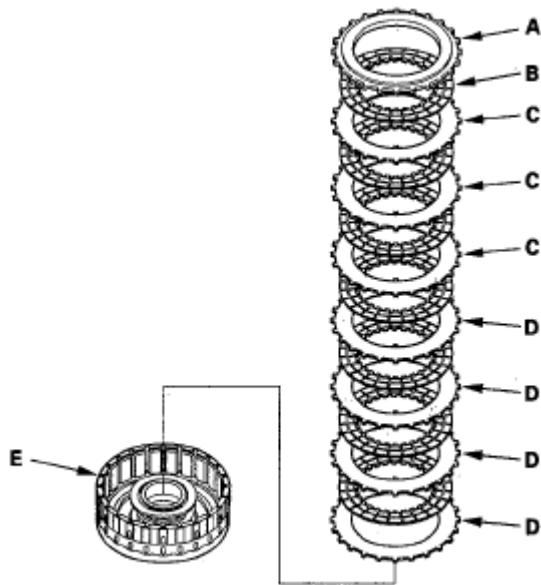


Fig. 544: Identifying Clutch End Plate, Clutch Discs, Clutch Wave-Plates And Clutch Flat-Plates
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make reference marks on the clutch wave-plates.
6. Remove the clutch end plate (A), clutch discs (B) (6), clutch wave-plates (C) (3), and clutch flat-plates (D) (3) from the 3rd clutch drum (E).

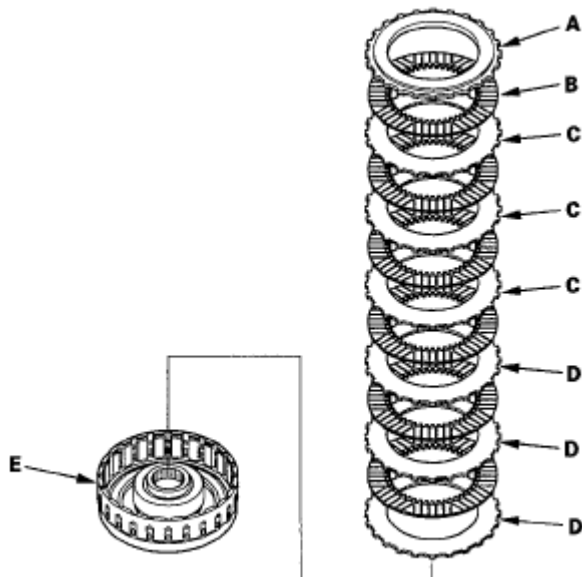


Fig. 545: Identifying Clutch End Plate, Clutch Discs, Clutch Wave-Plates And Clutch Flat-Plates

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Make reference marks on the clutch wave-plates.
8. Remove the clutch end plate (A), clutch discs (B) (5), clutch wave-plates (C) (2), clutch flat-plates (D) (3), and disc spring (E) from the 4th clutch drum (F).

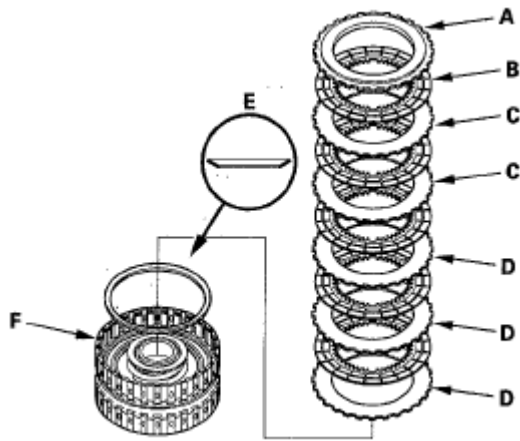


Fig. 546: Identifying Clutch End Plate, Clutch Discs, Clutch Wave-Plates, Clutch Flat-Plates And Disc Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Make reference marks on the clutch wave-plates.
10. Remove the clutch end plate (A), clutch discs (B) (5), clutch wave-plates (C) (2), clutch flat-plates (D) (3), and disc spring (E) from the 5th clutch drum (F).

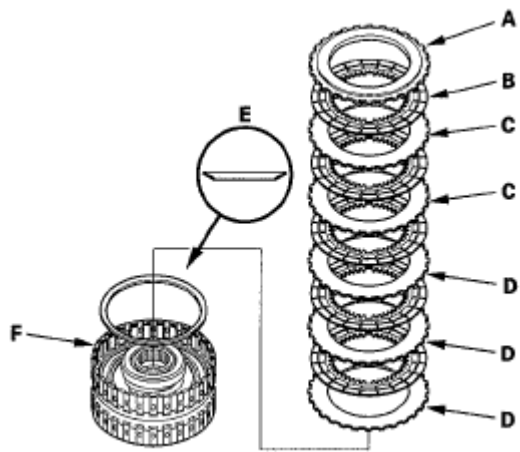


Fig. 547: Identifying Clutch End Plate, Clutch Discs, Clutch Wave-Plates And Clutch Flat-Plates
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Make reference marks on the clutch wave-plates.
12. Install the clutch spring compressor attachments and the clutch spring compressor bolt assembly.

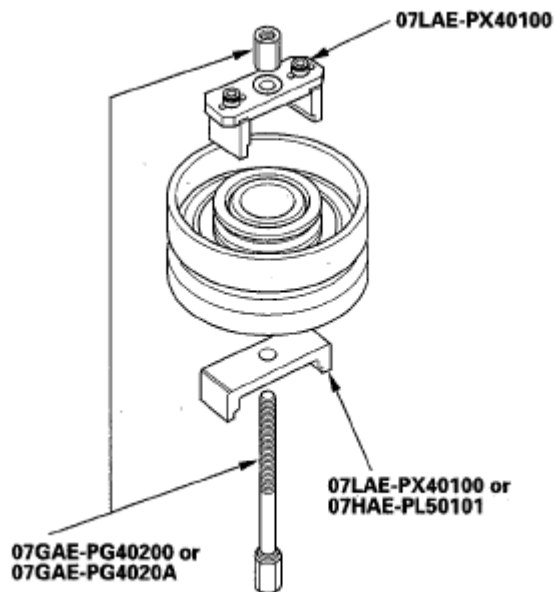


Fig. 548: Identifying Clutch Spring Compressor Attachments

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Be sure the clutch spring compressor attachment (A) is adjusted to have full contact with the spring retainer (B) on the 1st, 2nd, and 4th clutches.

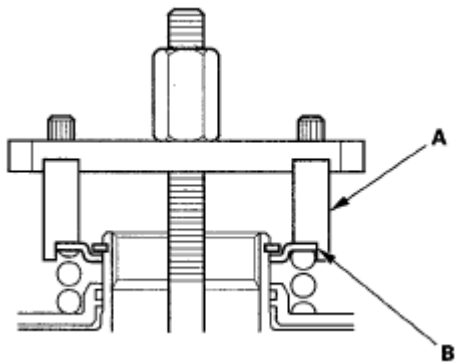


Fig. 549: Identifying Clutch Spring Compressor Attachment

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. If either end of the clutch spring compressor attachment is set over an area of the spring retainer that is unsupported by the return spring, the retainer may be damaged.

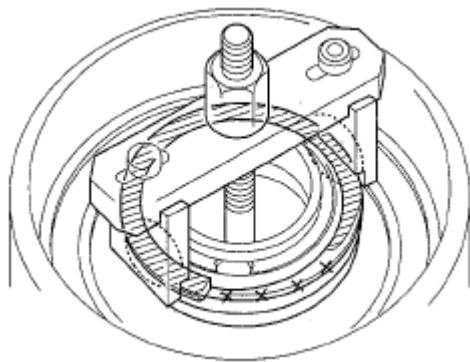


Fig. 550: Identifying Clutch Spring Compressor Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Set the clutch spring compressor attachment (A) on the spring retainer (B) of the 3rd and 5th clutches so the clutch spring compressor attachment works on the clutch return spring (C).

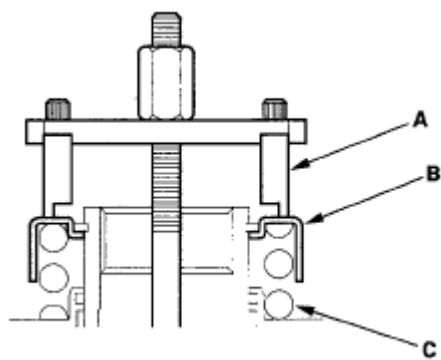


Fig. 551: Identifying Clutch Spring Compressor Attachment And Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. If either end of the clutch spring compressor attachment is not set over the clutch return spring end (A), the retainer may be damaged.

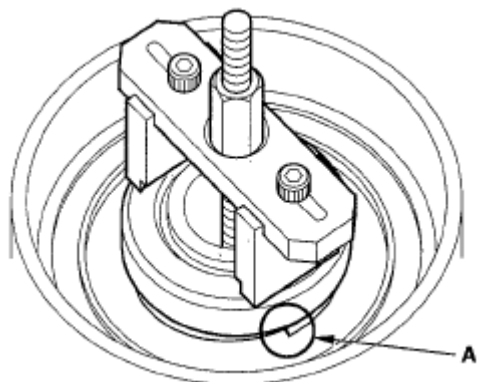


Fig. 552: Identifying Clutch Spring Compressor And Clutch Return Spring End

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Compress the return spring until the snap ring can be removed.

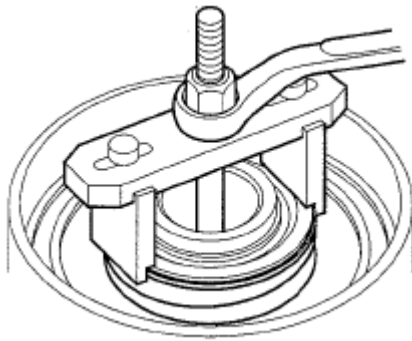


Fig. 553: Identifying Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Remove the snap ring with the snap ring pliers.

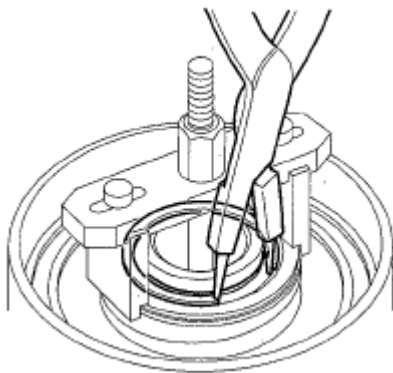


Fig. 554: Identifying Snap Ring With Snap Ring Pliers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the clutch spring compressor attachments and the clutch spring compressor bolt assembly.
20. Remove the snap ring (A), spring retainer (B), and return spring (C).

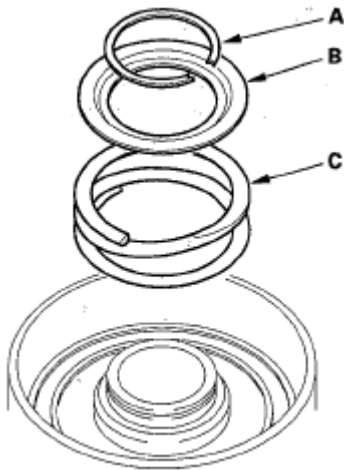


Fig. 555: Identifying Snap Ring, Spring Retainer And Return Spring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Wrap a shop rag around the clutch drum, and apply air pressure to the fluid passage to remove the piston. Place a finger tip on the other passage while applying air pressure.

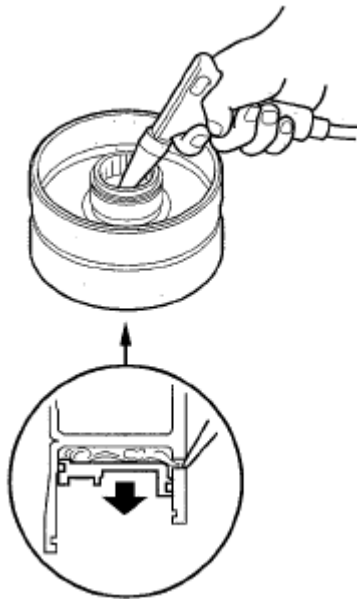


Fig. 556: Applying Air Pressure To Fluid Passage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the 1st/1st-hold clutch piston (A) from the clutch drum (B), and remove the O-rings from the 1st clutch piston.

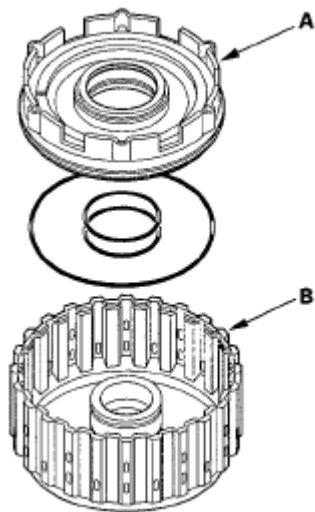


Fig. 557: Identifying 1st/1st-Hold Clutch Piston And Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the 1st-hold clutch piston (A) from the 1st clutch piston (B), and remove the O-rings from the 1st-hold clutch piston.

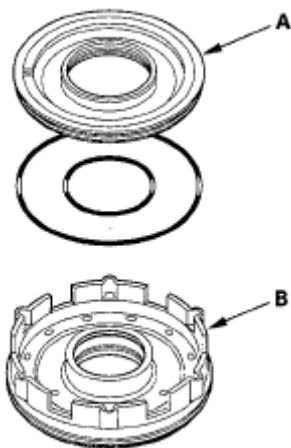


Fig. 558: Identifying Clutch Piston And 1st Clutch Piston
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the clutch piston, and remove the O-rings from the 2nd, 3rd, 4th, and 5th clutch pistons.

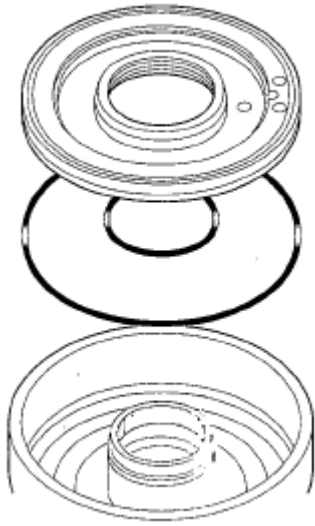


Fig. 559: Identifying O-rings 2nd, 3rd, 4th, And 5th Clutch Pistons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLUTCH INSPECTION

1. Inspect the clutch pistons and clutch piston check valves (A).

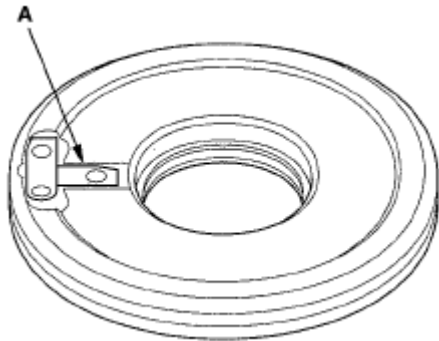


Fig. 560: Identifying Clutch Pistons And Clutch Piston Check Valves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the clutch piston check valve is loose or damaged, replace the clutch piston.
3. Check the spring retainer for wear and damage.
4. If the spring retainer is worn or damaged, replace it.
5. Inspect the clutch discs, clutch plates, and clutch end plate for wear, damage, and discoloration.

Clutch Discs:

Standard Thickness: 1.94 mm (0.076 in.)

Clutch Flat-plates and Clutch Wave-plates Standard Thickness:

1st Clutch: 1.6 mm (0.063 in.)

1st-hold Clutch: 1.8 mm (0.071 in.)

2nd Clutch: 1.8 mm (0.071 in.)

3rd Clutch: 1.8 mm (0.071 in.)

4th Clutch: 1.6 mm (0.063 in.)

5th Clutch: 1.6 mm (0.063 in.)

6. If the clutch discs are worn or damaged, replace them as a set. If the clutch discs are replaced, inspect the clearance between the clutch end-plate and the disc.
7. If any plate is worn, damaged, or discolored, replace the damaged plate with a new plate, and inspect the other wave-plates for a phase difference. If the clutch plate is replaced, inspect the clearance between the clutch end-plate and the disc.
8. If the clutch end plate is worn, damaged, or discolored, inspect the clutch end-plate disc clearance, then replace the clutch end plate.

CLUTCH WAVE-PLATE PHASE DIFFERENCE INSPECTION

1. Place the clutch wave-plate (A) on a surface plate, and set a dial indicator (B) on the wave-plate.

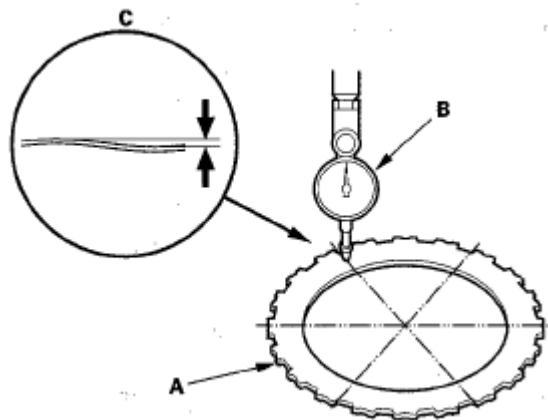


Fig. 561: Identifying Clutch Wave-Plate On Surface Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Find the bottom (C) of a phase difference of the wave-plate, zero the dial indicator and make a reference mark on the bottom of the wave-plate.
3. Measure the phase differences of 1st, 1st-hold, 2nd, and 3rd clutch wave-plates.
 1. Rotate the clutch wave-plate a bout 60-degrees while holding the wave-plate by its circumference. The dial indicator should be at the top of a phase difference. Do not rotate the wave-plate while holding its surface, always rotate it by holding its circumference.

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

2. Read the dial indicator. The dial indicator reads the phase difference of the wave-plate between the bottom and top.

Standard Phase Difference:

1st Clutch: 0.17-0.30 mm (0.007-0.012 in.)

1st-hold

Clutch: 0.07-0.20 mm (0.003-0.008 in.)

2nd Clutch: 0.07-0.20 mm (0.003-0.008 in.)

3rd Clutch: 0.07-0.20 mm (0.003-0.008 in.)

3. Rotate the wave-plate about 60-degrees. The dial indicator should be at the bottom of a phase difference, and zero the dial indicator.
4. Measure the phase difference at the other two tops of the wave-plate by following steps -1 thru 3.
4. Measure the phase differences of 4th and 5th clutch wave-plates.
 1. Rotate the clutch wave-plate 5-teeth or 4-teeth while holding the wave-plate by its circumference. The dial indicator should be at the top of a phase difference. Do not rotate the wave-plate while holding its surface, always rotate it by holding its circumference.
 2. Read the dial indicator. The dial indicator reads the phase difference of the wave-plate between the bottom and top.

Standard Phase Difference:

4th Clutch: 0.07-0.20 mm (0.003-0.008 in.)

5th Clutch: 0.07-0.20 mm (0.003-0.008 in.)

3. Rotate the wave-plate 5-teeth or 4-teeth. The dial indicator should be at the bottom of a phase difference, and zero the dial indicator.
4. Measure the phase difference at the other two tops of the wave-plate by following steps 1 thru 3.
5. If two of the three measurements are within the standard, the wave-plate is OK. If two of the measurements are out of standard, replace the wave-plate.

CLUTCH CLEARANCE INSPECTION

Special Tools Required

Clutch compressor attachment 07ZAE-PRP0100

1. Inspect the clutch piston, discs, plates, and end plate for wear and damage (see **CLUTCH INSPECTION**), and inspect the clutch wave-plate phase difference (see **CLUTCH WAVE-PLATE**

PHASE DIFFERENCE INSPECTION), if necessary.

2. Install the 1st-hold clutch piston in the 1st clutch piston, and install the 1st/1st-hold clutch piston (A) in the 1st/1st-hold clutch drum (B). Do not install the O-rings on the clutch pistons during inspection.

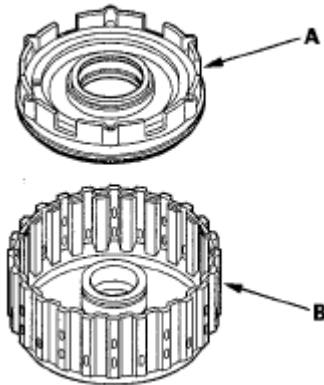


Fig. 562: Identifying Clutch Piston And Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 1st-hold clutch flat-plate (A), alternately install the clutch discs (B) (3) and the 1st-hold clutch wave-plates (C) (2), then install the 1st-hold clutch plate B (D) with the flat side down in the direction shown.

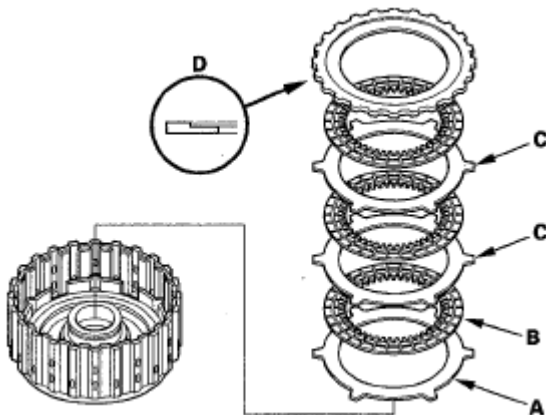


Fig. 563: Identifying Clutch Flat-Plate, Clutch Discs, 1St-Hold Clutch Wave-Plates And Clutch Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the 1st-hold clutch plate B-to-top disc clearance with a feeler gauge (A) while pressing the 1st-hold clutch plate B down. Take measurements in at least three places, and use the average as the actual clearance.

1st-hold Clutch Plate B-to-Top Disc Clearance:

Service Limit: 0.6-1.0 mm (0.024-0.039 in.)

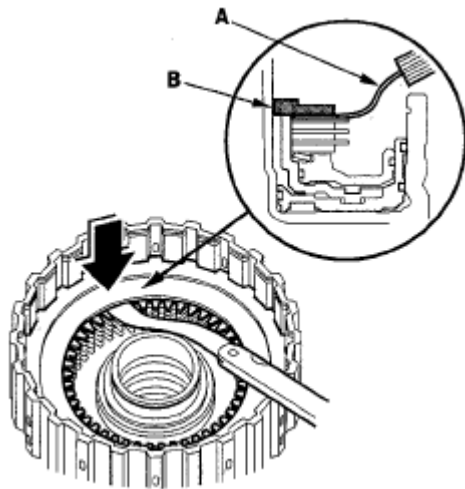


Fig. 564: Identifying 1st-hold Clutch Plate B-To-Top Disc Clearance
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the clearance is out of standard, replace the 1st-hold clutch plates and discs as a set, and recheck.
6. Install the disc spring (A) on the 1st-hold clutch plate B in the direction shown. Starting with the 1st clutch wave-plate, alternately install the wave-plates (B) (5) and discs (C) (5) in the 1st clutch drum (D), then install the clutch end-plate (E) with the flat side down.

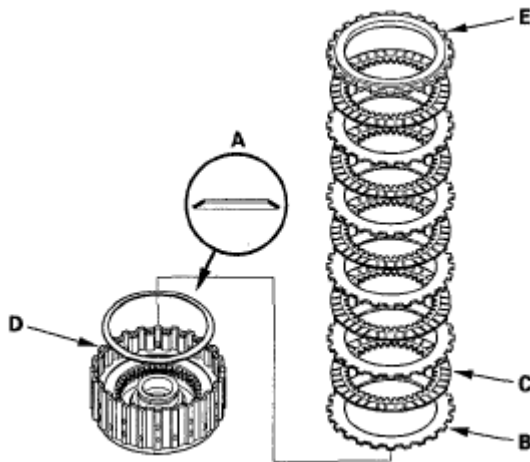


Fig. 565: Identifying Disc Spring, Wave-Plates, Clutch Drum And Clutch End-Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the clutch pistons in the 2nd, 3rd, 4th, and 5th clutch drums. Do not install the O-rings on the clutch pistons during inspection.

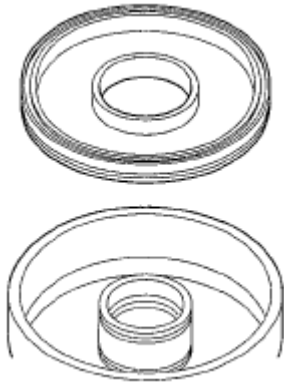


Fig. 566: Identifying 2nd, 3rd, 4th, And 5th Clutch Drums
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Starting with the 2nd clutch flat-plate, alternately install the flat-plates (A) (4) and discs (B) (4) in the 2nd clutch drum (C), and alternately install the wave-plates (D) (3) and discs (B) (3). Install the clutch end-plate (E) with the flat side down on the top disc.

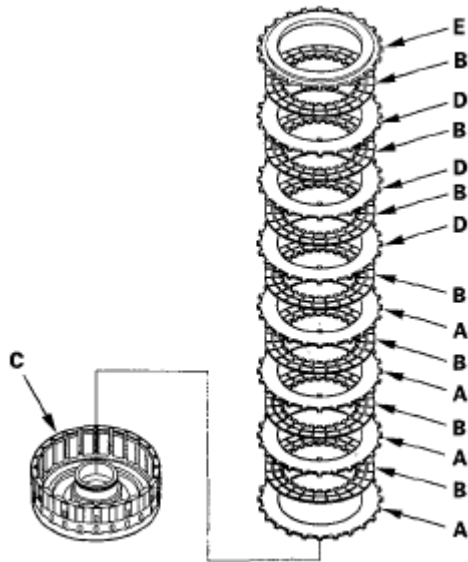


Fig. 567: Identifying Flat-Plates, Discs, 2Nd Clutch Drum, And Wave-Plates
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Starting with the 3rd clutch flat-plate, alternately install the flat-plates (A) (3) and discs (B) (3) in the 3rd clutch drum (C), and alternately install the wave-plates (D) (3) and discs (B) (3). Install the clutch end-plate (E) with the flat side down on the top disc.

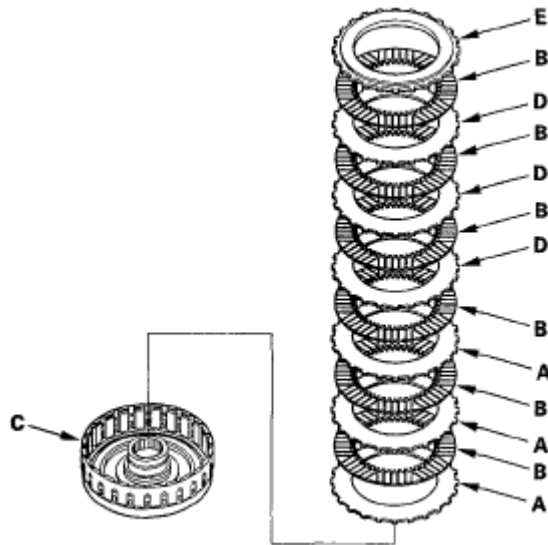


Fig. 568: Identifying Flat-Plates, Discs, 3rd Clutch Drum And Wave-Plates
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the disc spring (A) in the 4th clutch drum (B) in the direction shown. Starting with the 4th clutch flat-plate, alternately install the flat-plates (C) (3) and discs (D) (3), and alternately install the wave-plates (E) (2) and discs (D) (2). Install the clutch end-plate (F) with the flat side down on the top disc.

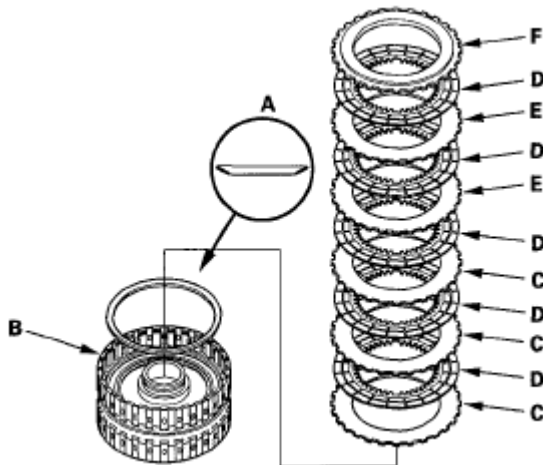


Fig. 569: Identifying Disc Spring, 4th Clutch Drum, 4th Clutch Flat-Plate, Flat-Plates And Discs
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the disc spring (A) in the 5th clutch drum (B) in the direction shown. Starting with the 5th clutch flat-plate, alternately install the flat-plates (C) (3) and discs (D) (3), and alternately install the wave-plates (E) (2) and discs (D) (2). Install the clutch end-plate (F) with the flat side down on the top disc.

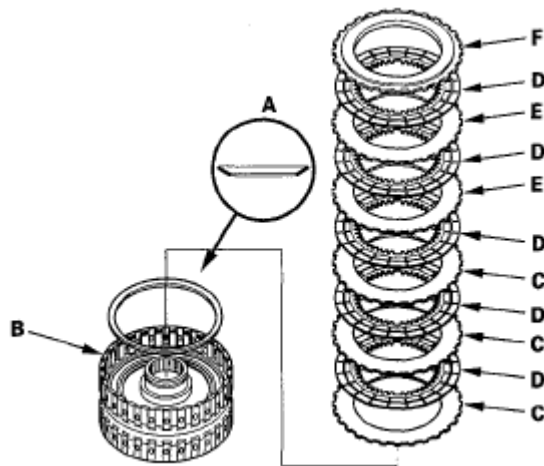


Fig. 570: Identifying Disc Spring In 5th Clutch Drum
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the snap ring with a screwdriver to secure the clutch end-plate.

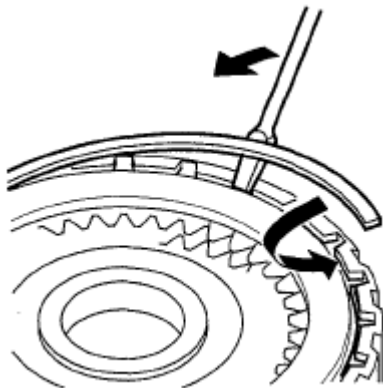


Fig. 571: Identifying Snap Ring To Clutch End-Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Set a dial indicator (A) on the clutch end-plate (B). A

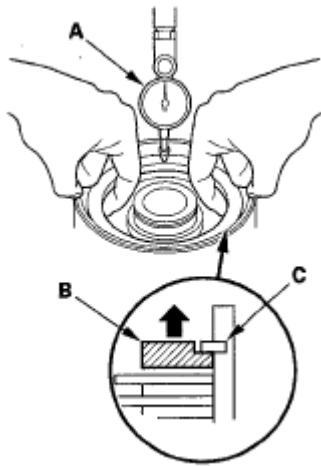


Fig. 572: Identifying Dial Indicator On Clutch End-Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Zero the dial indicator with the clutch end-plate lifted up to the snap ring (C).
15. Release the clutch end-plate to lower the clutch end-plate, then put the clutch compressor attachment on the end-plate (A).

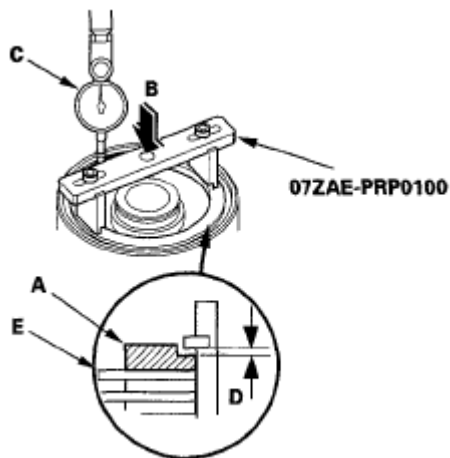


Fig. 573: Identifying Clutch End-Plate To Lower Clutch End-Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Press the clutch compressor attachment down with 150-160 N (15-16 kgf, 33-35 lbf) (B) using a force gauge, and read the dial indicator (C).
17. The dial indicator reads the clearance (D) between the clutch end-plate and top disc (E). Take measurements in at least three places, and use the average as the actual clearance.

Clearance between the Clutch End-plate and the Top Disc:

Service Limit:

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

1st Clutch: 1.15-1.35 mm (0.045-0.053 in.)

2nd Clutch: 1.05-1.25 mm (0.041-0.049 in.)

3rd Clutch: 0.9-1.1 mm (0.035-0.043 in.)

4th Clutch: 0.75-0.95 mm (0.030-0.037 in.)

5th Clutch: 0.75-0.95 mm (0.030-0.037 in.)

18. If the clearance is out of the service limit, select a new clutch end-plate from the following table.



Fig. 574: Identifying Clutch End-Plate Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1ST CLUTCH END PLATES

CLUTCH END PLATES THICKNESS SPECIFICATION

Plate No.	Part Number	Thickness
1	22551-RDK-003	3.1 mm (0.122 in.)
2	22552-RDK-003	3.2 mm (0.126 in.)
3	22553-RDK-003	3.3 mm (0.130 in.)
4	22554-RDK-003	3.4 mm (0.134 in.)
5	22555-RDK-003	3.5 mm (0.138 in.)
6	22556-RDK-003	3.6 mm (0.142 in.)
7	22557-RDK-003	3.7 mm (0.146 in.)
8	22558-RDK-003	3.8 mm (0.150 in.)
9	22559-RDK-003	3.9 mm (0.154 in.)

2ND CLUTCH END PLATES

CLUTCH END PLATES THICKNESS SPECIFICATION

Plate No.	Part Number	Thickness
1	22561-RDK-003	2.1 mm (0.083 in.)
2	22562-RDK-003	2.2 mm (0.087 in.)
3	22563-RDK-003	2.3 mm (0.091 in.)
4	22564-RDK-003	2.4 mm (0.094 in.)
5	22565-RDK-003	2.5 mm (0.098 in.)
6	22566-RDK-003	2.6 mm (0.102 in.)
7	22567-RDK-003	2.7 mm (0.106 in.)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

8	22568-RDK-003	2.8 mm (0.110 in.)
9	22569-RDK-003	2.9 mm (0.114 in.)

3RD CLUTCH END PLATES

CLUTCH END PLATES THICKNESS SPECIFICATION

Plate No.	Part Number	Thickness
1	22591-RYF-003	2.1 mm (0.083 in.)
2	22592-RYF-003	2.2 mm (0.087 in.)
3	22593-RYF-003	2.3 mm (0.091 in.)
4	22594-RYF-003	2.4 mm (0.094 in.)
5	22595-RYF-003	2.5 mm (0.098 in.)
6	22596-RYF-003	2.6 mm (0.102 in.)
7	22597-RYF-003	2.7 mm (0.106 in.)
8	22598-RYF-003	2.8 mm (0.110 in.)
9	22599-RYF-003	2.9 mm (0.114 in.)

4TH and 5TH CLUTCH END PLATES

CLUTCH END PLATES THICKNESS SPECIFICATION

Plate No.	Part Number	Thickness
1	22571-RYF-003	2.1 mm (0.083 in.)
2	22572-RYF-003	2.2 mm (0.087 in.)
3	22573-RYF-003	2.3 mm (0.091 in.)
4	22574-RYF-003	2.4 mm (0.094 in.)
5	22575-RYF-003	2.5 mm (0.098 in.)
6	22576-RYF-003	2.6 mm (0.102 in.)
7	22577-RYF-003	2.7 mm (0.106 in.)
8	22578-RYF-003	2.8 mm (0.110 in.)
9	22579-RYF-003	2.9 mm (0.114 in.)

19. Install the new clutch end-plate, and recheck the clearance. If the thickest clutch end-plate is installed, but the clearance is still over the service limit, replace the clutch discs and plates.

CLUTCH REASSEMBLY

Special Tools Required

- Clutch spring compressor attachment 07LAE-PX40100 or 07HAE-PL50101
- Clutch spring compressor bolt assembly 07GAE-PG40200 or 07GAE-PG4020A

1. Soak the clutch discs thoroughly in ATF for a minimum of 30 minutes.

2. Install the new G-rings (A) on the 1st-hold clutch piston (B), and install the 1st-hold clutch piston in the 1st clutch piston (C).

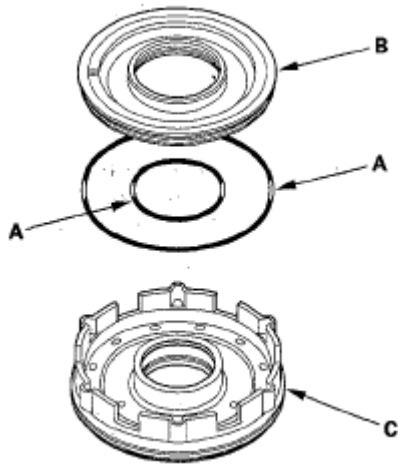


Fig. 575: Identifying G-Rings, 1St-Hold Clutch Piston And 1St Clutch Piston
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new O-rings (A) on the 1st clutch piston (B), and install the 1st/1st-hold clutch piston in the 1st/1st-hold clutch drum (C) while applying pressure and rotating to ensure proper seating. Do not pinch the O-ring.

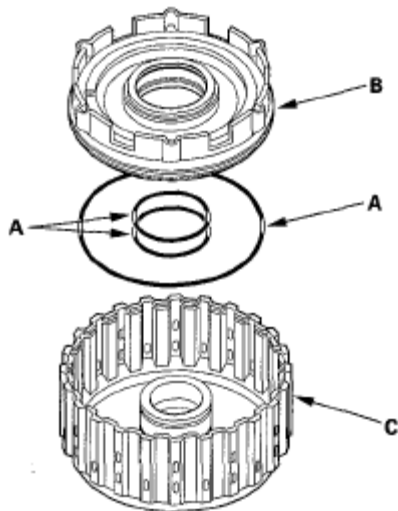


Fig. 576: Identifying O-rings On 1St Clutch Piston
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the O-rings (A) on the 2nd, 3rd, 4th, and 5th clutch piston (B).

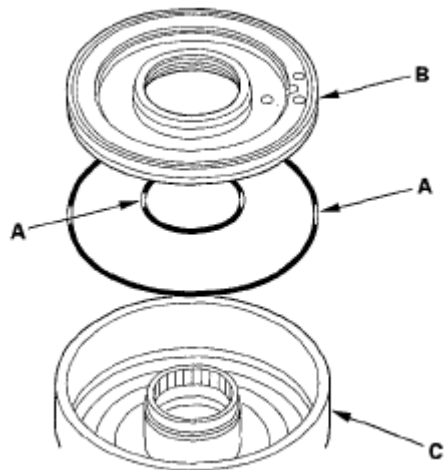


Fig. 577: Identifying O-rings On 2nd, 3rd, 4th, And 5th Clutch Piston
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the clutch pistons in the clutch drums (C) while applying pressure and rotating to ensure proper seating. Do not pinch the O-ring.
6. Install the return spring (A) and spring retainer (B), and position the snap ring (C) on the spring retainer.

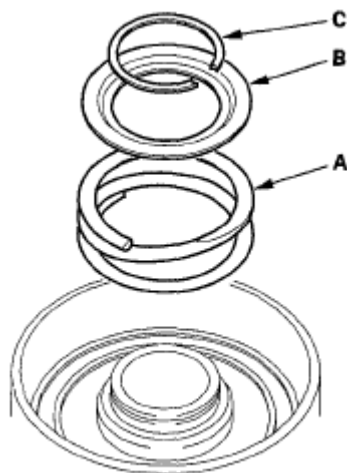


Fig. 578: Identifying Return Spring, Spring Retainer, Snap Ring And Spring Retainer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the clutch spring compressor attachments and the clutch spring compressor bolt assembly.

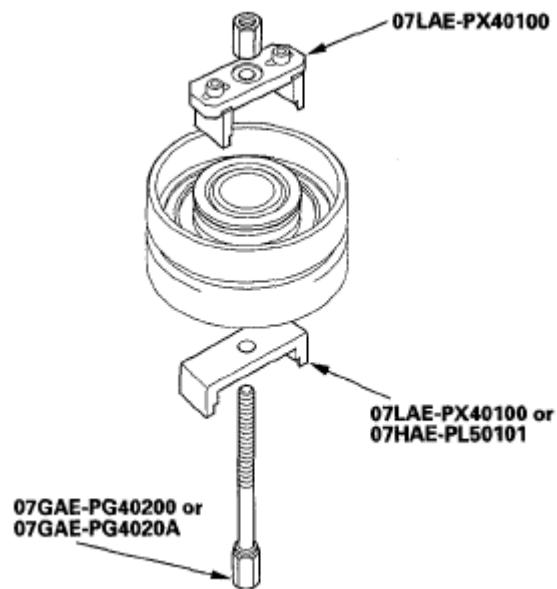


Fig. 579: Identifying Clutch Spring Compressor And Clutch Spring Compressor Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Be sure the clutch spring compressor attachment (A) is adjusted to have full contact with the spring retainer (B) on the 1st, 2nd, and 4th clutches.

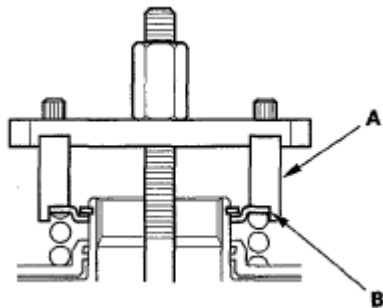


Fig. 580: Identifying Clutch Spring Compressor And Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If either end of the clutch spring compressor attachment is set over an area of the spring retainer that is unsupported by the return spring, the retainer may be damaged.

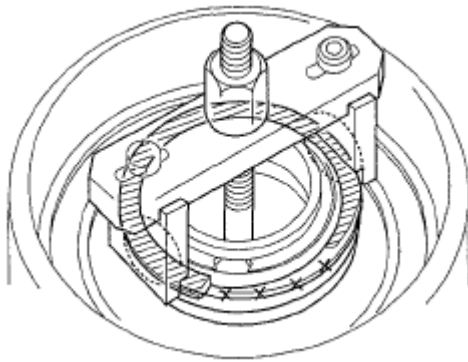


Fig. 581: Identifying Clutch Spring Compressor Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Set the clutch spring compressor attachment (A) on the spring retainer (B) of the 3rd and 5th clutches so the clutch spring compressor attachment works on the clutch return spring (C).

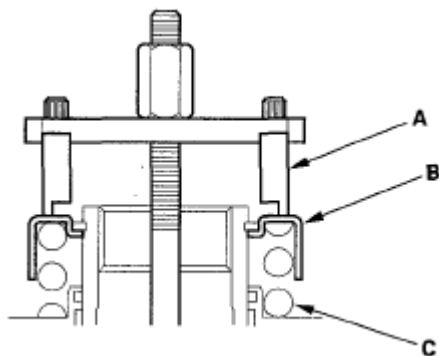


Fig. 582: Identifying Clutch Spring Compressor Attachment On Spring Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If either end of the clutch spring compressor attachment is not set over the clutch return spring end (A), the retainer may be damaged.

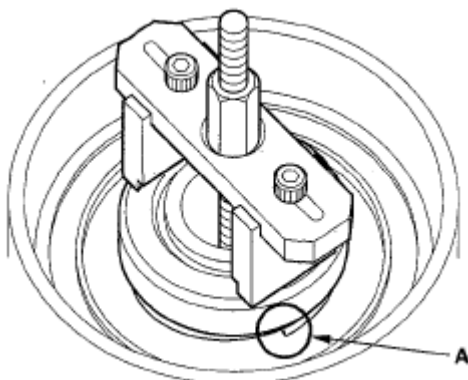


Fig. 583: Identifying Clutch Return Spring End

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Compress the return spring until the snap ring can be installed.

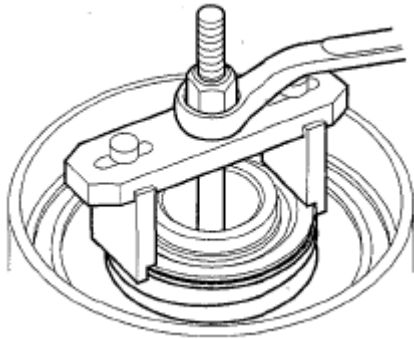


Fig. 584: Identifying Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the snap ring with the snap ring pliers.

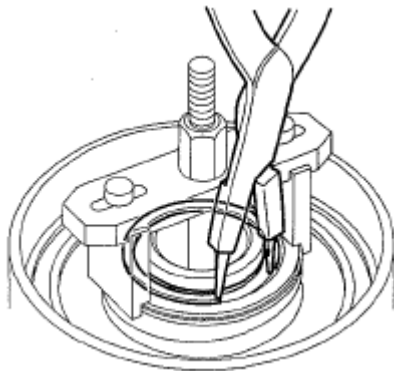


Fig. 585: Identifying Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the clutch spring compressor attachments and the clutch spring compressor bolt assembly.
15. Install the 1st-hold clutch flat-plate (A), alternately install the clutch discs (B) (3) and the 1st-hold clutch wave-plates (C) (2) in the 1st/1st-hold clutch drum (D), then install the 1st-hold clutch plate B (E) with the flat side down in the direction shown.

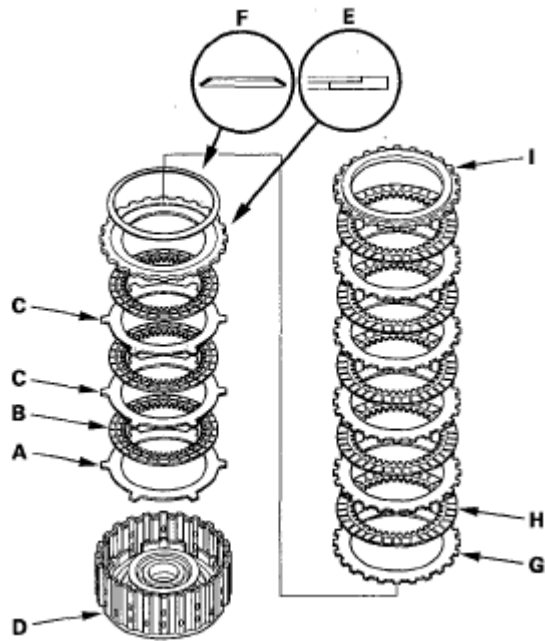


Fig. 586: Identifying Clutch Flat-Plate, Clutch Discs, 1st-Hold Clutch Wave-Plates And Clutch Plate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the disc spring (F) on the 1st-hold clutch plate B in the direction shown. Starting with the 1st clutch wave-plate, alternately install the wave-plates (G) (5) and discs (H) (5), then install the clutch end-plate (I) with the flat side down on the top disc.
17. Starting with the 2nd clutch flat-plate, alternately install the flat-plates (A) (4) and discs (B) (4) in the 2nd clutch drum (C), and alternately install the wave-plates (D) (3) and discs (B) (3). Install the clutch end-plate (E) with the flat side down on the top disc.

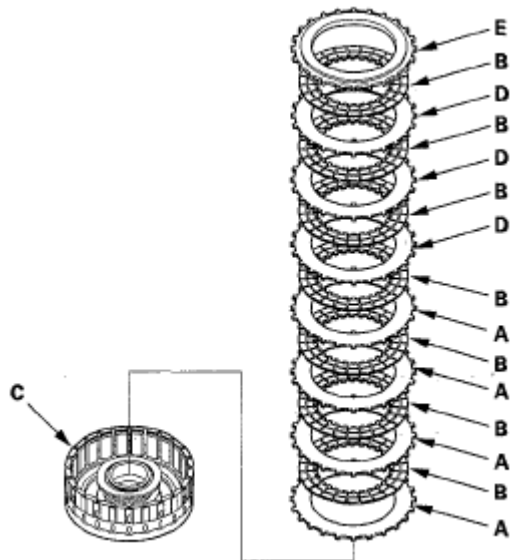


Fig. 587: Identifying Flat-Plates, Discs And 2nd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Starting with the 3rd clutch flat-plate, alternately install the flat-plates (A) (3) and discs (B) (3) in the 3rd clutch drum (C), and alternately install the wave-plates (D) (3) and discs (B) (3). Install the clutch end-plate (E) with the flat side down on the top disc.

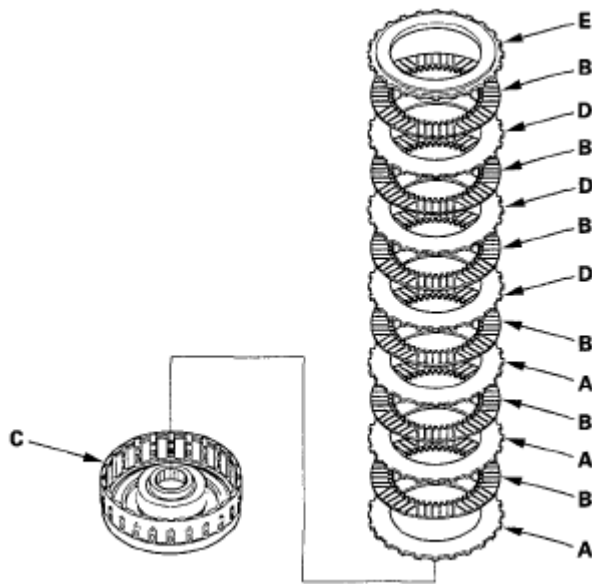


Fig. 588: Identifying 3Rd Clutch Flat-Plate, Flat-Plates, Discs And 3Rd Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the disc spring (A) in the 4th clutch drum (B) in the direction shown. Starting with the 4th clutch flat-plate, alternately install the flat-plates (C) (3) and discs (D) (3), and alternately install the wave-plates (E) (2) and discs (D) (2). Install the clutch end-plate (F) with the flat side down on the top disc.

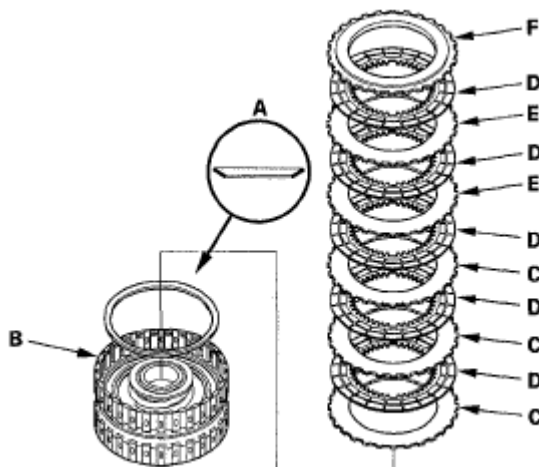


Fig. 589: Identifying Disc Spring, 4th Clutch Drum, 4th Clutch Flat-Plate, Flat-Plates And Discs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the disc spring (A) in the 5th clutch drum (B) in the direction shown. Starting with the 5th clutch flat-plate, alternately install the flat-plates (C) (3) and discs (D) (3), and alternately install the wave-plates (E) (2) and discs (D) (2). Install the clutch end-plate (F) with the flat side down on the top disc.

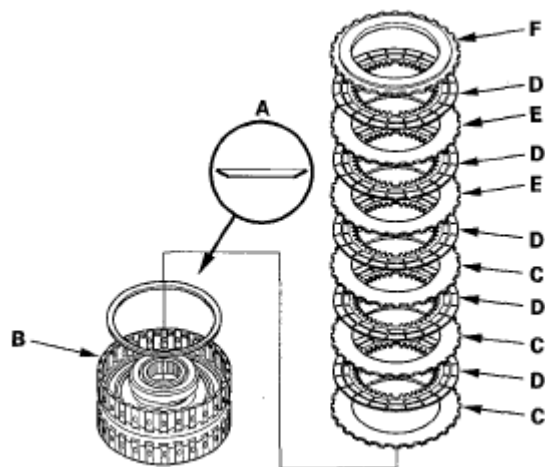


Fig. 590: Identifying Disc Spring And 5th Clutch Drum
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the snap ring with a screwdriver to secure the clutch end-plate.

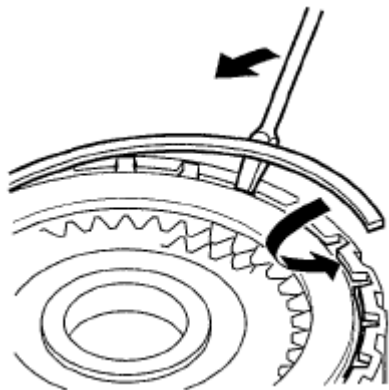


Fig. 591: Identifying Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION REASSEMBLY

Exploded View

Bolt Tightening Torque

6 x 1.0 mm: 12 N.m (1.2 kgf.m, 8.7 lbf.ft)

8 x 1.25 mm: 18 N.m (1.8 kgf.m, 13 lbf.ft)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Bolt Tightening Torque
6 x 1.0 mm: 12 N·m (1.2 kgf·m, 8.7 lbf·ft)
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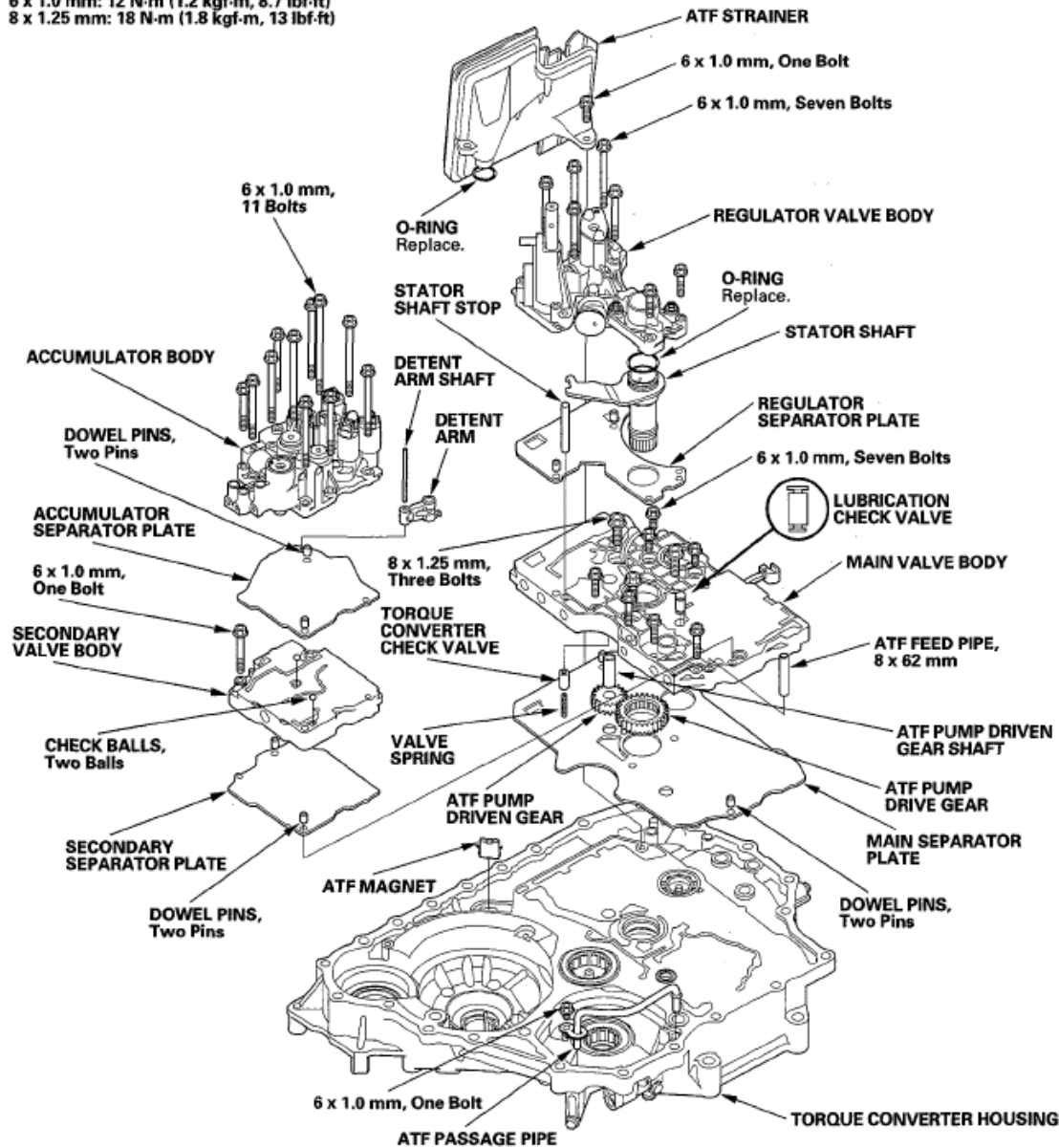


Fig. 592: Exploded View Of Transmission With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Mainshaft holder 07GAB-PF50101

1. Make sure that the ATF magnet is cleaned and installed in the torque converter housing. Clean and install the ATF magnet, if necessary.
2. Install the main separator plate and the two dowel pins on the torque converter housing. Then install the ATF pump drive gear (A), driven gear (B), and ATF pump driven gear shaft (C). Install the ATF pump driven gear with its grooved and chamfered side facing down.

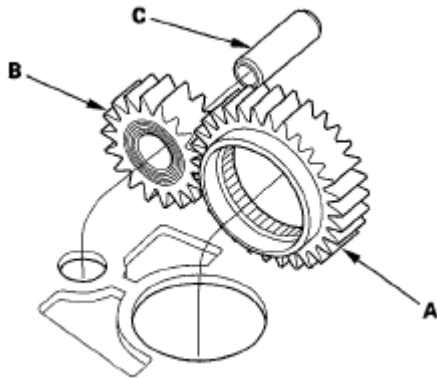


Fig. 593: Identifying ATF Pump Drive Gear, Driven Gear And ATF Pump Driven Gear Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. install the torque converter check valve spring and valve in the torque converter housing.
4. Install the main valve body (seven 6 mm bolts and three 8 mm bolts). Make sure the ATF pump drive gear (A) rotates smoothly in the normal operating direction, and the ATF pump driven gear shaft (C) moves smoothly in the axial and normal operating direction.

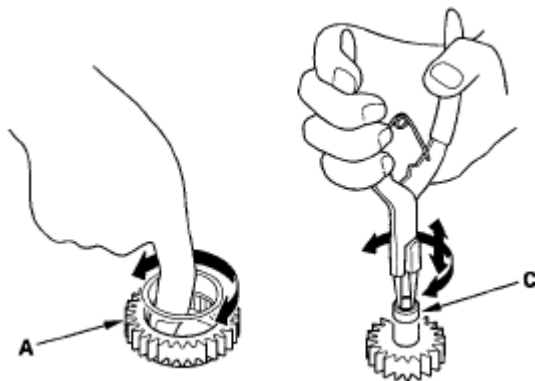


Fig. 594: Identifying Main Valve Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the ATF pump drive gear and ATF pump driven gear shaft do not move smoothly, loosen the main valve body bolts. Realign the ATF pump driven gear shaft, and retighten the bolts to the specified torques, then recheck. Failure to align the ATF pump driven gear shaft correctly will result in a seized ATF pump drive gear or ATF pump driven gear shaft.
6. Install the lubrication check valve, cooler check valve and cooler check valve spring in the main valve body. Install the lubrication check valve in the direction shown in the exploded view.
7. Install the secondary separator plate and the two dowel pins on the main valve body, and install the secondary valve body (one bolt).
8. Install the two check balls in the secondary valve body.
9. Install the accumulator separator plate and the two dowel pins on the secondary valve body.
10. Position the detent arm on the accumulator separator plate, and install the detent arm shaft into the detent

arm through the separator plates to the main valve body.

11. Install the 8x62 mm ATF feed pipes in the main valve body, and install the accumulator body (11 bolts).
12. Install the regulator separator plate and the two dowel pins on the main valve body.
13. Install the stator shaft with the new O-ring, and install the regulator valve body (eight bolts).
14. Install the stator shaft stop in the main valve body.
15. Install the ATF strainer with the new O-ring (two bolts).
16. Install the ATF passage pipe (one bolt) in the torque converter housing.
17. Install the intermediary shaft (A) into the main valve body, and install the 26.5 mm washer (B) on the top of the intermediary shaft.

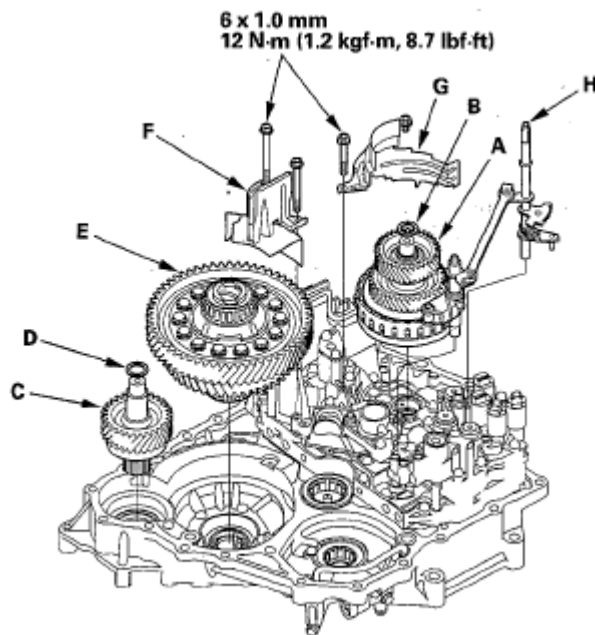


Fig. 595: Identifying Intermediary Shaft Into Main Valve Body With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the transfer output shaft (C) in the torque converter housing, and install the thrust shim (D) on the top of the transfer output shaft.
19. Install the differential assembly (E) in the torque converter housing.
20. Install the baffle plate (F), and make sure the differential is clear of the baffle plate.
21. Install the baffle plate (G), and make sure the intermediary shaft is clear of the baffle plate.
22. Install the selector control shaft and the park lever link(H).
23. Assemble the mainshaft, countershaft, and secondary shaft.
24. Install the needle bearing (A) on the secondary shaft roller bearing in the torque converter housing.

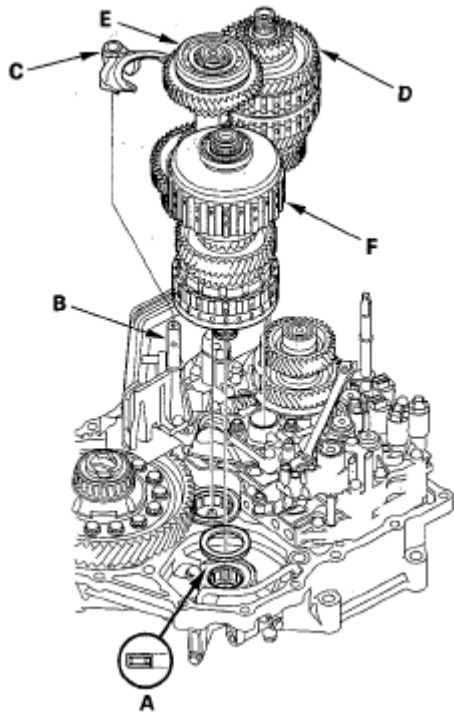


Fig. 596: Identifying Needle Bearing On Secondary Shaft Roller Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Turn the shift fork shaft (B) so the large chamfered hole is facing the fork bolt hole of the shift fork.
26. Engage the shift fork (C) with the reverse selector on the countershaft, and join the mainshaft (D), countershaft (E), and secondary shaft (F), then install them in the torque converter housing and shift fork on the shift fork shaft.
27. Secure the shift fork (A) to the shift fork shaft with the lock bolt and the new lock washer (B), then bend the lock tab of the lock washer against the bolt head.

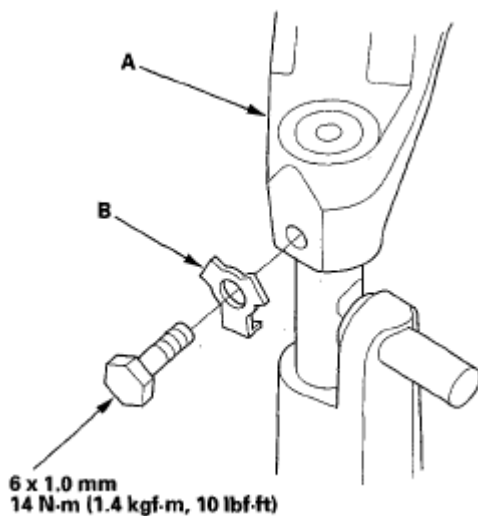


Fig. 597: Identifying Shift Fork And Lock Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the park pawl shaft (A), pawl spring (B), park pawl (C), and park pawl stop (D).

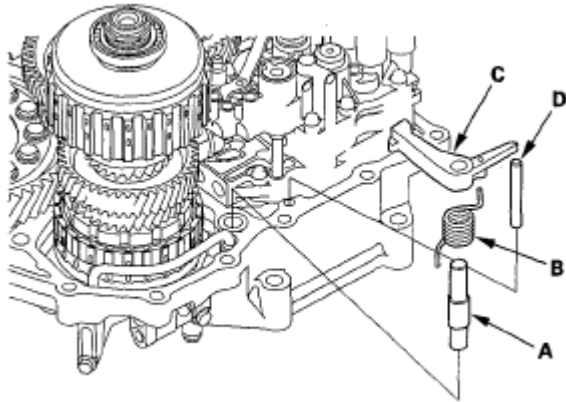


Fig. 598: Identifying Park Pawl Shaft, Pawl Spring, Park Pawl And Park Pawl Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Align the control lever pin with the manual valve guide.

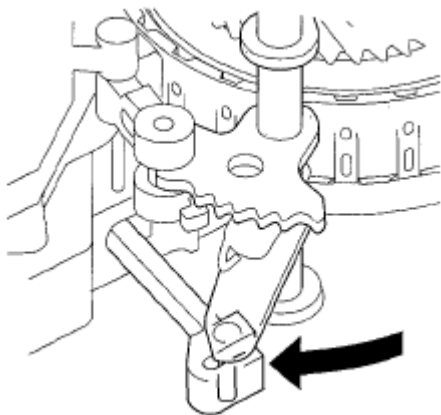


Fig. 599: Identifying Control Lever Pin With Manual Valve Guide
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Hook the detent arm spring to the detent arm.

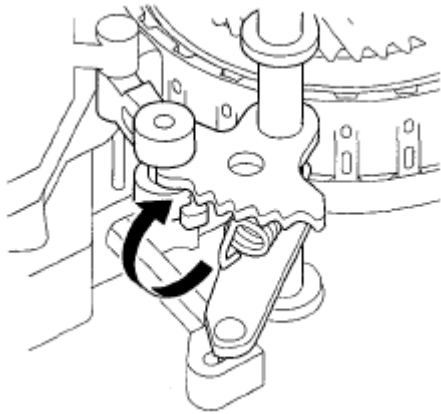


Fig. 600: Identifying Detent Arm Spring To Detent Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the 8 x 85 mm ATF feed pipe (A), the 8 x 151.5 mm pipes (B), and the 8 x 40 mm pipe (C) in the accumulator body.

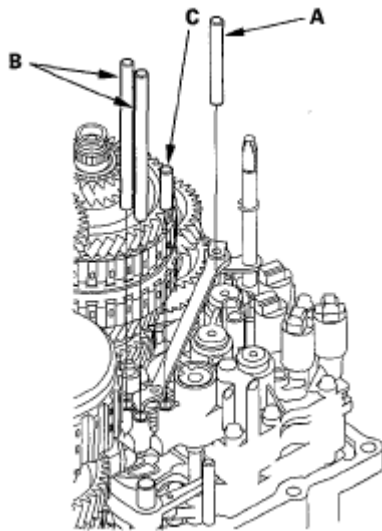


Fig. 601: Identifying ATF Feed Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Install the 8 x 57.5 mm ATF feed pipe (A) and the 10 x 123 mm pipe (B) in the torque converter housing.

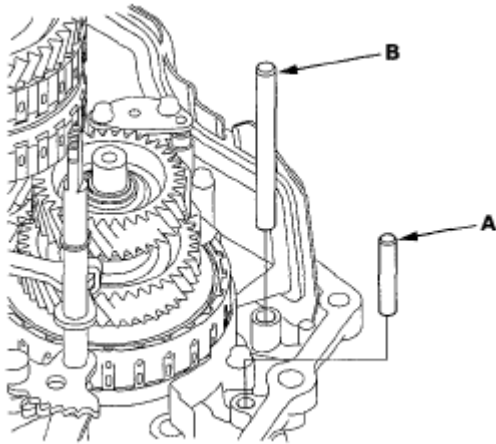


Fig. 602: Identifying ATF Feed Pipe And Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Install the two dowel pins (A) and the new gasket (B) on the torque converter housing (C).

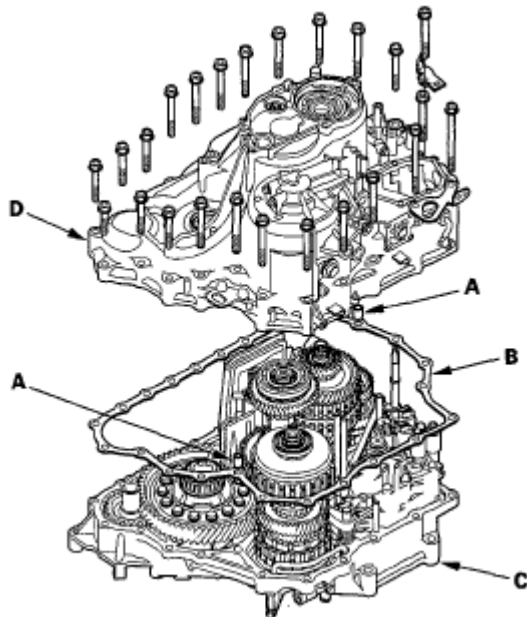


Fig. 603: Identifying Two Dowel Pins, Gasket And Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Place the transmission housing (D) on the torque converter housing.
35. Wrap a screwdriver tip with tape to prevent damaging the reverse idler gear teeth. Engage the reverse idler gear with reverse gears by rotating the idler gear using the screwdriver.

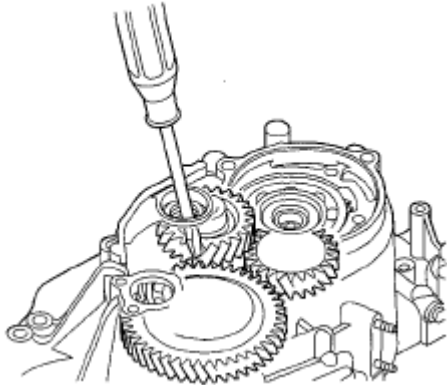


Fig. 604: Identifying Transmission Housing On Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. While expanding the snap ring of the countershaft bearing using snap ring pliers, install the transmission housing onto the bearing part-way. Then release the snap ring pliers, and push down on the housing until it bottoms and the snap ring snaps into place in the transmission housing snap ring groove.

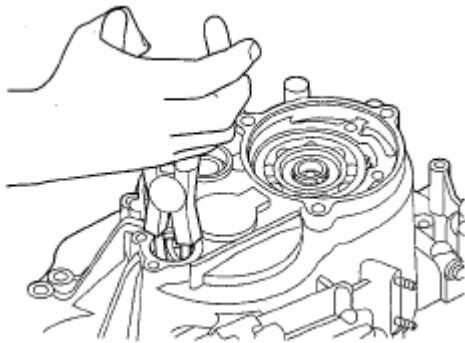


Fig. 605: Identifying Snap Ring Expand
Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Install the transmission housing mounting bolts (21 bolts) and the bolt (A) along with the transmission hanger (B) and the transmission ground terminal bracket (C), and tighten the bolts in two or more steps in a criss-cross pattern to 44 N.m (4.5 kgf.m, 33 lbf.ft).

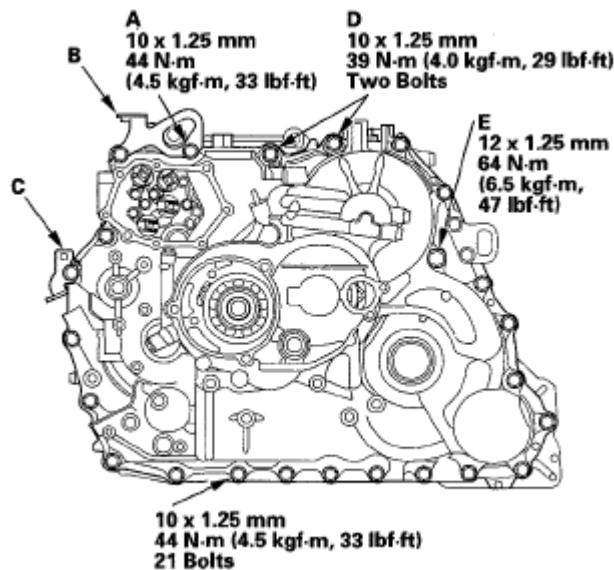


Fig. 606: Identifying Transmission Housing Mounting Bolts With Torque Specification With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Install and tighten the two mounting bolts (D) to 39 N·m (4.0 kgf·m, 29 lbf·ft). Keep the mounting bolts free of grease or oil.
39. Install and tighten the special bolt (E) to 64 N·m (6.5 kgf·m, 47 lbf·ft).
40. Install the mainshaft holder onto the mainshaft.

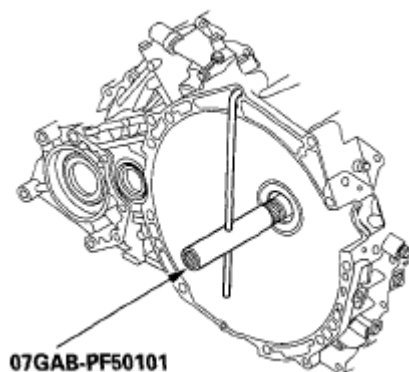


Fig. 607: Identifying Mainshaft Holder Onto Mainshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Install the new lock washer (A) with the marked side (B) up over the mainshaft (C), and apply ATF to surfaces of the lock washer and old locknut (D).

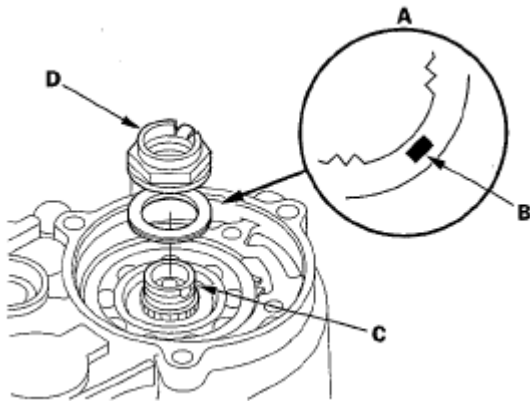


Fig. 608: Identifying Lock Washer With Marked Side
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Install the old locknut, and tighten it to seat the lock washer to 178 N.m (18.2 kgf.m, 132 lbf.ft), then remove the old locknut.
43. Install the new locknut and tighten it to 176 N.m (18.2 kgf.m, 132 lbf.ft), then stake the locknut to a depth (A) of 0.7-1.3 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

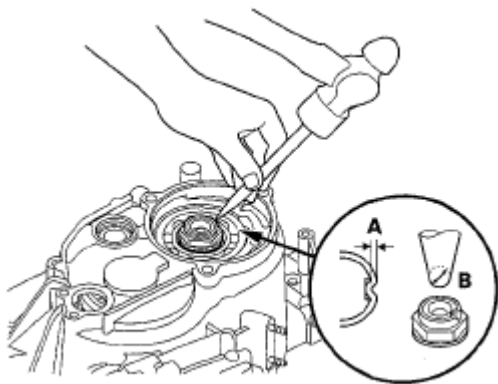


Fig. 609: Identifying Locknut
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Install the end cover (A), dowel pin (B), and new O-ring (C).

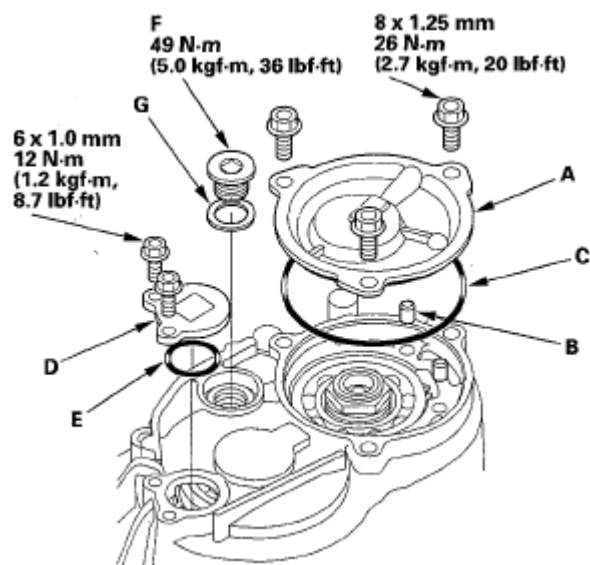


Fig. 610: Identifying End Cover, Dowel Pin, And New O-Ring With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Install the snap ring cap (D) with the new O-ring (E).
46. Apply thread lock sealant to the threads of the sealing plug (F), and install the sealing plug and the new sealing washer (G).
47. Install the new O-ring (E) on the solenoid harness connector (F).

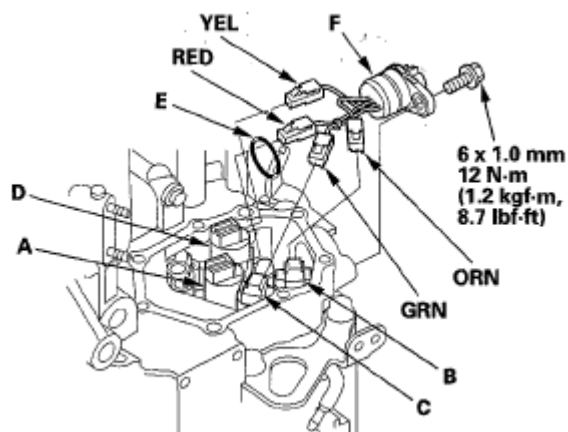


Fig. 611: Identifying O-Ring And Solenoid Harness Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Route the solenoid harness through the transmission housing, and install the solenoid harness connector.
49. Connect the harness terminals to the solenoids:
 - RED wire connector to shift solenoid valve A.
 - ORN wire connector to shift solenoid valve B.
 - GRN wire connector to shift solenoid valve C.

- YEL wire connector to shift solenoid valve D.
50. Secure the solenoid harness connector with the bolt on the transmission housing.
 51. Install the solenoid valve cover (A) with the two dowel pins (B) and the new gasket (C), and secure it with the seven bolts.

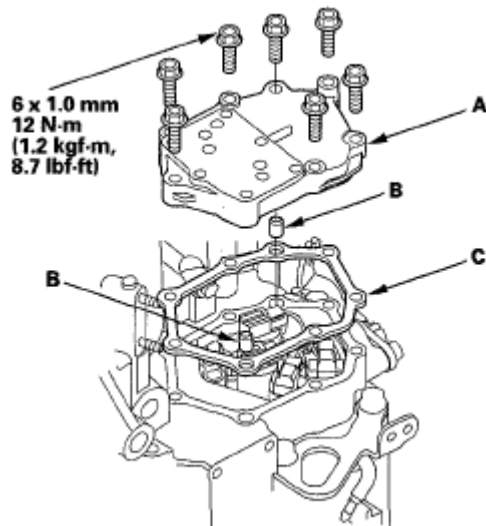


Fig. 612: Identifying Solenoid Valve Cover, Dowel Pins, Gasket And Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Place the new gasket (A) on the solenoid valve cover, then install the 8 x 105.8 mm ATF feed pipe (B) and the 8x58.3 mm pipes (C) with their filter side into the transmission housing.

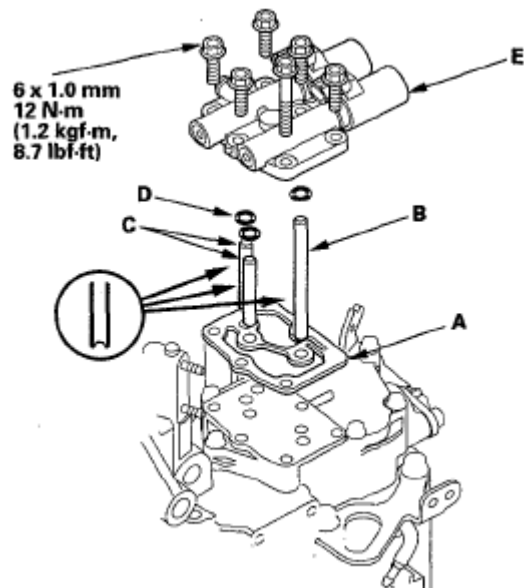


Fig. 613: Identifying Solenoid Valve Cover With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Install the new O-rings (D) over the ATF feed pipes, and install the A/T clutch pressure control solenoid valves A and B(E).
54. Install the 8 x 53 mm ATF joint pipe (A) with the filter side into its mounting hole (B).

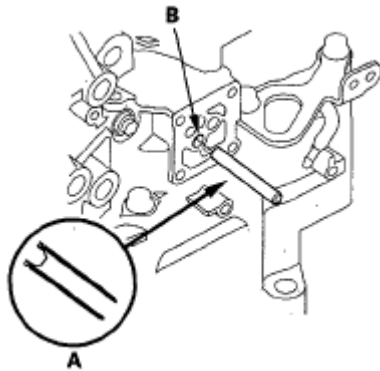


Fig. 614: Identifying ATF Joint Pipe And Mounting Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Check the height (A) of the 8 x 53 mm ATF joint pipe (B) between the top (C) of the pipe and the solenoid valve body mounting surface (D). The height is about 7 mm (0.3 in.) If the height is over 7 mm (0.3 in.), install the pipe securely until it stops the accumulator body.

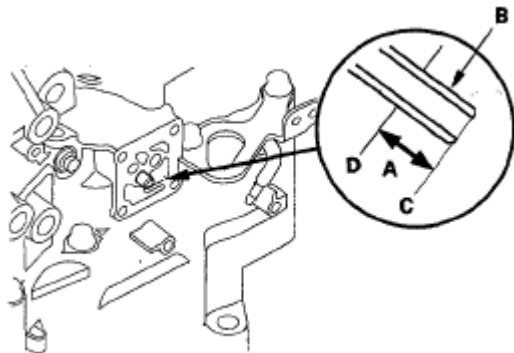


Fig. 615: Identifying Height Of ATF Joint Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Install the new gasket (A) on the transmission housing. Install the 8 x 34.5 mm ATF pipe (B) with the filter end in the transmission housing, and install the 8 x 25.5 mm ATF pipe (D).

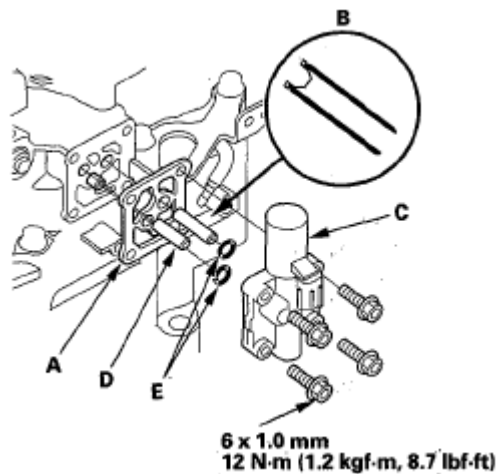


Fig. 616: Identifying Transmission Housing And ATF Pipe With Trque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Install new O-rings (E) over the ATF joint pipes.
58. Install A/T clutch pressure control solenoid valve C.
59. Set the control shaft to N by turning the selector control shaft with a 6.0 mm wrench.

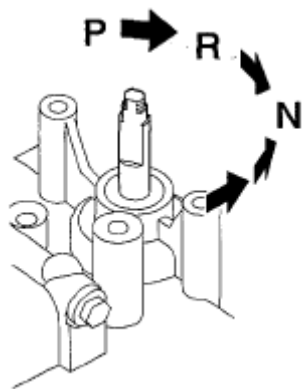


Fig. 617: Identifying Selector Control Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Set the transmission range switch (A) to N. The transmission range switch clicks in N, and the selector control shaft hole (B) aligns with the N positioning line (C).

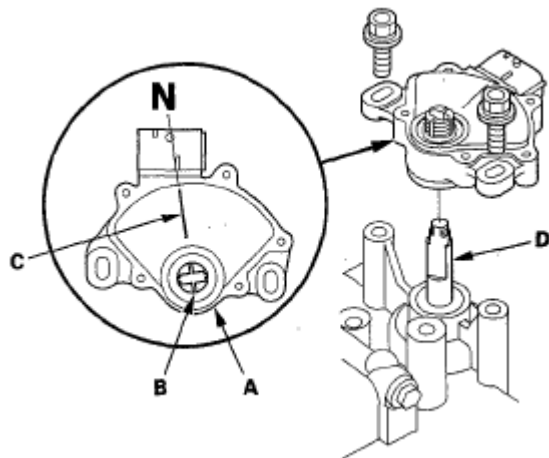


Fig. 618: Identifying Transmission Range Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Install the transmission range switch gently over the selector control shaft (D), and install the bolts loosely.
62. Install the new lock washer (A) over the selector control shaft (B) by aligning the tab (C) of the lock washer with the N positioning line (D) on the transmission range switch (E). Then install the locknut (F).

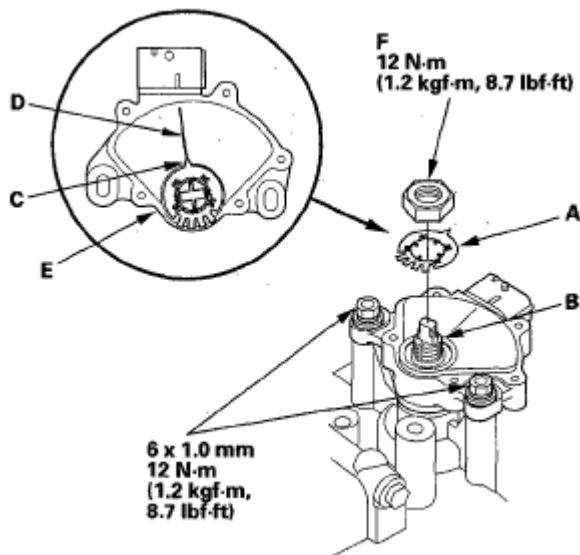


Fig. 619: Identifying Lock Washer, Selector Control Shaft And Lock Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Push the locknut against the transmission housing to seat the range switch into the selector control shaft, and tighten the locknut to 12 N·m (1.2 kgf·m, 8.7 lbf·ft) while holding the selector control shaft with a 6 mm wrench, then bend the lock tabs against the locknut.

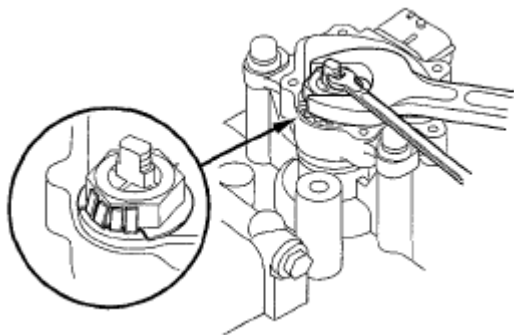


Fig. 620: Identifying Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Tighten the range switch mounting bolts to 12 N.m (1.2 kgf.m, 8.7 lbf.ft).
65. Install the control lever (A), spring washer (B), lock washer (C), and locknut (D) on the selector control shaft (E).

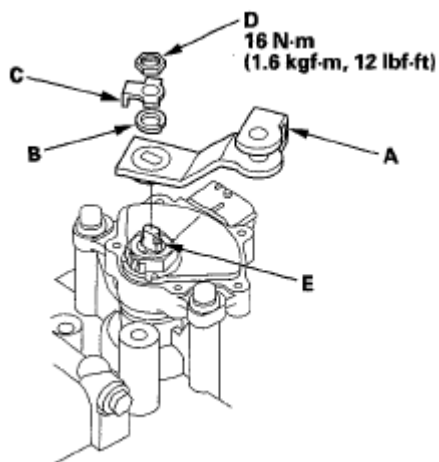


Fig. 621: Identifying Control Lever, Spring Washer, Lock Washer, Locknut And Selector Control Shaft With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Install the new O-ring (A) on the input shaft (mainshaft) speed sensor (B), and install the input shaft (mainshaft) speed sensor.

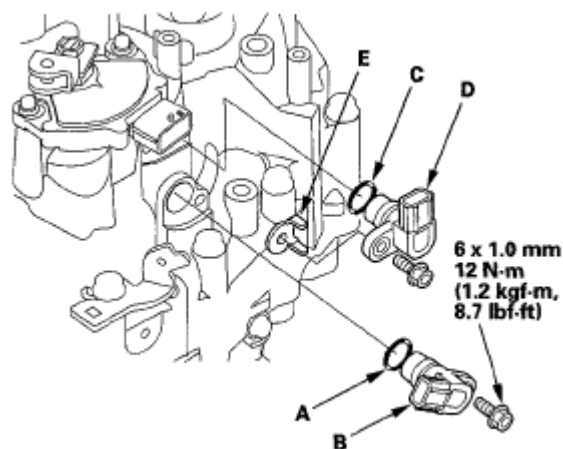


Fig. 622: Identifying O-Ring, Input Shaft And Speed Sensor With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

67. Install the new O-ring (C) on the output shaft (countershaft) speed sensor (D), and install the output shaft (countershaft) speed sensor and the sensor washer (E).
68. Install the 4th clutch transmission fluid pressure switch (A) with the new sealing washer (B). Tighten the switch with the metal part.

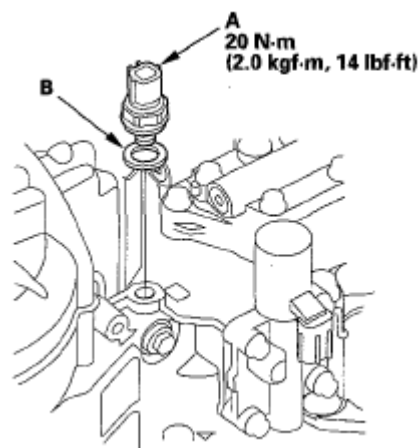


Fig. 623: Identifying 4Th Clutch Transmission Fluid Pressure Switch And Sealing Washer With Torque Specificaiton
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

69. Install the 3rd clutch transmission fluid pressure switch (A) with the new sealing washer (B). Tighten the switch with the metal part.

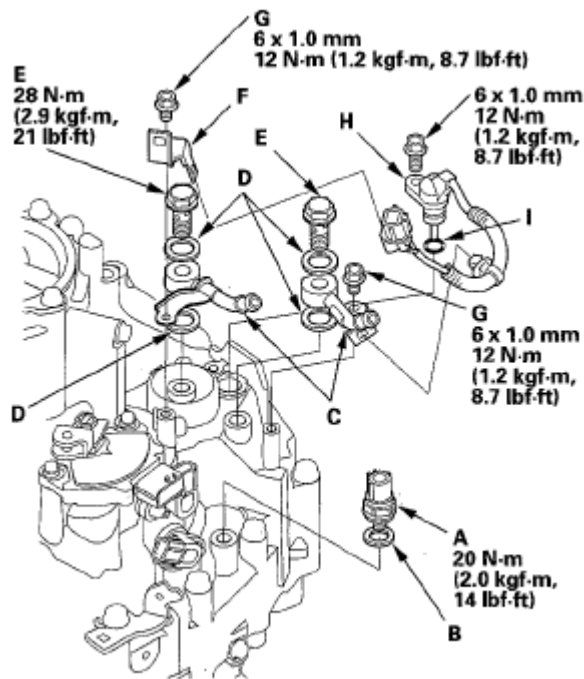


Fig. 624: Identifying 3rd Clutch Transmission Fluid Pressure Switch And Sealing Washer With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

70. Install the ATF cooler lines (C) with the new sealing washers (D) and the line bolts (E).
71. Install the connector bracket (F), and secure the ATF lines with the 6.0 mm bolts (G) on the transmission housing.
72. Install the ATF temperature sensor (H) with the new O-ring (I). Install the connector on the connector bracket and the harness clamp on the bracket.
73. Install the 2nd clutch transmission fluid-pressure switch (A) with the new sealing washer (B). Tighten the switch by the metal part.

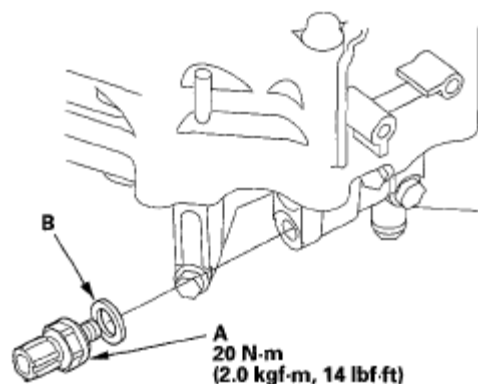


Fig. 625: Identifying 2nd Clutch Transmission Fluid-Pressure Switch And Sealing Washer With Torque Specificaiton

Courtesy of AMERICAN HONDA MOTOR CO., INC.

74. Install the ATF dipstick guide pipe (A) with the new O-ring (B).

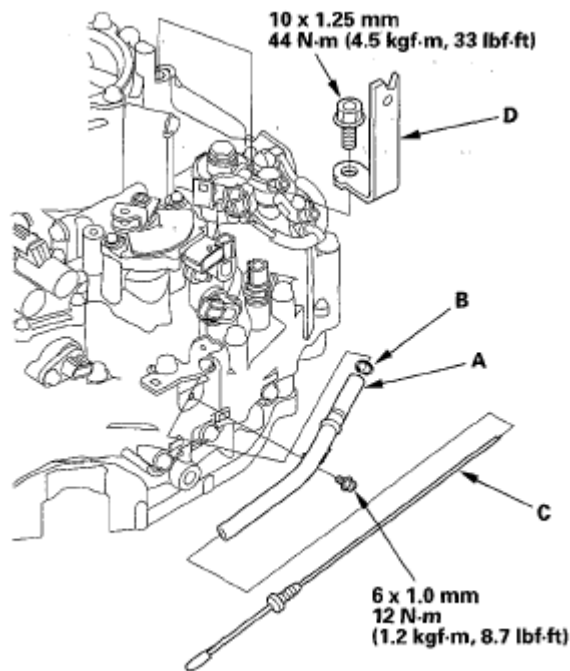


Fig. 626: Identifying ATF Dipstick Guide Pipe And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

75. Install the ATF dipstick (C) in its guide pipe.
76. Install the transmission ground terminal (D).

A/T DIFFERENTIAL

COMPONENT LOCATION INDEX

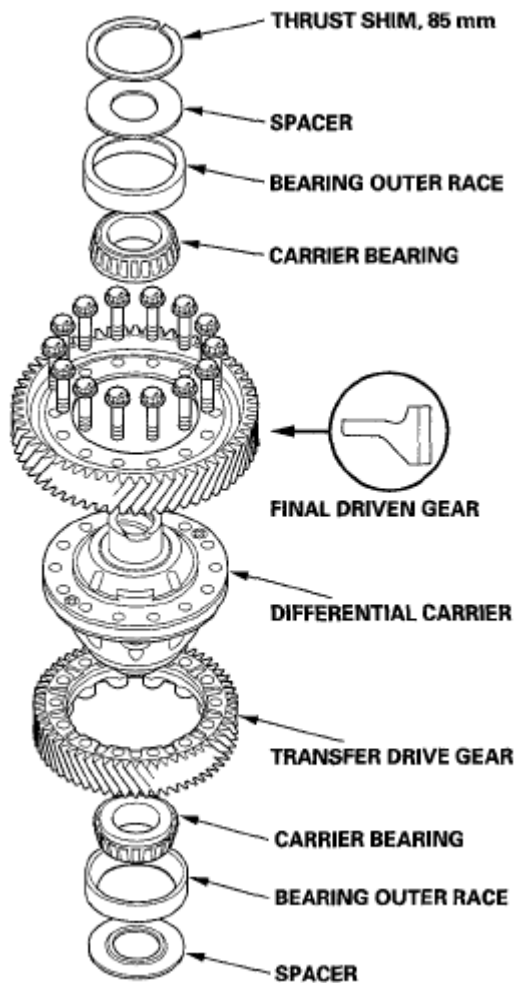


Fig. 627: Identifying A/T Differential Component
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BACKLASH INSPECTION

1. Remove the final driven gear and transfer drive gear from the differential carrier.
2. Install both axles into the differential assembly (A) and place the axles on V-blocks (B).

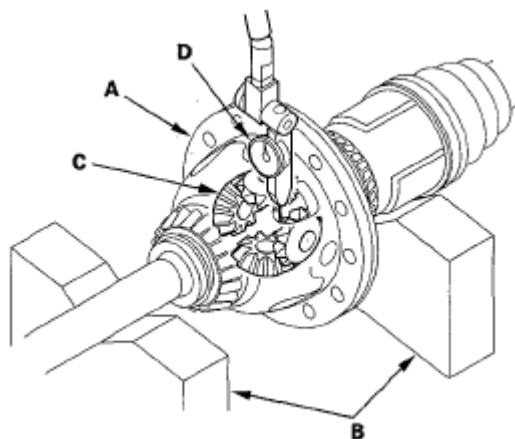


Fig. 628: Identifying Backlash Of Pinion Gears With Dial Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the backlash of the pinion gears (C) with a dial indicator (D).

Standard (New): 0.05-0.15 mm (0.002-0.006 in.)

4. If the backlash is out of standard, replace the differential carrier.
5. Install the final driven gear and transfer drive gear on the differential carrier (see **DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT**).

DIFFERENTIAL CARRIER, FINAL DRIVEN GEAR, AND TRANSFER DRIVE GEAR REPLACEMENT

NOTE: **Inspect and adjust the bearing preload whenever the carrier is replaced.**

1. Remove the final driven gear (A) and transfer drive gear (B) from the differential carrier (C).

NOTE: **The final driven gear bolts have left-hand threads.**

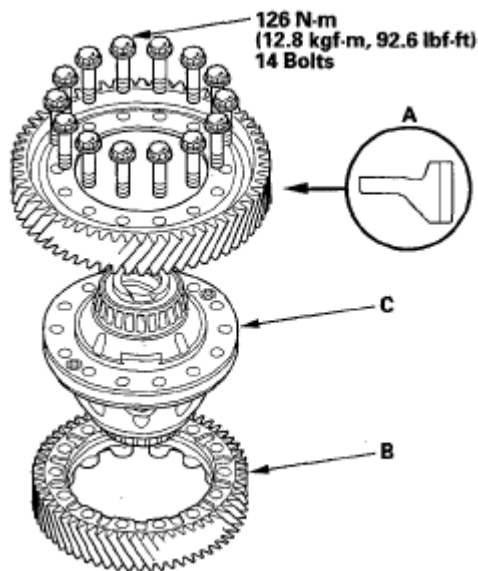


Fig. 629: Identifying Final Driven Gear, Transfer Drive Gear And Differential Carrier With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the final driven gear on the differential carrier in the direction shown. The letter on the final driven gear must match the letter on the top of the countershaft. They are a matched set.
3. Install the bolts through the differential carrier to the transfer drive gear.
4. Tighten the bolts to the specified torque in a crisscross pattern.

CARRIER BEARING REPLACEMENT

Special Tools Required

Attachment, 45 x 55 mm 07MAD-PR90100

NOTE:

- The bearing and outer race should be replaced as a set.
- Inspect and adjust the bearing preload whenever the bearing is replaced.
- Check the bearing for wear and rough rotation. If the bearing is OK, removal is not necessary.

1. Remove the carrier bearing (A) with a commercially available bearing puller (B), bearing separator (C), and stepper adapter (D).

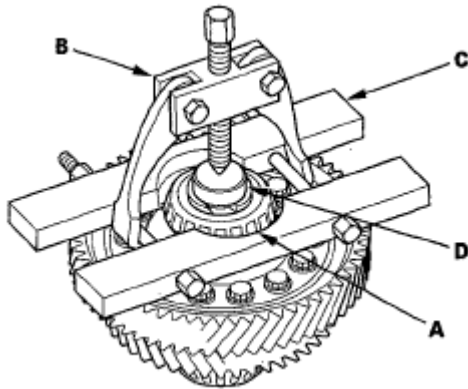


Fig. 630: Identifying Carrier Bearing, Bearing Puller, Bearing Separator And Stepper Adapter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new carrier bearing using the attachment (45 x 55 mm) and the press.

NOTE:

- Press the bearing on until it bottoms.
- Use the small end of the attachment (45 x 55 mm) to install the bearings.
- Press the bearing on securely so there is no clearance between the bearing and the differential carrier.

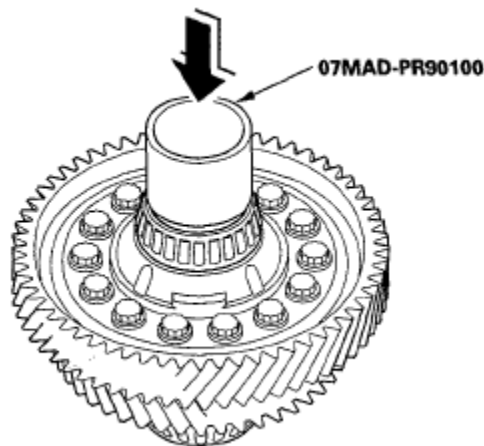


Fig. 631: Identifying Carrier Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Oil seal driver attachment 07GAD-PG40101

- Oil seal driver attachment 07JAD-PH80101

1. Remove the oil seal from the transmission housing.

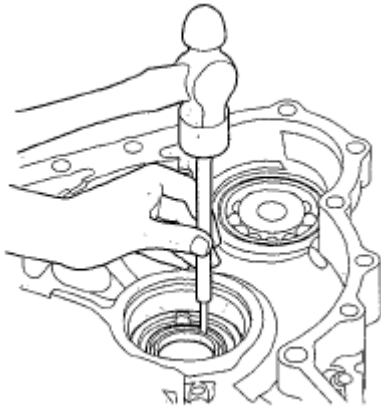


Fig. 632: Identifying Oil Seal Of Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the oil seal from the torque converter housing.

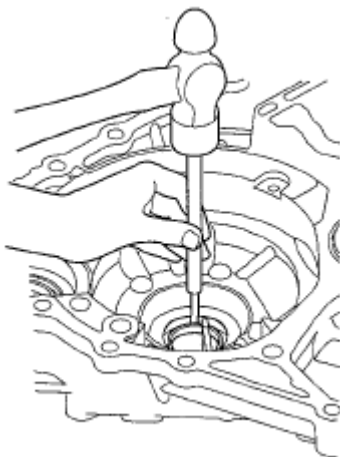


Fig. 633: Identifying Oil Seal Of Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the new oil seal flush to the transmission housing using the drive and the oil seal driver attachment.

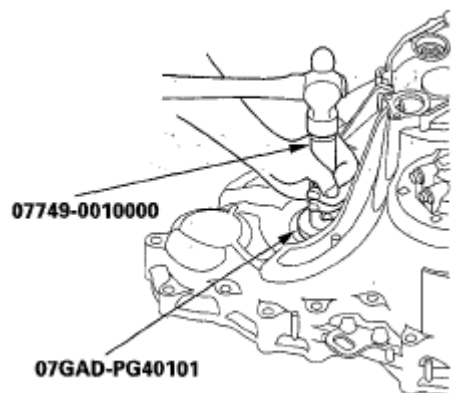


Fig. 634: Identifying Oil Seal Flush To Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new oil seal to the torque converter housing using the drive and the oil seal driver attachment.

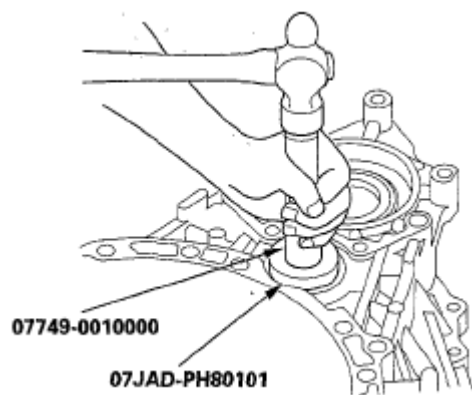


Fig. 635: Identifying Oil Seal To Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARRIER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 83 mm 07HAD-SG00100
- Attachment, 78 x 80 mm 07NAD-PX40100

NOTE:

- Replace the bearing with a new one whenever the outer race is replaced.
- Do not use shim(s) on the torque converter housing side.
- Adjust the preload after replacing the bearing and the outer race.
- Coat all parts with ATF during installation.

1. Remove the bearing outer race (A), spacer (B), and 85 mm thrust shim (C) from the transmission housing (D) by heating the housing to about 212 °F (100°C) with a heat gun (E). Do not heat the housing more than 212 °F (100°C).

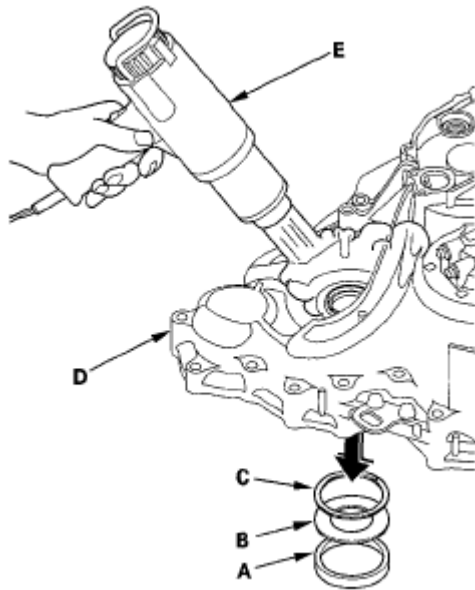


Fig. 636: Identifying Bearing Outer Race, Spacer (And Thrust Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 85 mm thrust shim (A), spacer (B), and outer race (C) in the transmission housing (D).

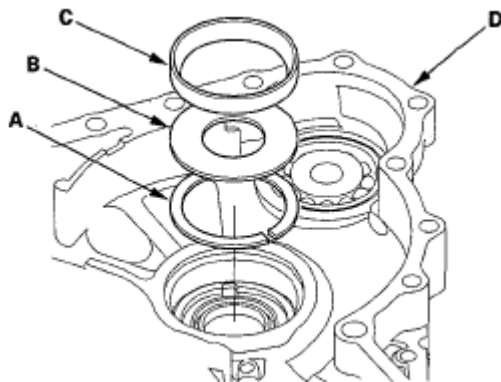


Fig. 637: Identifying Thrust Shim, Spacer, Outer Race And Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using the driver and the attachment (83 mm), drive the outer race securely in the housing so there is no clearance between the outer race, spacer, shim, and housing.

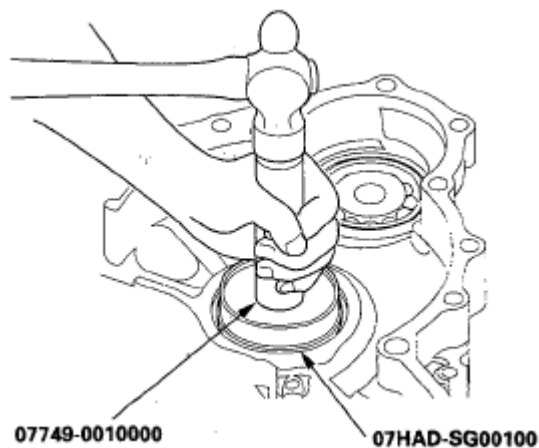


Fig. 638: Identifying Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the plate (A), and remove the bearing outer race (B) and spacer (C) from the torque converter housing (D).

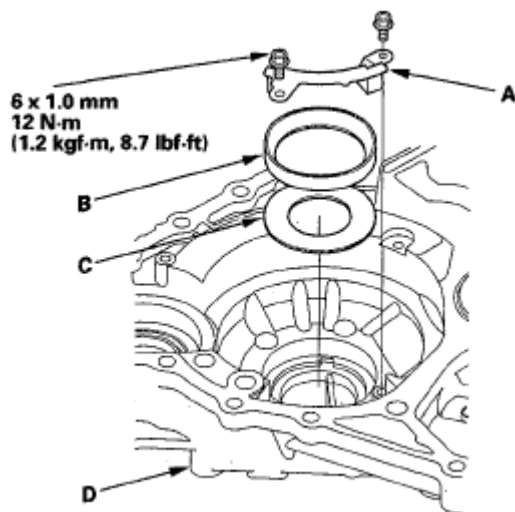


Fig. 639: Identifying Plate, Bearing Outer Race, Spacer And Torque Converter Housing With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the spacer and the new outer race in the torque converter housing.
6. Drive the bearing outer race securely in the housing using the driver and the attachment (78x80 mm).

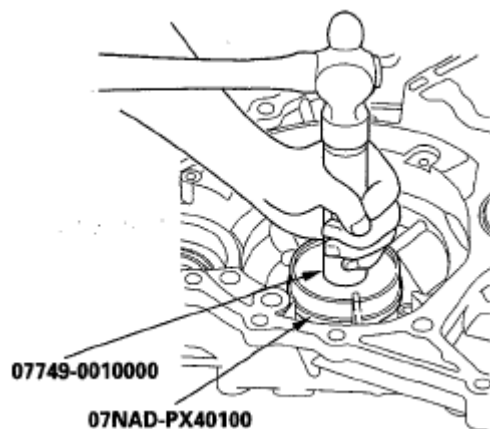


Fig. 640: Identifying Spacer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the plate over the outer race in the torque converter housing.

CARRIER BEARING PRELOAD INSPECTION

Special Tools Required

- Driver 07749-0010000
- Attachment, 83 mm 07HAD-SG00100
- Preload inspection tool 070AJ-0020101

NOTE: If the transmission housing, torque converter housing, differential carrier, tapered roller bearing, bearing outer race, or thrust shim were replaced, the bearing preload must be adjusted.

1. Remove the bearing outer race (A), spacer (B), and 85 mm thrust shim (C) from the transmission housing (D) by heating the housing to about 212 °F (100 °C) with a heat gun (E). Do not heat the housing more than 212 °F (100 °C).

NOTE: Let the transmission housing cool to room temperature before adjusting the bearing preload.

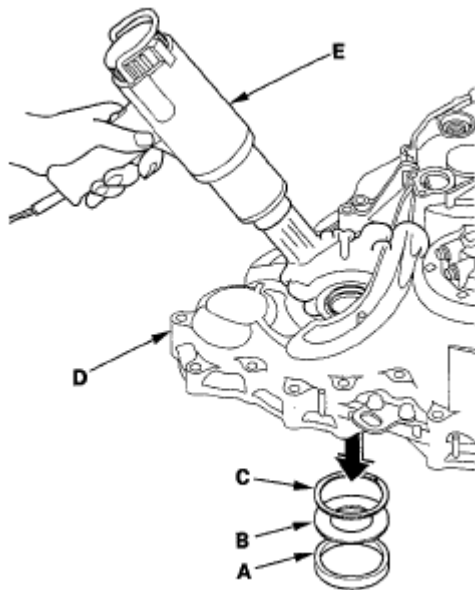


Fig. 641: Identifying Bearing Outer Race, Spacer, And Thrust Shim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Replace the tapered roller bearing when the outer race is to be replaced.
3. Do not use a shim on the torque converter housing side.
4. Install the 85 mm thrust shim (A) in the transmission housing (B). If you replace the 85 mm thrust shim with a new one, use the same thickness shim as the old one.

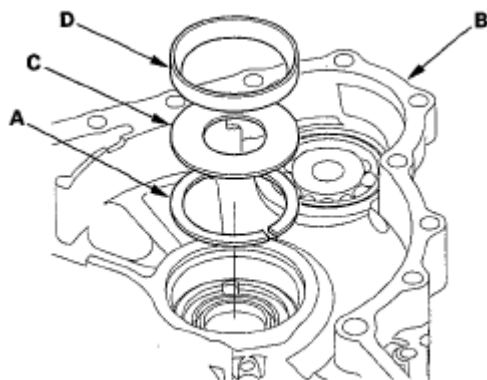


Fig. 642: Identifying Thrust Shim In Transmission Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the spacer (C), and the bearing outer race (D) in the transmission housing.
6. Drive the outer race securely in the housing using the driver and the attachment (83 mm) so there is no clearance between the outer race, spacer, shim, and housing.

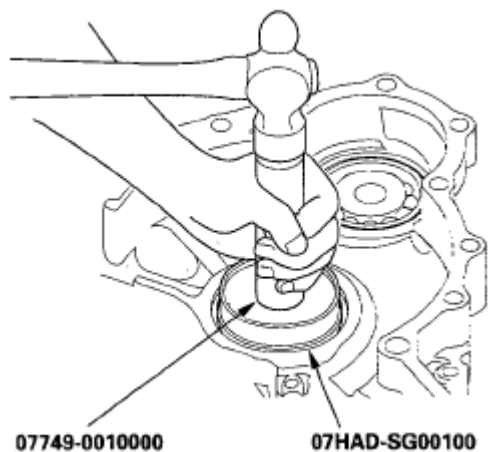


Fig. 643: Identifying Spacer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the differential assembly (A) in the torque converter housing (B), and install the gasket (C) and the two dowel pins (D) on the housing.

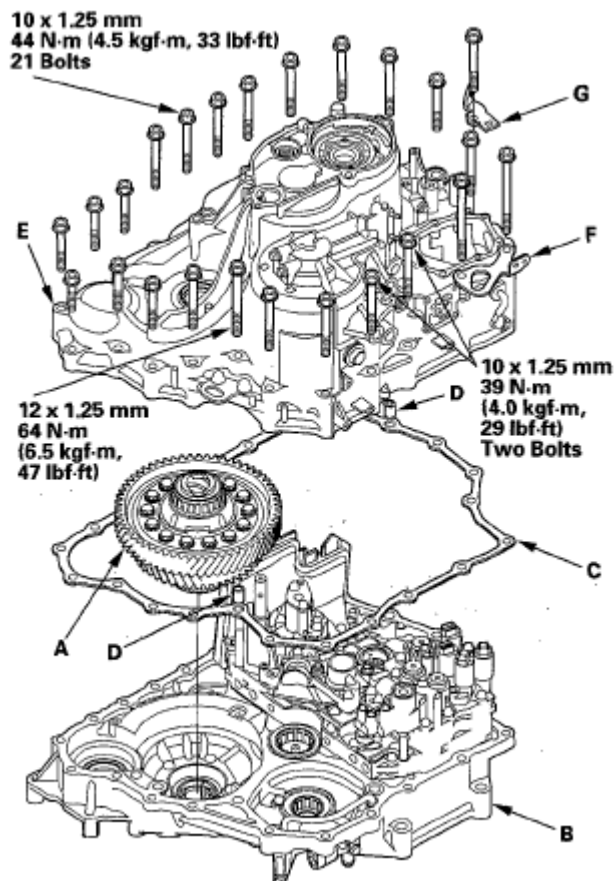


Fig. 644: Identifying Differential Assembly With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the transmission housing (E), and install the mounting bolts (24 bolts) with the transmission hanger (F) and the ground terminal bracket (G), then tighten the bolts.
9. Rotate the differential assembly in both directions to seat the bearings.
10. Measure the starting torque of the differential assembly with the preload inspection tool, a torque wrench (A), and a socket (B). Measure the starting torque at normal room temperature in both directions.

Standard

New bearings:

3.9-5.1 N.m (40-52 kgf.cm, 35-45 lbf.in.)

Reused bearings:

3.6-4.8 N.m (37-49 kgf.cm, 32-43 lbf.in.)

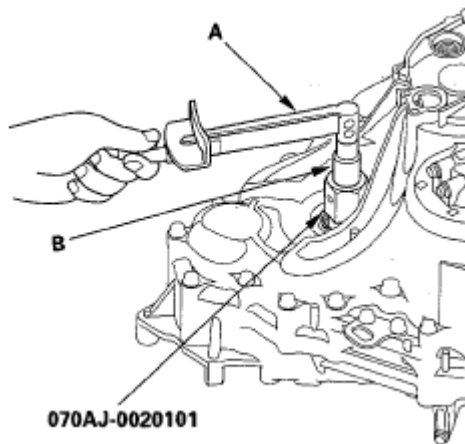


Fig. 645: Identifying Starting Torque Of Differential Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the measurement is out of standard, remove the thrust shim and measure its thickness.
12. Select a new thrust shim. To increase the starting torque, increase thickness of the thrust shim.

To decrease the starting torque, decrease the thickness of the thrust shim. Changing the shim to the next size will increase or decrease the starting torque about 0.5-0.6 N.m (5-6 kgf.cm, 4-5 lbf.in.).

THRUST SHIM, 85 mm

THRUST SHIM THICKNESS SPECIFICATION

No.	Part Number	Thickness
A	41440-RGR-000	1.350 mm (0.0531 in.)
B	41441-RGR-000	1.375 mm (0.0541 in.)
C	41442-RGR-000	1.400 mm (0.0551 in.)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

D	41443-RGR-000	1.425 mm (0.0561 in.)
E	41444-RGR-000	1.450 mm (0.0571 in.)
F	41445-RGR-000	1.475 mm (0.0581 in.)
G	41446-RGR-000	1.500 mm (0.0591 in.)
H	41447-RGR-000	1.525 mm (0.0600 in.)
I	41448-RGR-000	1.550 mm (0.0610 in.)
J	41449-RGR-000	1.575 mm (0.0620 in.)
K	41450-RGR-000	1.600 mm (0.0630 in.)
L	41451-RGR-000	1.625 mm (0.0640 in.)
M	41452-RGR-000	1.650 mm (0.0650 in.)
N	41453-RGR-000	1.675 mm (0.0659 in.)
O	41454-RGR-000	1.700 mm (0.0669 in.)
P	41455-RGR-000	1.725 mm (0.0679 in.)
Q	41456-RGR-000	1.750 mm (0.0689 in.)
R	41457-RGR-000	1.775 mm (0.0699 in.)
S	41458-RGR-000	1.800 mm (0.0709 in.)
T	41459-RGR-000	1.825 mm (0.0719 in.)
U	41460-RGR-000	1.850 mm (0.0728 in.)
V	41461-RGR-000	1.875 mm (0.0738 in.)
W	41462-RGR-000	1.900 mm (0.0748 in.)
X	41463-RGR-000	1.925 mm (0.0758 in.)
Y	41464-RGR-000	1.950 mm (0.0768 in.)
Z	41465-RGR-000	1.975 mm (0.0778 in.)
AA	41466-RGR-000	2.000 mm (0.0787 in.)
AB	41467-RGR-000	2.025 mm (0.0797 in.)
AC	41468-RGR-000	2.050 mm (0.0807 in.)
AD	41469-RGR-000	2.075 mm (0.0817 in.)
AE	41470-RGR-000	2.100 mm (0.0827 in.)
AF	41471-RGR-000	2.125 mm (0.0837 in.)
AG	41472-RGR-000	2.150 mm (0.0846 in.)
AH	41473-RGR-000	2.175 mm (0.0856 in.)
AI	41474-RGR-000	2.200 mm (0.0866 in.)
AJ	41475-RGR-000	2.225 mm (0.0876 in.)
AK	41476-RGR-000	2.250 mm (0.0886 in.)
AL	41477-RGR-000	2.275 mm (0.0896 in.)
AM	41478-RGR-000	2.300 mm (0.0906 in.)
AN	41479-RGR-000	2.325 mm (0.0915 in.)
AO	41480-RGR-000	2.350 mm (0.0925 in.)
AP	41481-RGR-000	1.250 mm (0.0492 in.)
AQ	41482-RGR-000	1.275 mm (0.0502 in.)
AR	41483-RGR-000	1.300 mm (0.0512 in.)

41484-RGR-000	1.325 mm (0.0522 in.)
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13. Install the new thrust shim, then recheck the starting torque.

TRANSFER OUTPUT SHAFT

COMPONENT LOCATION INDEX

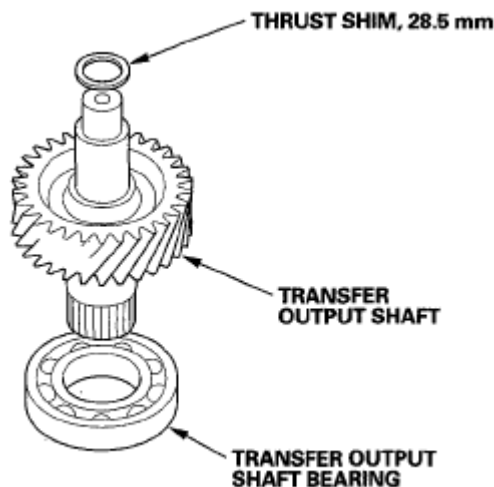


Fig. 646: Identifying Transfer Output Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT BEARING REPLACEMENT

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Remove the transfer output shaft bearing (A) with a commercially available puller (B), bearing separator (C), and shaft protector (D). Place a shaft protector between the transfer output shaft and the puller to prevent damaging the shaft.

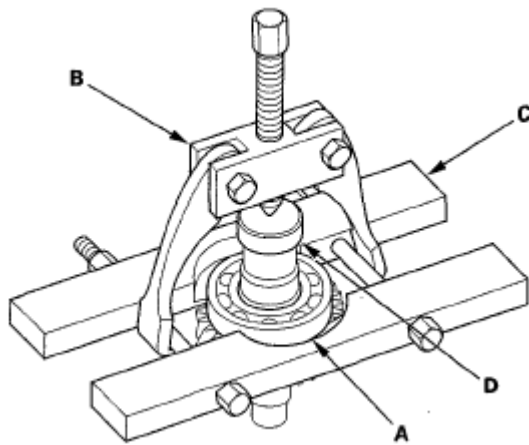


Fig. 647: Identifying Transfer Output Shaft Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing (A) on the transfer output shaft with the using the driver (40 mm I.D.) and the press.

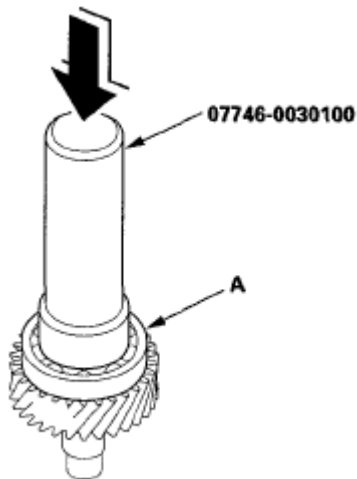


Fig. 648: Identifying Bearing On Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 65 mm 07JAD-SH30100

1. Remove the oil seal from the torque converter housing.

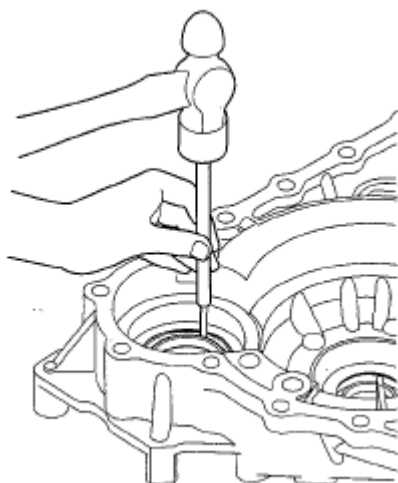


Fig. 649: Identifying Oil Seal Of Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal flush to the torque converter housing using the driver and the attachment (65 mm).

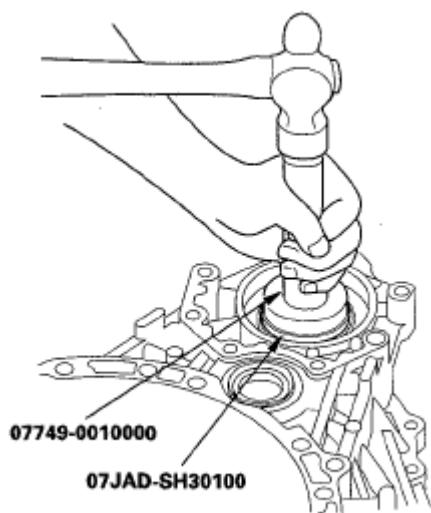


Fig. 650: Identifying Oil Seal Flush To Torque Converter Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSMISSION HOUSING BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
 - Attachment, 72 x 75 mm 07746-0010600
1. Remove the transfer output shaft bearing (A) from the transmission housing (B) by heating the housing to about 212 °F (100 °C) with a heat gun (C). Do not heat the housing more than 212 °F (100 °C).

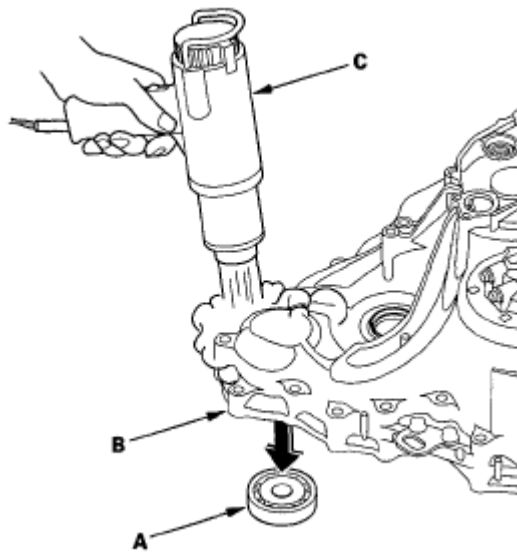


Fig. 651: Identifying Transfer Output Shaft Bearing Of Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new bearing in the housing in the direction shown.

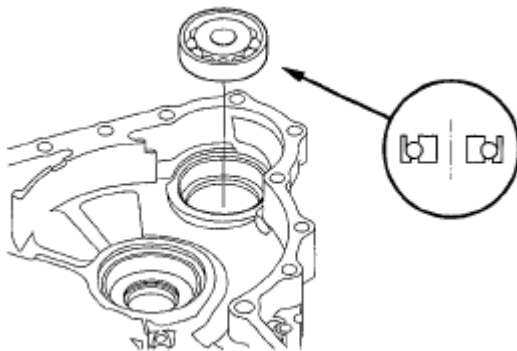


Fig. 652: Identifying Bearing In Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive the new bearing until it bottoms in the housing using the driver and the attachment (72 x 75 mm).

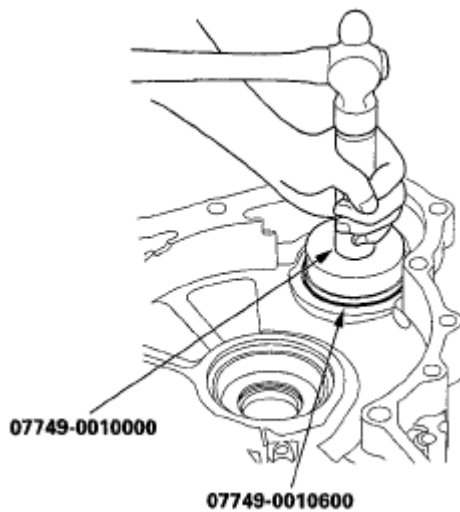


Fig. 653: Identifying Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT INSTALLATION HEIGHT INSPECTION/ADJUSTMENT

NOTE: If the transfer output shaft, transfer output shaft bearing, transfer output shaft transmission housing bearing, transmission housing, or torque converter housing were replaced, adjust the transfer output shaft installation height with the 28.5 mm thrust shim.

1. Install the transfer output shaft (A) in the torque converter housing, and install the 28.5 mm thrust shim (B) on the top of the shaft. If you replace the 28.5 mm thrust shim with a new one, use the same thickness shim as the old one.

Standard: 46.31-46.35 mm (1.823-1.825 in.)

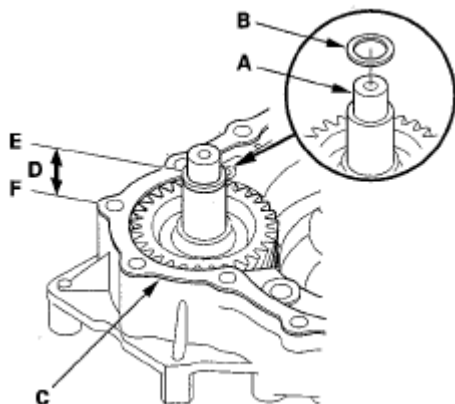


Fig. 654: Identifying Transfer Output Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

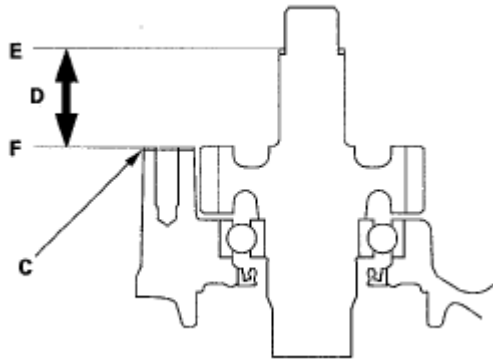
Transfer Output Shaft Cutaway View

Fig. 655: Identifying Transfer Output Shaft Cutaway View
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new gasket (C) on the torque converter housing.
3. Measure the height (D) of the transfer output shaft installation between the surface (E) of the gasket and the top (F) of the 28.5 mm thrust shim in at least three places. Use the average as the actual height.
4. If the measurement is out of standard, remove the 28.5 mm thrust shim and measure its thickness.
5. Select and install a new thrust shim, then recheck the installation height.

THRUST SHIM, 28.5 mm**THRUST SHIM THICKNESS SPECIFICATION**

No.	Part Number	Thickness
A	29031-RDK-000	1.82 mm (0.0717 in.)
B	29032-RDK-000	1.84 mm (0.0724 in.)
C	29033-RDK-000	1.86 mm (0.0732 in.)
D	29034-RDK-000	1.88 mm (0.0740 in.)
E	29035-RDK-000	1.90 mm (0.0748 in.)
F	29036-RDK-000	1.92 mm (0.0756 in.)
G	29037-RDK-000	1.94 mm (0.0764 in.)
H	29038-RDK-000	1.96 mm (0.0772 in.)
I	29039-RDK-000	1.98 mm (0.0780 in.)
J	29040-RDK-000	2.00 mm (0.0787 in.)
K	29041-RDK-000	2.02 mm (0.0795 in.)
L	29042-RDK-000	2.04 mm (0.0803 in.)
M	29043-RDK-000	2.06 mm (0.0811 in.)
N	29044-RDK-000	2.08 mm (0.0819 in.)
O	29045-RDK-000	2.10 mm (0.0827 in.)
P	29046-RDK-000	2.12 mm (0.0835 in.)
Q	29047-RDK-000	2.14 mm (0.0843 in.)

R	29048-RDK-000	2.16 mm (0.0850 in.)
S	29049-RDK-000	2.18 mm (0.0858 in.)
T	29050-RDK-000	2.20 mm (0.0866 in.)
U	29051-RDK-000	2.22 mm (0.0874 in.)
V	29052-RDK-000	2.24 mm (0.0882 in.)
W	29053-RDK-000	2.26 mm (0.0890 in.)
X	29054-RDK-000	2.28 mm (0.0898 in.)
Y	29055-RDK-000	2.30 mm (0.0906 in.)
Z	29056-RDK-000	2.32 mm (0.0913 in.)
AA	29057-RDK-000	2.34 mm (0.0921 in.)

TRANSFER ASSEMBLY

INSPECTION

Transfer Gear Backlash Measurement

1. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the direct extension of the bolt hole center (D).

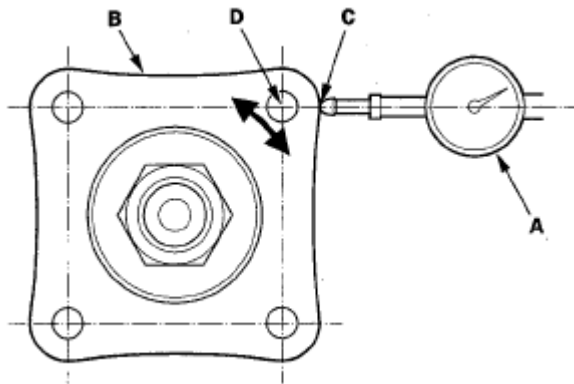


Fig. 656: Identifying Transfer Gear Backlash
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the transfer gear backlash.

Standard: 0.06-0.16 mm (0.02-0.06 in.)

Total Starting Torque Measurement

3. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

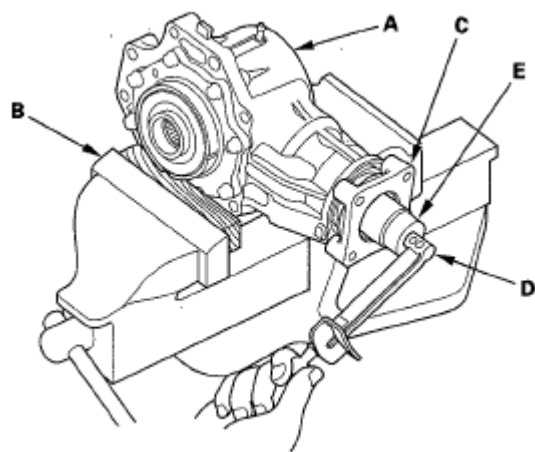


Fig. 657: Identifying Total Starting Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Rotate the companion flange several turns to seat the tapered roller bearings.
5. Measure the starting torque at the companion flange (C) with a torque wrench (D) and a socket (E).

Standard: 2.64-4.23 N.m

(26.9-43.1 kgf.cm, 23.3-37.4 lbf.in.)

6. If any of the pressures are out of standard, disassemble the transfer assembly and repair it.

DISASSEMBLY

Exploded View

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

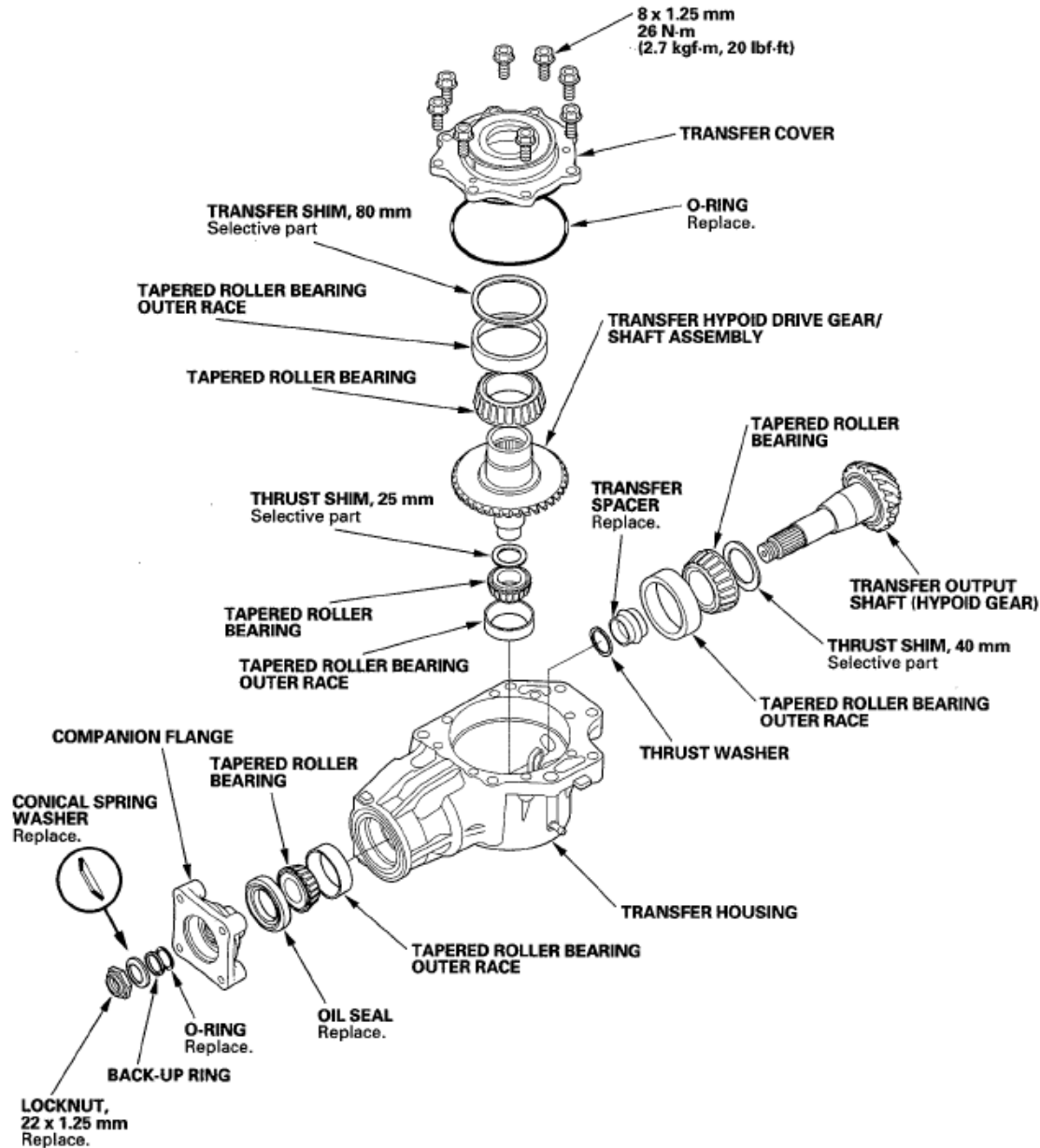


Fig. 658: Exploded View Of Transfer Housing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Companion flange holder 07XAB-0010101

NOTE: Refer to the Exploded View as needed during the following procedure.

1. Remove the transfer cover (A) from the transfer housing (B).

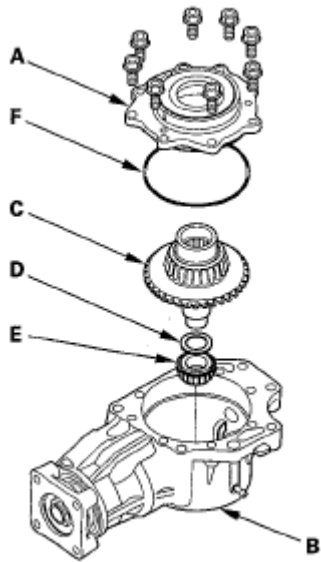


Fig. 659: Identifying Transfer Cover Of Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the transfer hypoid drive gear/shaft assembly (C), 25 mm thrust shim (D), and tapered roller bearing (E).
3. Remove the O-ring (F) from the cover.
4. Drain the transfer fluid (hypoid gear oil) from the transfer housing.
5. Cut the lock tab on the locknut using a chisel.

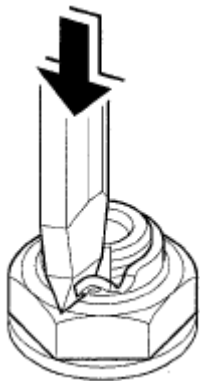


Fig. 660: Identifying Lock Tab On Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

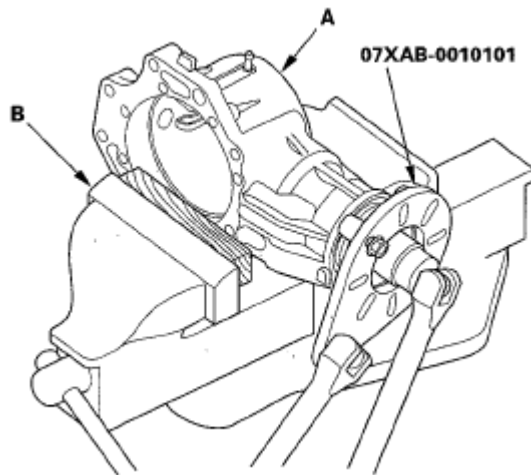


Fig. 661: Identifying Transfer Housing In Bench Vise
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the companion flange holder on the companion flange, then loose the locknut.
8. Remove the companion flange holder.
9. Remove the locknut (A), conical spring washer (B), back-up ring (C), O-ring (D), and companion flange (E) from the transfer output shaft (hypoid gear) (F).

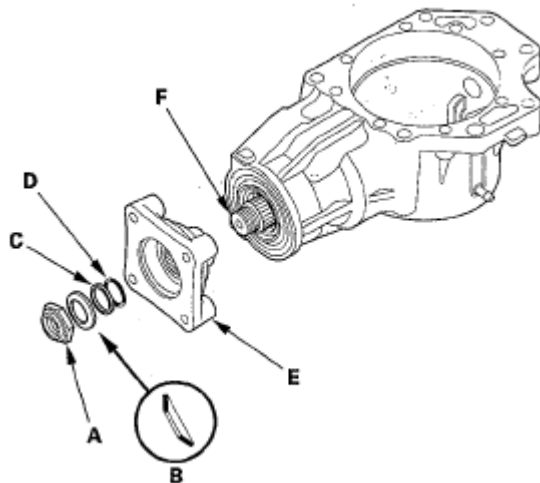


Fig. 662: Identifying Locknut , Conical Spring Washer, Back-Up Ring, O-Ring, And Companion Flange
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the transfer output shaft (hypoid gear) (A) from the transfer housing (B), then remove the thrust washer (C) and transfer spacer (D) from the transfer output shaft (hypoid gear).

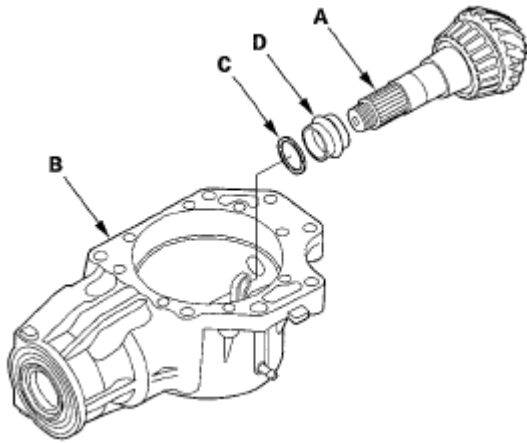


Fig. 663: Identifying Transfer Output Shaft, Transfer Housing, Thrust Washer And Transfer Spacer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the oil seal (A) and tapered roller bearing (B) from the transfer housing (C).

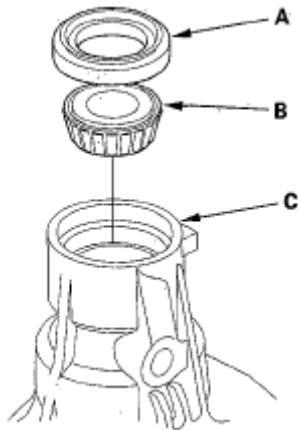


Fig. 664: Identifying Oil Seal, Tapered Roller Bearing And Transfer Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER HYPOID DRIVE GEAR BEARING REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300
- Attachment, 40 x 50 mm 07LAD-PW50601

1. Remove the tapered roller bearing (A) from the transfer hypoid drive gear (B) using the driver, the attachment (42 x 47 mm), bearing separator (C) and the press.

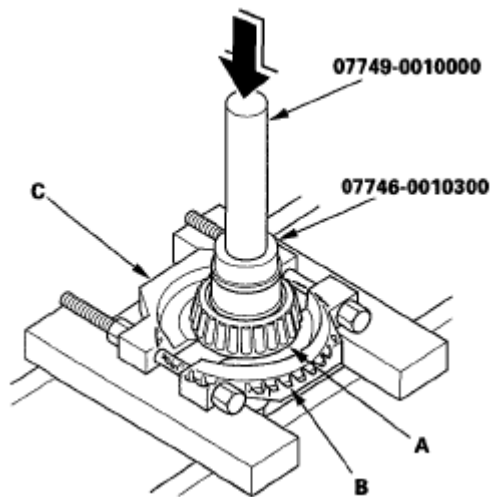


Fig. 665: Identifying Tapered Roller Bearing Of Transfer Hypoid Drive Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new tapered roller bearing (A) on the transfer hypoid drive gear (B) using the driver, the attachment (42 x 47 mm), the attachment (40 x 50 mm), and the press.

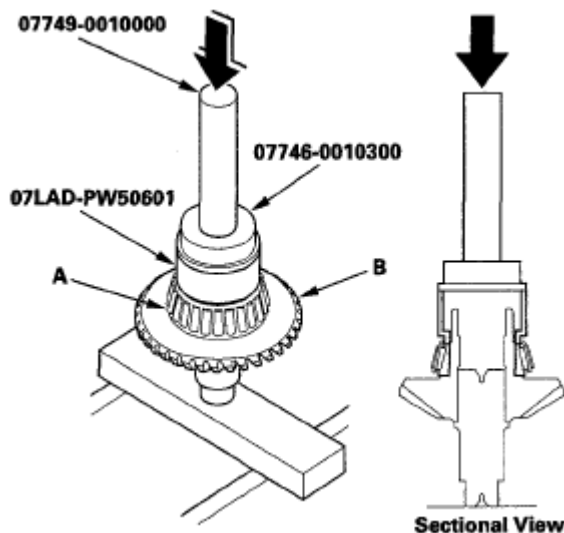


Fig. 666: Identifying Tapered Roller Bearing On Transfer Hypoid Drive Gear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER OUTPUT SHAFT (HYPOID GEAR) BEARING REMOVAL/INSTALLATION

Special Tools Required

Driver, 40 mm I.D. 07746-0030100

1. Remove the tapered roller bearing (A) from the transfer output shaft (hypoid gear) (B) with a bearing

separator (C) and the press. Place a shaft protector (D) between the transfer output shaft (hypoid gear) and the press to prevent damaging the transfer output shaft (hypoid gear).

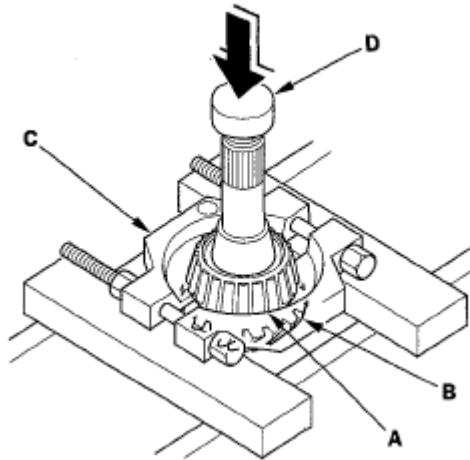


Fig. 667: Identifying Tapered Roller Bearing Of Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 40 mm thrust shim (A) over the transfer output shaft (hypoid gear) (B).

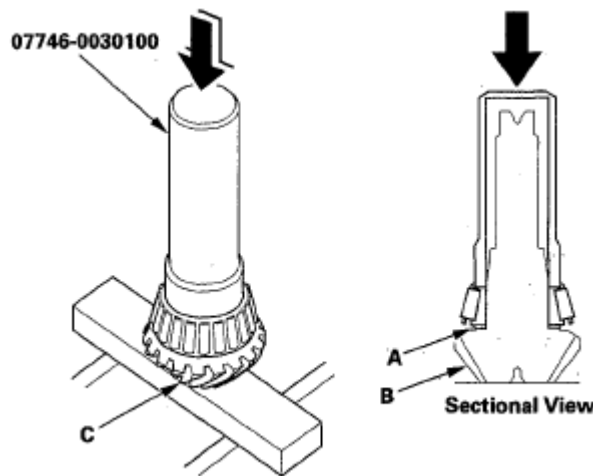


Fig. 668: Identifying Thrust Shim And Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tapered roller bearing (C) over the transfer output shaft (hypoid gear) using the driver (40 mm I.D.) and the press.

TRANSFER HOUSING TAPERED ROLLER BEARING OUTER RACE REPLACEMENT

Special Tools Required

- Driver 07749-0010000

- Attachment, 52 x 55 mm 07746-0010400
- Attachment, 65 mm 07JAD-SH30100
- Tapered bearing race installer A 07MAF-SP0011A
- Installer shaft 07MAF-SP0013A

NOTE: **Replace the bearing with a new one whenever the outer race is replaced.**

1. Remove the 52 mm bearing outer race (A), 75 mm outer race (B), and 65 mm outer race (C) from the transfer housing (D).

NOTE: **Some bearing outer races (52 mm, 65 mm, and 75 mm) are press-fitted in the housing and must be removed by heating the housing.**

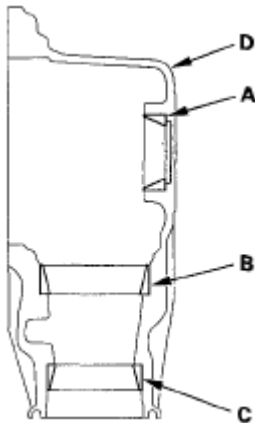


Fig. 669: Identifying Bearing Outer Race And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the press-fitted bearing outer race (A) from the transfer housing (B) by heating the housing to about 212 °F (100 °C) with a heat gun (C). Do not heat the housing more than 212 °F (100 °C).

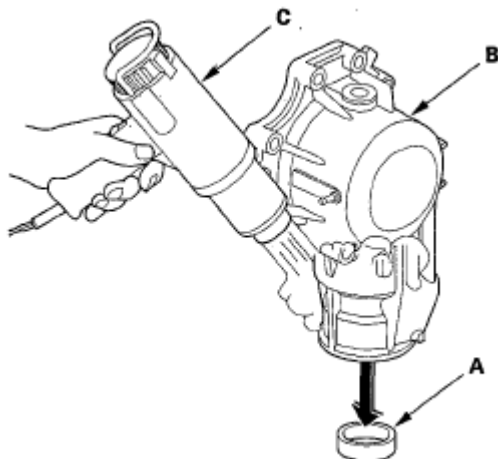


Fig. 670: Identifying Press-Fitted Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the 52 mm bearing outer race (A) until it bottoms in the transfer housing (B) using the driver and the attachment (52 x 55 mm).

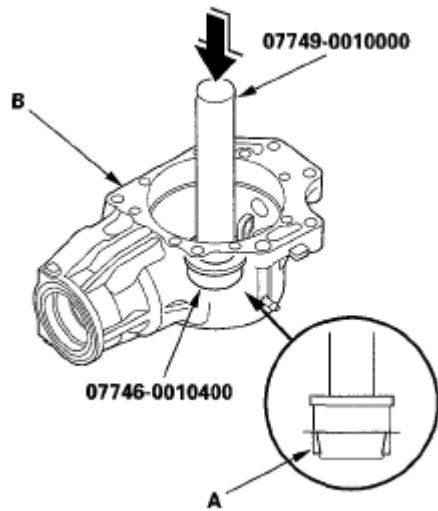


Fig. 671: Identifying Bearing Outer Race
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the 75 mm bearing outer race (A) and 65 mm bearing outer race (B) in the transfer housing (C), set the attachment (65 mm) and the tapered bearing race installer A over the races, and install the installer shaft through the attachment and installer.

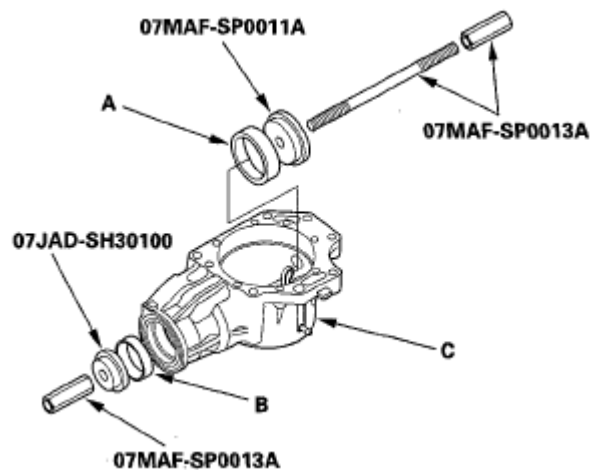


Fig. 672: Identifying Bearing Outer Race And Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the installer shaft nut (A) to install the races (B) (C) into the transfer housing (D) securely.

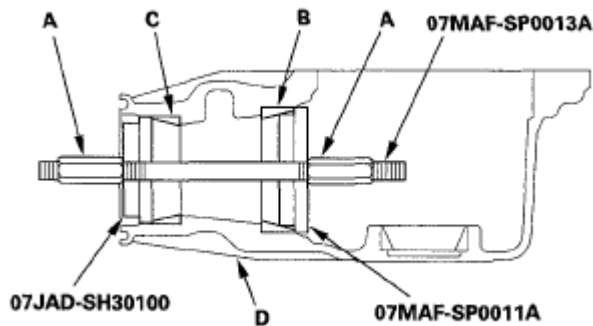


Fig. 673: Identifying Installer Shaft Nut, Races And Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER TAPERED ROLLER BEARING OUTER RACE REMOVAL/INSTALLATION

Special Tools Required

- Driver 07749-0010000
- Attachment, 78 x 80 mm 07NAD-PX40100

NOTE: Replace the bearing with a new one whenever the outer race is replaced.

1. Remove the bearing outer race (A) and 80 mm thrust shim (B) from the transfer cover (C). If the bearing outer race is press-fitted, remove the outer race by heating the cover to about 212 °F (100 °C) with a heat gun (D). Do not heat the housing more than 212°F (100°C).

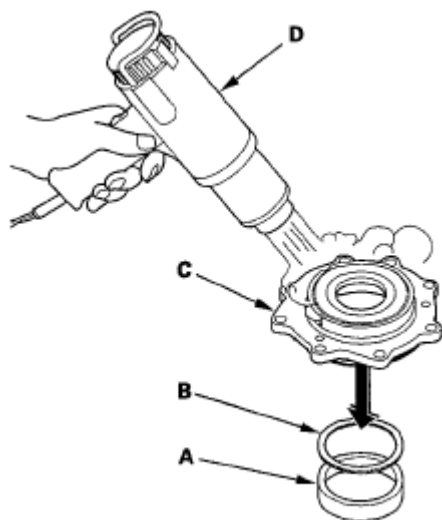


Fig. 674: Identifying Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the 80 mm thrust shim (A) and bearing outer race (B) in the transfer cover (C).

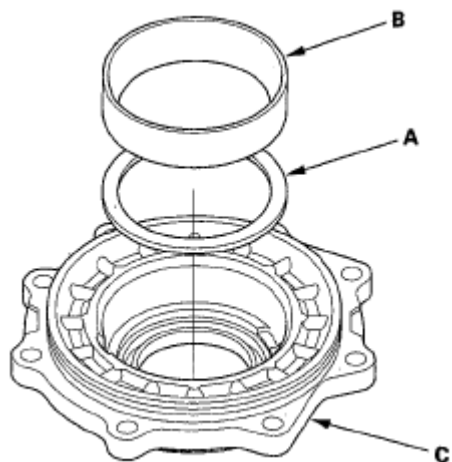


Fig. 675: Identifying Thrust Shim, Bearing Outer Race And Transfer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Drive the outer race securely in the cover using the driver and the attachment (78 x 80 mm) so there is no clearance between the outer race, thrust shim, and cover.

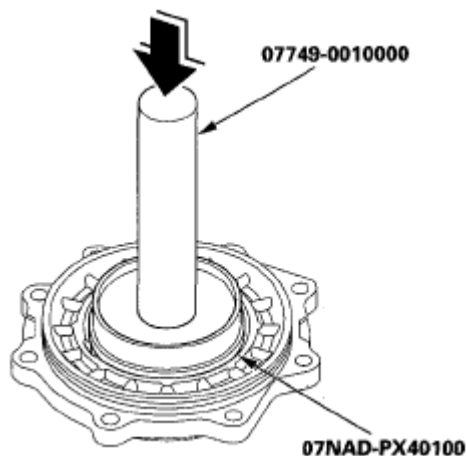


Fig. 676: Identifying Thrust Shim And Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRANSFER COVER OIL SEAL REPLACEMENT

Special Tools Required

- Driver 07749-0010000
- Attachment, 65 mm 07JAD-SH30100

1. Remove the oil seal from the transfer cover.

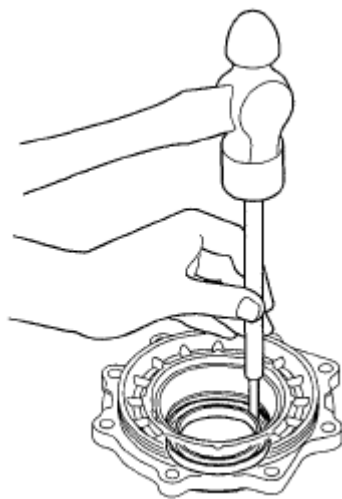


Fig. 677: Identifying Oil Seal Of Transfer Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new oil seal (A) in the transfer cover (B) in height (C) of 0-1 mm (0-0.04 in.) above the cover surface using the driver and attachment (65 mm).

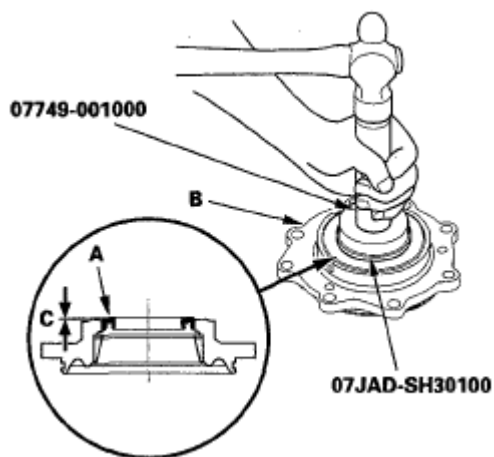


Fig. 678: Identifying Oil Seal In Transfer Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

Special Tools Required

- Driver, 40 mm I.D. 07746-003010G
- Driver 07749-0010000
- Attachment, 65 mm 07JAD-SH30100
- Companion flange holder 07XAB-0010101

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

- Attachment, 78 x 80 mm 07NAD-PX40100

NOTE:

- While reassembling the transfer assembly:
 - Check and adjust the transfer gear tooth contact.
 - Measure and adjust the transfer gear backlash.
 - Check and adjust the tapered roller bearing starting torque.
- Coat all parts with transfer fluid (hypoid gear oil) during reassembly.
- Replace the tapered roller bearing and the bearing outer race as a set if either part is replaced.
- Replace the transfer hypoid drive gear and the transfer output shaft (hypoid gear) as a set if either part is replaced.

1. Select the 40 mm thrust shim if the transfer output shaft (hypoid gear) is replaced. Calculate the thickness of the 40 mm thrust shim using the formula below, and select the shim from the following table.

FORMULA: $A/100 - B/100 + C = X$

A: Number on the existing transfer output shaft (hypoid gear)

B: Number on the replacement transfer output shaft (hypoid gear)

C: Thickness of the existing 40 mm thrust shim

D: Thickness needed for the replacement 40 mm thrust shim

NOTE: The number on the transfer output shaft (hypoid gear) is shown in 1/100 mm.

EXAMPLE

A: Existing transfer output shaft (hypoid gear) Number = +2

B: Replacement transfer output shaft (hypoid gear) Number = -1

C: Existing 40 mm thrust shim thickness = 1.05 mm

X: Replacement 40 mm thrust shim thickness

$$X = A/100 - B/100 + C$$

$$= 2/100 - (-1)/100 + 1.05$$

$$= 0.02 + 0.01 + 1.05 = 1.08 \text{ (mm)}$$

Select No. M 40 mm thrust shim of 1.08 mm (0.043 in.)

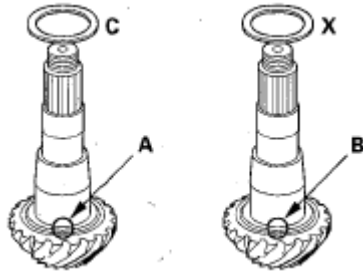


Fig. 679: Identifying Thrust Shim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

THRUST SHIM, 40 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
A	29361-RDK-000	0.72 mm (0.028 in.)
B	29362-RDK-000	0.75 mm (0.030 in.)
C	29363-RDK-000	0.78 mm (0.031 in.)
D	29364-RDK-000	0.81 mm (0.032 in.)
E	29365-RDK-000	0.84 mm (0.033 in.)
F	29366-RDK-000	0.87 mm (0.034 in.)
G	29367-RDK-000	0.90 mm (0.035 in.)
H	29368-RDK-000	0.93 mm (0.037 in.)
I	29369-RDK-000	0.96 mm (0.038 in.)
J	29370-RDK-000	0.99 mm (0.039 in.)
K	29371-RDK-000	1.02 mm (0.040 in.)
L	29372-RDK-000	1.05 mm (0.041 in.)
M	29373-RDK-000	1.08 mm (0.043 in.)
N	29374-RDK-000	1.11 mm (0.044 in.)
O	29375-RDK-000	1.14 mm (0.045 in.)

2. Select the 40 mm thrust shim if the tapered roller bearing on the transfer output shaft (hypoid gear) is replaced. Measure the thickness of the replacement bearing and the existing bearing, and calculate the difference of the bearing thickness. Adjust the thickness of the existing 40 mm thrust shim by the amount of difference in bearing thickness, and select the replacement 40 mm thrust shim.
3. Install the 40 mm thrust shim (A) on the transfer output shaft (hypoid gear) (B), then install the tapered roller bearing (C) using the driver (40 mm I.D.) and the press.

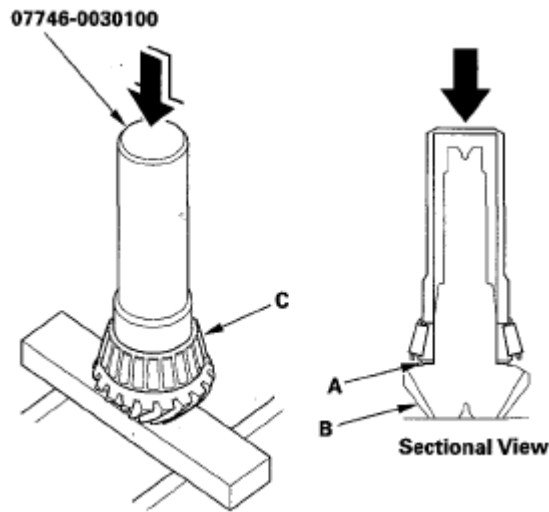


Fig. 680: Identifying Thrust Shim On Transfer Output Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Place the tapered roller bearing (A) on the bearing outer race of the companion flange side of the transfer housing, and install the new oil seal (B).

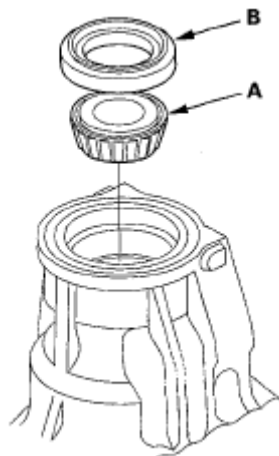


Fig. 681: Identifying Tapered Roller Bearing And Oil Seal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Drive the oil seal securely in the transfer housing using the driver and the attachment (65 mm).

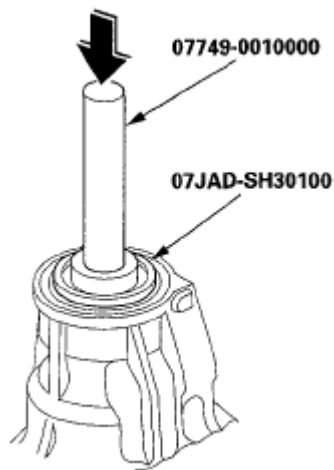


Fig. 682: Identifying Oil Seal In Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the transfer output shaft (hypoid gear) (A) in the transfer housing (B). Do not install the transfer spacer and thrust washer on the transfer output shaft (hypoid gear).

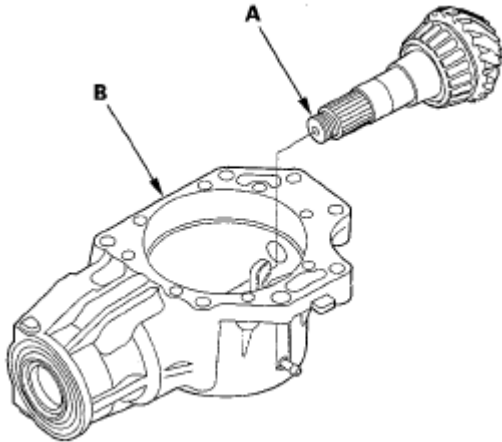


Fig. 683: Identifying Transfer Output Shaft In Transfer Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the companion flange (A), conical spring washer (B) in the direction shown, and locknut (C) on the transfer output shaft (hypoid gear) (D). Do not install the O-ring and back-up ring.

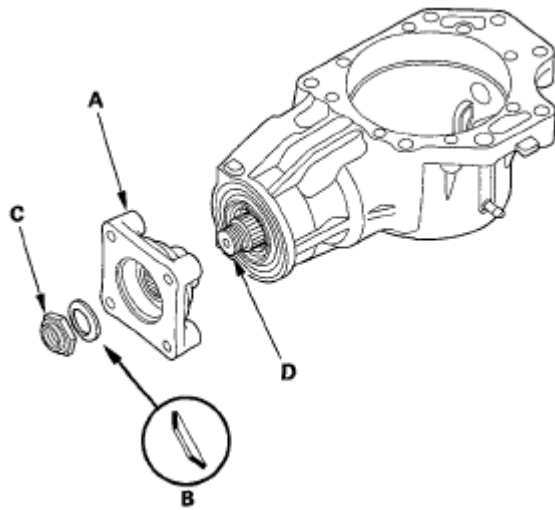


Fig. 684: Identifying Companion Flange, Conical Spring Washer And Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

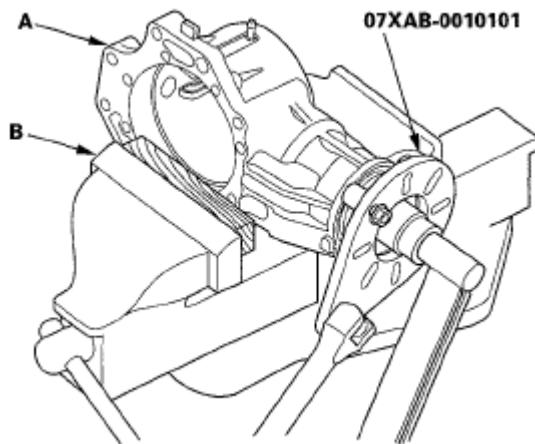


Fig. 685: Identifying Transfer Housing In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the companion flange holder on the companion flange.
10. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within 1.15-1.71 N.m (11.7-17.4 kgf.cm, 10.2-15.1 lbf.in.). Do not stake the locknut in this step.
11. Remove the companion flange holder.
12. Apply Prussian Blue to both sides of the transfer hypoid drive gear teeth lightly and evenly.
13. Install the tapered roller bearing (A), 25 mm thrust shim (B), and transfer drive gear/shaft assembly (C) in the transfer housing (D).

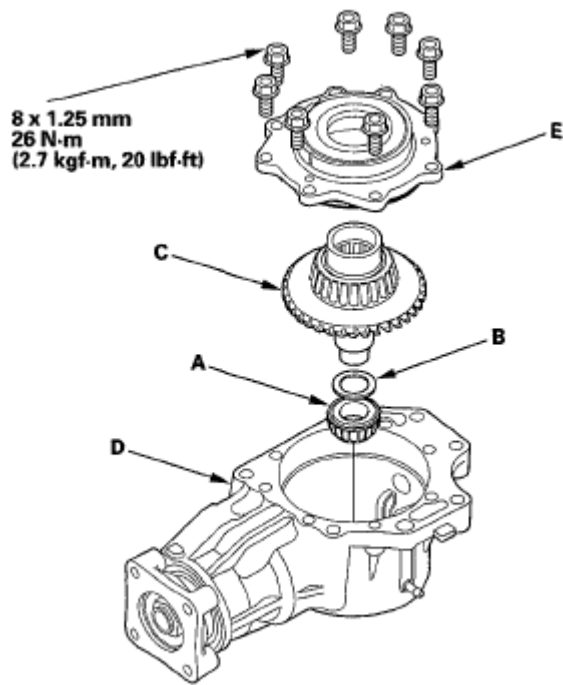


Fig. 686: Identifying Tapered Roller Bearing, Thrust Shim, Transfer Drive Gear And Shaft Assembly With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the transfer cover (E) and secure the cover with the bolts. Do not install the O-ring on the transfer cover.
15. Rotate the companion flange in both directions until the transfer gears rotate one full turn in both directions.
16. Set a dial indicator (A) on the transfer companion flange (B); position the dial indicator tip (C) on the direct extension of the bolt hole center (D).

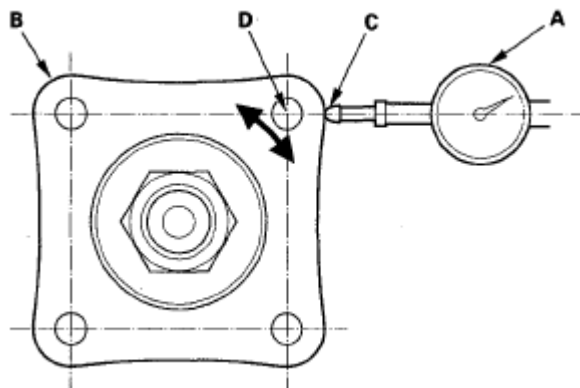


Fig. 687: Identifying Dial Indicator On Transfer Companion Flange

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Measure the transfer gear backlash.

Standard: 0.06-0.16 mm (0.002-0.006 in.)

18. Remove the transfer cover, transfer hypoid drive gear/shaft assembly, and check the transfer hypoid drive gear tooth contact pattern.

CORRECT TOOTH CONTACT PATTERN



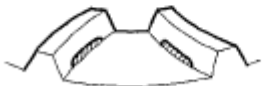
INCORRECT TOOTH CONTACT PATTERN



TOE CONTACT



HEEL CONTACT



FLANK CONTACT



FACE CONTACT

Fig. 688: Identifying Correct Tooth Contact Pattern

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. If the backlash measurement is out of standard, adjust the backlash with the 40 mm thrust shim and recheck. Do not use more than two 40 mm thrust shims to adjust the backlash.
20. If the transfer gear tooth contact is incorrect, adjust the tooth contact with the 25 mm, 40 mm, or 80 mm thrust shim. Do not use more than two of each thrust shim to adjust the tooth contact.

- Toe Contact

Use a thicker 40 mm thrust shim to move the transfer output shaft (hypoid gear) away from the transfer hypoid drive gear. Because this movement causes the transfer gear backlash to change, move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

- Reduce the thickness of the 25 mm thrust shim.
- Increase the thickness of the 80 mm thrust shim by the amount you reduced the thickness of the 25 mm thrust shim.

- Heel Contact

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

Use a thicker 40 mm thrust shim to move the transfer output shaft (hypoid gear) toward the transfer hypoid drive gear. Because this movement causes the transfer gear backlash to change, move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear) to adjust the transfer gear backlash as follows:

- Increase the thickness of the 25 mm thrust shim.
- Reduce the thickness of the 80 mm thrust shim by the amount you increased the thickness of the 25 mm thrust shim.
- Flank Contact

Use a thicker 25 mm thrust shim to move the transfer hypoid drive gear away from the transfer output shaft (hypoid gear). Flank contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.

- Face Contact

Use a thinner 25 mm thrust shim to move the transfer hypoid drive gear toward the transfer output shaft (hypoid gear). Face contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

THRUST SHIM, 25 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
1.70	29411-P1 C-000	1.70 mm (0.067 in.)
1.73	29412-P1 C-000	1.73 mm (0.068 in.)
1.76	29413-P1 C-000	1.76 mm (0.069 in.)
1.79	29414-P1 C-000	1.79 mm (0.070 in.)
1.82	29415-P1 C-000	1.82 mm (0.072 in.)
1.85	29416-P1 C-000	1.85 mm (0.073 in.)
1.88	29417-P1 C-000	1.88 mm (0.074 in.)
1.91	29418-P1 C-000	1.91 mm (0.075 in.)
1.94	29419-P1 C-000	1.94 mm (0.076 in.)
1.97	29420-P1 C-000	1.97 mm (0.078 in.)
2.00	29421-P1 C-000	2.00 mm (0.079 in.)
2.03	29422-P1 C-000	2.03 mm (0.080 in.)
2.06	29423-P1 C-000	2.06 mm (0.081 in.)
2.09	29424-P1 C-000	2.09 mm (0.082 in.)
2.12	29425-P1 C-000	2.12 mm (0.083 in.)
2.15	29426-P1 C-000	2.15 mm (0.085 in.)
2.18	29427-P1 C-000	2.18 mm (0.086 in.)
2.21	29428-P1 C-000	2.21 mm (0.087 in.)
2.24	29429-P1 C-000	2.24 mm (0.088 in.)

21. Remove the transfer cover (A), transfer hypoid drive gear/shaft assembly (B), 25 mm thrust shim (C), and tapered roller bearing (D) from the transfer housing (E) after adjusting the transfer gear backlash or transfer gear tooth contact.

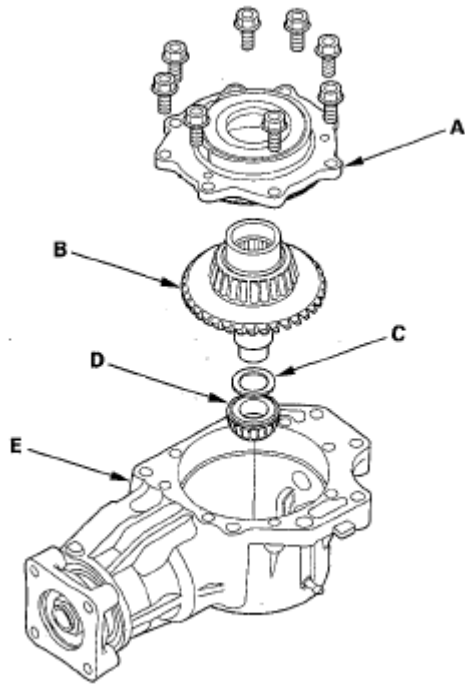


Fig. 689: Identifying Incorrect Tooth Contact Pattern
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

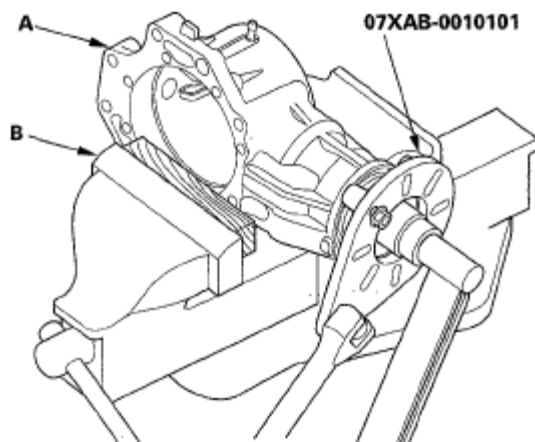


Fig. 690: Identifying Transfer Housing With Soft Jaws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the companion flange holder on the companion flange, then loose the locknut.
24. Remove the companion flange holder.
25. Remove the locknut (A), conical spring washer (B), and companion flange (C) from the transfer output shaft (hypoid gear) (D).

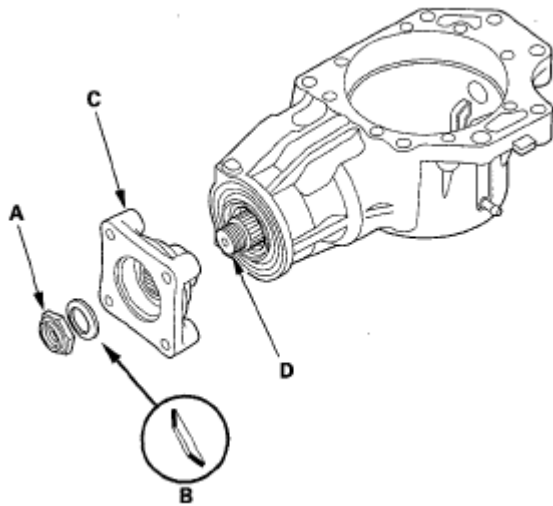


Fig. 691: Identifying Locknut, Conical Spring Washer And Companion Flange
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the transfer output shaft (hypoid gear) from the transfer housing.
27. Install the thrust washer (A) and the new transfer spacer (B) on the transfer output shaft (hypoid gear) (C) in the direction shown, and install them in the transfer housing (D).

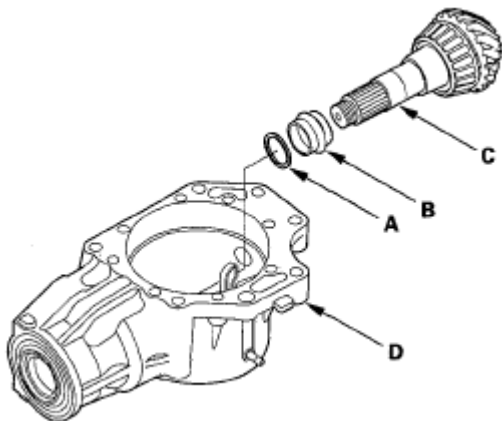


Fig. 692: Identifying Thrust Washer, Transfer Spacer, Transfer Output Shaft And Transfer Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Coat the threads of the locknut and transfer output shaft (hypoid gear) with transfer fluid (hypoid gear oil).

29. Install the companion flange (A), new O-ring (B), back-up ring (C), new conical spring washer (D), and new locknut (E) on the transfer output shaft (hypoid gear) (F). Install the conical spring washer in the direction shown.

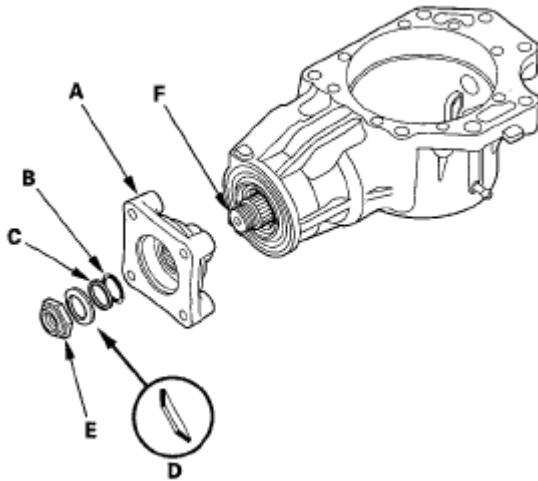


Fig. 693: Identifying Companion Flange, O-Ring, Back-Up Ring And Conical Spring Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

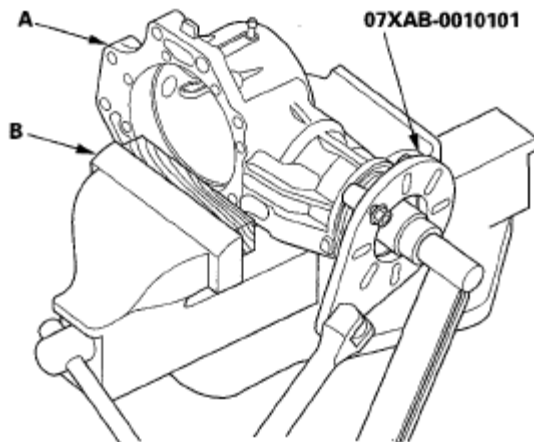


Fig. 694: Identifying Transfer Housing In Bench Vise
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the companion flange holder on the companion flange.
32. Tighten the locknut while measuring the starting torque of the transfer output shaft (hypoid gear) so the starting torque is within 1.15-1.71 N.m (11.7-17.4 kgf.cm, 10.2-15.1 lbf.in.).

Tightening Torque:

108-294 N.m

(11.0-30.0 kgf.m, 79.6-217 lbf.ft)

Starting Torque:

1.15-1.71 N.m

(11.7-17.4 kgf.cm, 10.2-15.1 lbf.in.)

NOTE:

- Rotate the companion flange several turns to seat the tapered roller bearings, then measure the starting torque.
- If the starting torque exceeds 1.71 N.m (17.4 kgf.cm, 15.1 lbf.in), replace the transfer spacer and reassemble the parts. Do not adjust the torque with the locknut loose.
- If the tightening torque exceeds 294 N.m (30.0 kgf.m, 217 lbf.ft), replace the transfer spacer and reassemble the parts.

33. Remove the companion flange holder.

34. Stake the locknut into the transfer output shaft (hypoid gear) in depth (A) of 0.7-1.2 mm (0.03-0.05 in.) using a 3.5 mm punch (B).

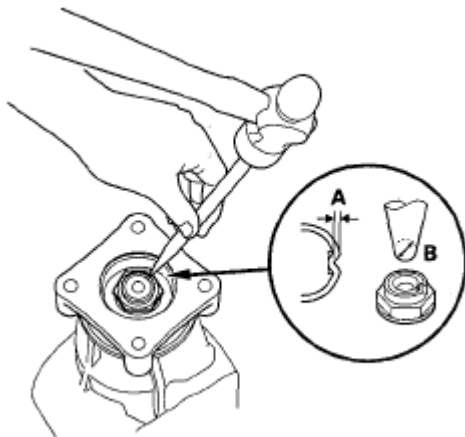


Fig. 695: Identifying Locknut Into Transfer Output Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the tapered roller bearing (A), 25 mm thrust shim (B), and transfer hypoid drive gear/shaft assembly (C) in the transfer housing (D).

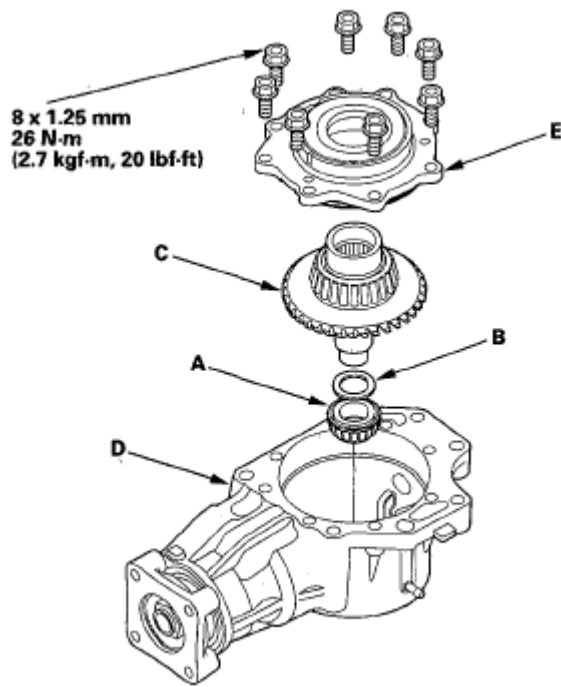


Fig. 696: Identifying Tapered Roller Bearing, Thrust Shim And Transfer Hypoid Drive Gear With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Temporarily install the transfer cover (E) without the O-ring, and secure the cover with the bolts.
37. Secure the transfer housing (A) in a bench vise (B) with soft jaws. To prevent damaging the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vise.

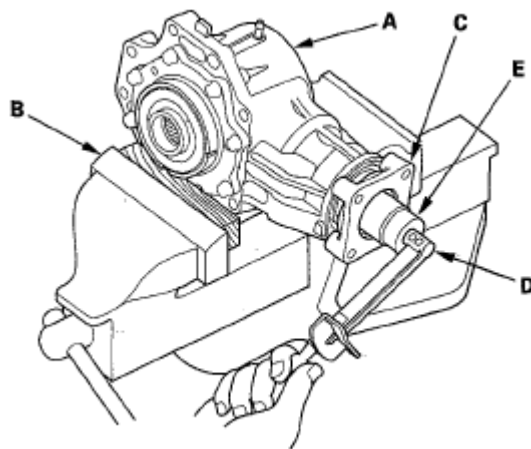


Fig. 697: Identifying Transfer Housing In Bench Vise

Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Rotate the companion flange several turns to seat the tapered roller bearings.
39. Measure the starting torque at the companion flange (C) with a torque wrench (D) and a socket (E).

Standard: 2.74-4.64 N.m

(27.9-47.3 kgf.cm, 24.2-41.1 lbf.in.)

40. Remove the transfer cover from the transfer housing.
41. If the measurement is within the standard, go to step 47.
42. If the measurement is out of standard, remove the bearing outer race (A) and 80 mm thrust shim (B) from the transfer cover (C). If the bearing outer race is press-fitted, remove the outer race by heating the cover to about 212 °F (100 °C) with a heat gun (D). Do not heat the housing more than 212 °F (100 °C).

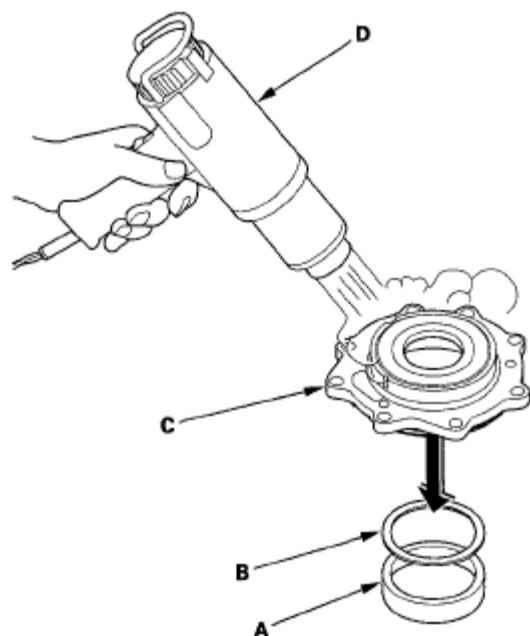


Fig. 698: Identifying Transfer Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Measure the thickness of the 80 mm thrust shim, and select the new 80 mm thrust shim.

THRUST SHIM, 80 mm

THRUST SHIM THICKNESS SPECIFICATION

Shim No.	Part Number	Thickness
A	41401-RDK-000	1.52 mm (0.060 in.)
B	41402-RDK-000	1.55 mm (0.061 in.)
C	41403-RDK-000	1.58 mm (0.062 in.)
D	41404-RDK-000	1.61 mm (0.063 in.)
E	41405-RDK-000	1.64 mm (0.065 in.)
F	41406-RDK-000	1.67 mm (0.066 in.)
G	41407-RDK-000	1.70 mm (0.067 in.)

2008 Acura MDX

2007-09 TRANSMISSION Automatic Transmission - MDX

H	41408-RDK-000	1.73 mm (0.068 in.)
I	41409-RDK-000	1.76 mm (0.069 in.)
J	41410-RDK-000	1.79 mm (0.070 in.)
K	41411-RDK-000	1.82 mm (0.072 in.)
L	41412-RDK-000	1.85 mm (0.073 in.)
M	41413-RDK-000	1.88 mm (0.074 in.)
N	41414-RDK-000	1.91 mm (0.075 in.)
O	41415-RDK-000	1.94 mm (0.076 in.)
P	41416-RDK-000	1.97 mm (0.078 in.)
Q	41417-RDK-000	2.00 mm (0.079 in.)
R	41418-RDK-000	2.03 mm (0.080 in.)
S	41419-RDK-000	2.06 mm (0.081 in.)
T	41420-RDK-000	2.09 mm (0.082 in.)
U	41421-RDK-000	2.12 mm (0.083 in.)
V	41422-RDK-000	2.15 mm (0.085 in.)
W	41423-RDK-000	2.18 mm (0.086 in.)
X	41424-RDK-000	2.21 mm (0.087 in.)
Y	41425-RDK-000	2.24 mm (0.088 in.)
Z	41426-RDK-000	2.27 mm (0.089 in.)
AA	41427-RDK-000	2.30 mm (0.091 in.)
AB	41428-RDK-000	2.33 mm (0.092 in.)
AC	41429-RDK-000	2.36 mm (0.093 in.)
AD	41430-RDK-000	2.39 mm (0.094 in.)
AE	41431-RDK-000	2.42 mm (0.095 in.)
AF	41432-RDK-000	2.45 mm (0.096 in.)
AG	41433-RDK-000	2.48 mm (0.098 in.)
AH	41434-RDK-000	2.51 mm (0.099 in.)
AI	41435-RDK-000	2.54 mm (0.100 in.)
AJ	41436-RDK-000	2.57 mm (0.101 in.)
AK	41437-RDK-000	2.60 mm (0.102 in.)
AL	41438-RDK-000	2.63 mm (0.104 in.)
AM	41439-RDK-000	2.66 mm (0.105 in.)

44. Install the 80 mm thrust shim (A) and bearing outer race (B) in the transfer cover (C). If you heated the cover, let it cool to room temperature before installing the thrust shim.

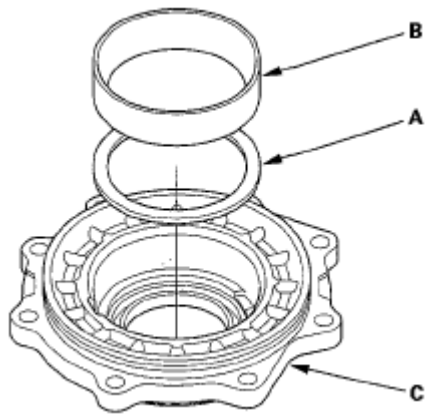


Fig. 699: Identifying Thrust Shim, Bearing Outer Race And Transfer Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Drive the outer race securely in the cover using the driver and the attachment (78 x 80 mm) so there is no clearance between the outer race, thrust shim, and cover.

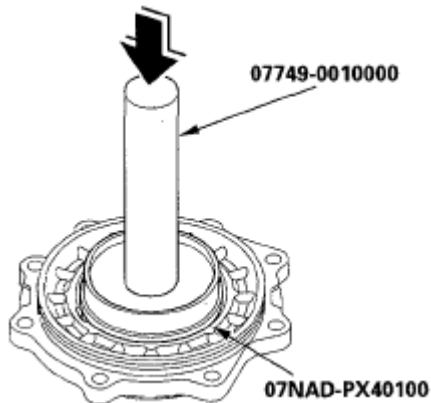


Fig. 700: Identifying Thrust Shim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. After replacing the 80 mm thrust shim, recheck and make sure that the total starting torque is within the specification.
47. Install the new O-ring (A) on the transfer cover (B), then install the transfer cover on the transfer housing (C).

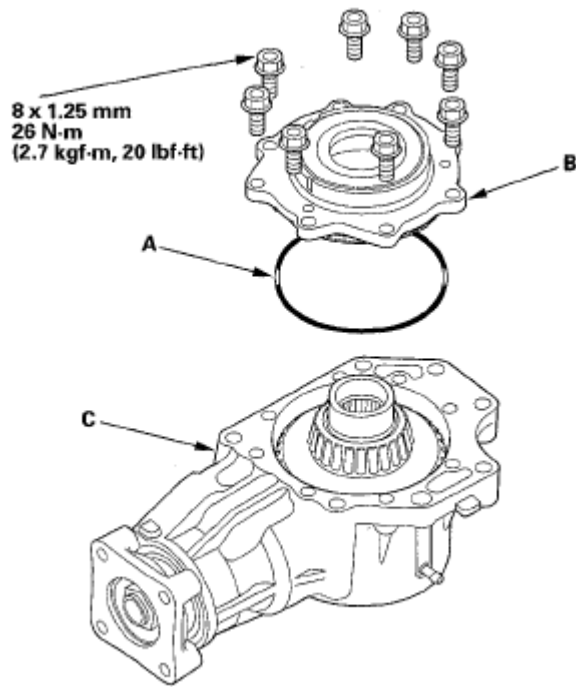


Fig. 701: Identifying O-Ring, Transfer Cover And Transfer Housing With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Remove the filler plug (A), then refill the transfer assembly with transfer fluid (hypoid gear oil). Use an SAE 90 or SAE 80W-90 viscosity hypoid gear oil, API classified GL4 or GL5 only.

Viscosity:

SAE 90: Above 0 °F (-18°C)

SAE 80W-90: Below 0 °F (-18 °C)

Hypoid Gear Oil Capacity: 0.45 L (0.48 US qt)

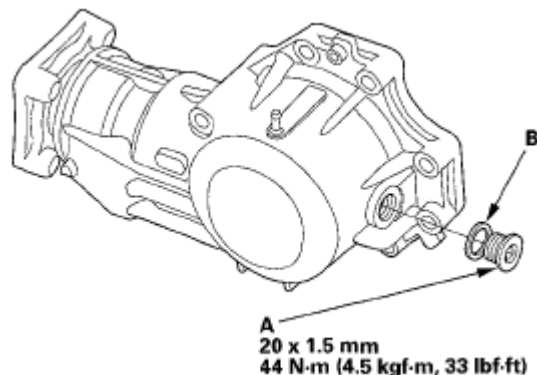


Fig. 702: Identifying Filler Plug And Sealing Washer With Torque Specification

2008 Acura MDX
2007-09 TRANSMISSION Automatic Transmission - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Install the filler plug with the new sealing washer (B).

2008 Acura MDX

2007-09 DRIVELINE/AXLES Driveline/Axle - MDX

2007-09 DRIVELINE/AXLES

Driveline/Axle - MDX

DRIVELINE/AXLE

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAD-S3VA000	Driveshaft Remover	1
②	07JAD-PH80101	Oil Seal Driver Attachment	1
③	07LAF-SM40300	Support Base Attachment	1
④	07XAC-001020A	Threaded Adapter, 24 x 1.5 mm	1
⑤	07XAC-001030A	Threaded Adapter, 26 x 1.5 mm	1
⑥	07746-0010300	Attachment, 42 x 47 mm	1
⑦	07749-0010000	Driver	1
⑧	07946-MB00000	Inner Handle, 30 mm	1
⑨	07947-4630100	Fork Seal Driver, 39.2 x 49.5 x 15 mm	1
⑩	07965-SD90100	Support Base	1

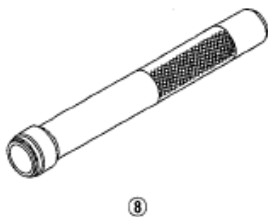
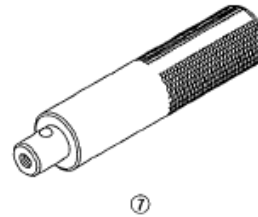
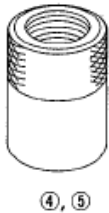
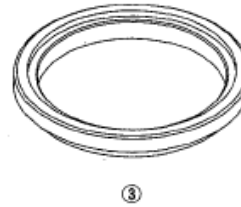
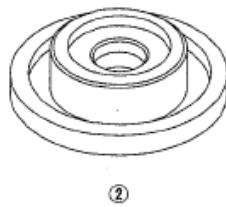
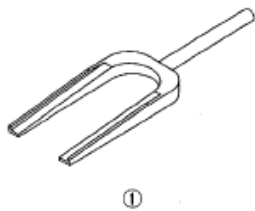


Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

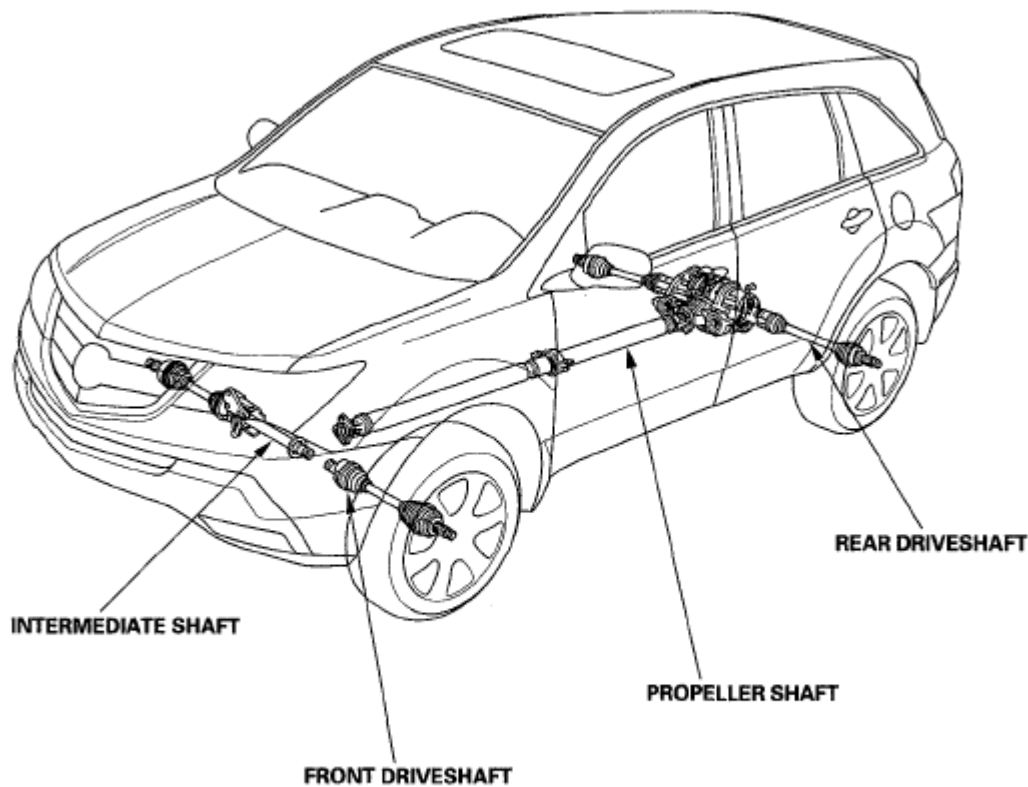


Fig. 2: Identifying Driveline/Axle Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVESHAFT INSPECTION

1. Check the inboard boot (A) and the outboard boot (B) on the driveshaft (C) for cracks, damage, leaking grease, and loose boot bands (D). If any damage is found, replace the boot and boot bands.

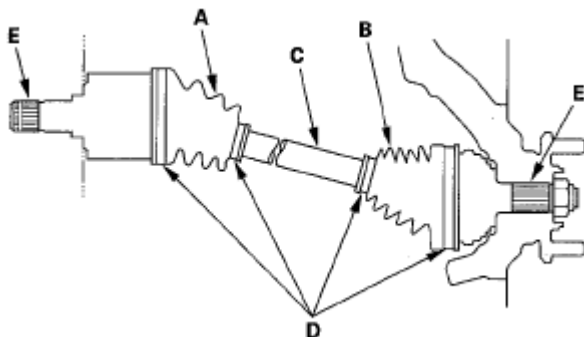


Fig. 3: Identifying Inboard Boot And Outboard Boot On Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the driveshaft for cracks and damage. If any damage is found, replace the driveshaft.
3. Check the inboard joint (E) and the outboard joint (F) for cracks and damage. If any damage is found, replace the inboard joint or the outboard joint as an assembly.
4. Hold the inboard joint and turn the front wheel by hand, then make sure the joint is not excessively loose. If necessary, replace the inboard joint or the outboard joint as an assembly.

FRONT DRIVESHAFT REMOVAL

1. Raise the vehicle on a lift. remove the front wheels.
2. Remove the front wheels.
3. Pry up the locking tab (A) on the spindle nut (B), then remove the nut.

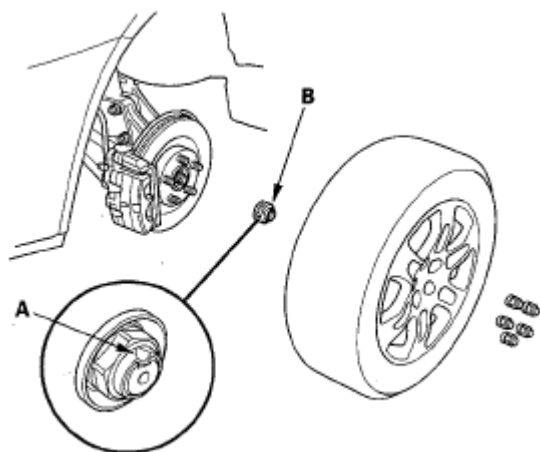


Fig. 4: Identifying Locking Tab On Spindle Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the splash shield.(see step 30 on **ENGINE REMOVAL**).
5. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer. (see **ATF REPLACEMENT**).
6. Remove the suspension stroke sensor (with active damper system). (see **DASHBOARD WIRE HARNESS (CENTER CONSOLE BRANCH)**)
7. Remove the lock pin (A) from the lower arm ball joint castle nut (B), and remove the nut.

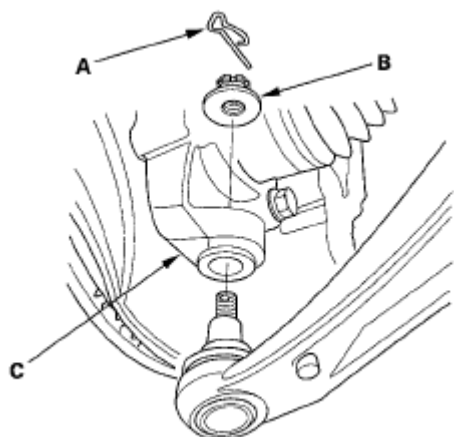


Fig. 5: Identifying Lock Pin From Lower Arm Ball Joint Castle Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Separate the ball joint from the knuckle (C).

NOTE:

- To avoid damaging the ball joint, install the ball joint thread protector onto the threads of the ball joint.
- Be careful not to damage the ball joint boot when installing the remover (see BALL JOINT REMOVAL).

9. Loosen the driveshaft outboard joint from the front hub using a plastic hammer.

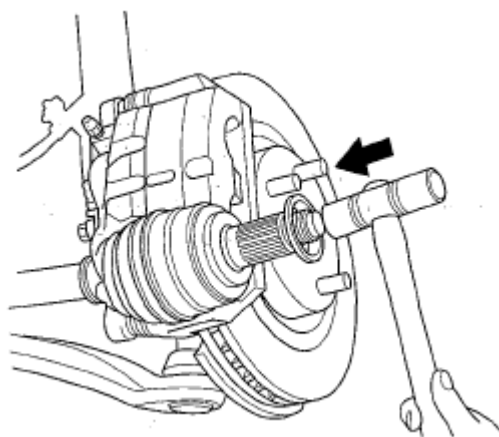


Fig. 6: Tapping Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull the knuckle outward, and separate the outboard joint from the front hub.

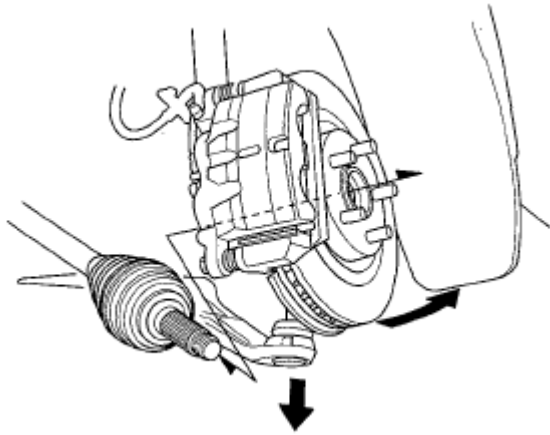


Fig. 7: Identifying Driveshaft Outboard Joint From Front Wheel Hub
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Left driveshaft: Pry the inboard joint (A) from the differential with a prybar. Remove the driveshaft as an assembly.

NOTE:

- Do not pull by the driveshaft (B) or the inboard joint may come apart. Pull the driveshaft straight out to avoid damaging the oil seal.
- Be careful not to damage the ball joint boot when installing the remover .

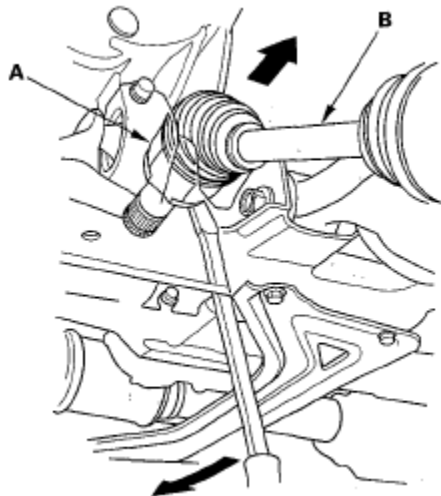


Fig. 8: Prying Inboard Joint From Transmission Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Right driveshaft: Drive the inboard joint (A) off of the intermediate shaft using a drift and a hammer. Remove the driveshaft as an assembly.

NOTE:

Do not pull on the driveshaft (B) or the inboard joint may come apart.

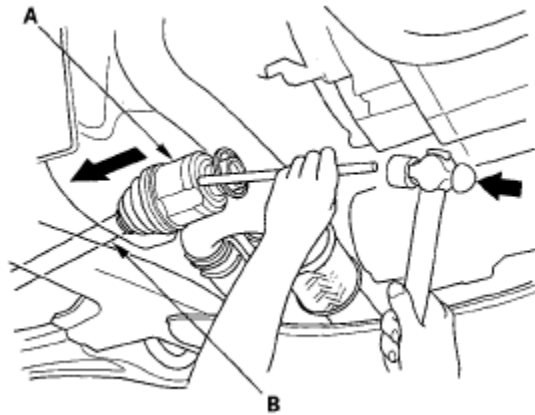


Fig. 9: Tapping Inboard Joint With Drift
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the set ring (A) from the left driveshaft inboard joint.

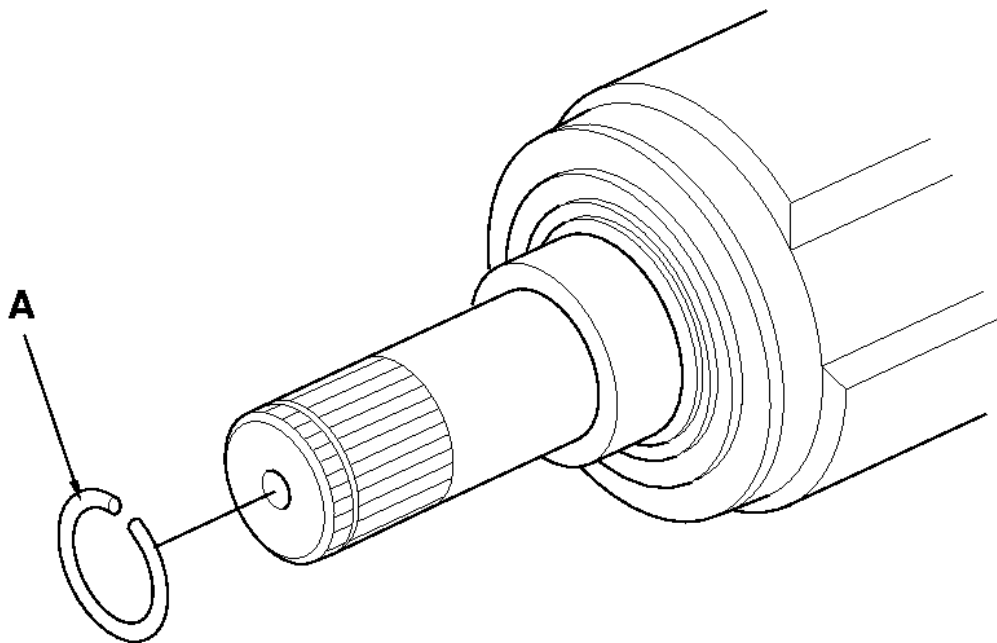


Fig. 10: Identifying Set Ring And Left Driveshaft Inboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the set ring (A) from the intermediate shaft.

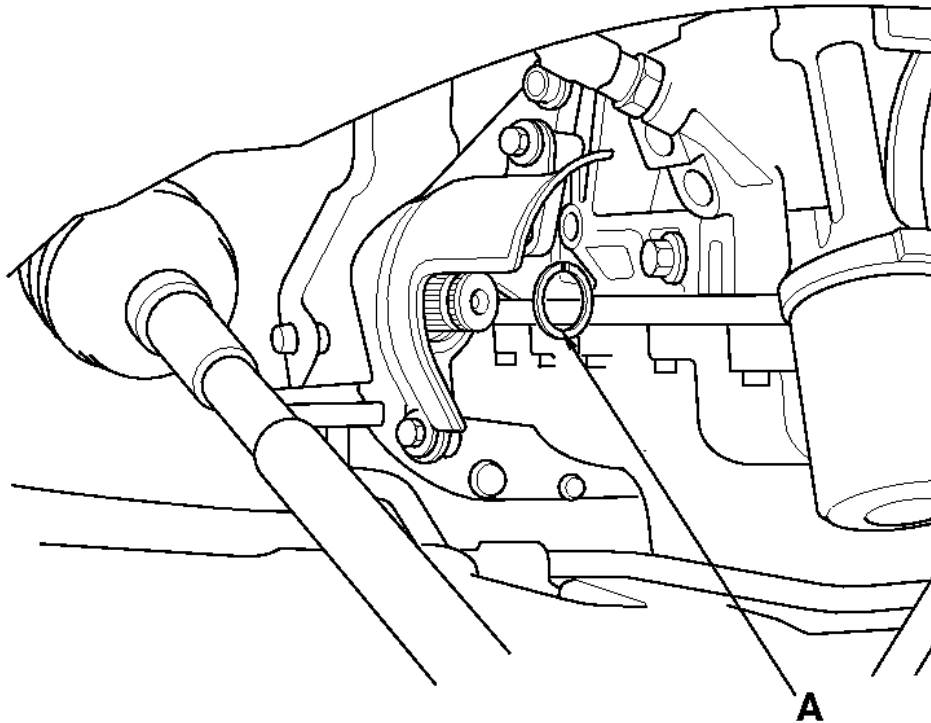


Fig. 11: Identifying Set Ring And Intermediate Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DRIVESHAFT DISASSEMBLY

Special Tools Required

- Threaded adapter, 26 x 1.5 mm 07XAC-001030A
- Slide hammer, 5/8"-18 UNF, commercially available.
- Puller, commercially available
- Boot band pliers, commercially available

Inboard Joint Side

1. Remove the boot bands. Be careful not to damage the boot.
 - If the boot band is a double loop type (A), lift up the band end (B), then push it into the clip (C).
 - If the boot band is a low profile type (D), pinch the boot band using commercially available boot band pliers (E).

Double loop type

Double loop type

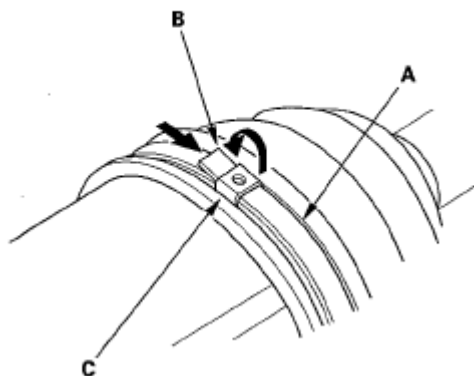


Fig. 12: Identifying Boot Band Clip (Double Loop Type)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Low profile type

Low profile type

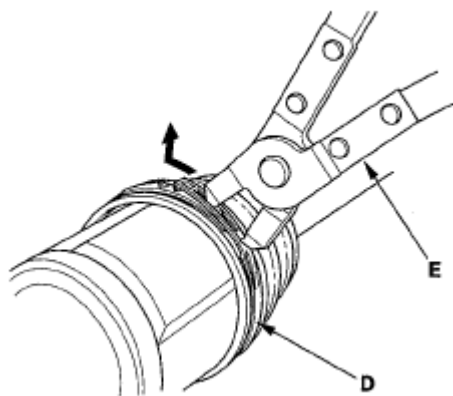


Fig. 13: Identifying Boot Band Using Boot Band Pliers (Low Profile Type)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Make marks (A) on each roller (B) and inboard joint (C) to identify the locations of rollers and grooves in the inboard joint. Then remove and place the inboard joint on a shop towel (D). Be careful not to drop the rollers when separating them from the inboard joint.

NOTE: Do not engrave or scribe any marks on the rolling surface.

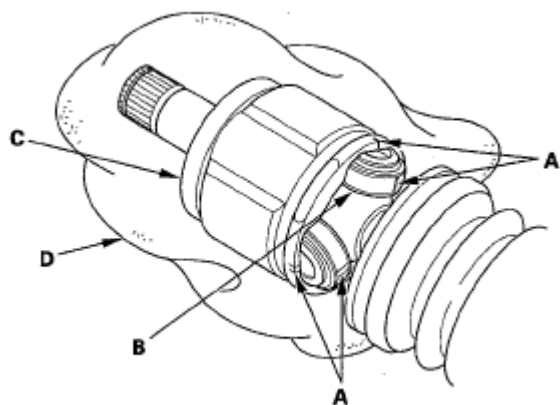


Fig. 14: Identifying Mark Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make marks (A) on the rollers (B) and spider (C) to identify the locations of the rollers on the spider, then remove the rollers.

NOTE: Do not engrave or scribe any marks on the rolling surface.

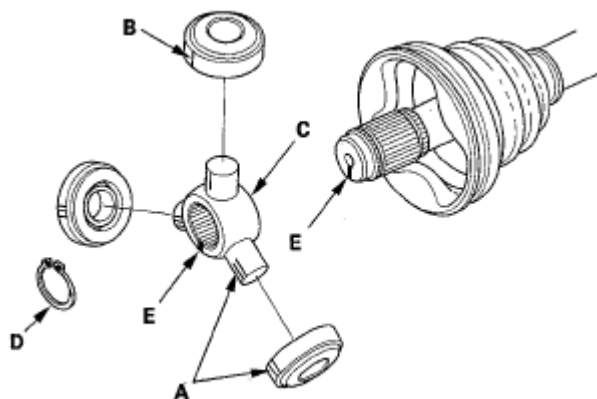


Fig. 15: Identifying Rollers And Spider With Circlip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the circlip(D).
5. Mark the spider and driveshaft (E) to identify the position of the spider on the shaft.
6. Remove the spider.

NOTE: If necessary, use a commercially available puller.

7. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.

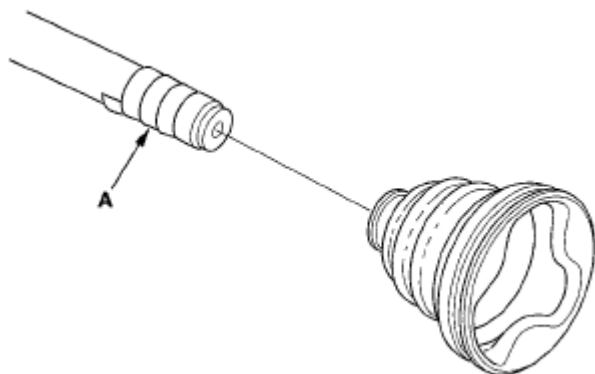


Fig. 16: Identifying Splines On Driveshaft With Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the inboard boot. Be careful not to damage the boot.
9. Remove the vinyl tape.

Outboard Joint Side

1. Remove the boot bands (A). Be careful not to damage the boot. Lift up the three tabs (B) with a screwdriver.

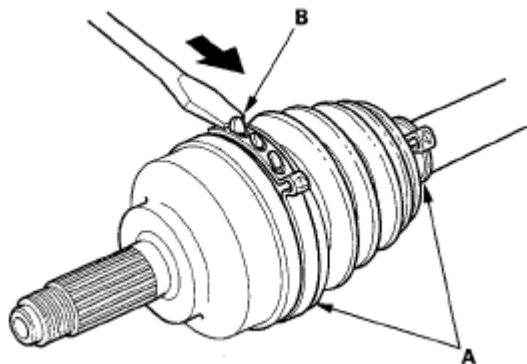


Fig. 17: Identifying Lifting Up Three Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slide the outboard boot (A) partially to the inboard joint side. Be careful not to damage the boot.

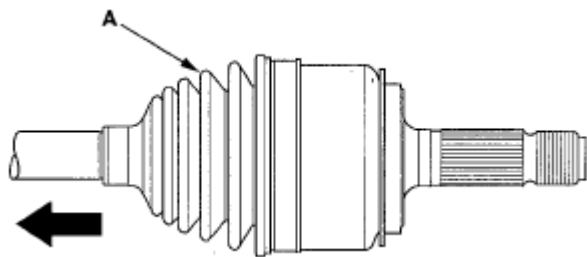
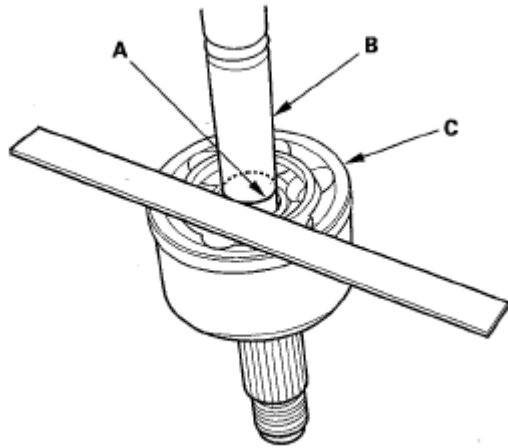


Fig. 18: Identifying Outboard Boot

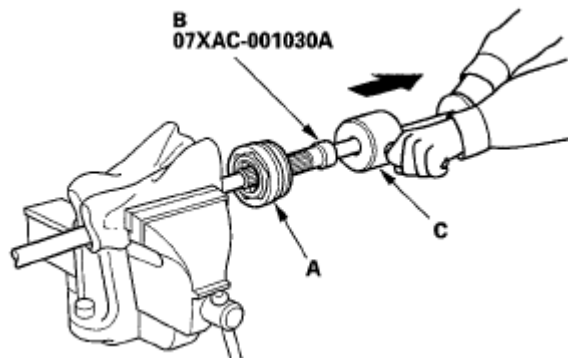
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint rim (C).

**Fig. 19: Identifying Grease To Expose Driveshaft And Outboard Joint Inner Race**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Securely clamp the driveshaft in a bench vise with a shop towel.
6. Remove the outboard joint (A) using the 26 x 1.5 mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).

**Fig. 20: Identifying Outboard Joint**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the driveshaft from the vise.
8. Remove the stop ring (A) from the driveshaft.

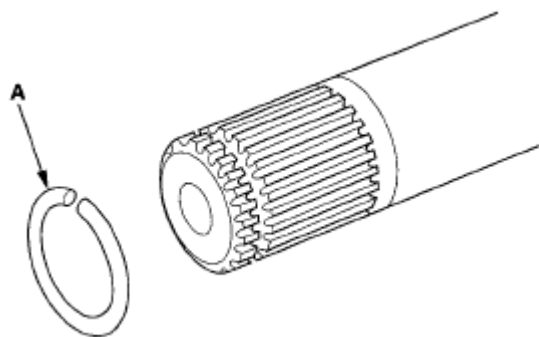


Fig. 21: Identifying Stop Ring From Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.

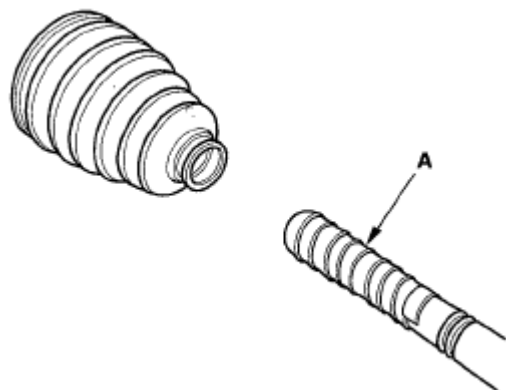


Fig. 22: Identifying Splines On Driveshaft With Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the outboard boot. Be careful not to damage the boot.
11. Remove the vinyl tape.

FRONT DRIVESHAFT REASSEMBLY

Exploded View

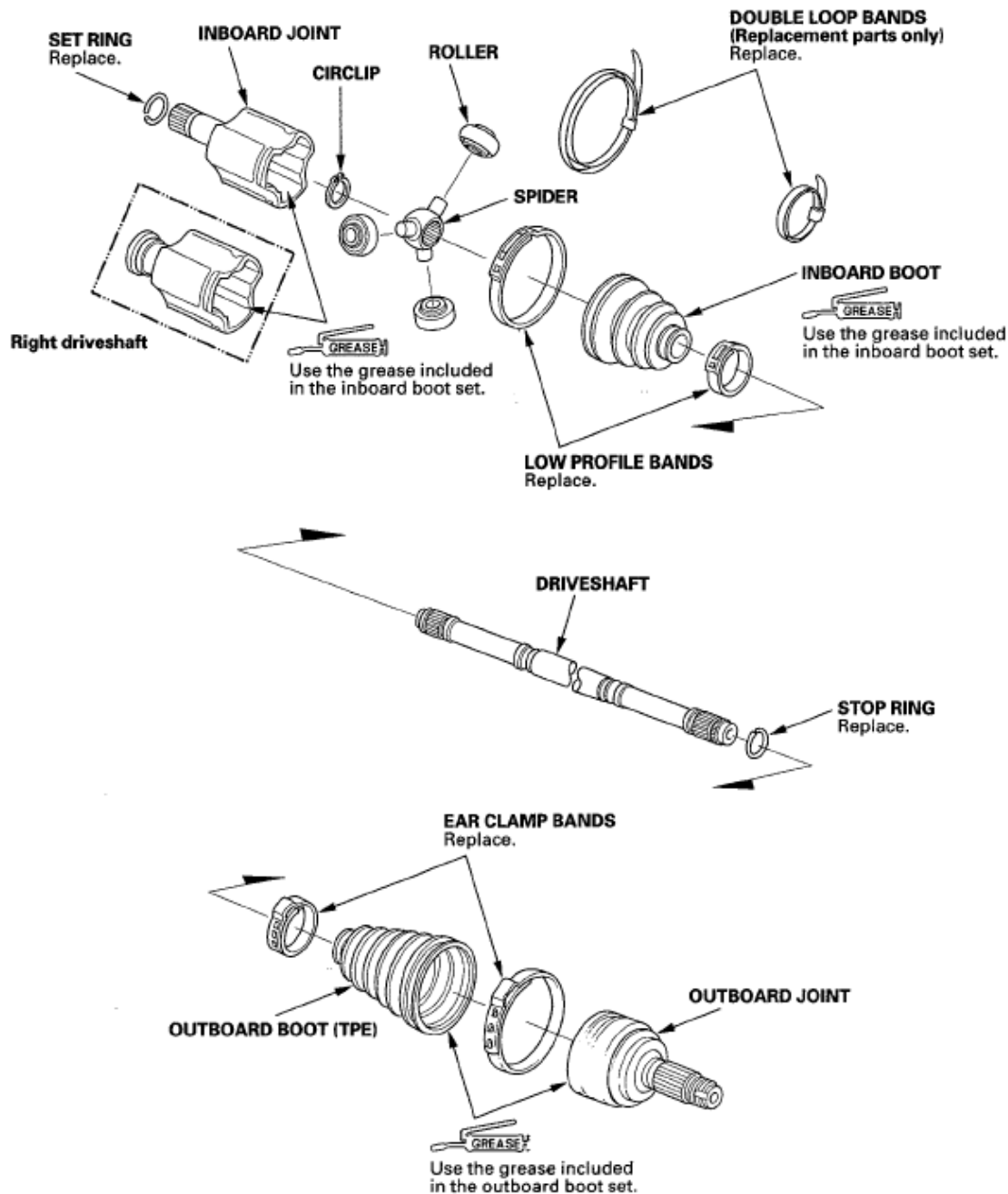


Fig. 23: Exploded View Of Front Driveshaft Reassembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Boot band tool, KD-3191 or equivalent, commercially available
- Boot band pliers, Kent-Moore J-35910 or equivalent, commercially available
- Boot band pliers, commercially available

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

Inboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the inboard boot.

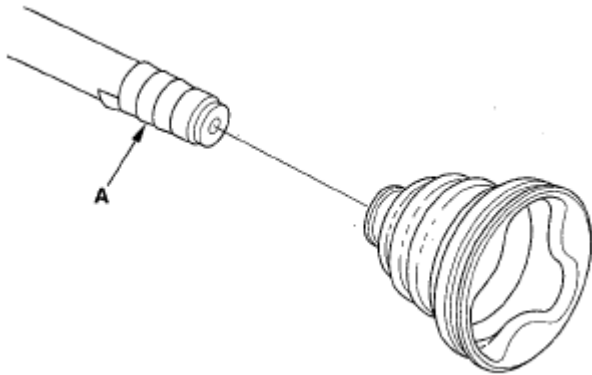


Fig. 24: Identifying Splines With Vinyl Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the inboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the inboard boot.
3. Install the spider (A) onto the driveshaft by aligning the marks (B) you made on the spider and the end of the driveshaft.

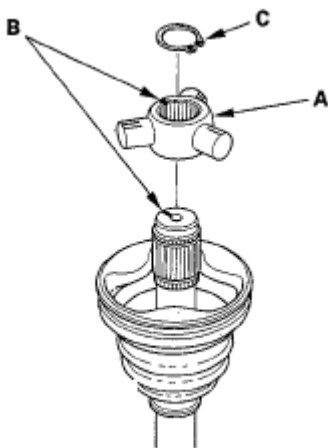


Fig. 25: Identifying Spider Onto Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the circlip (C) into the driveshaft groove. Rotate the circlip in its groove to make sure it is fully seated.
5. Fit the rollers (A) onto the spider (B) with their high shoulders facing outward, and note these items:
 - Reinstall the rollers in their original positions on the spider by aligning the marks (C) you made.

- Hold the driveshaft pointed up to prevent the rollers from falling off.

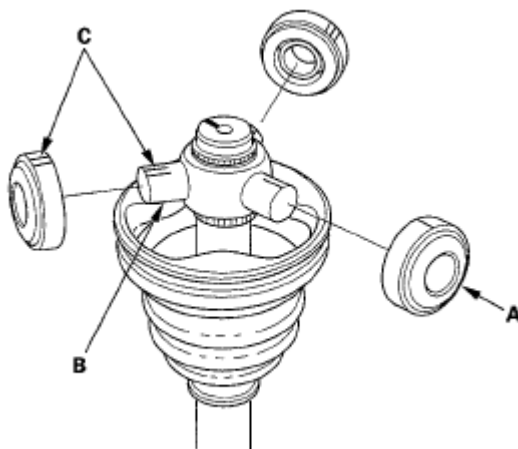


Fig. 26: Identifying Driveshaft Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pack the inboard joint with the joint grease included in the new inboard boot set.

Grease quantity

Inboard joint: 190–210 g (6.7–7.4 oz)



Fig. 27: Identifying Grease Applying Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Fit the inboard joint onto the driveshaft, and note these items:
 - Reinstall the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the rollers.
 - Hold the driveshaft so the inboard joint is pointing up to prevent it from falling off.

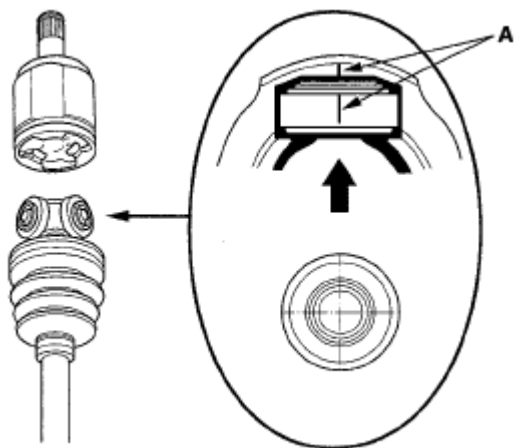


Fig. 28: Identifying Marks On Inboard Joint And Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Fit the boot ends (A) onto the driveshaft (B) and the inboard joint (C).

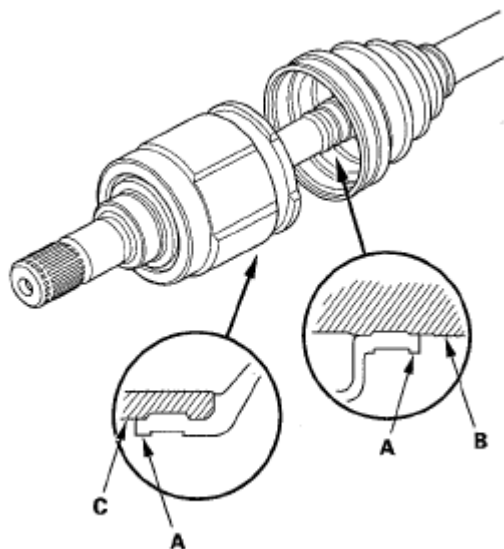
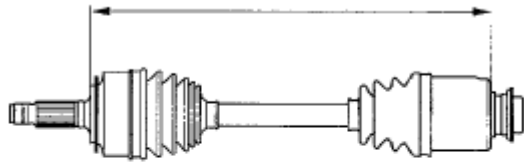


Fig. 29: Identifying Boot Ends Onto Driveshaft And Inboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Adjust the inboard joint so the rollers are in the middle of the joint, bleed the excess air from the boot, then adjust the driveshaft length to the figure as shown. Doing this prevents a vacuum or too much air in the boot, preventing it from compressing or extending properly.

Right driveshaft: 569.5—574.5 mm (22.42—22.62 in.)



Left driveshaft: 571.2—576.2 mm (22.49—22.68 in.)

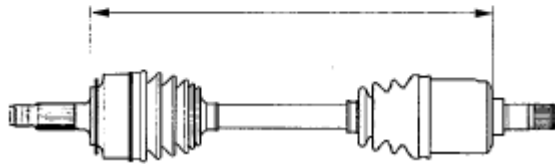


Fig. 30: Identifying Driveshaft Length

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install new boot bands.
 - For the double loop type, go to step 11.
 - For the low profile type, go to step 20.
11. Fit the boot ends onto the driveshaft and the inboard joint, then install the new double loop band (A) onto the boot (B).

NOTE: Pass the end of the new double loop band through the clip (C) twice in the direction of the forward rotation of the driveshaft.

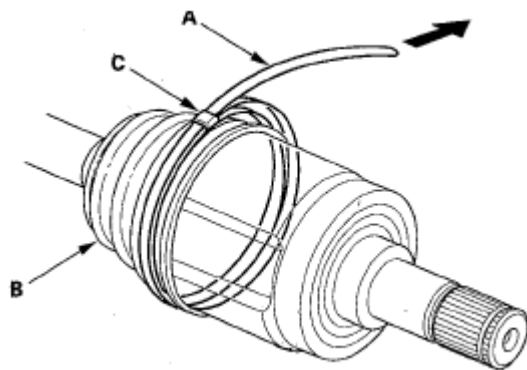


Fig. 31: Identifying End Of Double Loop Band Through Clip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Pull up the slack in the band by hand.
13. Mark a position (A) on the band 10-14 mm (0.4-0.6 in.) from the clip (B).

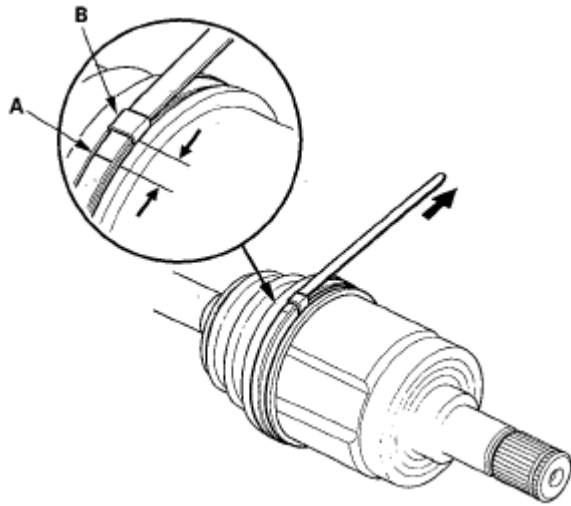


Fig. 32: Identifying Boot Band Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Thread the free end of the band through the nose section of the commercially available boot band tool KD-3191 or equivalent (A), and into the slot on the winding mandrel (B).

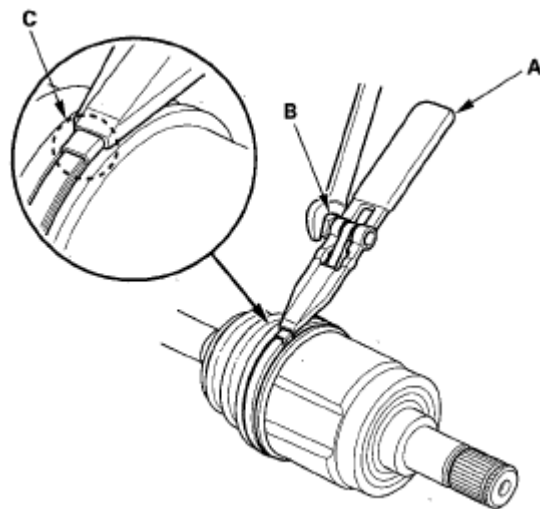


Fig. 33: Identifying Boot Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Using a wrench on the winding mandrel of the boot band tool, tighten the band until the marked spot (C) on the band meets the edge of the clip.
16. Lift up the boot band tool to bend the free end of the band 90 degrees to the clip. Center-punch the clip, then fold over the remaining tail onto the clip.

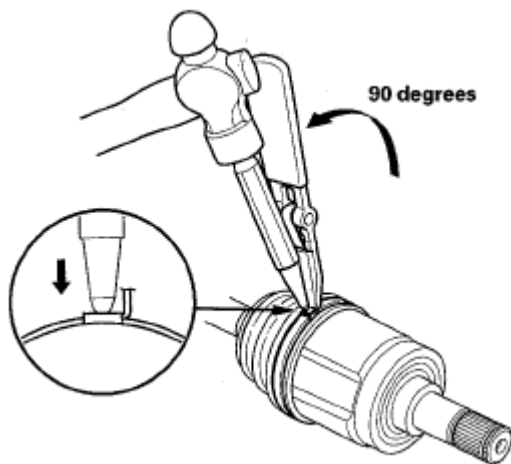


Fig. 34: Identifying Boot Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Unwind the boot band tool, and cut off the excess free end of the band to leave a 5-10 mm (0.2-0.4 in.) tail protruding from the clip.

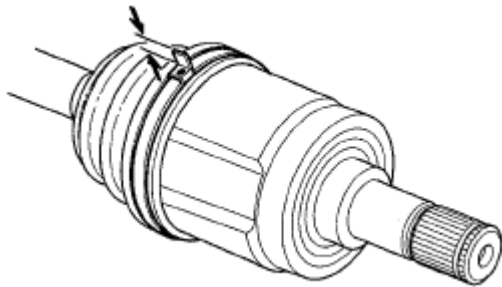


Fig. 35: Identifying Cutting Off Excess Free End Of Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Bend the band end (A) by tapping it down with a hammer.

NOTE:

- Make sure the band and clip do not interfere with anything on the vehicle and the band does not move.
- Clean any grease remaining on the surrounding surfaces.

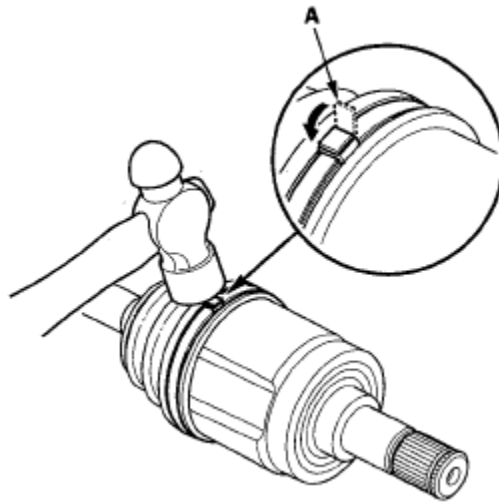


Fig. 36: Identifying Boot Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Repeat steps 11 through 18 for the band on the other end of the boot.
20. Install the new low profile band (A) onto the boot (B), then hook the tab (C) of the band.

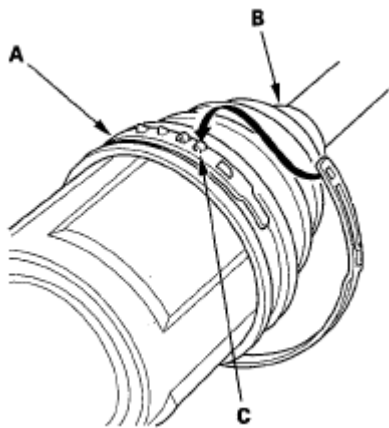


Fig. 37: Identifying Boot Clamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Close the hook portion of the band with a commercially available boot band pliers (A), then hook the tabs (B) of the band.

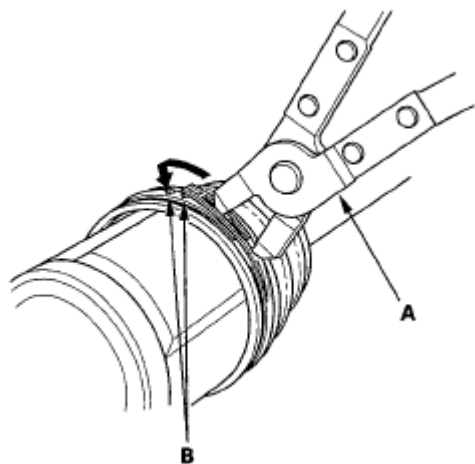


Fig. 38: Identifying Hook Portion Of Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the boot band on the other end of the boot, and repeat steps 20 and 21.

Outboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the outboard boot.

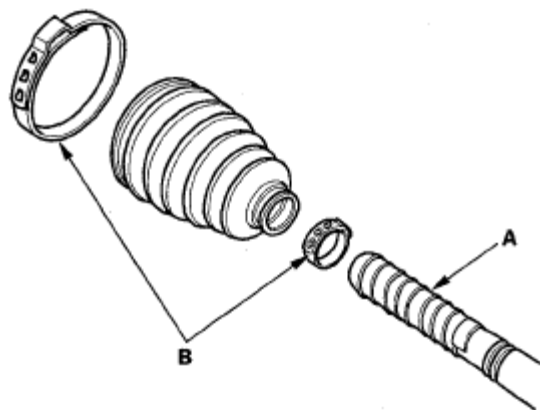


Fig. 39: Identifying Splines With Vinyl Tape

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new ear clamp bands (B) and the outboard boot, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Install the new stop ring into the driveshaft groove (A).

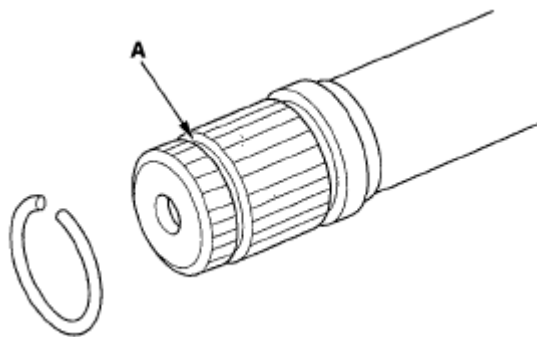


Fig. 40: Identifying Stop Ring Into Driveshaft Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pack about 35 g (1.2 oz) grease included in the new joint boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.



Fig. 41: Identifying Grease In Driveshaft Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint.

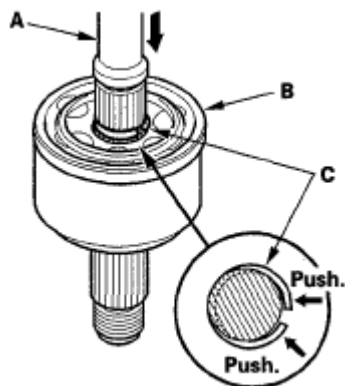


Fig. 42: Identifying Driveshaft Into Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. To completely seat the outboard joint, pick up the driveshaft and joint, and tap or hit them from a height of about 10 cm (4 in.) onto a hard surface. Do not use a hammer as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.

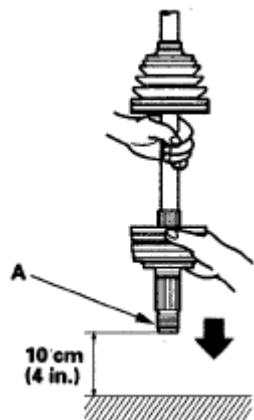


Fig. 43: Identifying Outboard Joint Into Hard Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the alignment of the paint mark (A) with the outboard joint rim (B).

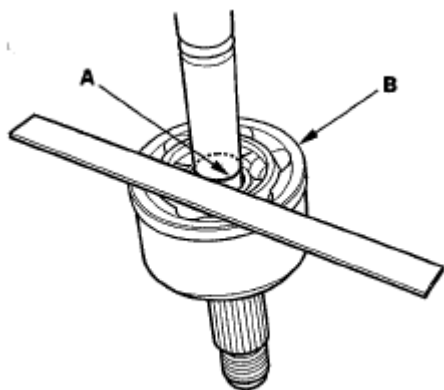


Fig. 44: Identifying Alignment Of Paint Mark With Outboard Joint Rim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pack the outboard joint (A) with the remaining joint grease included in the new joint boot set.

Total grease quantity
 outboard joint: 115—135 g (4.0—4.7 oz)

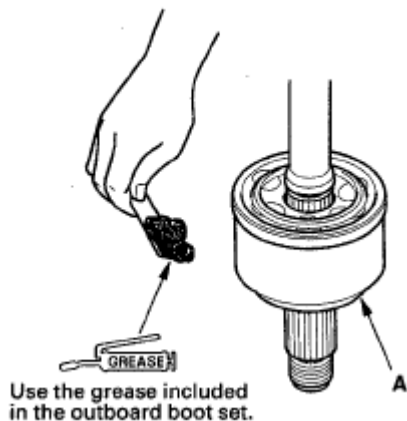


Fig. 45: Identifying Grease To Outboard Joint
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Fit the boot (A) ends onto the driveshaft (B) and the outboard joint (C).

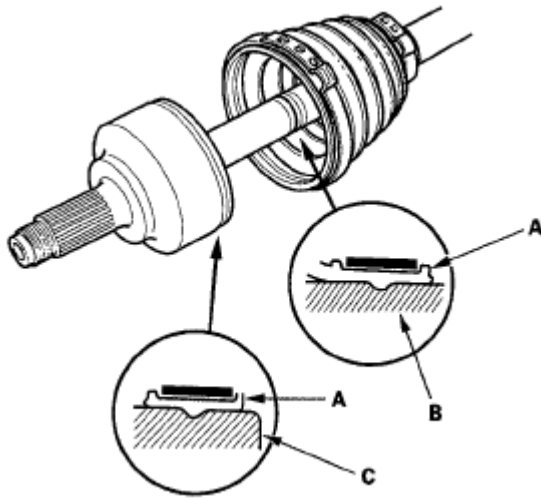
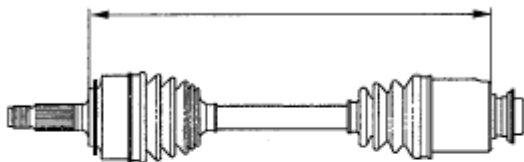


Fig. 46: Identifying Boot Onto Driveshaft And Outboard Joint
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full extension. Make sure the ends of the boots seat in the groove of the driveshaft and joint. Doing this prevents a vacuum or too much air in the boot, preventing it from compressing or extending properly.

Right driveshaft: 569.5—574.5 mm (22.42—22.62 in.)



Left driveshaft: 571.2—576.2 mm (22.49—22.68 in.)

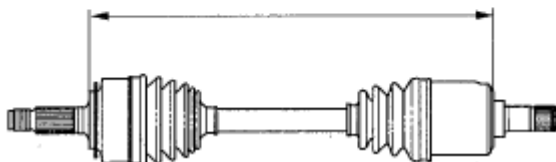


Fig. 47: Identifying Driveshafts Length
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Close the ear portion (A) of the band with commercially available boot band pliers Kent-Moore J-35910 or equivalent (B).

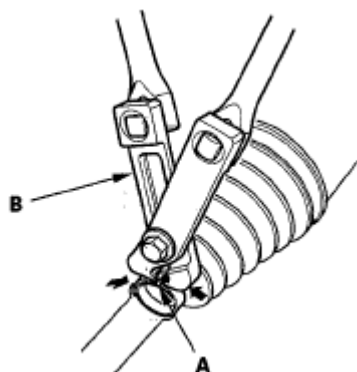


Fig. 48: Identifying Portion Of Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.

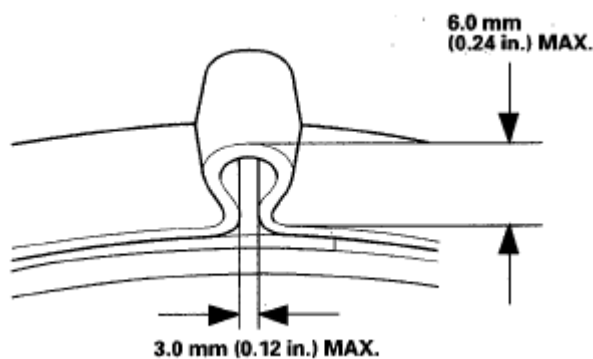


Fig. 49: Identifying Clearance Between Closed Portion Of Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Repeat steps 11 and 12 for the band on the other end of the boot.

FRONT DRIVESHAFT INSTALLATION

NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are not dusty or dirty.

1. Apply about 5 g (0.18 oz) of moly 60 paste (P/N 08734-0001) to the contact area (A) of the outboard joint and the front wheel bearing.

NOTE: The paste helps to prevent noise and vibration.

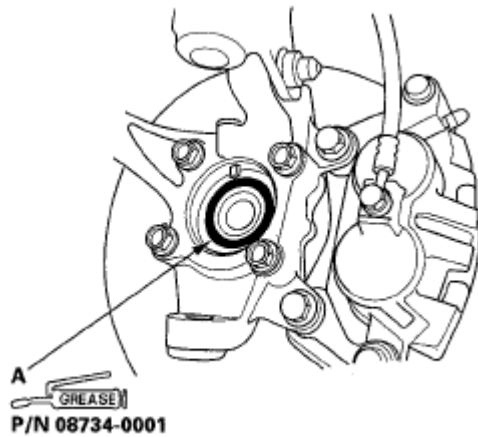


Fig. 50: Identifying Grease In Outboard Joint And Front Wheel Bearing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new set ring (A) in the set ring groove (B) of the driveshaft (left driveshaft).

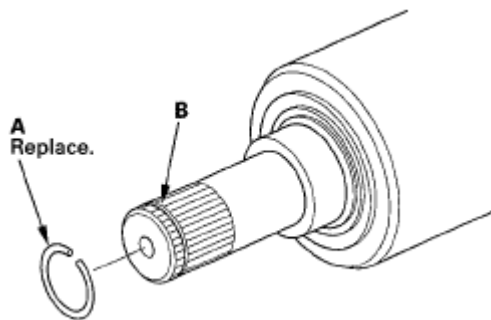


Fig. 51: Identifying Set Ring In Set Ring Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install a new set ring (A) onto the set ring groove (B) of the intermediate shaft.

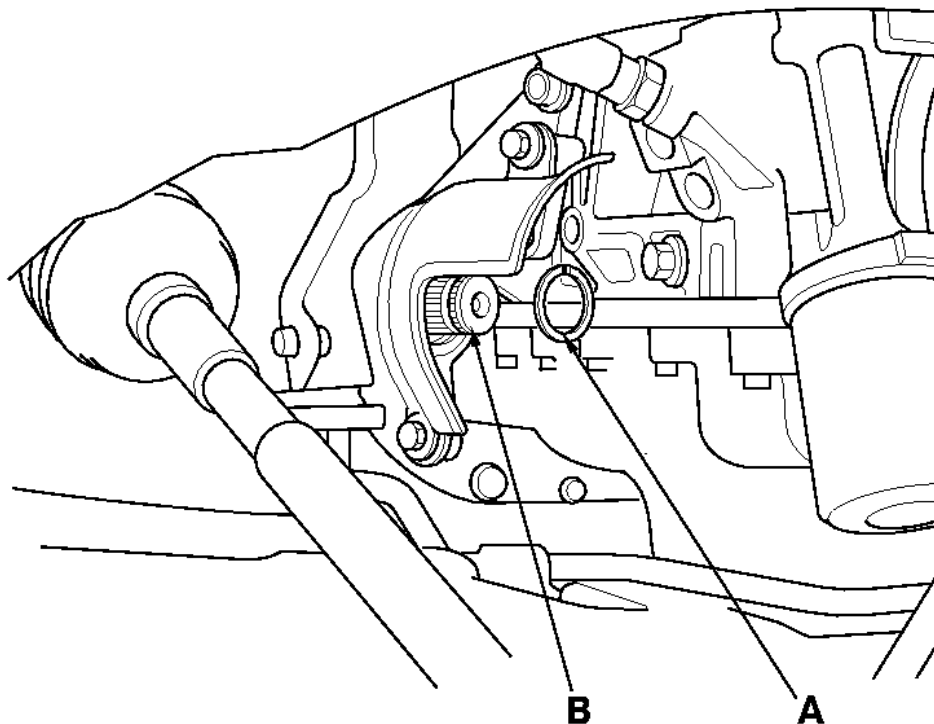


Fig. 52: Identifying Set Ring & Set Ring Groove

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply 2.0-3.0 g (0.07-0.10 oz) of super high temp urea grease (P/N 08798-9002) to the entire splined surface (A) of the right driveshaft. After applying grease, remove the grease from the splined grooves at intervals of 2-3 splines and from the set ring groove (B) so that air can bleed from the intermediate shaft.

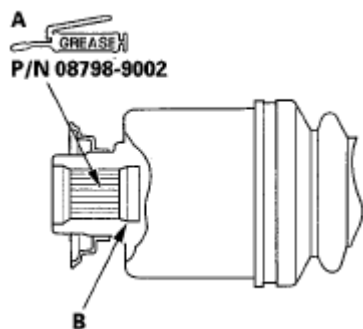


Fig. 53: Identifying Grease To Splined Surface

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Clean the areas where the driveshaft contacts the differential thoroughly with solvent or brake cleaner, and dry with compressed air.

NOTE: Do not wash the rubber parts with solvent or brake cleaner.

6. Insert the inboard end (A) of the driveshaft into the differential (B) or intermediate shaft (C) until the set ring (D) locks in the groove (E).

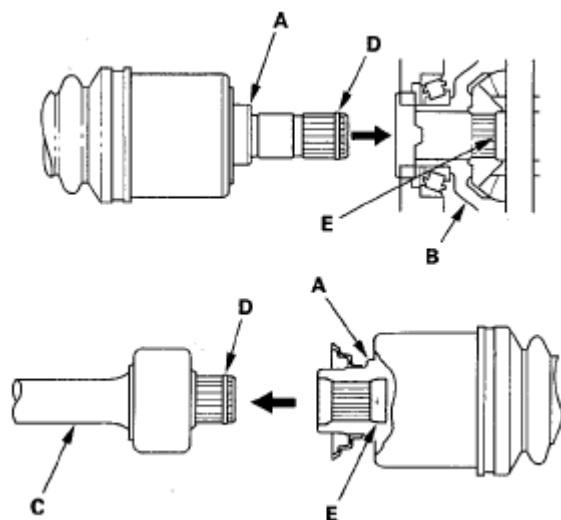


Fig. 54: Identifying Inboard Of Driveshaft Into Differential
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the knuckle (A) onto the lower arm (B). Be careful not to damage the ball joint boot (C). Wipe off the grease before tightening the nut at the ball joint. Torque the new castle nut (D) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the nut by loosening it.

NOTE: Make sure the ball joint boot is not damaged or cracked.

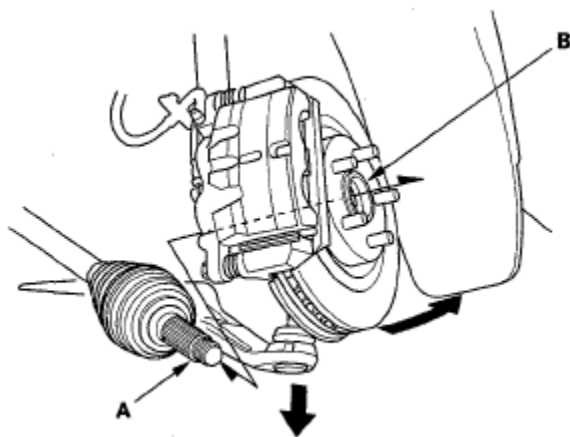


Fig. 55: Identifying Outboard Joint Into Front Wheel Hub
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Wipe off any grease contamination from the ball joint tapered section and threads, then install the knuckle (A) onto the lower arm (B). Be careful not to damage the ball joint boot (C). Wipe off the grease before

tightening the nut at the ball joint. Torque the new castle nut (D) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole.

NOTE:

- Make sure the ball joint boot is not damaged or cracked.
- Do not align the nut by loosening it.

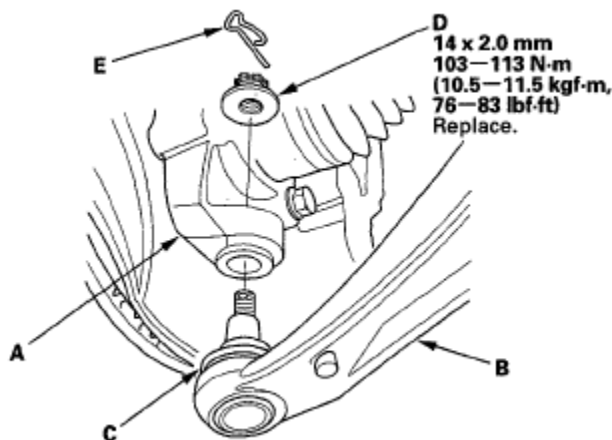


Fig. 56: Identifying Knuckle Onto Lower Arm With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lock pin (E) into the pin hole as shown.
10. Install the suspension stroke sensor (with active damper system). **SUSPENSION STROKE SENSOR REPLACEMENT**
11. Install the splash shield.(see step 39 on **ENGINE INSTALLATION**
12. Apply a small amount of engine oil to the seating surface of the new spindle nut (A).

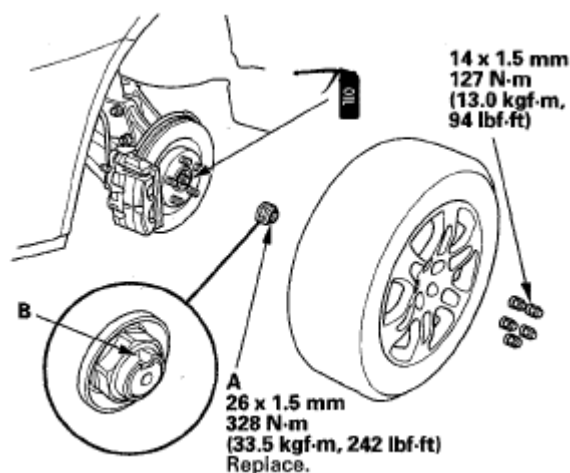


Fig. 57: Identifying Mount Of Engine Oil To Seating Surface Of Spindle Nut With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
14. Clean the mating surfaces of the brake disc and the front wheel, then install the front wheels.
15. Turn the front wheel by hand, and make sure there is no interference between the driveshaft and surrounding parts.
16. Lower the vehicle on the lift.
17. Refill the transmission with recommended fluid. (see ATF REPLACEMENT).
18. Test-drive the vehicle.(see WHEEL ALIGNMENT).

INTERMEDIATE SHAFT REMOVAL

1. Drain the transmission fluid. Reinstall the drain plug using a new washer (see ATF REPLACEMENT).
2. Remove the right driveshaft (see FRONT DRIVESHAFT REMOVAL).
3. Remove exhaust pipe A (see step 7 in TRANSFER ASSEMBLY REMOVAL).
4. Remove the exhaust pipe bracket (A).

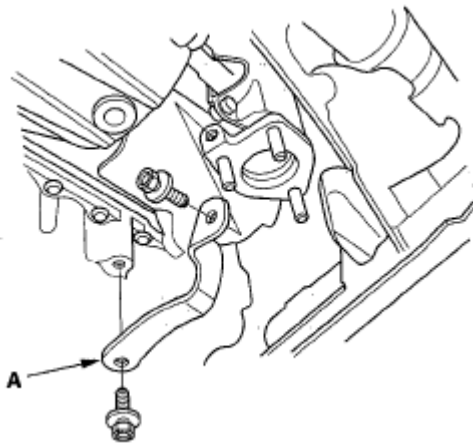


Fig. 58: Identifying Exhaust Pipe Bracket And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange bolt (A), and two dowel bolts (B).

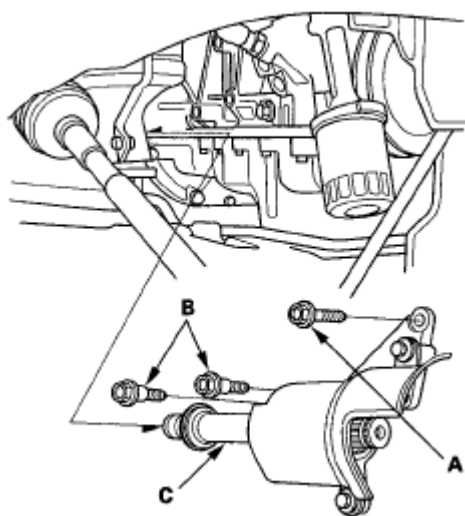


Fig. 59: Identifying Flange Bolt And Dowel Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the intermediate shaft (C) from the differential. Hold the intermediate shaft horizontally until it is clear of the differential to prevent damaging to the differential oil seal.

INTERMEDIATE SHAFT DISASSEMBLY

Special Tools Required

- Driver 07749-0010000
- Support base attachment 07LAF-SM40300
- Support base 07965-SD90100
- Attachment, 42 x 47 mm 07746-0010300

1. Remove the heat shield.

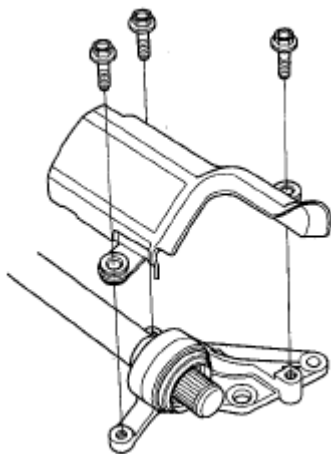
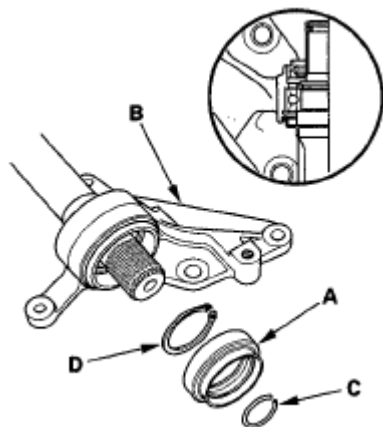


Fig. 60: Identifying Heat Shield And Bolts

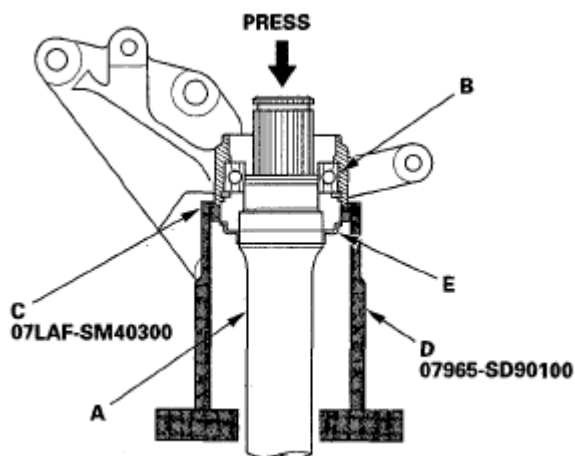
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the intermediate shaft outer seal (A) from the bearing support (B).

**Fig. 61: Identifying Set Ring And External Snap Ring**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the set ring (C) and external snap ring (D).
4. Press the intermediate shaft (A) out of the intermediate shaft bearing (B) using the support base attachment (C), support base (D) and a press. Be careful not to damage the bearing support ring (E) on the intermediate shaft during disassembly.

**Fig. 62: Identifying Intermediate Shaft Out Of Intermediate Shaft Bearing**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the internal snap ring.

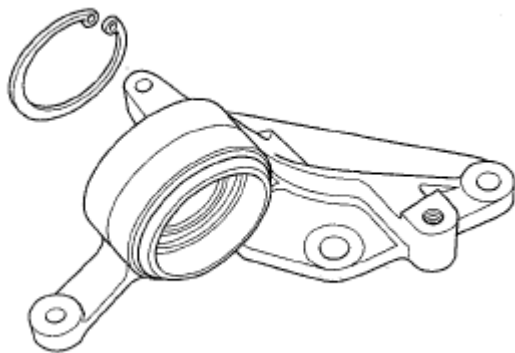


Fig. 63: Identifying Internal Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Press the intermediate shaft bearing (A) out of the bearing support (B) using the support base attachment (C), support base (D), driver (E), attachment (F) and a press.

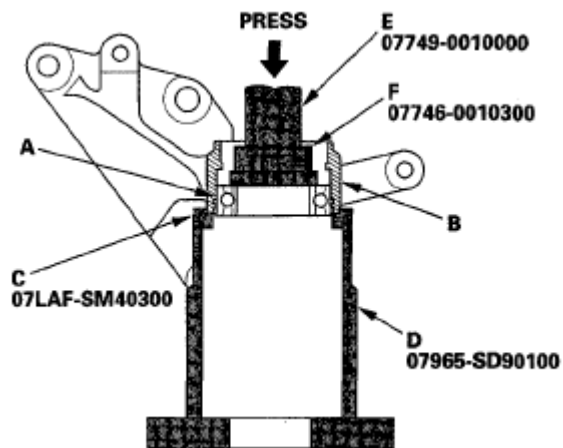


Fig. 64: Identifying Intermediate Shaft Bearing Out Of Bearing Support

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIATE SHAFT REASSEMBLY

Exploded View

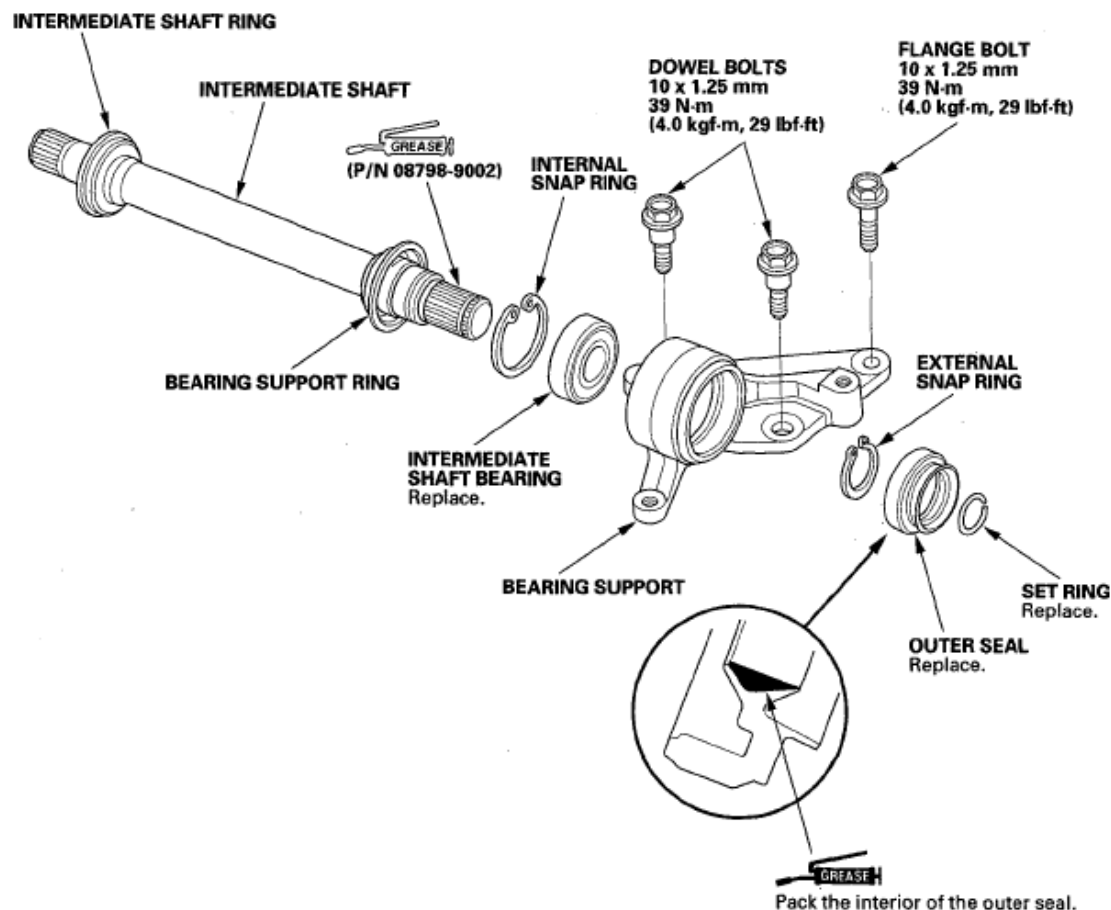


Fig. 65: Exploded View Of Intermediate Shaft With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver 07749-0010000
- Support base attachment 07LAF-SM40300
- Support base 07965-SD90100
- Oil seal driver attachment 07JAD-PH80101
- Fork seal driver, 39.2 x 49.5 x 15 mm 07947-4630100

NOTE: Refer to the EXPLODED VIEW, as needed, during this procedure.

1. Clean the disassembled parts with solvent, and dry them with compressed air. Do not wash the rubber parts with solvent.
2. Press the intermediate shaft bearing (A) into the bearing support (B) using the driver (C), oil seal driver attachment (D) and a press.

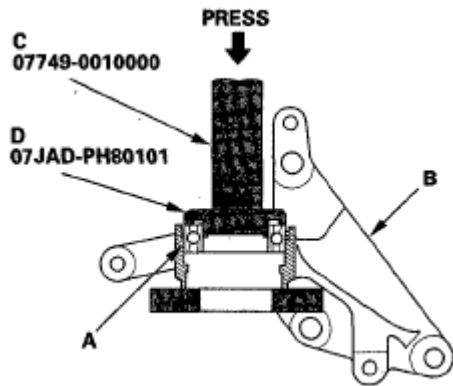


Fig. 66: Identifying Intermediate Shaft Bearing Into Bearing Support
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install, then seat the internal snap ring in the groove of the bearing support.

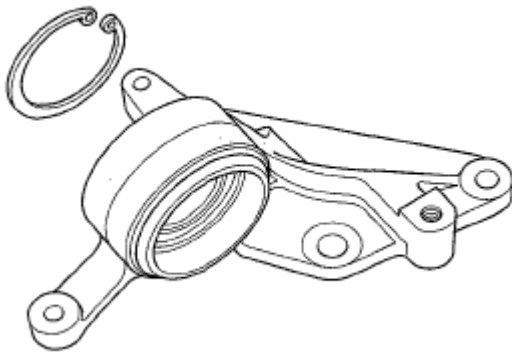


Fig. 67: Identifying Snap Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Press the intermediate shaft (A) into the shaft bearing (B) using the fork seal driver (C) and a press.

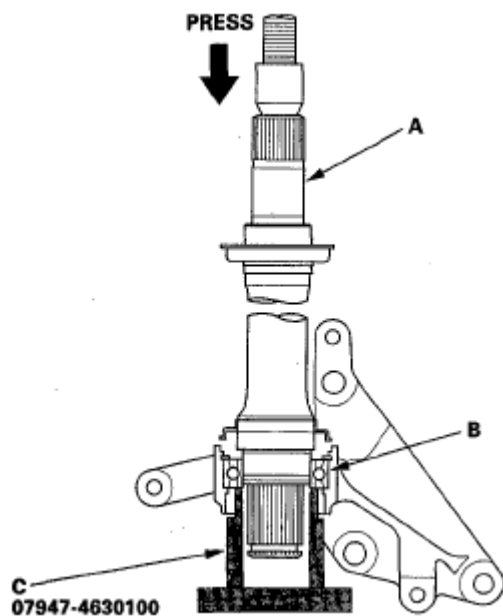


Fig. 68: Identifying Intermediate Shaft Into Shaft Bearing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install, then seat the external snap ring (A) in the groove of the intermediate shaft (B).

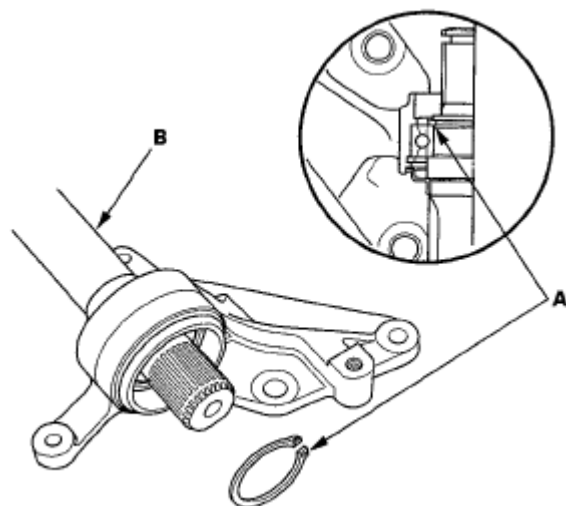


Fig. 69: Identifying External Snap Ring In Groove Of Intermediate Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the outer seal (A) into the bearing support (B) using the fork seal driver (C), support base attachment (D), support base (E) and a press.

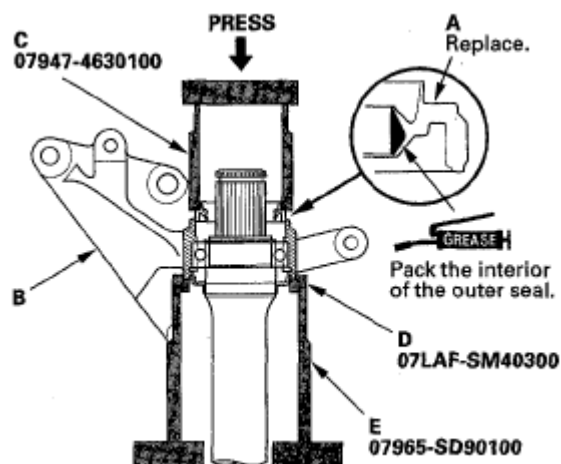


Fig. 70: Identifying Outer Seal Into Bearing Support
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the heat shield onto the bearing support.

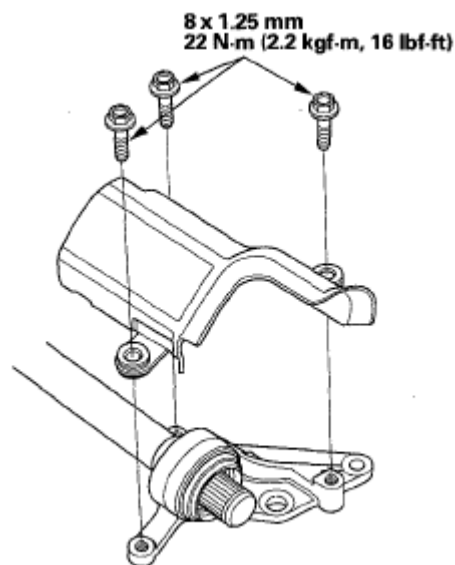


Fig. 71: Identifying Heat Shield Onto Bearing Support With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMEDIATE SHAFT INSTALLATION

1. Clean the areas where the intermediate shaft contacts the differential thoroughly with solvent or brake cleaner, and dry with compressed air.

NOTE: Do not wash the rubber parts with solvent or brake cleaner.

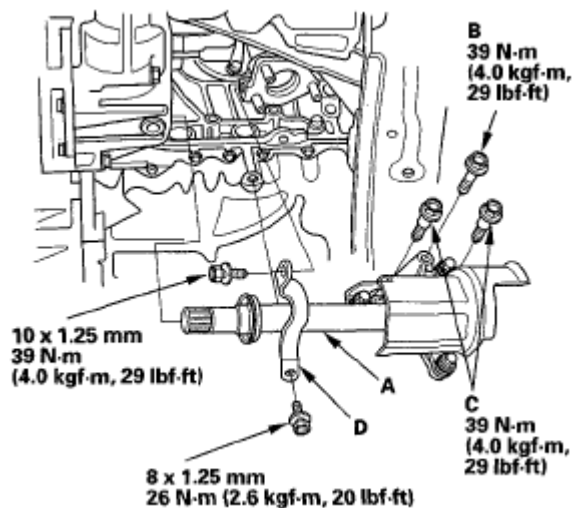


Fig. 72: Identifying Intermediate Shaft Installation Positions With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new set ring (A) onto the set ring groove of the intermediate shaft (B).
3. Insert the intermediate shaft into the differential correctly.
4. Install the flange bolt (C), two dowel bolts (D), and exhaust pipe bracket (E).
5. Install exhaust pipe A. (see step 5 on **TRANSFER ASSEMBLY INSTALLATION**).
6. Install the right driveshaft. (see **FRONT DRIVESHAFT INSTALLATION**).
7. Refill the transmission with recommended fluid. (see **ATF REPLACEMENT**).
8. Check the wheel alignment, and adjust it if necessary. (see **WHEEL ALIGNMENT**).
9. Test-drive the vehicle.

REAR DRIVESHAFT REMOVAL

Special Tools Required

- Driveshaft remover 07AAD-S3VA000
- Ball joint remover, 28 mm 07MAC-SL0A202

1. Raise the vehicle on a lift.
2. Remove the rear wheels.
3. Pry up the locking tab (A) on the spindle nut (B), then remove the nut.

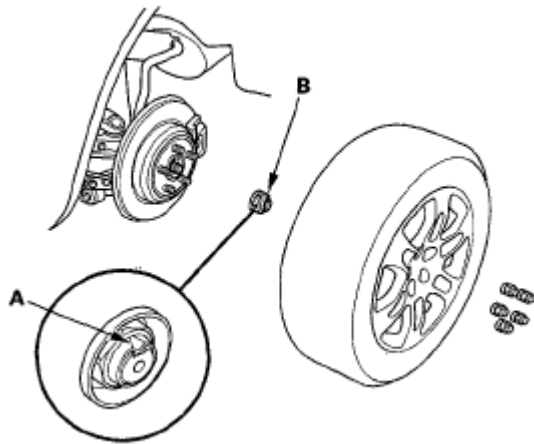


Fig. 73: Identifying Locking Tab On Spindle Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear wheel sensor (A) and harness clip (B).

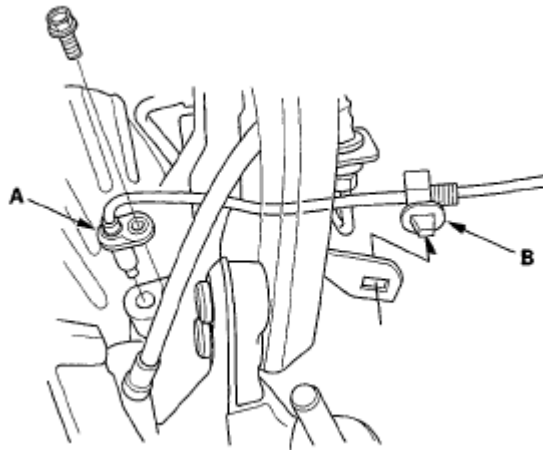


Fig. 74: Identifying VSA Rear Wheel Sensor And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the lock pin (A) from the upper arm ball joint castle nut (B), and remove the nut.

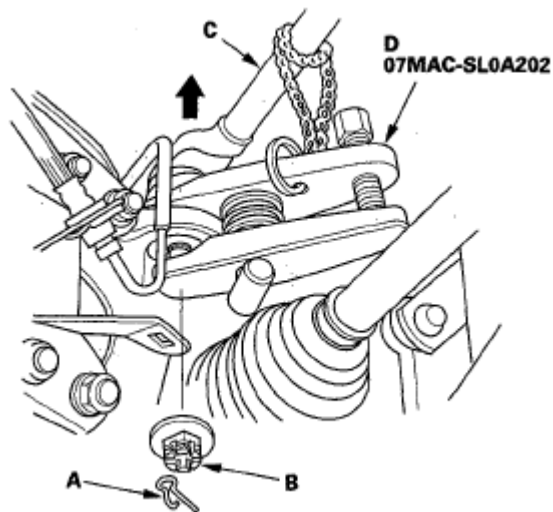


Fig. 75: Identifying Ball Joint From Upper Arm With Ball Joint Remover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Separate the ball joint from the upper arm (C) with the ball joint remover (D) (see **BALL JOINT REMOVAL**).
7. Remove the special self-locking nut (B), washer and flange bolt (C), then remove the lower arm A.

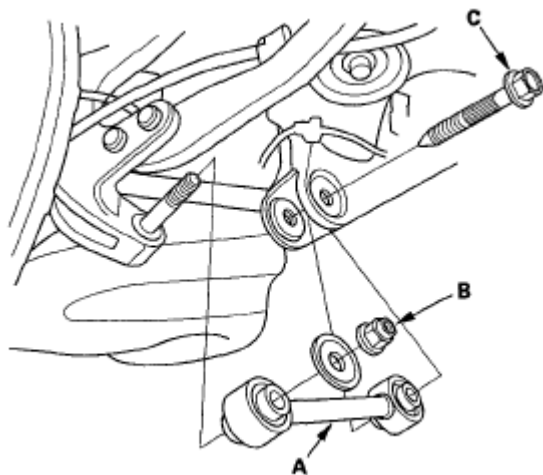


Fig. 76: Identifying Special Self-Locking Nut And Washer With Flange Bolt
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Place a transmission jack under lower arm B and remove the flange bolt (A).

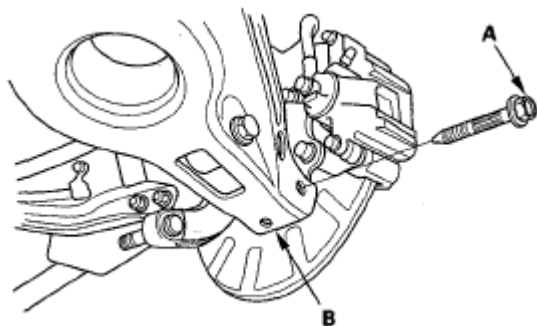


Fig. 77: Identifying Transmission Jack Under Lower Arm And Flange Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Loosen the rear driveshaft outboard joint from the rear hub using a plastic hammer.

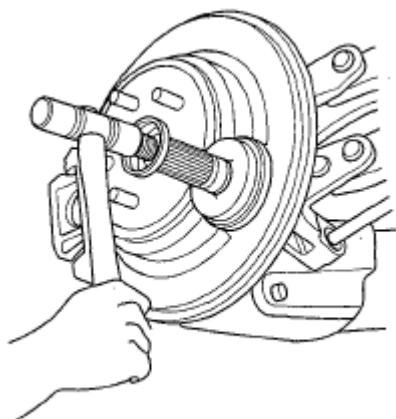


Fig. 78: Tapping Rear Driveshaft Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull the knuckle (A) outward, then remove the rear driveshaft outboard joint (B).

NOTE: When removing the outboard joint, continue supporting both the knuckle and lower arm with the transmission jack. Make sure not to over extend the brake hose.

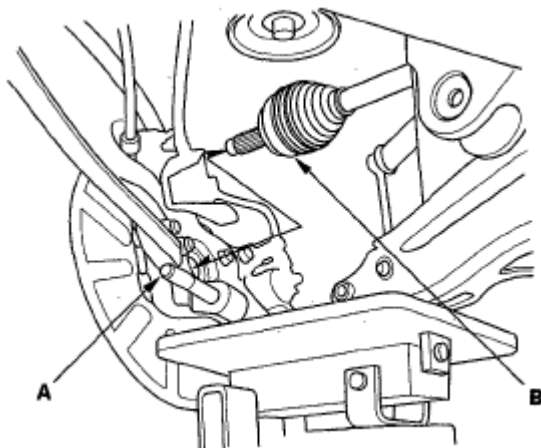


Fig. 79: Identifying Rear Driveshaft Outboard Joint And Knuckle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Using the driveshaft remover (A) and the hammer, pry out the inboard joint (B) from the rear differential (C).

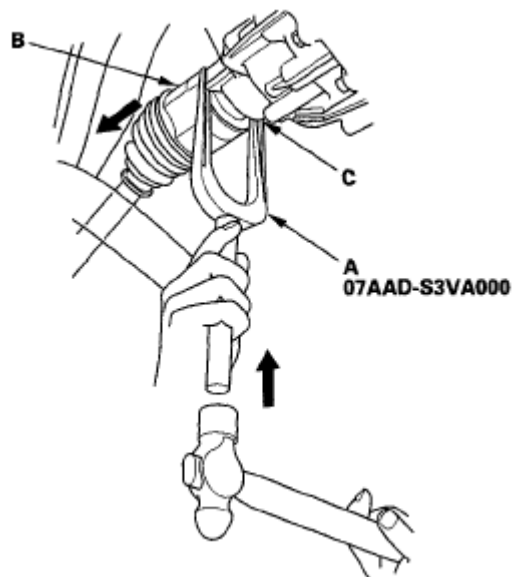


Fig. 80: Identifying Prying Out Inboard Joint From Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the rear driveshaft(A), then remove the set ring (B).

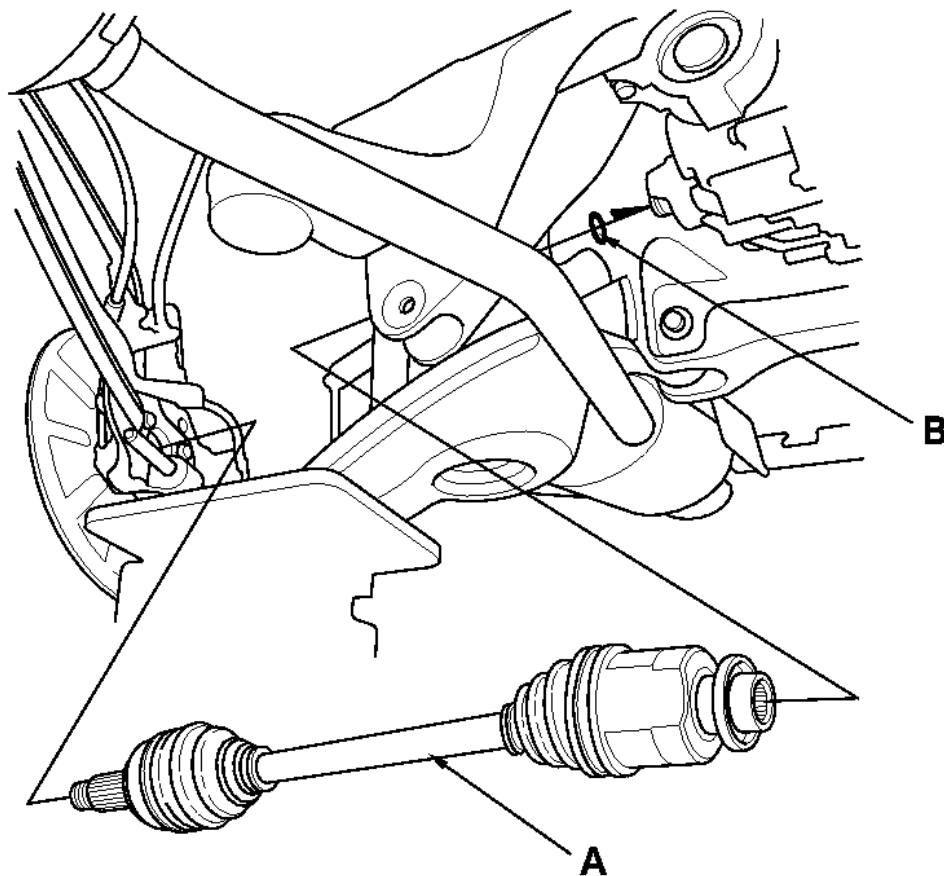


Fig. 81: Identifying Rear Driveshaft And Set Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DRIVESHAFT DISASSEMBLY

Special Tools Required

Threaded adapter, 24 x 1.5 mm 07XAC-001020A

Inboard Joint Side

1. Remove the boot bands. Be careful not to damage the boot (see step 1).
2. Make a mark (A) on each roller (B) and inboard joint (C) to identify the locations of the rollers and the grooves in the inboard joint. Then remove the inboard joint and place it on a shop towel (D). Be careful not to drop the rollers when separating them from the inboard joint.

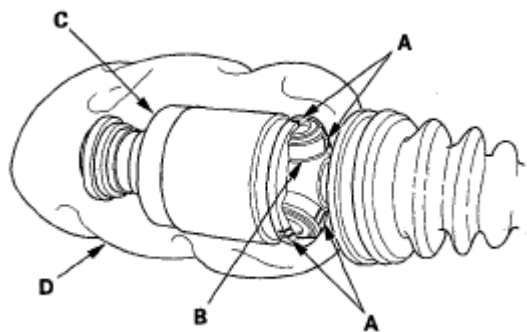


Fig. 82: Identifying Mark Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the circlip (A).

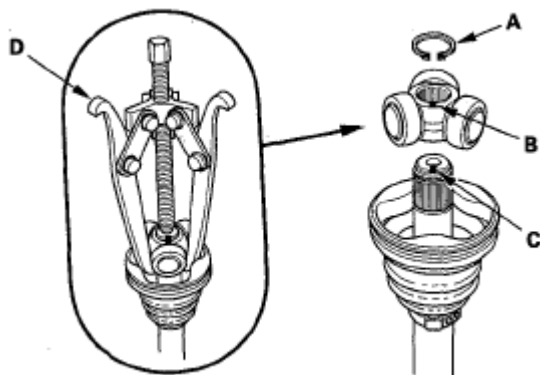


Fig. 83: Identifying Spider And Rollers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Make a mark on the spider (B) and driveshaft (C) to identify the position of the spider on the shaft.
5. Remove the spider and rollers using a commercially available bearing remover (D).
6. Wrap the splines on the driveshaft (A) with vinyl tape (B) to prevent damaging the boot.

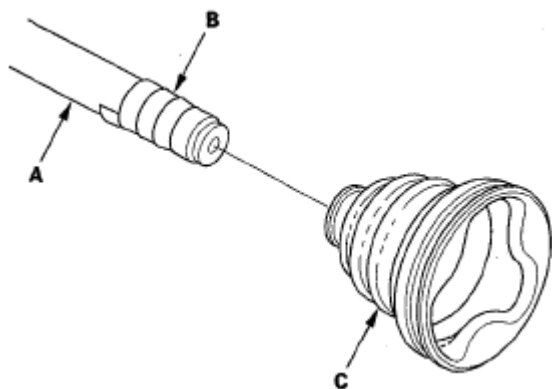


Fig. 84: Identifying Splines On Driveshaft With Vinyl Tape

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the inboard boot (C). Be careful not to damage the boot (see **INBOARD JOINT SIDE**).
8. Remove the vinyl tape.

Outboard Joint Side

1. Remove the boot bands. Be careful not to damage the boot (see step 1)).
2. Slide the outboard boot (A) partially to the inboard joint side. Be careful not to damage the boot.

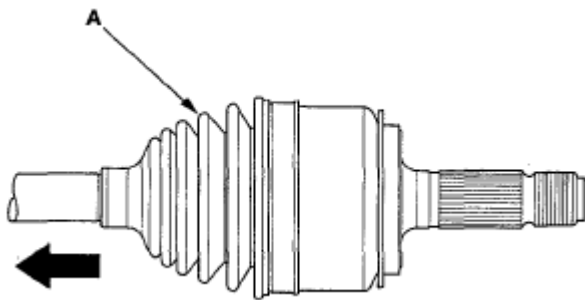


Fig. 85: Identifying Outboard Boot

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint end (C).

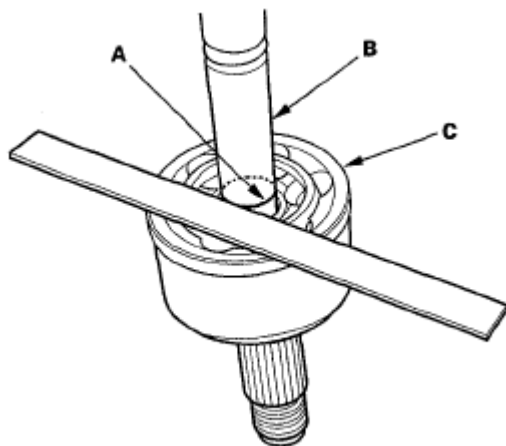


Fig. 86: Identifying Grease To Expose Driveshaft And Outboard Joint Inner Race

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Securely clamp the driveshaft in a bench vise with a shop towel.
6. Remove the outboard joint (A) using the 24x1.5mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).

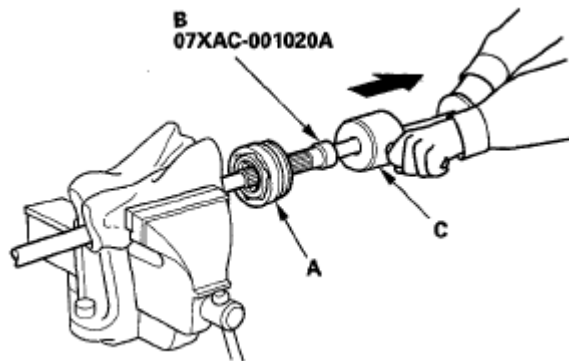


Fig. 87: Identifying Outboard Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the driveshaft from the bench vise.
8. Remove the stop ring (A) from the driveshaft (B).

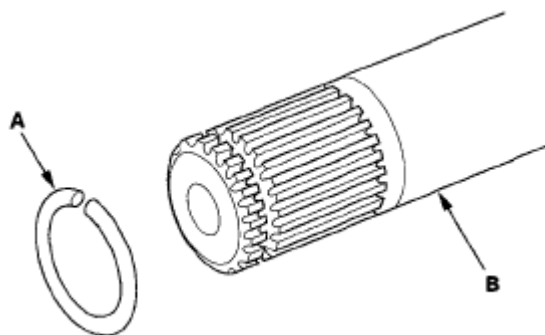


Fig. 88: Identifying Stop Ring From Driveshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Wrap the splines on the driveshaft with vinyl tape to prevent damaging to the boot.
10. Remove the outboard boot. Be careful not to damage the boot.
11. Remove the vinyl tape.

REAR DRIVESHAFT REASSEMBLY

Exploded View

2008 Acura MDX

2007-09 DRIVELINE/AXLES Driveline/Axle - MDX

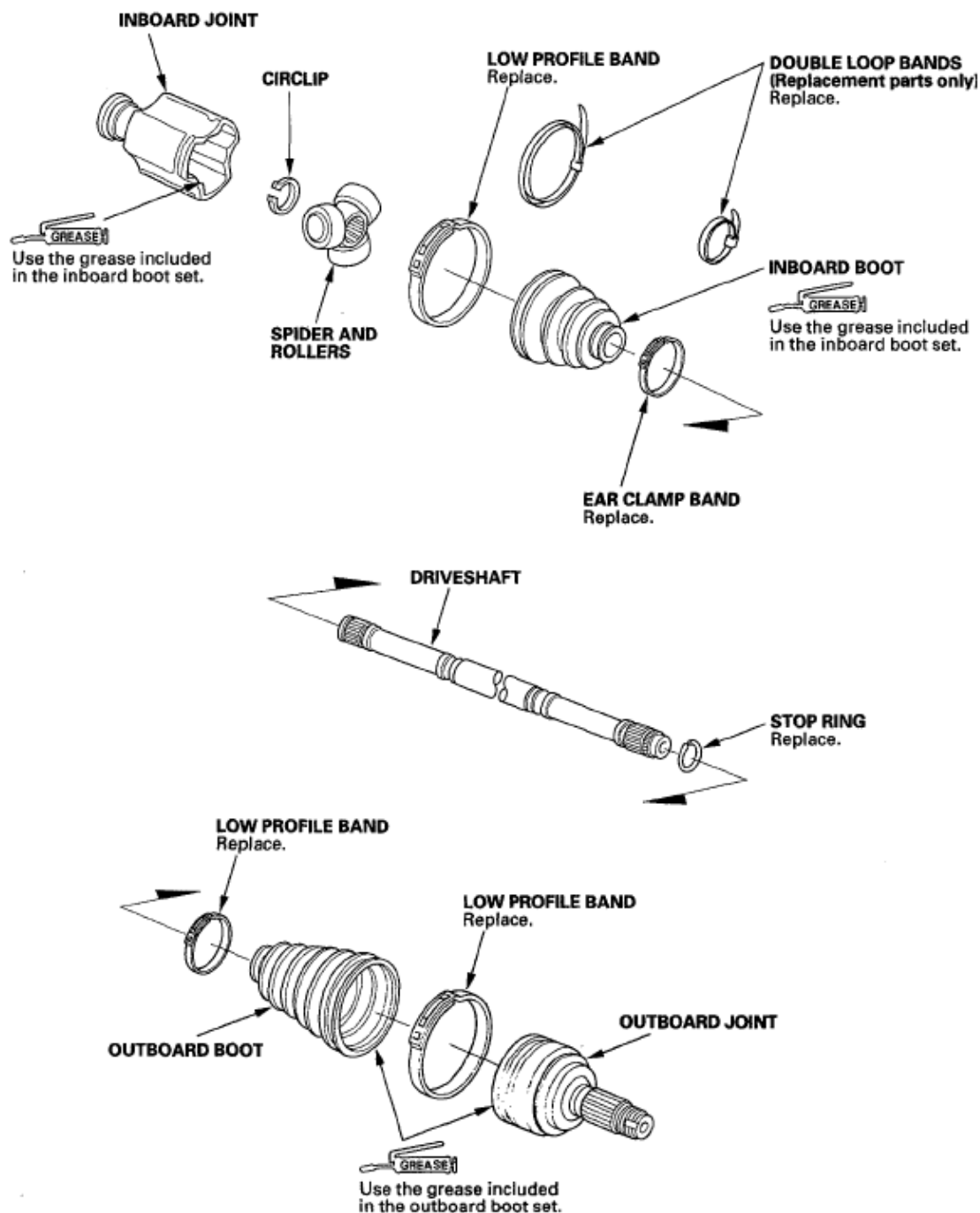


Fig. 89: Exploded View Of Rear Driveshaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

Inner handle, 30 mm 07946-MB00000

NOTE: Refer to the EXPLODED VIEW as needed during this procedure.

Inboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the inboard boot (B).

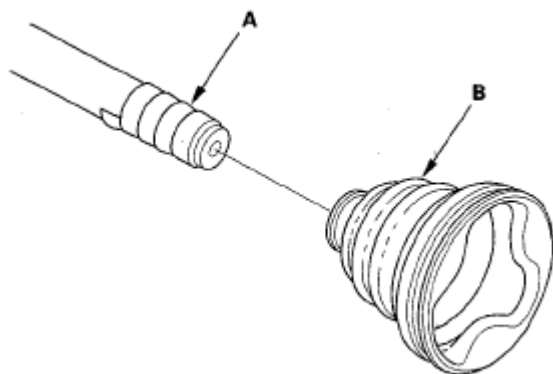


Fig. 90: Identifying Splines With Vinyl Tape

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the spider and rollers (A) onto the driveshaft by aligning the marks (B) you made, install it using the inner handle (C).

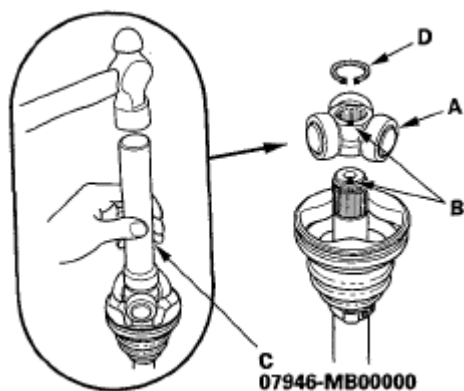


Fig. 91: Tapping Spider On Driveshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the circlip (D) into the driveshaft groove. Rotate the circlip in its groove to make sure it is fully seated.
4. Pack the inboard joint with the joint grease included in the new inboard boot set.



Fig. 92: Identifying Grease In Inboard Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Fit the inboard joint onto the driveshaft, and note these items:
 - Reinstall the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the rollers.
 - Hold the driveshaft so the inboard joint is pointing up to prevent it from falling off.

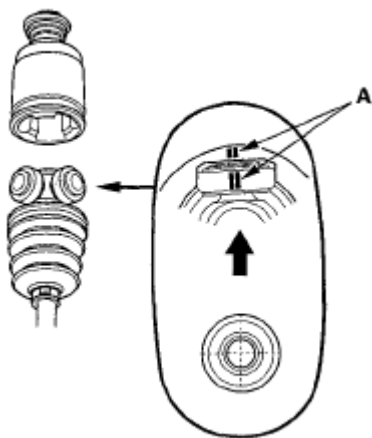


Fig. 93: Identifying Inboard Joint Onto Driveshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Fit the boot ends (A) onto the driveshaft (B) and outboard joint (C).

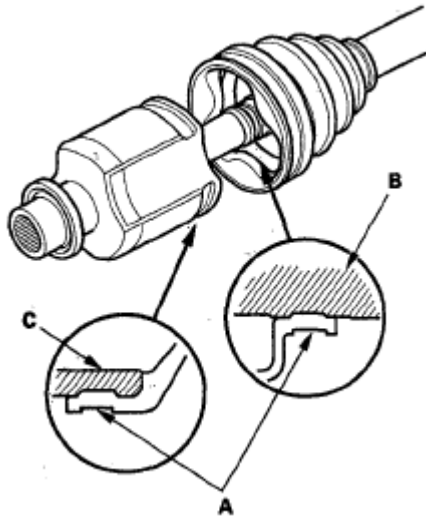


Fig. 94: Identifying Boot Onto Driveshaft And Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Adjust the length of the driveshafts to the figure as shown, then adjust the boots to halfway between full compression and full extension. Make sure the ends of the boots seat in the groove of the driveshaft and joint. Doing this prevents a vacuum or too much air in the boot, preventing it from compressing or extending properly.

Left driveshaft: 592.5—593.5 mm
(23.33—23.37 in.)
Right driveshaft: 621.5—622.5 mm
(24.47—24.51 in.)



Fig. 95: Identifying Driveshafts Length
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install new boot bands:
 - For the double loop type (see step 11 on)
 - For the low profile type (see step 20 on)

Outboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the outboard boot (B).

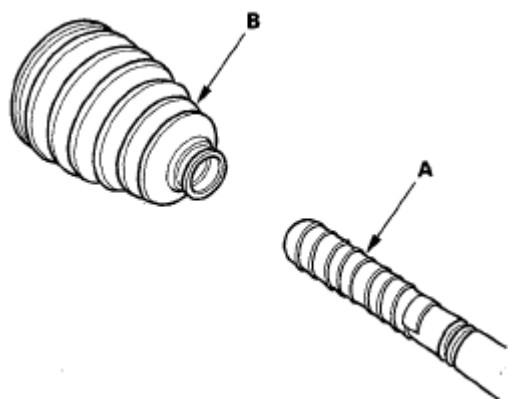


Fig. 96: Identifying Splines With Vinyl Tape

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the outboard boot, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Install a new stop ring (A) in the driveshaft groove (B).

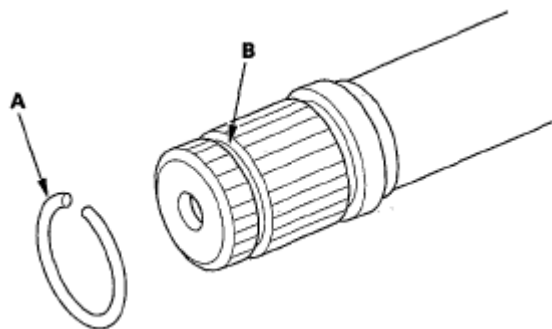


Fig. 97: Identifying Stop Ring In Driveshaft Groove

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pack about 35 g (1.2 oz) grease included in the new outboard boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.

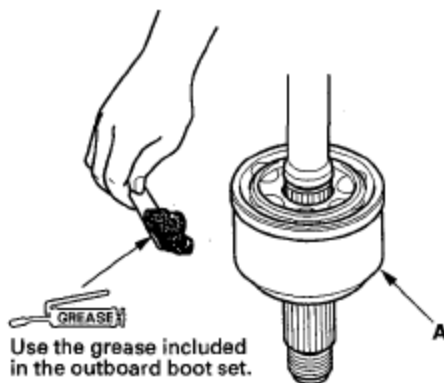


Fig. 98: Identifying Grease In Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint.

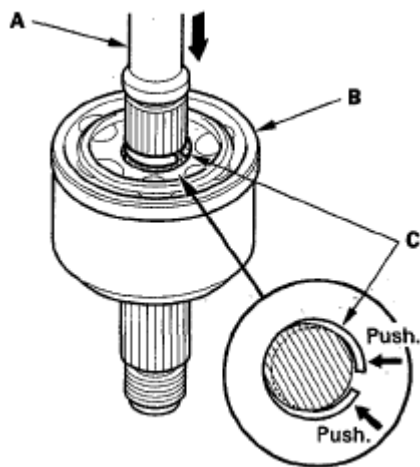


Fig. 99: Identifying Driveshaft Into Outboard Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. To completely seat the outboard joint, pick up the driveshaft and joint, and tap them on a hard surface.

NOTE: Do not use a hammer as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.

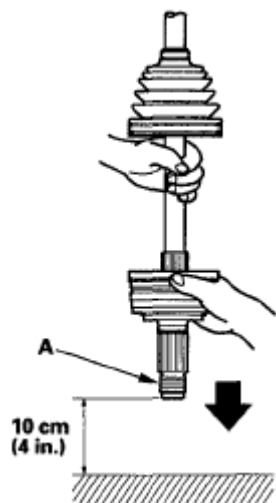


Fig. 100: Seating Outboard Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the alignment of the paint mark (A) you made with the outboard joint end (B).

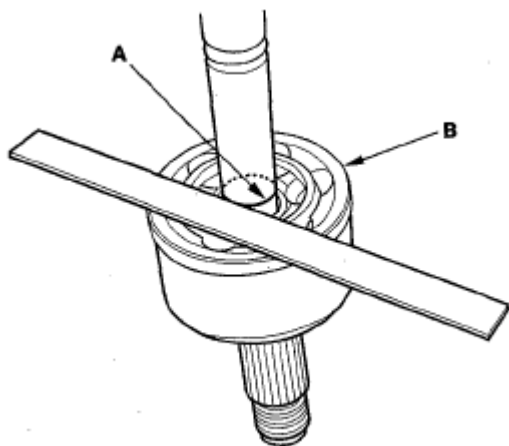


Fig. 101: Identifying Alignment Of Paint Mark

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pack the outboard joint (A) with the remaining joint grease included in the new outboard boot set.

NOTE: Total grease quantity ; Outboard joint: 85-105 g (3.0-3.7 oz)

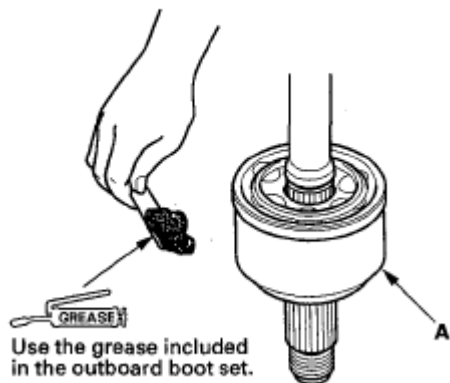


Fig. 102: Identifying Grease In Outboard Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Fit the boot ends (A) onto the driveshaft (B) and the outboard joint (C). Bleed any excess air from the boots by inserting a flat-tipped screwdriver between the boot and the joint.

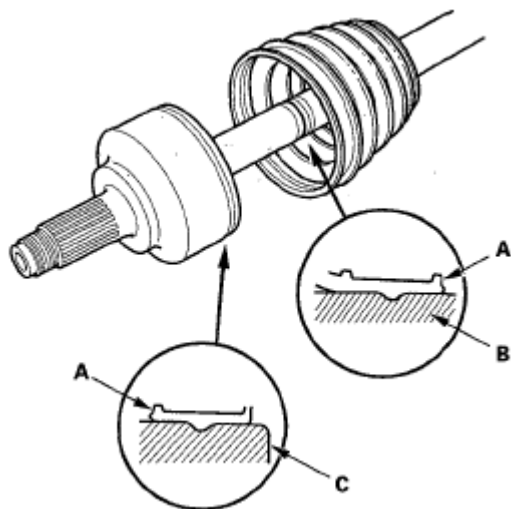


Fig. 103: Identifying Boot Onto Driveshaft And Outboard Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Inspect the length (A) of the driveshaft to the figure as shown, then adjust the boots to halfway between full compression and full extension.

Left driveshaft: 592.5—593.5 mm
(23.33—23.37 in.)
Right driveshaft: 621.5—622.5 mm
(24.47—24.51 in.)

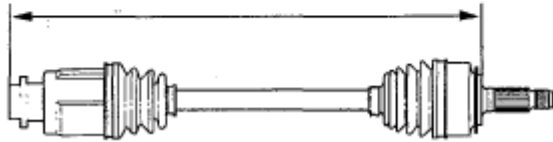


Fig. 104: Identifying Driveshafts Length

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the new low profile bands (see step 20).
12. Install the boot band on the other end of the boot, and repeat step 11.

REAR DRIVESHAFT INSTALLATION

NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are free from dirt or dust.

1. Apply 1.5-2.0 g (0.05-0.07 oz) of grease to the whole splined surface (A). After applying grease, remove the grease from the splined grooves at intervals of 2-3 splines and from the set ring groove (B) so that air can bleed from the differential.

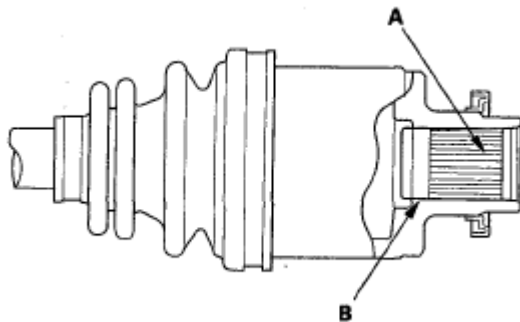


Fig. 105: Identifying Grease To Splined Surface

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install a new set ring in the set ring groove (A) of the differential.

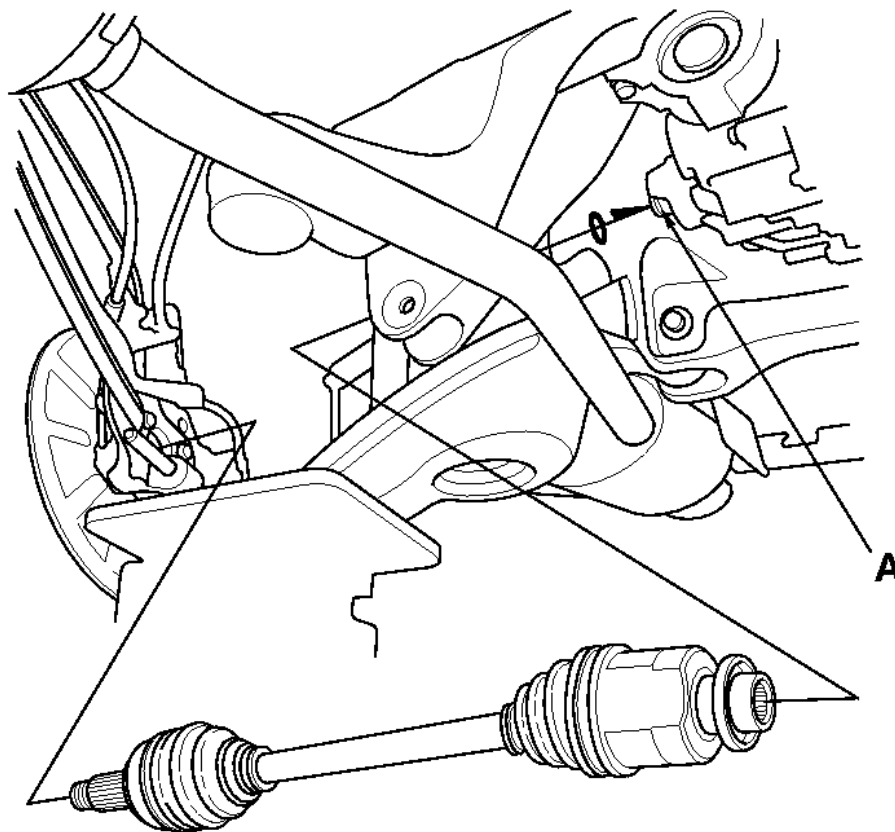


Fig. 106: Identifying Set Ring Groove

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean the areas where the driveshaft contacts the differential thoroughly with solvent or brake cleaner, and dry with compressed air. Insert the inboard end (A) of the driveshaft into the differential (B) until the set ring (C) locks in the groove (D).

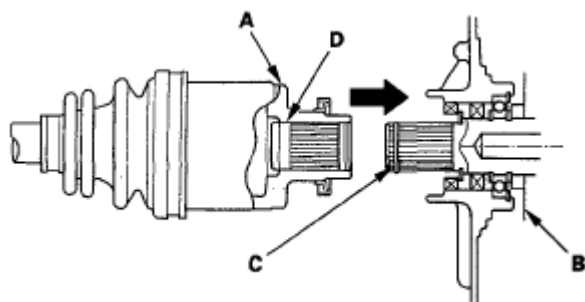


Fig. 107: Identifying Inboard Of Driveshaft Into Differential

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the knuckle (A) outward, and install the rear driveshaft outboard joint (B) into the rear hub.

NOTE: When installing the outboard joint continue supporting both the knuckle and lower arm with the transmission jack. Make sure not to over extend the brake hose.

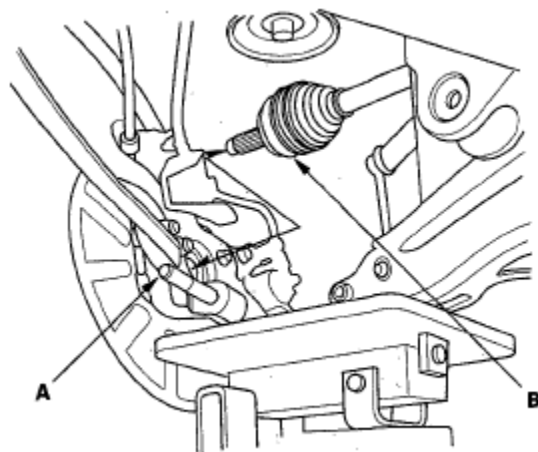


Fig. 108: Identifying Rear Driveshaft Outboard Joint And Knuckle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Loosely install the flange bolt (A) onto lower arm B.

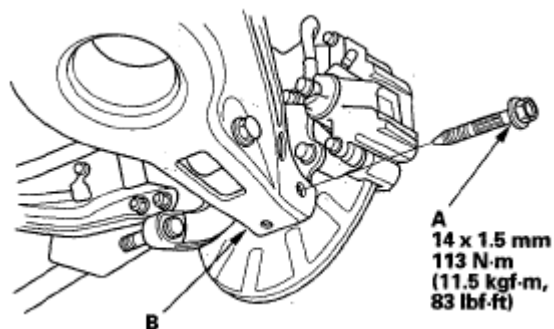


Fig. 109: Identifying Flange Bolt Onto Lower Arm With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the lower arm A, then loosely install a new flange bolt (B) and a new self-locking nut (C) with a washer (D).

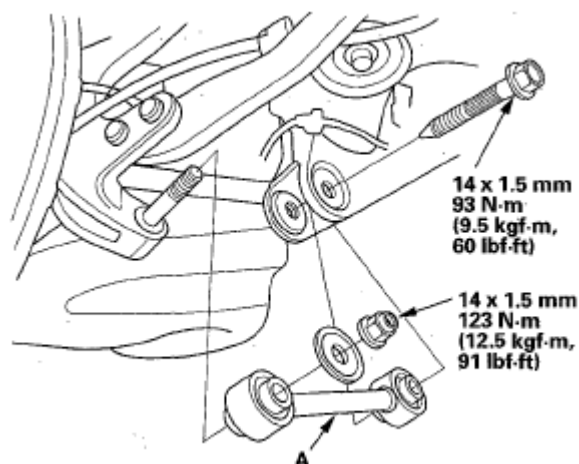


Fig. 110: Identifying Lower Arm And Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the upper arm (A). Be careful not to damage the ball joint boot (B). Wipe off the grease before tightening the nut at the ball joint.

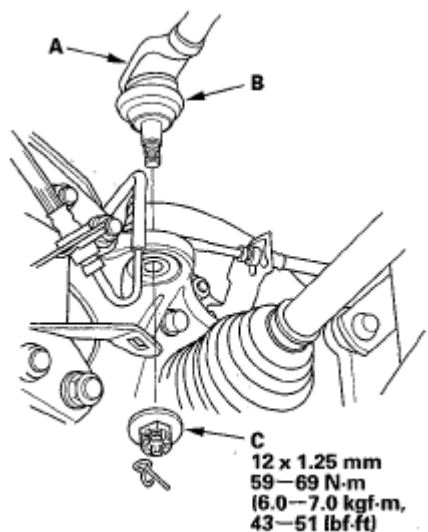


Fig. 111: Identifying Upper Arm And Ball Joint Boot With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Torque the new castle nut (C) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the nut by loosening it.

NOTE: Make sure the ball joint boot is not damaged or cracked.

9. Install the rear wheel sensor (A) and harness clip (B).

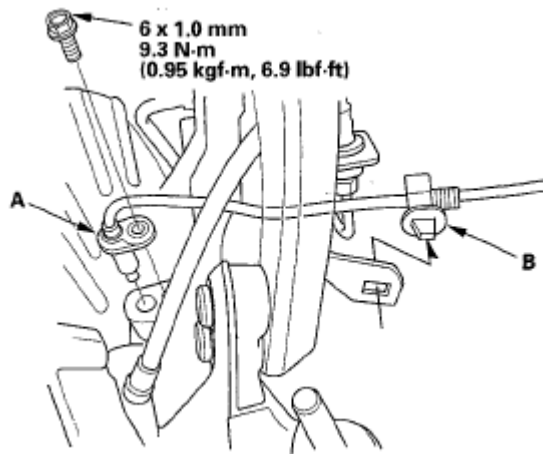


Fig. 112: Identifying VSA Rear Wheel Sensor And Harness Clip With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Place a floor jack under the lower arm, and raise the suspension to load it with the vehicle's weight.

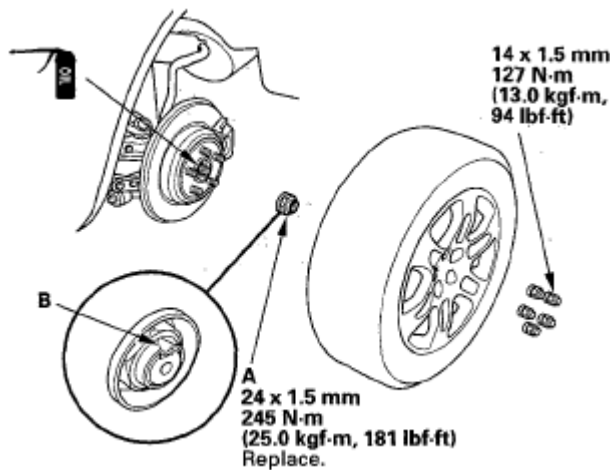


Fig. 113: Identifying Spindle Nut With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Tighten the lower arm B flange bolt, the lower arm A self-locking nut and the lower arm A flange bolt to the specified torque values.
12. Apply a small amount of engine oil to the seating surface of a new spindle nut (A).
13. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
14. Clean the mating surfaces of the brake disc and the rear wheel, then install the rear wheels.
15. Turn the rear wheel by hand, and make sure there is no interference between the driveshaft and surrounding parts.
16. Lower the vehicle on the lift.
17. Check the rear wheel alignment, and adjust it if necessary.(see **WHEEL ALIGNMENT**).

18. Test-drive the vehicle

PROPELLER SHAFT INSPECTION

Universal Joint and Boots

1. Shift the transmission to .
2. Raise the vehicle on a lift (see **LIFT AND SUPPORT POINTS**).
3. Check the center support bearing (A) for excessive play or rattle. If the center support has excessive play or rattle, replace the propeller shaft assembly.

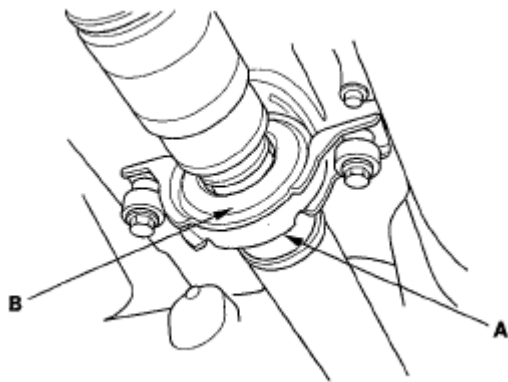


Fig. 114: Identifying Center Support Bearing And Rubber Portion Mount
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the rubber portion of the mount (B) for damage and deterioration. If the rubber portion is damaged or deteriorated, replace the propeller shaft assembly.
5. Check the universal joints for excessive play or rattle. If the universal joints have excessive play or rattle, replace the propeller shaft assembly.

Propeller Shaft Runout

6. Install a dial indicator with its needle on the center of No. 1 propeller shaft or No. 2 propeller shaft.
7. Turn the other propeller shaft slowly, and check the runout. Repeat this procedure for the other propeller shaft.

No. 1 Propeller Shaft Runout Service Limit: 1.5 mm (0.06 in.)

**No. 1 Propeller Shaft Runout
Service Limit: 1.5 mm (0.06 in.)**

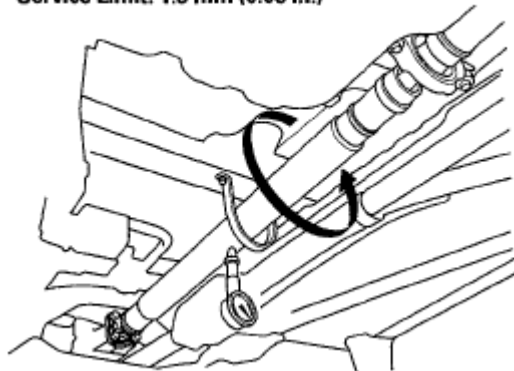


Fig. 115: Identifying Propeller Shaft Runout No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

No. 2 Propeller Shaft Runout Service Limit: 1.5 mm (0.06 in.)

**No. 2 Propeller Shaft Runout
Service Limit: 1.5 mm (0.06 in.)**

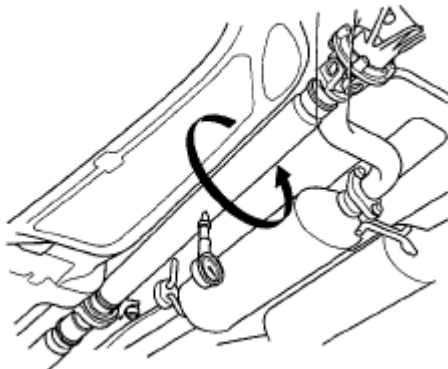


Fig. 116: Identifying Propeller Shaft Runout No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

PROPELLER SHAFT REMOVAL

1. Raise the vehicle on a lift.
2. Remove the propeller shaft protector.

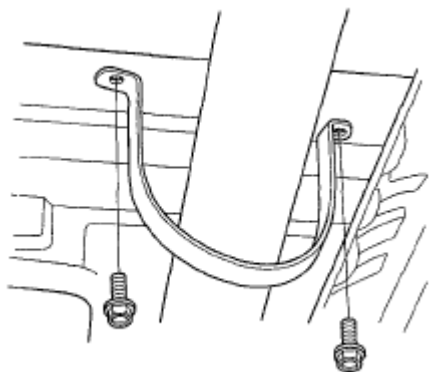


Fig. 117: Identifying Propeller Shaft Protector And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make a reference mark (A) across the No. 1 propeller shaft (B) and transfer companion flange (C).

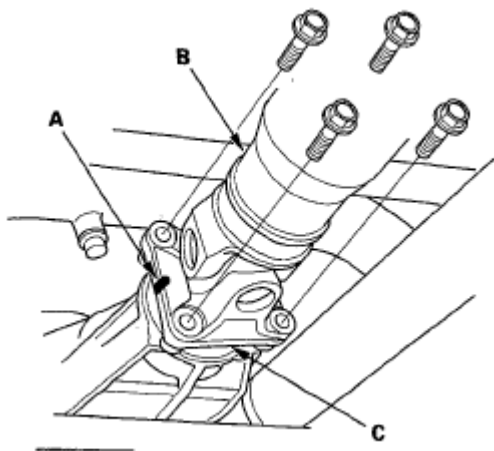


Fig. 118: Identifying No. 1 Propeller Shaft And Transfer Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Separate the No. 1 propeller shaft from the transfer assembly.
5. Remove the center support bearing mounting bolts.

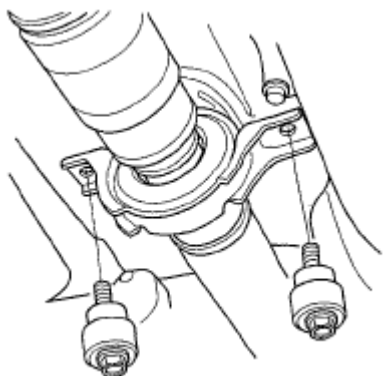
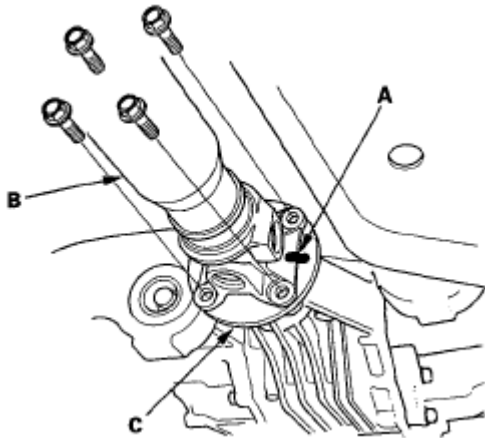


Fig. 119: Identifying Center Support Bearing Mounting Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Make a reference mark (A) across the No. 2 propeller shaft (B) and rear differential companion flange (C).

**Fig. 120: Identifying No. 2 Propeller Shaft And Transfer Companion Flange**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Separate the No. 2 propeller shaft from the rear differential, then remove the propeller shaft assembly.

PROPELLER SHAFT INSTALLATION

1. If you are installing a new propeller shaft, go to step 2.

If you are reinstalling the original propeller shaft, go to step 3.

2. Install the new propeller shaft (A) onto the rear differential (B), by aligning the reference mark (C) on the new propeller shaft with the factory reference mark (D) on the companion flange (E). Do not use the marks you made on the companion from the removal procedure. If there are no factory marks on the companion flange, go to step 4.

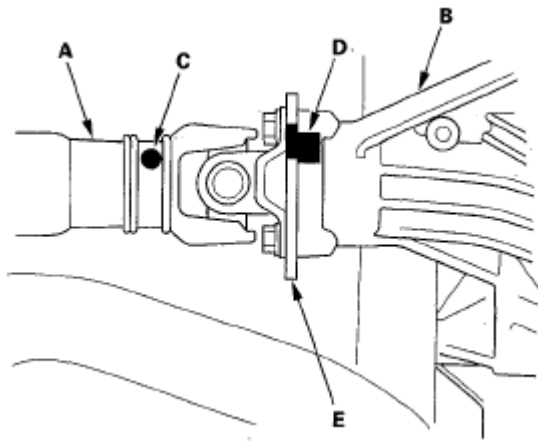


Fig. 121: Identifying Reference Mark On Propeller Shaft With Factory Reference Mark On Companion Flange

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the No. 2 propeller shaft (A) to the rear differential (B) by aligning the reference marks (C) you made during the removal procedure.

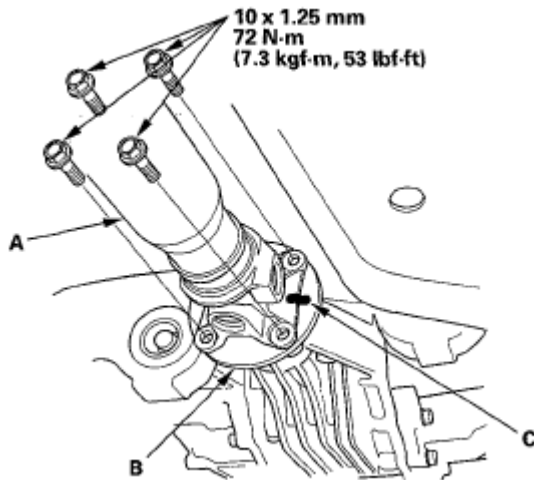


Fig. 122: Identifying No. 2 Propeller Shaft To Rear Differential With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Attach the No. 2 propeller shaft to the rear differential with new mounting bolts. Tighten the bolts to the specified torque.
5. Install the center support bearing mounting bolts. Make sure you use new bolts.

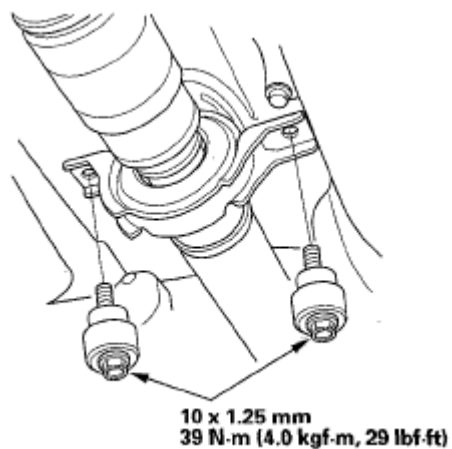


Fig. 123: Identifying Center Support Bearing Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the No. 1 propeller shaft (A) onto the transfer companion flange (B) by aligning the reference mark (C). Make sure you use new mounting bolts.

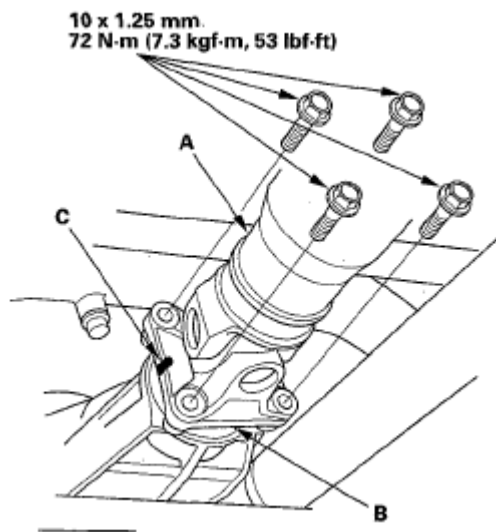


Fig. 124: Identifying No. 1 Propeller Shaft Onto Transfer Companion Flange With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the propeller shaft protector.

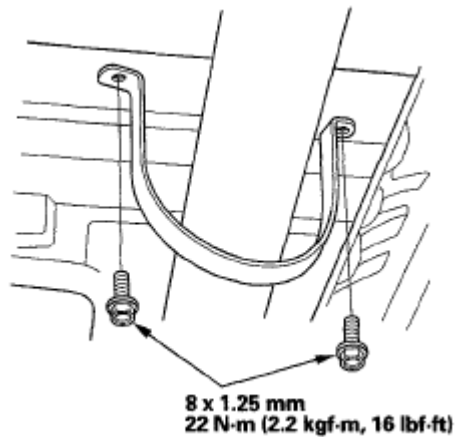


Fig. 125: Identifying Propeller Shaft Protector With Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If you installed a new propeller shaft, test drive the vehicle at 55 mph (88 kph) and check for noise or vibration.
 - If there is no noise or vibration, the repair is complete.
 - If there is a noise or vibration, go to step 9.
9. Remove the mounting bolts from the propeller shaft at the rear differential companion flange. Note the current alignment of the propeller shaft to rear differential companion flange.
10. Rotate the propeller shaft 180 degrees from its current alignment with the rear differential companion flange.
11. Install new mounting bolts and tighten them to the specified torque.

2008 Acura MDX

2007-08 BRAKES Conventional Brake Components - MDX

2007-08 BRAKES

Conventional Brake Components - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAE-SEPA101	Brake Caliper Piston Compressor	1
②	070AB-SJA0100	Booster Piston Holder	1

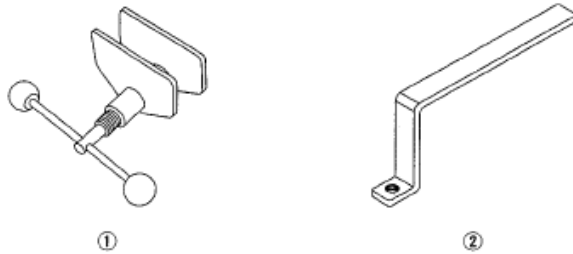


Fig. 1: Identifying Special Tool

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-08 BRAKES Conventional Brake Components - MDX

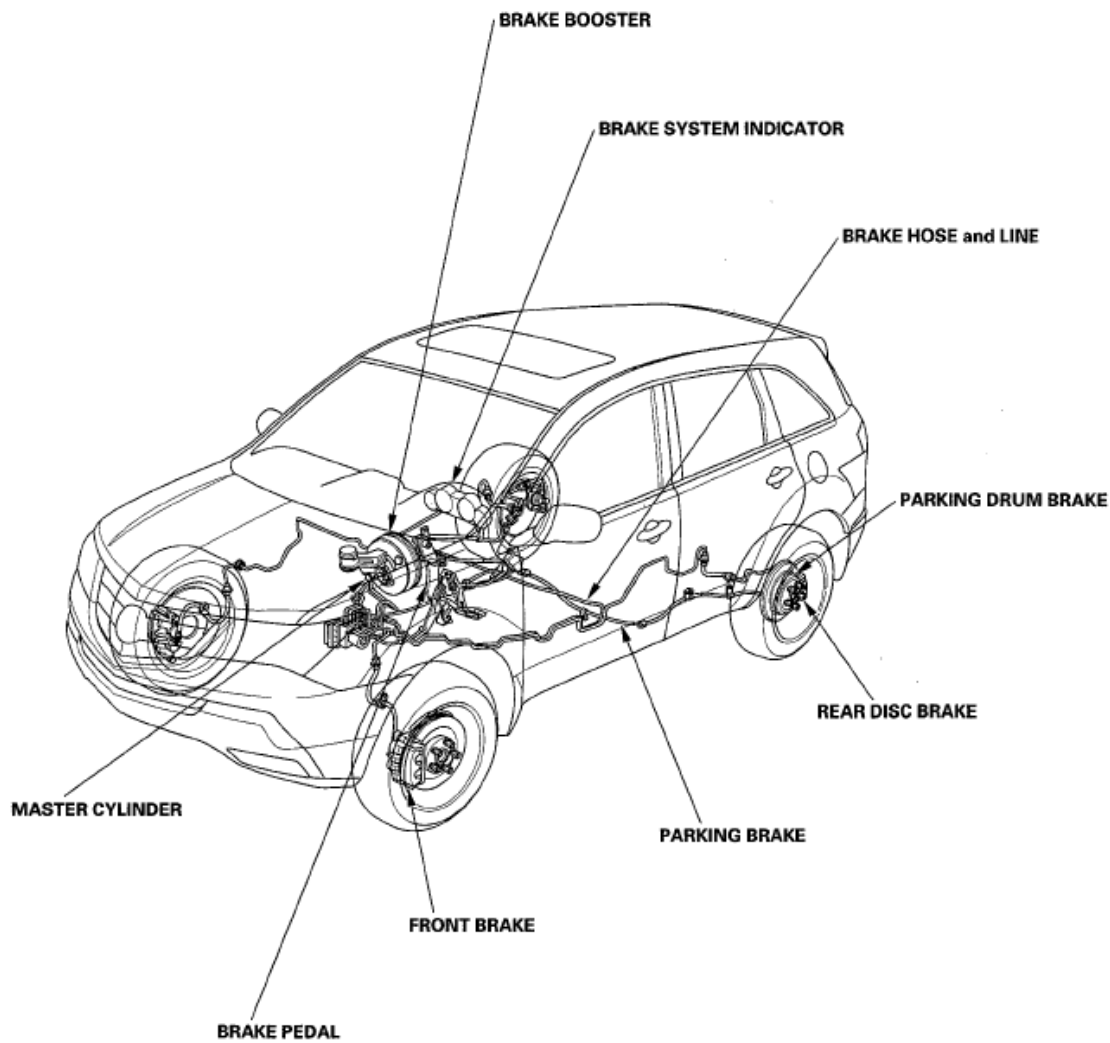


Fig. 2: Identifying Conventional Brake Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE SYSTEM INSPECTION AND TEST

Inspect the brake system components listed. Repair or replace any parts that are leaking or damaged.

Component Inspections:

COMPONENT INSPECTIONS

Component	Procedure	Also check for
Master Cylinder	Look for damage or signs of fluid leakage at: • Reservoir or reservoir grommets.	Bulging seal at reservoir cap. This is a

2008 Acura MDX

2007-08 BRAKES Conventional Brake Components - MDX

	• Line joints. • Between master cylinder and booster.	sign of fluid contamination.
Brake Hoses	Look for damage or signs of fluid leakage at: • Line joints and banjo bolt connections. • Hoses and lines, also inspect for twisting or damage.	Bulging, twisted, or bent lines.
Caliper	Look for damage or signs of fluid leakage at: • Piston seal. • Banjo bolt connections. • Bleed screw.	Seized or sticking caliper pins.
VSA Modulator-control Unit	Look for damage or signs of fluid leakage at: • Line joints. • Modulator-control unit.	

BRAKE SYSTEM TEST

Brake pedal sinks/fades when braking

1. Set the parking brake, and start the engine, then turn off the A/C. Allow the engine to warm up to normal operating temperature (radiator fan comes on twice).
2. Attach a 50 mm (2 in.) piece of masking tape along the bottom of the steering wheel, and draw a horizontal reference mark across it.
3. With the transmission in the P or N, press and hold the brake pedal lightly (about the same pressure needed to keep an A/T-equipped vehicle from creeping), then release the parking brake.
4. While still holding the brake pedal, hook the end of the tape measure behind the brake pedal, then pull the tape up to the steering wheel. Note the measurement between the brake pedal and the reference mark on the steering wheel.
5. Apply steady pressure to the brake pedal for 3 minutes.
6. Watch the tape measure.
 - If the measurement increases 10 mm (3/8 in.) or less, the master cylinder is OK.
 - If the measurement increases more than 10 mm (3/8 in.), replace the master cylinder.

SYMPTOM TROUBLESHOOTING

RAPID BRAKE PAD WEAR, VEHICLE VIBRATION (AFTER A LONG DRIVE), OR HIGH, HARD

BRAKE PEDAL

NOTE: **Make sure that the caliper pins are installed correctly.**

The upper caliper pin B and lower caliper pin A are different. If the pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear. For proper caliper pin location (see **FRONT BRAKE CALIPER OVERHAUL**).

1. Drive the vehicle until the brakes drag or until the pedal is high and hard. This can take 20 or more brake pedal applications during an extended test-drive.
2. With the engine running, raise the vehicle on a lift, and spin all four wheels by hand.

Is there brake drag at any of the wheels?

YES - Go to step 3.

NO - Look for other causes of pad wear, high pedal, or vehicle vibration.

3. Turn the ignition switch to LOCK (0), press the brake pedal several times to deplete the vacuum in the brake booster, and then spin the wheels again to check for brake drag.

Is there brake drag at any of the wheels?

YES - Go to step 4.

NO - Replace the brake booster (see **BRAKE BOOSTER REPLACEMENT**).

4. Without removing the brake lines, unbolt and separate the master cylinder from the booster, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES - Go to step 5.

NO - Check the brake pedal position switch adjustment and pedal free play (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

5. Loosen the hydraulic lines at the master cylinder, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES - Go to step 6.

NO - Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid. If the brake fluid is OK, replace the master cylinder (see **MASTER CYLINDER REPLACEMENT**).

- Loosen the bleed screws at each caliper, then spin the wheels to check for brake drag.

Is there brake drag at any of the wheels?

YES - Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid. If the brake fluid is OK, disassemble and repair the caliper on the wheel(s) with brake drag.

NO - Look for and replace any damaged brake lines. If all brake lines are OK, replace the VSA modulator-control unit (see VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION).

BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT

PEDAL HEIGHT

- Turn the brake pedal position switch (A) counterclockwise, and pull it back until it is no longer touching the brake pedal.

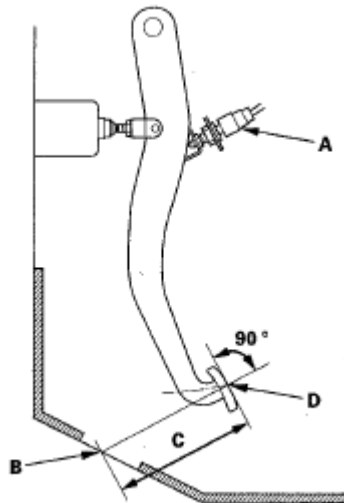


Fig. 3: Identifying Brake Pedal Position Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Pull back the carpet and find the cutout (B) in the insulation. Measure the pedal height (C) at the center of the pedal pad (D) to the floor without the insulation.

Standard pedal height (with carpet removed): 178 mm (7 in.)

- Loosen the pushrod locknut (A), and screw the pushrod (8) in or out with pliers until the standard pedal height from the floor is reached. After adjustment, tighten the locknut firmly. Do not adjust the pedal height with the pushrod pressed.

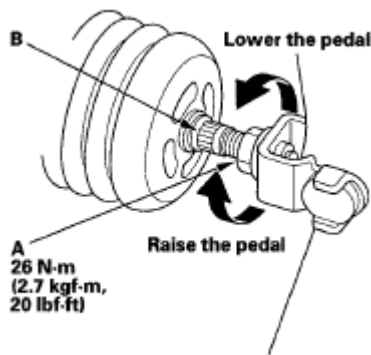


Fig. 4: Identifying Pushrod Locknut With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Brake Pedal Position Switch Clearance

4. Lift up on the brake pedal by hand. Push in the brake pedal position switch until its plunger is fully pressed (threaded end (A) touching the pad (B) on the pedal arm). Turn the switch 45° clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to 0.7 mm (0.028 in.) by locking the switch. Make sure the brake lights go off when the pedal is released.

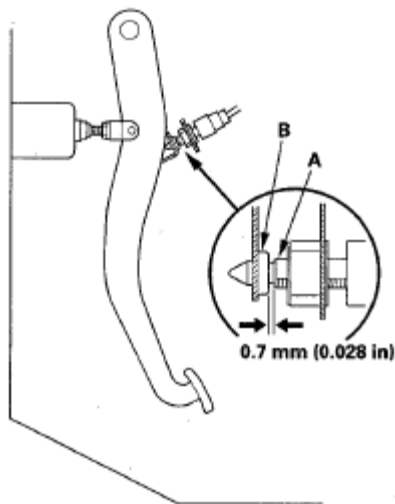


Fig. 5: Identifying Brake Pedal Position Switch Clearance
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the brake pedal free play.

PEDAL FREE PLAY

1. With the ignition switch LOCK (0), inspect the play (A) at the brake pedal pad (B) by pushing the brake pedal by hand. If the brake pedal free play is out of specification, adjust the brake pedal position switch (C). If the brake pedal free play is insufficient, it may result in brake drag.

Free play: 1-5 mm (1/16-3/16 in.)

Free play: 1—5 mm (1/16—3/16 in.)

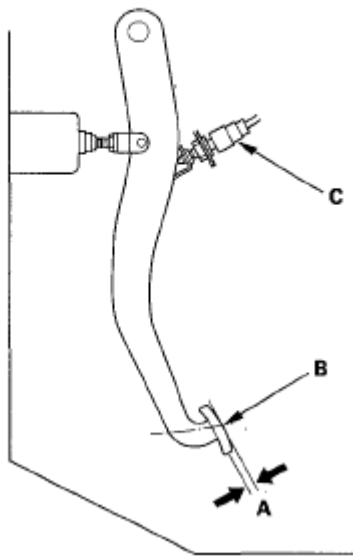


Fig. 6: Identifying Pedal Free Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION AND ADJUSTMENT

INSPECTION

1. Press the parking brake pedal (A) with 294 N (30 kgf, 66 lbf) of force to fully apply the parking brake. The parking brake pedal should be locked within the specified number of clicks.

Pedal locked clicks: 9 to 11

Pedal locked clicks: 9 to 11

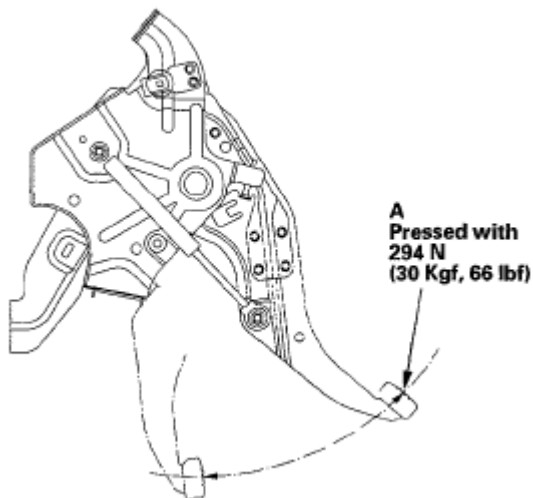


Fig. 7: Identifying Parking Brake Pedal With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Adjust the parking brake if the pedal clicks are not within the specification.

NOTE: Minor parking brake pedal adjustments (1 to 2 clicks) can be made with the adjusting nut (see parking brake minor adjustment). If a larger adjustment is required, follow the major adjustment procedure using the adjuster nut at the parking brake drum (see parking brake major adjustment). After installing new parking brake shoes and/or new brake disc/drum, make sure you drive the vehicle for "break-in" (see PARKING BRAKE SHOE LINING BREAK-IN).

Minor Adjustment

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Fully release the parking brake pedal.
3. Press the parking brake pedal 1 click.
4. Tighten the parking brake adjusting nut (A) until the parking brakes drag slightly when the rear wheels are turned.

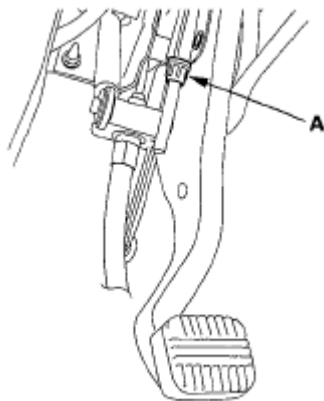


Fig. 8: Identifying Parking Brake Adjusting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the parking brake pedal fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
6. Make sure the parking brakes are fully applied when the parking brake pedal is pressed all the way.

Major Adjustment (to be done when replacing parking brake shoes and after lining surface break-in)

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Fully release the parking brake pedal.
3. Back off the parking brake adjusting nut (A) in the parking brake pedal.

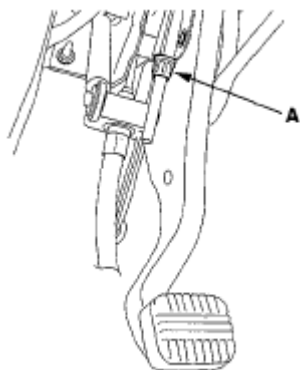


Fig. 9: Identifying Parking Brake Adjusting Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear wheels.
5. Remove the access plug (A).

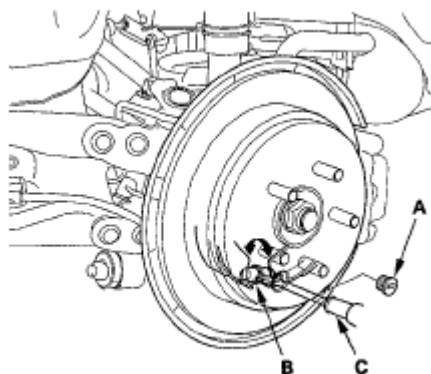


Fig. 10: Identifying Access Plug

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ratchet teeth on the adjuster nut (B) with a flat-tip screwdriver (C) until the shoes lock against the parking brake drum. Then back off the adjuster 10 clicks, and install the access plug.
7. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.
8. Do the minor adjustment procedure.

BRAKE SYSTEM BLEEDING

NOTE:

- Do not reuse the drained fluid. Use only clean Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.
- Do not mix different brands of brake fluid; they may not be compatible.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not spill brake fluid on the vehicle, it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- The reservoir connected to the master cylinder must be at the MAX (upper) level mark at the start of the bleeding procedure and checked after bleeding each wheel. Add fluid as required.

1. Make sure the brake fluid level in the reservoir (A) is at the MAX (upper) level line (B).

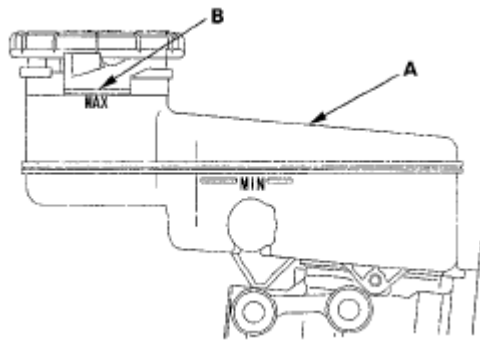


Fig. 11: Identifying Reservoir Is At MAX (Upper) Level Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Start the bleeding at the driver's side of the front brake system.

NOTE: Bleed the calipers or the wheel cylinders in the sequence shown.

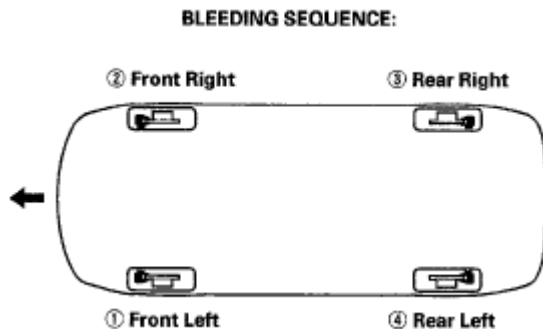


Fig. 12: Identifying Bleeding Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Attach a length of clear drain tube (A) to the bleed screw (B), then, loosen the bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.

Front

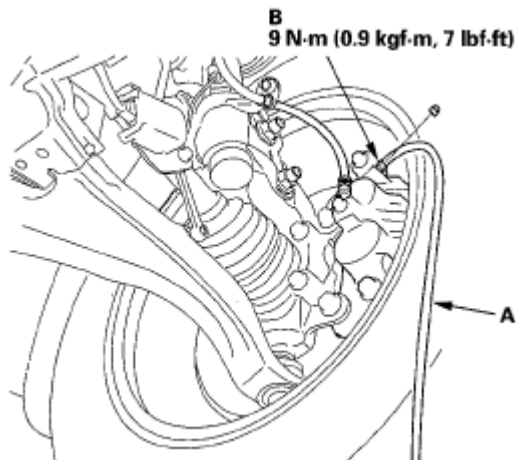


Fig. 13: Identifying Drain Tube And Bleed Screw With Torque Specification (Front)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

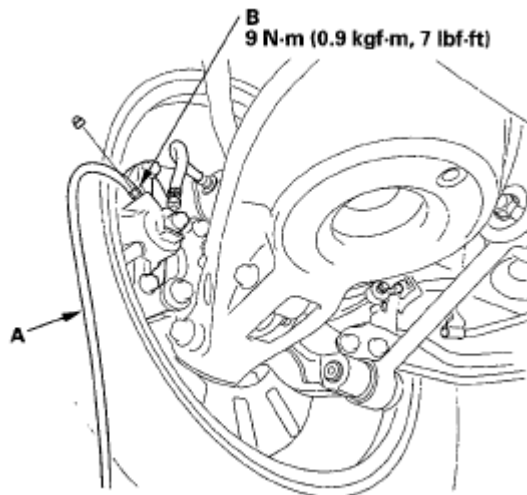


Fig. 14: Identifying Drain Tube And Bleed Screw With Torque Specification (Rear)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Refill the master cylinder reservoir to the MAX (upper) level line.
6. Repeat the procedure for each brake circuit until there are no air bubbles are in the fluid.

BRAKE SYSTEM INDICATOR CIRCUIT DIAGRAM

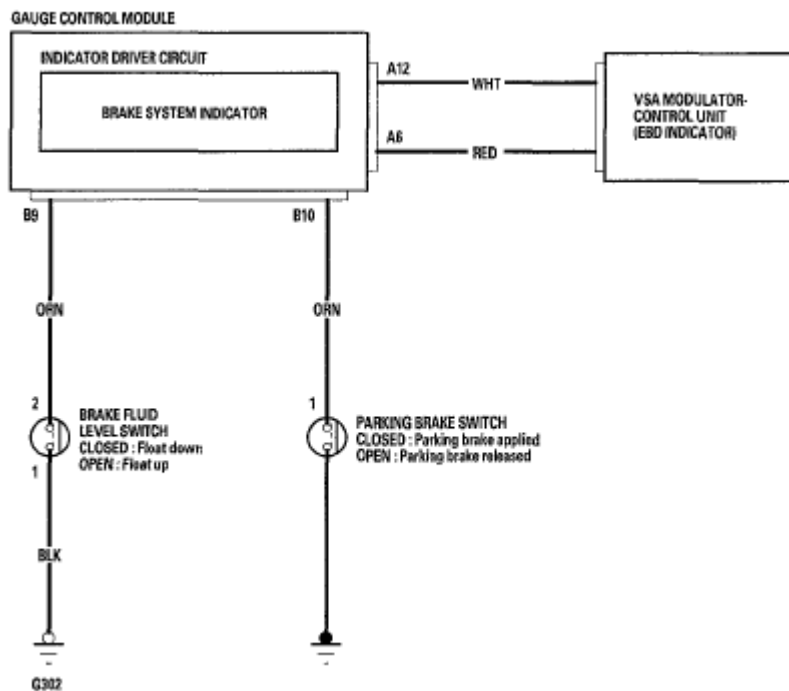


Fig. 15: Brake System Indicator Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE SWITCH TEST

NOTE: If both the ABS/VSA indicator, the brake system indicator, and the trailer stability assist warning come on at the same time, check the VSA system first (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the parking brake switch connector (A) from the parking brake switch (B).

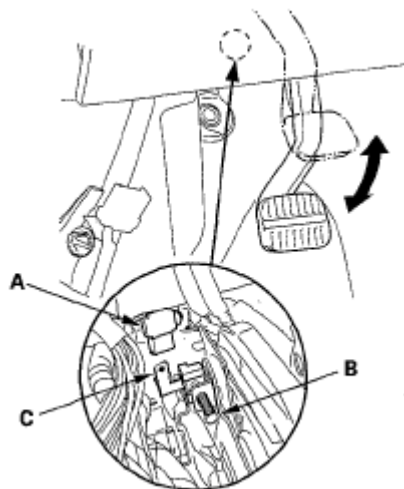


Fig. 16: Identifying Parking Brake Switch Connector And Parking Brake Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the positive terminal (C) and body ground.
 - With the parking brake pedal pressed, there should be continuity.
 - With the parking brake pedal released, there should be no continuity.

NOTE: If the parking brake switch and the fluid level switch are OK, but the brake system indicator does not function, do the gauge control module test (see SELF-DIAGNOSTIC FUNCTION).

3. Connect the parking brake switch connector to the parking brake switch.

BRAKE FLUID LEVEL SWITCH TEST

Check for continuity between the terminals (1) and (2) with the float in the down position and in the up position.

- NOTE:**
- Remove the brake fluid completely from the reservoir. With the float down, there should be continuity.
 - Fill the reservoir with brake fluid to the MAX (upper) level (A). With the float up, there should be no continuity.
 - If both the ABS/VSA indicator, the brake system indicator, and the trailer stability assist warning come on at the same time, check the VSA system first (see GENERAL TROUBLESHOOTING INFORMATION).
 - If the parking brake switch and fluid level switch are OK, but the brake system indicator does not function, do the gauge control module test (see SELF-DIAGNOSTIC FUNCTION).

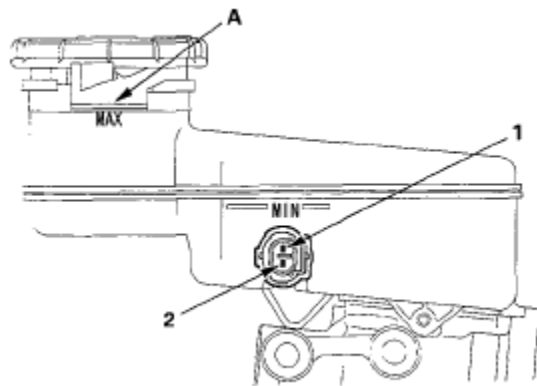


Fig. 17: Identifying Brake Fluid Level Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT BRAKE PAD INSPECTION AND REPLACEMENT

Special Tools Required

Brake caliper piston compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

INSPECTION

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Check the thickness (A) of the inner pad (B) and outer pad (C). Do not include the thickness of the backing plate.

Brake pad thickness:

Standard: 10.6-11.2 mm (0.42-0.44 in.)

Service limit: 1.6 mm (0.06 in.)

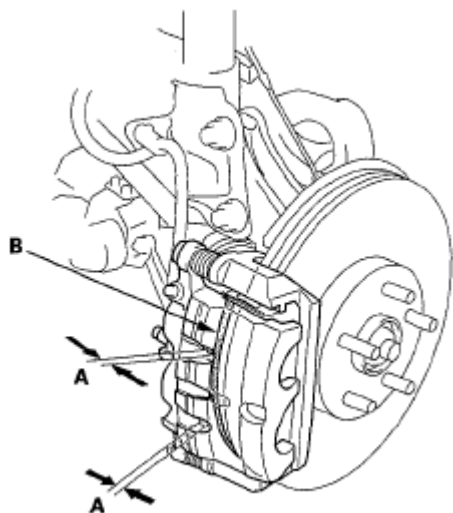
Inner pad

Fig. 18: Identifying Thickness Of Inner Pad
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Outer pad

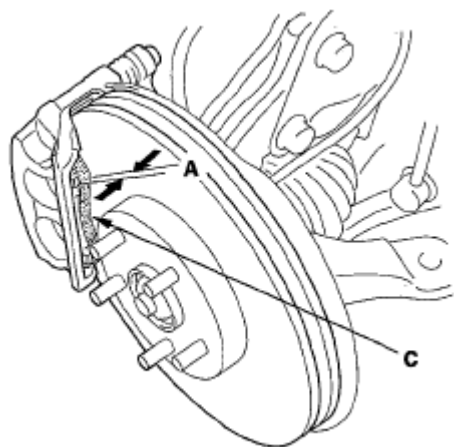


Fig. 19: Identifying Thickness Of Outer Pad

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the brake pad thickness is less than the service limit, replace the front brake pads as a set.
5. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
3. Remove the front wheels.
4. Remove the flange bolt (A), and pivot the caliper (B) up out of the way. Check the hose and pin boots for damage and deterioration.

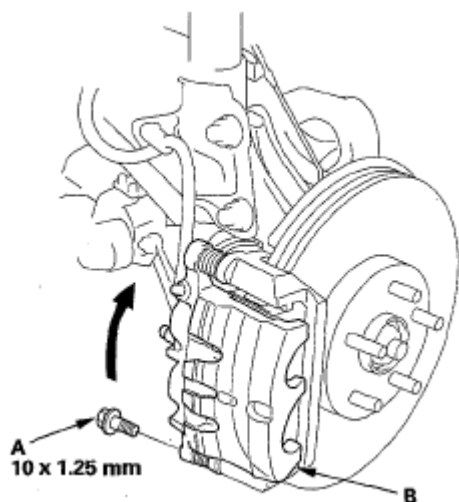


Fig. 20: Identifying Flange Bolt And Pivot Caliper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the pad shims (A) and brake pads (B).

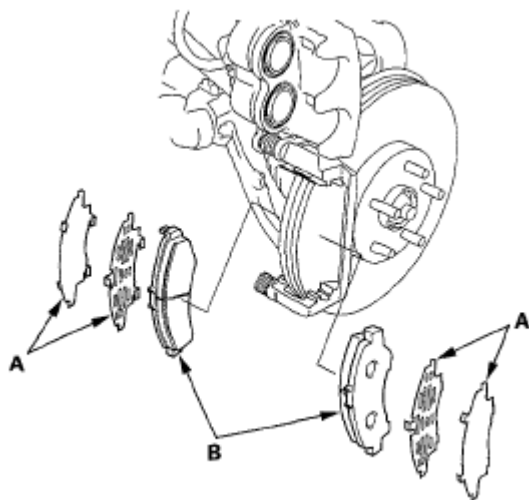


Fig. 21: Identifying Pad Shims And Brake Pads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the pad retainers (A).

NOTE: The upper and lower pad retainers are different. During installation, make sure the pad retainers are in proper positions.

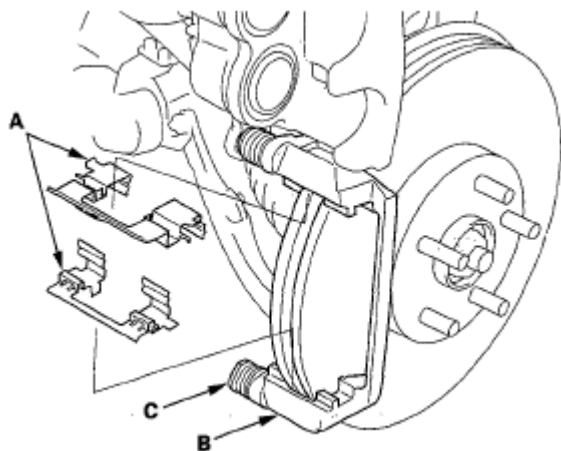


Fig. 22: Identifying Pad Retainers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks. Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
8. Inspect the brake disc, and check for damage and cracks (see **FRONT BRAKE DISC INSPECTION**).
9. Install the pad retainers. Wipe excess assembly paste off the retainers. Keep the assembly paste off the

discs and pads.

10. Mount the brake caliper piston compressor tool (A) on the caliper body (B).

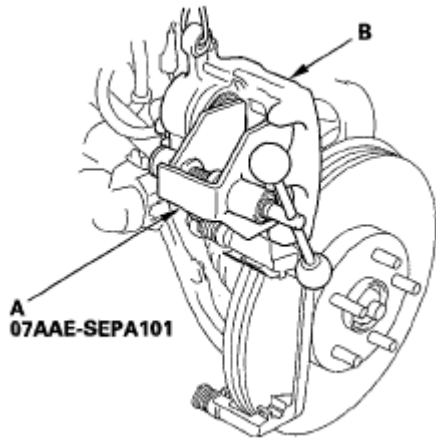


Fig. 23: Identifying Brake Caliper Piston Compressor Tool And Caliper Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Press in the piston with the brake caliper piston compressor tool so the caliper will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper down.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

12. Remove the brake caliper piston compressor tool.
13. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B) and the other areas indicated by the arrows. Wipe excess assembly paste off the pad shims and brake pads. Contaminated brake discs or brake pads reduce stopping ability. Keep grease and assembly paste off the brake discs and brake pads.

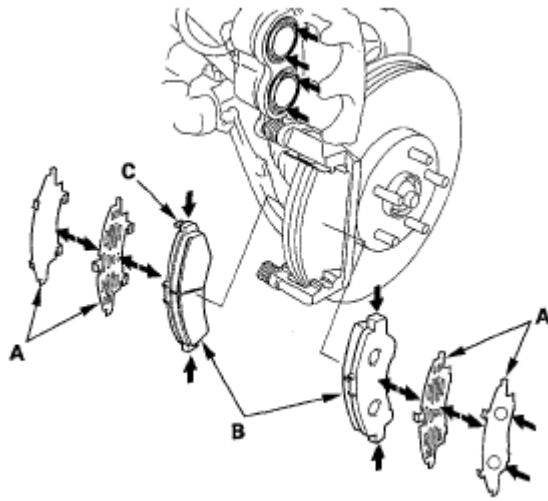


Fig. 24: Identifying Brake Parts Grease Area Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the upper inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a momentary loss of braking efficiency.
15. Pivot the caliper down into position. Install the flange bolt (A), and tighten it to the specified torque.

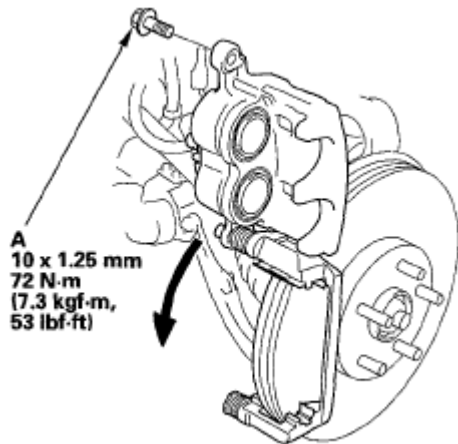


Fig. 25: Identifying Flange Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheels.
17. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

18. Add brake fluid as needed.
19. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then recheck for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

FRONT BRAKE DISC INSPECTION

RUNOUT

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Remove the brake pads (see **REPLACEMENT**).
4. Inspect the brake disc surface for damage and cracks. Clean the brake disc thoroughly, and remove all rust.
5. Install suitable flat washers (A) and wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.

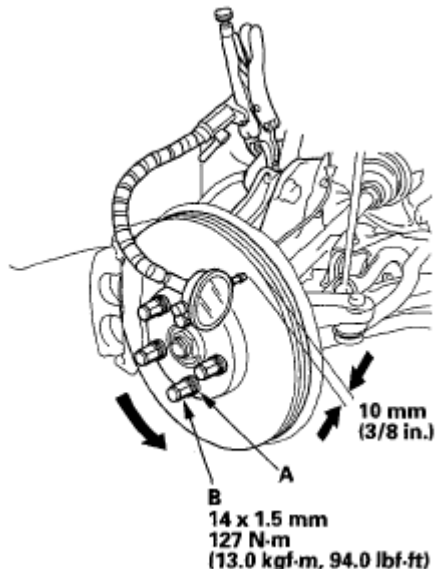


Fig. 26: Identifying Flat Washers And Wheel Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set up the dial gauge against the brake disc as shown, and measure the runout at 10 mm (3/8 in.) from the outer edge of the brake disc.

Brake disc runout:

Service limit: 0.04 mm (0.0016 in.)

7. If the brake disc is beyond the service limit, refinish the brake disc with a commercially available on-car

brake lathe.

Max. refinishing limit: 26.0 mm (1.02 in.)

NOTE:

- If the brake disc is beyond the service limit for refinishing, replace it (see FRONT BRAKE DISC REPLACEMENT).
- A new brake disc should be refinished if its runout is greater than 0.04 mm (0.0016 in.).

THICKNESS AND PARALLELISM

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the front wheels.
3. Remove the brake pads (see REPLACEMENT).
4. Using a micrometer, measure the brake disc thickness at eight points, about 45° apart and 10 mm (3/8 in.) in from the outer edge of the brake disc. Replace the brake disc if the smallest measurement is less than the max. refinishing limit.

Brake disc thickness:

Standard: 27.9-28.1 mm (1.10-1.11 in.)

Max. refinishing limit: 26.0 mm (1.02 in.)

Brake disc parallelism: 0.015 mm (0.0006 in.) max.

NOTE: This is the maximum allowable difference between the thickness measurements.

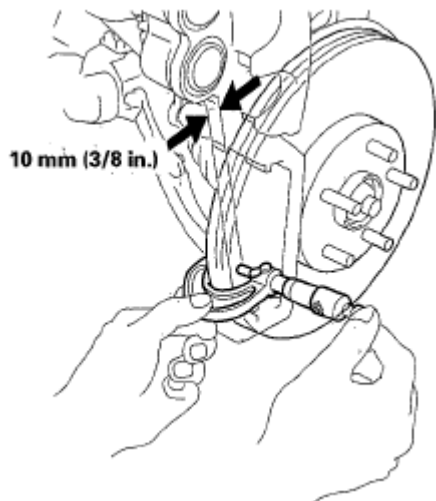


Fig. 27: Identifying Brake Disc Thickness

Courtesy of AMERICAN HONDA MOTOR CO., INC.

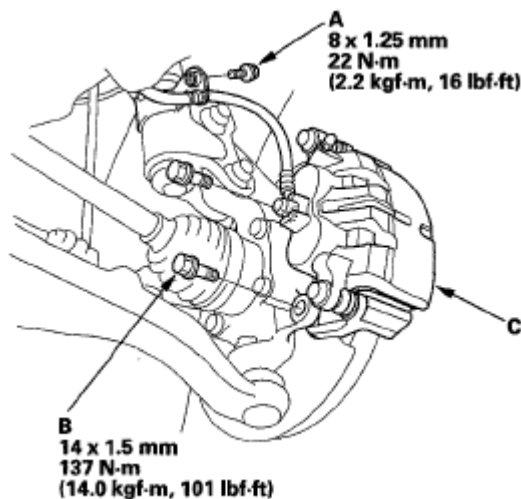
5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with a commercially available on-car brake lathe.

NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see **FRONT BRAKE DISC REPLACEMENT**).

FRONT BRAKE DISC REPLACEMENT

NOTE: Keep any grease off the brake disc and brake pads.

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the brake hose bracket mounting bolt (A).

**Fig. 28: Identifying Brake Hose Bracket Mounting Bolt With Torque Specifications**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Remove the brake disc flat screws (A).

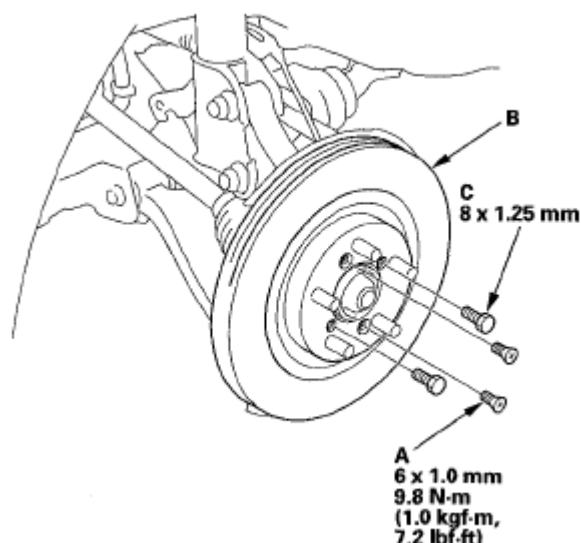


Fig. 29: Identifying Brake Disc Flat Screws With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc (B) from the hub bearing unit.

NOTE: If the brake disc is stuck to the hub bearing unit, thread two 8 x 1.25 mm bolts (C) into the brake disc to push it away from the hub bearing unit. Turn each bolt 90 degrees to prevent the brake disc from binding.

7. Install the brake disc in the reverse order of removal.

NOTE: Before installing the brake disc, clean the mating surfaces of the hub bearing unit and the inside of the brake disc.

8. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.

FRONT BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

NOTE: Make sure that the caliper pins are installed correctly. Upper caliper pin B and lower caliper pin A are different. If these caliper pins are installed in the wrong

location, it will cause vibration, uneven or rapid pad wear, and possibly uneven tire wear.

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent dripping brake fluid, cover disconnected hose joints with rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only clean Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.
- Do not mix different brands of brake fluid as they may not be compatible.
- Coat the pistons, piston seal grooves, and caliper bores with clean brake fluid.
- Replace all rubber parts with new ones whenever disassembled.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- When you apply the silicone grease, make sure not to get any on the terminal part of the connectors and surrounding switches. Also do not touch the switches and the terminal part of the connectors with hands or gloves that have silicone grease on them.

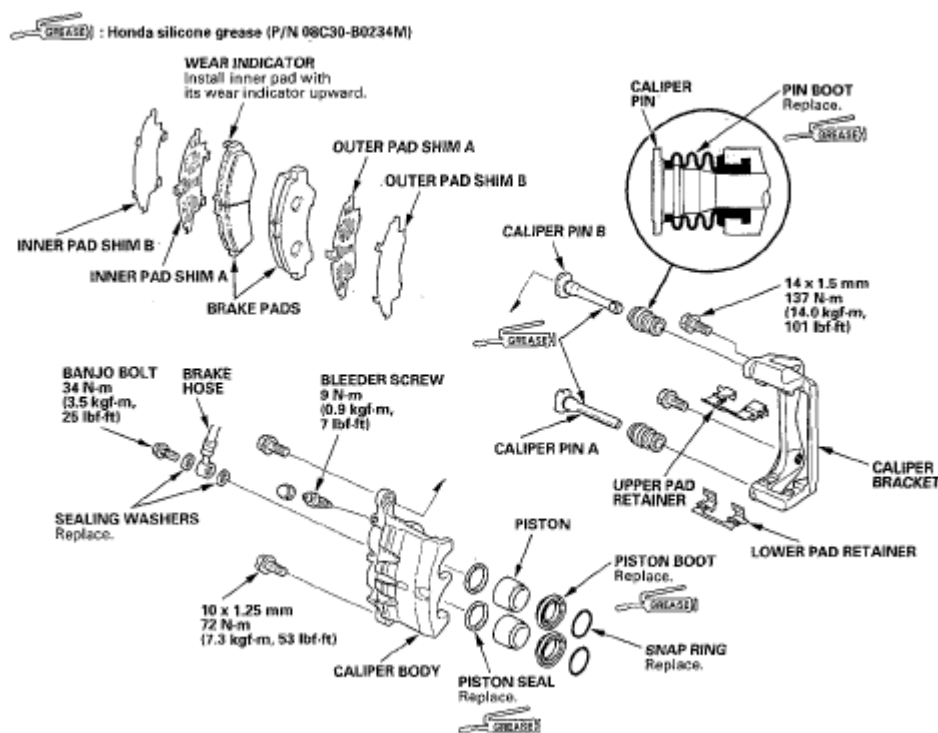


Fig. 30: Identifying Front Brake Caliper Overhaul With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MASTER CYLINDER REPLACEMENT

NOTE:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- Be careful not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent.

1. Open the air cleaner housing cover (see [AIR CLEANER ELEMENT INSPECTION/REPLACEMENT](#)).
2. Remove the reservoir cap and the brake fluid from the master cylinder reservoir with a syringe.
3. Disconnect the brake fluid level switch connector (A).

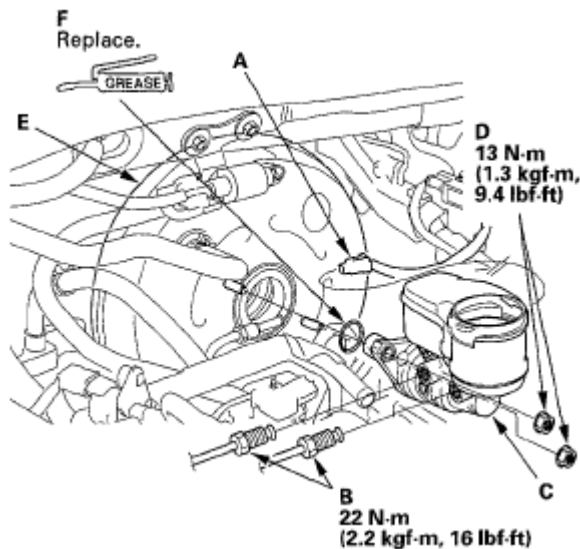


Fig. 31: Identifying Brake Fluid Level Switch Connector With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the brake lines (B) from the master cylinder (C). To prevent spills, cover the hose joints with rags or shop towels.
5. Remove the master cylinder mounting nuts (D).
6. Remove the master cylinder from the brake booster (E). Be careful not to bend or damage the brake lines when removing the master cylinder.
7. Remove the O-ring (F) from the master cylinder.

NOTE: Replace the O-ring whenever the master cylinder is removed.

8. Install the master cylinder in the reverse order of removal, and note these items:
 - Check the brake booster pushrod clearance (see **BRAKE BOOSTER PUSHROD CLEARANCE ADJUSTMENT**).
 - Coat the new O-ring with silicone oil (Shin-Etsu KF 54).
 - When you apply the silicone oil, make sure not to get any on the terminal part of the connectors and surrounding switches. Also do not touch the switches and the terminal part of the connectors with hands or gloves that have silicone grease on them.
 - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
9. Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
10. Spin the wheels to check for brake drag.

MASTER CYLINDER INSPECTION

1. Inspect and note these items:

- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Do not try to disassemble the master cylinder assembly. Replace the master cylinder assembly with a new part if necessary.
- Do not allow dirt or foreign matter to contaminate the brake fluid.

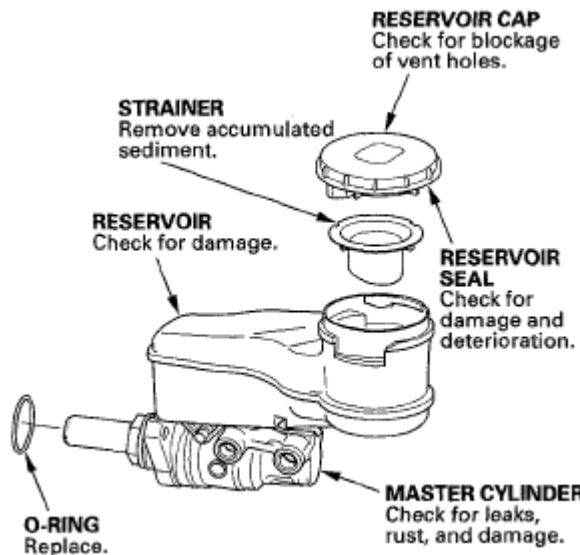


Fig. 32: Inspecting Master Cylinder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE BOOSTER TEST

FUNCTIONAL TEST

1. With the ignition switch at LOCK (0), press the brake pedal several times to deplete the vacuum reservoir, then press the brake pedal hard, and hold it for 15 seconds. If the brake pedal sinks, either the master cylinder is bypassing internally, or the brake system is leaking. Inspect the brake hoses and lines (see **BRAKE HOSE AND LINE INSPECTION**).
2. Start the engine with the brake pedal pressed. If the brake pedal sinks slightly, the vacuum booster is operating normally. If the brake pedal height does not vary, do the brake system test (see **BRAKE SYSTEM INSPECTION AND TEST**).

LEAK TEST

1. Press the brake pedal with the engine running, then stop the engine. The brake pedal height should not vary while pressed for 30 seconds. If the pedal height rises, go to step 6. If it does not rise, go to step 2.
2. Start the engine and let it idle for 30 seconds. Turn the ignition switch to LOCK (0), and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise. Does the pedal rise on each consecutive application? If it rises, the booster is OK. If it does not, go to step 3.
3. Disconnect the brake booster vacuum hose (A) at the booster. The check valve is built into the hose.

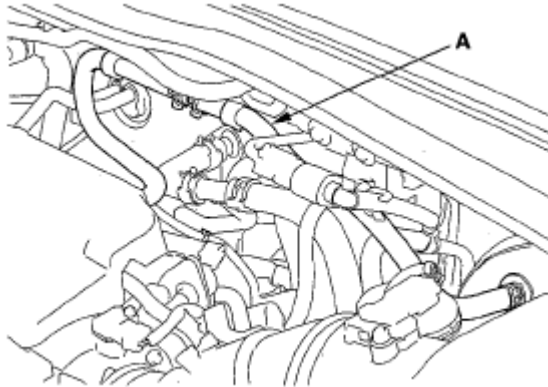


Fig. 33: Identifying Brake Booster Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Start the engine, and let it idle. There should be vacuum available. If no vacuum is available, the check valve is not working properly. Replace the brake booster vacuum hose and check valve, and retest. If vacuum is found, go to step 5.
5. With the ignition switch at LOCK (0), reconnect the vacuum hose to the brake booster.
6. Start the engine, and then pinch the brake booster vacuum hose between the check valve and the booster.
7. Turn the ignition switch to LOCK (0), and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
 - If the pedal position does not vary, inspect the O-ring between the master cylinder and booster. If the O-ring is OK, replace the brake booster.
 - If the pedal position varies, replace the brake booster vacuum hose/check valve assembly.

BRAKE BOOSTER PUSHROD CLEARANCE ADJUSTMENT

Special Tools Required

Booster piston holder 070AB-SJA0100

NOTE:

- **Brake booster pushrod to piston clearance must be checked and readjusted before installing a new master cylinder.**
- **The master cylinder assembly comes with a tool that must be used to adjust the clearance between the brake booster pushrod and the master cylinder piston.**
- **Use only the tool that comes with the new master cylinder to check the pushrod clearance. Do not use any other tool.**
- **Make sure to discard the tool supplied with the master cylinder after its use.**
- **The brake booster must be installed on the vehicle before doing the pushrod clearance adjustment.**

- If the booster is removed, check the pushrod length (A) as shown. If the length is incorrect, loosen the pushrod locknut (B), and turn the yoke (C) in or out to adjust.

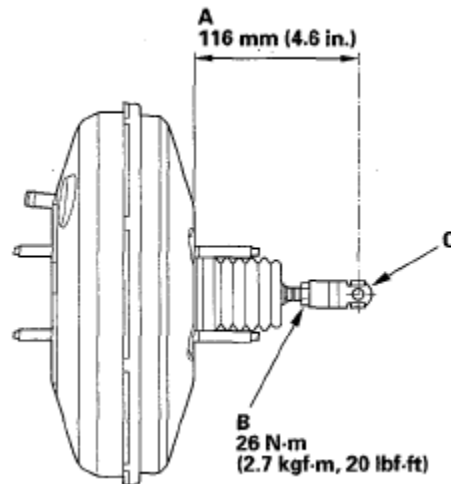


Fig. 34: Identifying Pushrod Length With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Measure the clearance between the tool (A) supplied with master cylinder and brake booster pushrod (B). Make sure that the tool is lying flat against the surface (C) of the brake booster, and that the tip of the tool contacts the pushrod. If the tool will not lie flat (D) or there is a gap (E) between the tool and the pushrod, go to step 2. If the clearance is correct, go to step 3.

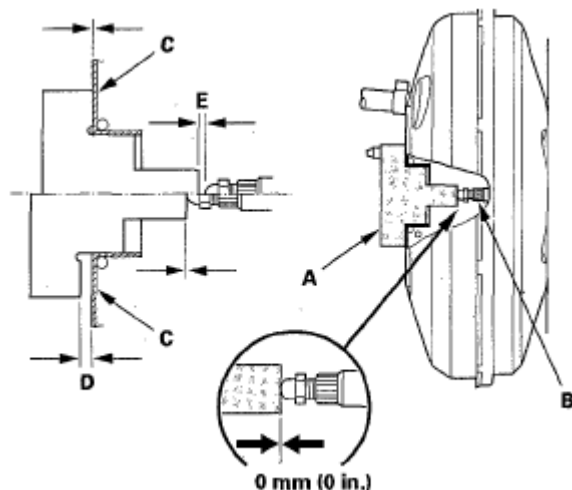


Fig. 35: Identifying Clearance Between Tool With Master Cylinder And Brake Booster Pushrod
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the clearance is incorrect, use the booster piston holder to hold the pushrod (A) and turn the adjusting screw (B) clockwise to inward or counterclockwise to outward.

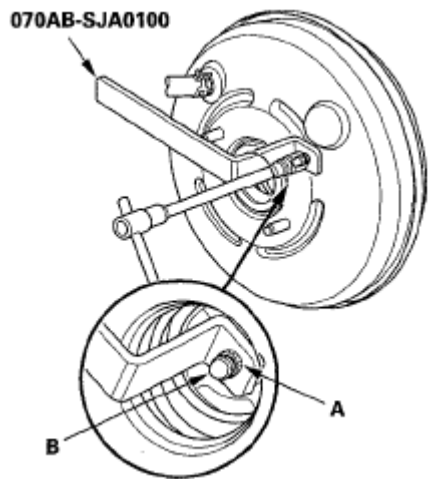


Fig. 36: Identifying Adjusting Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the master cylinder (see MASTER CYLINDER REPLACEMENT).

BRAKE BOOSTER REPLACEMENT

1. Remove the air cleaner (see AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT).
2. Remove the master cylinder (see MASTER CYLINDER REPLACEMENT).
3. Remove the brake lines (A) from the VSA modulator-control unit (B).

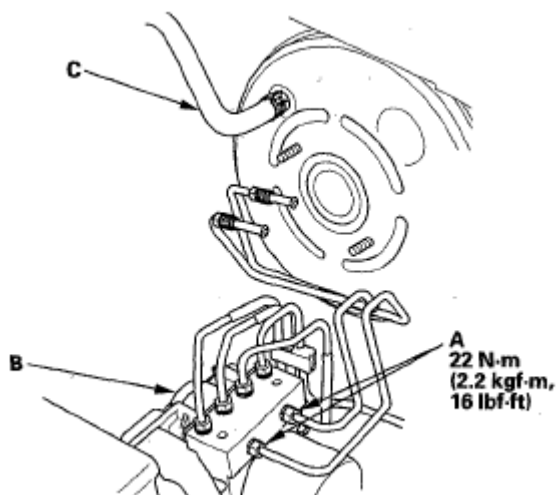


Fig. 37: Identifying Brake Lines Of VSA Modulator-Control Unit With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the brake booster vacuum hose (C) from the brake booster.
5. Remove the driver's dashboard undercover (see DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION).

6. Remove the lock pin (A) and the joint pin (B), then disconnect the yoke from the brake pedal.

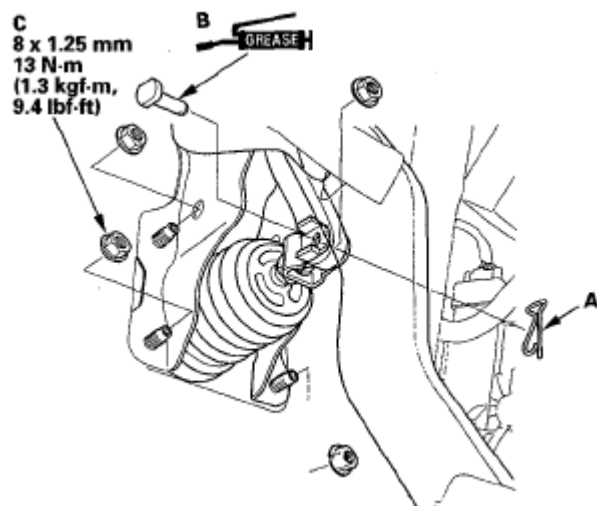


Fig. 38: Identifying Lock Pin, Joint Pin And Brake Pedal With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the brake booster mounting nuts (C).
8. Remove the brake booster (A) from the engine compartment.

NOTE:

- Be careful not to damage the booster surfaces and threads of the booster stud bolts.
- Be careful not to bend or damage the brake lines.

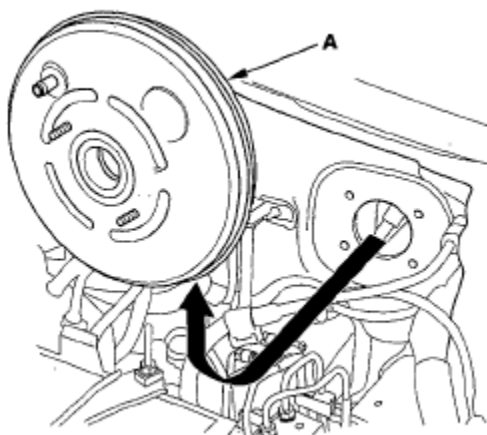


Fig. 39: Identifying Brake Booster Of Engine Compartment
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the brake booster in the reverse order of removal, and note these items:
 - Adjust the pushrod clearance before installing the brake booster (see **BRAKE BOOSTER**

PUSHROD CLEARANCE ADJUSTMENT).

- Install the master cylinder after installing the brake booster (see **MASTER CYLINDER REPLACEMENT**).
- Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).
- Bleed the brake system (see **BRAKE SYSTEM BLEEDING**).

REAR BRAKE PAD INSPECTION AND REPLACEMENT**Special Tools Required**

Brake caliper piston compressor 07AAE-SEPA101

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

INSPECTION

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.
3. Check the thickness (A) of the inner pad (B) and outer pad (C). Do not include the thickness of the backing plate.

Brake pad thickness:

Standard: 9.6—10.2 mm (0.38—0.40 in.)

Service limit: 1.6 mm (0.06 in.)

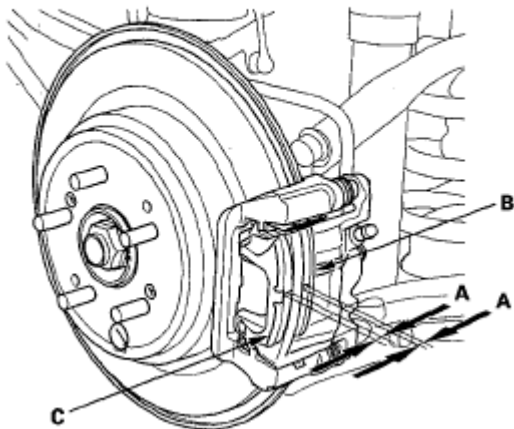


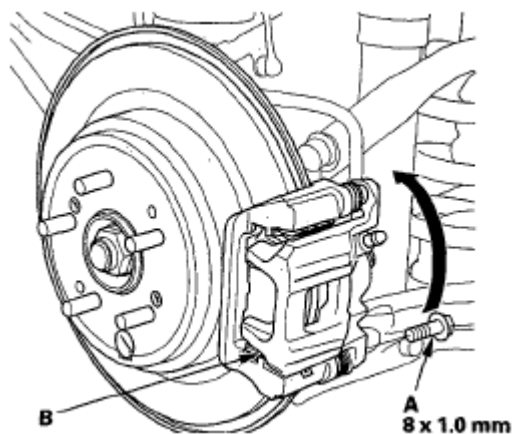
Fig. 40: Identifying Thickness Of Inner Pad And Outer Pad

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the brake pad thickness is less than the service limit, replace the rear brake pads as a set.
5. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.

REPLACEMENT

1. Remove some brake fluid from the master cylinder.
2. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
3. Remove the rear wheels.
4. Remove the flange bolt (A), and pivot the caliper (B) up out of the way. Check the hose and pin boots for damage and deterioration.

**Fig. 41: Identifying Flange Bolt And Pivot Caliper**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the pad shims (A) and brake pads (B).

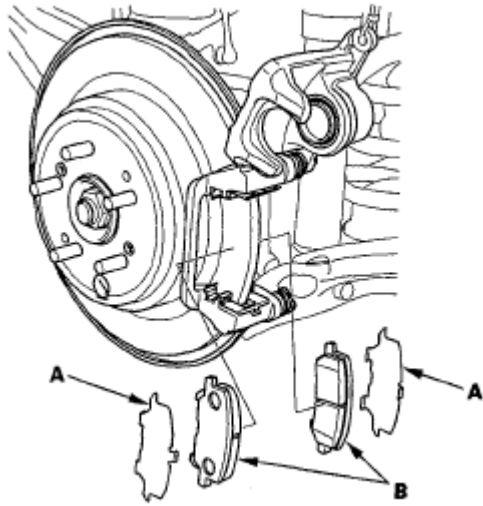


Fig. 42: Identifying Pad Shims And Brake Pads

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the pad retainers (A).

NOTE: The upper and lower pad retainers are different. During installation, make sure the pad retainers are in their proper positions.

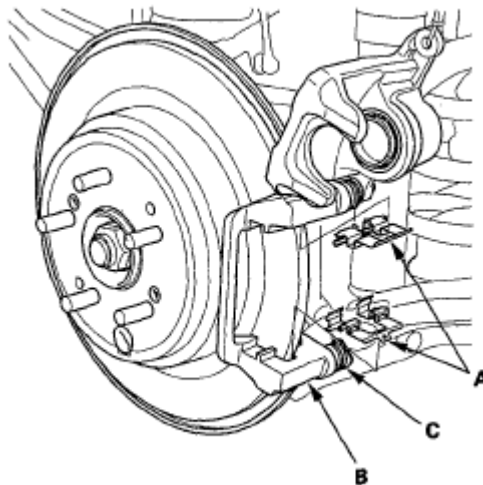


Fig. 43: Identifying Pad Retainers, Caliper Bracket And Caliper Pins

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks. Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
8. Inspect the brake disc/drum, and check for damage and cracks (see **REAR BRAKE DISC INSPECTION**).
9. Install the pad retainers. Wipe excess assembly paste off the retainers. Keep the assembly paste off the discs and pads.

10. Mount the brake caliper piston compressor tool (A) on the caliper body (B).

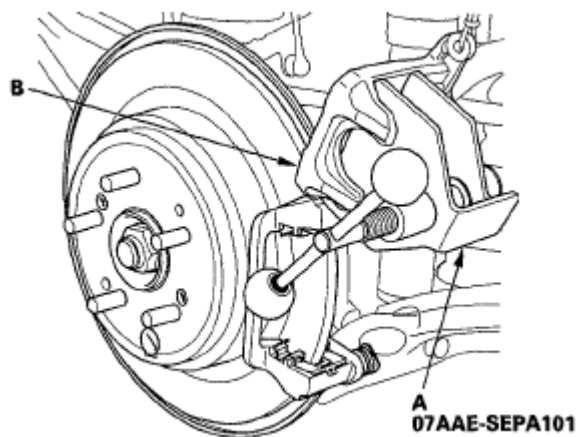


Fig. 44: Identifying Brake Caliper Piston Compressor Tool And Caliper Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Press in the piston with the brake caliper piston compressor tool so the caliper will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper down.

NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder's reservoir. If brake fluid gets on any painted surface, wash it off immediately with water.

12. Remove the brake caliper piston compressor tool.
13. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe excess assembly paste off the pad shims and brake pads. Contaminated brake disc/drums or brake pads reduce stopping ability. Keep grease and assembly paste off the brake disc/drums and brake pads.

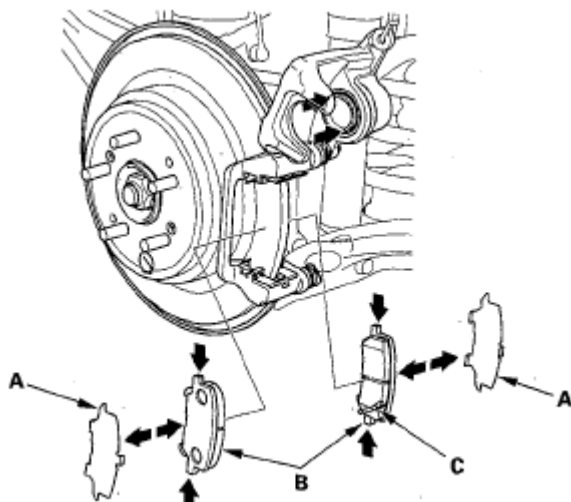
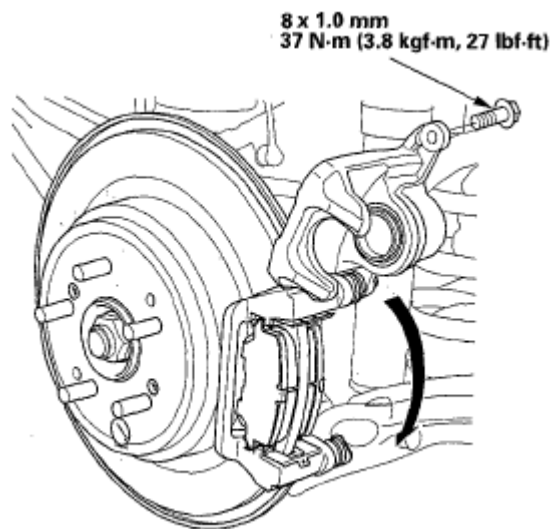


Fig. 45: Identifying Rear Brake Pad Grease Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the bottom inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a momentary loss of braking efficiency.
15. Pivot the caliper down into position. Install the flange bolt (A), and tighten it to the specified torque.

**Fig. 46: Identifying Flange Bolt With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.
17. Press the brake pedal several times to make sure the brakes work.

NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

18. Add brake fluid as needed.
19. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks (see **BRAKE HOSE AND LINE INSPECTION**).

REAR BRAKE DISC INSPECTION

RUNOUT

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheels.

3. Remove the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Inspect the brake disc/drum surface for damage and cracks. Clean the brake disc/drum thoroughly, and remove all rust.
5. Install suitable flat washers (A) and wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc/drum securely against the hub.

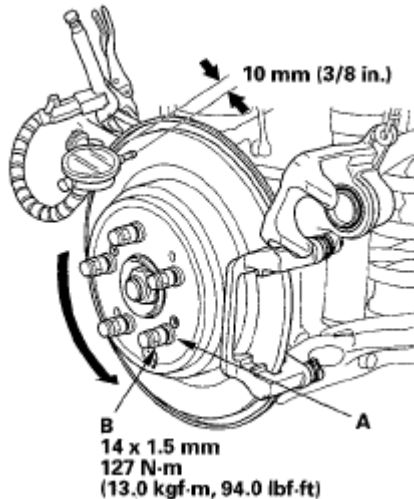


Fig. 47: Identifying Brake Disc/Drum Surface For Damage And Cracks With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set up the dial gauge against the brake disc/drum as shown, and measure the runout at 10 mm (3/8 in.) from the outer edge of the brake disc/drum.

Brake disc/drum runout:

Service limit: 0.04 mm {0.0016 in.}

7. If the brake disc/drum is beyond the service limit, refinish the brake disc/drum with a commercially available on-car brake lathe.

Max. refinishing limit: 9.0 mm (0.35 in.)

NOTE:

- If the brake disc/drum is beyond the service limit for refinishing, replace it (see **REAR BRAKE DISC REPLACEMENT**).
- A new brake disc/drum should be refinished if its runout is greater than 0.04 mm (0.0016 in.).

THICKNESS AND PARALLELISM

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).

2. Remove the rear wheels.
3. Remove the brake pads (see **REAR BRAKE PAD INSPECTION AND REPLACEMENT**).
4. Using a micrometer, measure the brake disc/drum thickness at eight points, about 45° apart and 10 mm (3/8 in.) in from the outer edge of the brake disc/drum. Replace the brake disc/drum if the smallest measurement is less than the max. refinishing limit.

Brake disc/drum thickness:

Standard: 10.9-11.1 mm (0.43-0.44 in.)

Max. refinishing limit: 9.0 mm (0.35 in.)

Brake disc/drum parallelism: 0.015 mm (0.0006 in.) max.

NOTE: This is the maximum allowable difference between the thickness measurements.

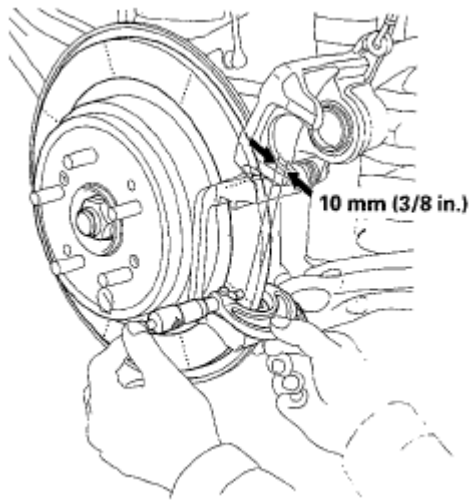


Fig. 48: Identifying Brake Disc/Drum Thickness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the brake disc/drum is beyond the service limit for parallelism, refinish the brake disc/drum with a commercially available on-car brake lathe.

NOTE: If the brake disc/drum is beyond the service limit for refinishing, replace it (see **REAR BRAKE DISC REPLACEMENT**).

REAR BRAKE DISC REPLACEMENT

NOTE: Keep any grease off the brake disc/drum and brake pads.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the rear wheel.
3. Remove the brake caliper bracket mounting bolts (A), then remove the caliper assembly (B) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

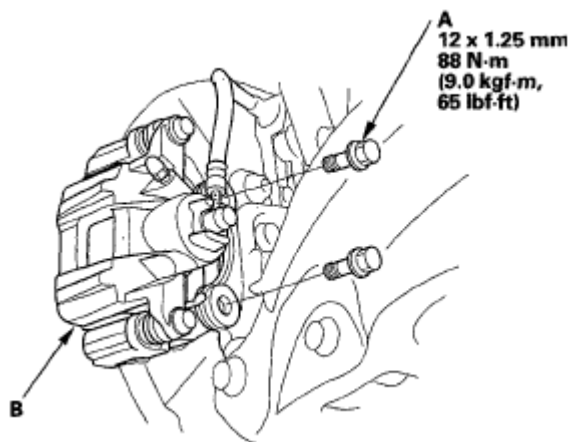


Fig. 49: Identifying Brake Caliper Bracket Mounting Bolts And Caliper Assembly With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the parking brake.
5. Remove the brake disc/drum flat screws (A).

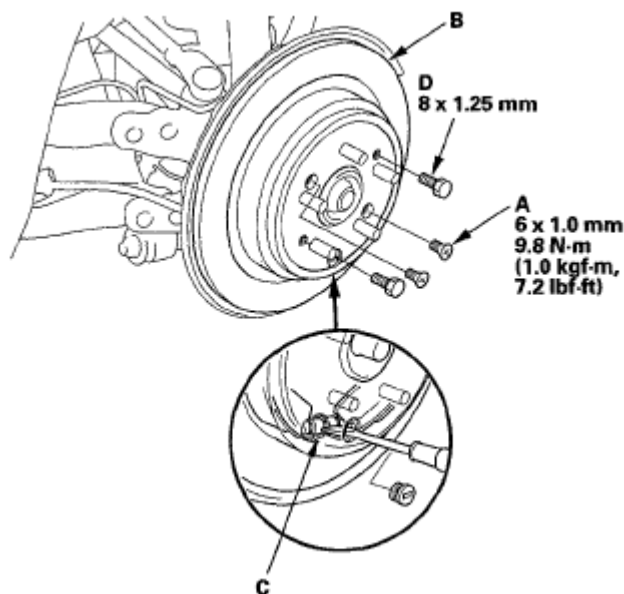


Fig. 50: Identifying Brake Disc/Drum Flat Screws With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc/drum (B) from the hub bearing unit.

NOTE:

- If may be necessary to back-off the parking brake adjuster nut (C) to remove the brake disc/drum from the hub bearing unit (see step 5 on MINOR ADJUSTMENT).
- If the brake disc/drum has stuck to the hub bearing unit, thread two 8 x 1.25 mm bolts (D) into the brake disc/drum to push it away from the hub bearing unit. Turn each bolt 90 degrees to prevent the brake disc/drum from binding.
- After installation, check the parking brake, and adjust it necessary (see PEDAL FREE PLAY).

7. Install the brake disc/drum in the reverse order of removal.

NOTE:

Before installing the brake disc/drum, clean the mating surfaces of the hub bearing unit and the inside of the brake disc/drum.

8. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheel.

REAR BRAKE CALIPER OVERHAUL

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent dripping brake fluid, cover disconnected hose joints with rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.

- Do not reuse drained brake fluid. Use only clean Acura DOT 3 Brake Fluid from an unopened container. Using a non-Acura brake fluid can cause corrosion and shorten the life of the system.
- Do not mix different brands of brake fluid as they may not be compatible.
- Coat the pistons, piston seal grooves, and caliper bores with clean brake fluid.
- Replace all rubber parts with new ones whenever disassembled.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- When you apply the silicone grease, make sure not to get any on the terminal part of the connectors and surrounding switches. Also do not touch the switches and the terminal part of the connectors with hands or gloves that have silicone grease on them.

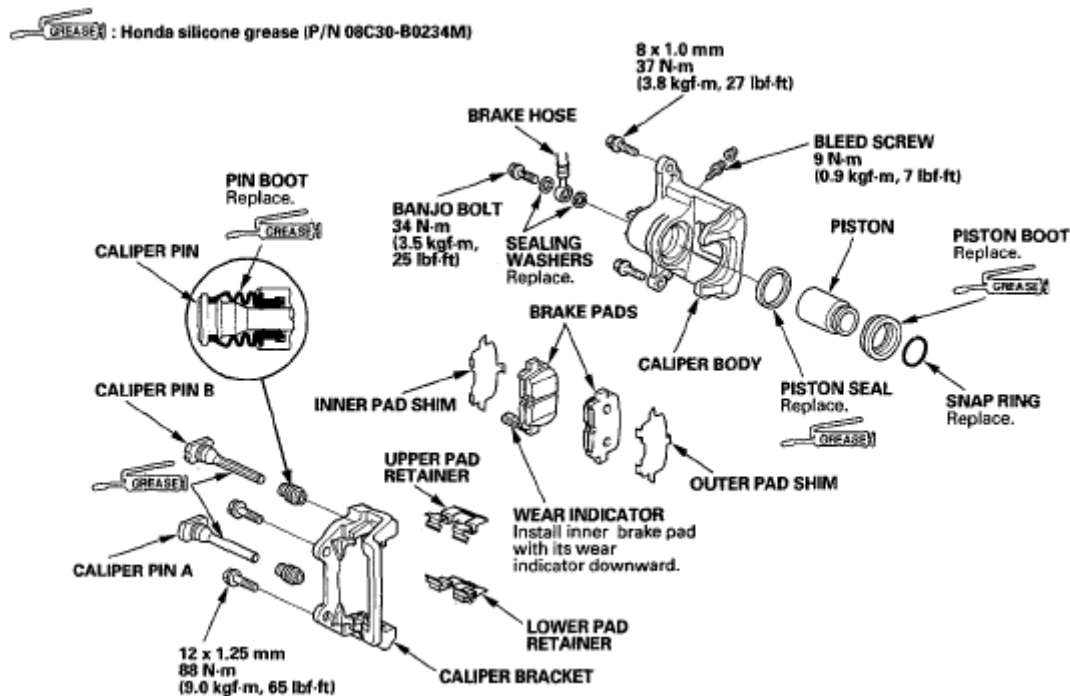


Fig. 51: Identifying Rear Brake Caliper Overhaul With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

PARKING BRAKE INSPECTION

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).

2. Remove the rear wheels.
3. Release the parking brake, and remove the rear brake disc/drum (see **REAR BRAKE DISC REPLACEMENT**).

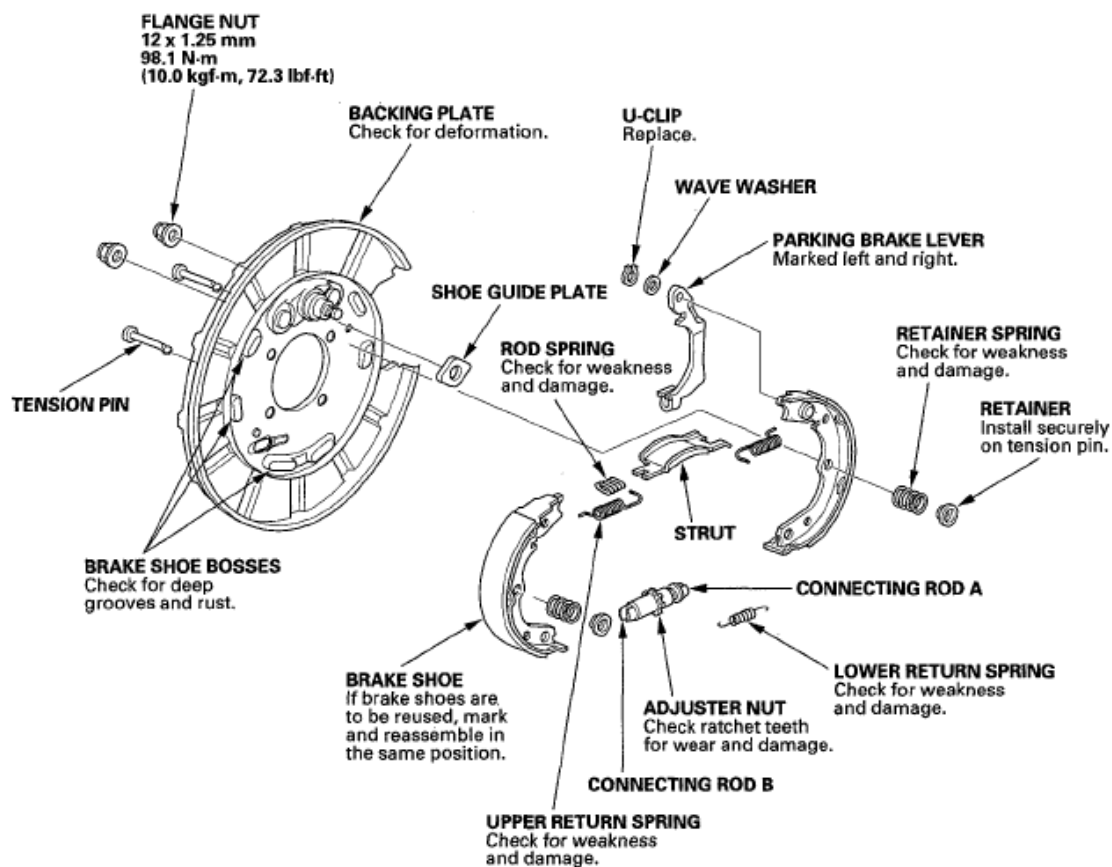


Fig. 52: Exploded View Of Parking Brake With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the parking brake linings (A) for cracking, glazing, wear, and contamination.

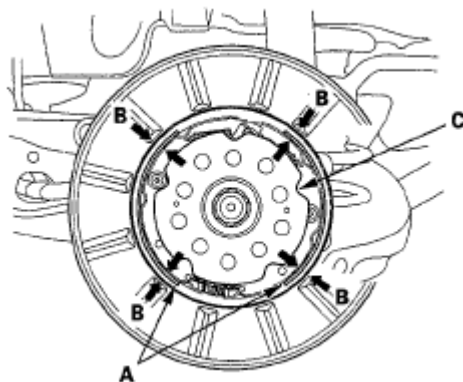


Fig. 53: Identifying Parking Brake Linings

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the parking brake lining thickness (B). Measurement does not include brake shoe thickness.

Parking brake lining thickness:

Standard: 3.9 mm (0.15 in.)

Service limit: 1.0 mm (0.04 in.)

6. If the parking brake lining thickness is less than the service limit, replace all of the parking brake shoes as a set (see **PARKING BRAKE SHOE REPLACEMENT**).
7. Check the hub (C) for smooth operation. If it requires servicing, replace the hub bearing unit (see **HUB BEARING UNIT REPLACEMENT**).
8. Measure the inside diameter of the parking brake drum with inside vernier calipers.

Parking brake drum inside diameter:

Standard: 210.0-210.1 mm

(8.268-8.272 in.)

Service limit: 211.0 mm (8.307 in.)

Parking brake drum inside diameter:

**Standard: 210.0—210.1 mm
(8.268—8.272 in.)**

Service limit: 211.0 mm (8.307 in.)

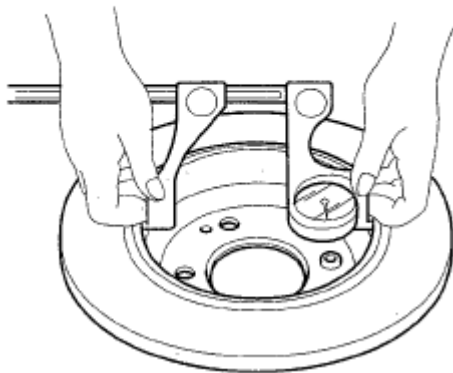


Fig. 54: Measuring Diameter Of Parking Brake Drum With Inside Vernier Calipers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the inside diameter of the parking brake drum is more than the service limit, replace the brake disc/drum.
10. Check the parking brake disc/drum for scoring, grooves, and cracks.
11. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheels.

PARKING BRAKE SHOE REPLACEMENT

CAUTION: Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

DISASSEMBLY

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the rear wheels.
3. Release the parking brake, and remove the rear brake disc/drum (see REAR BRAKE DISC REPLACEMENT).
4. Disconnect and remove the upper return springs (A).

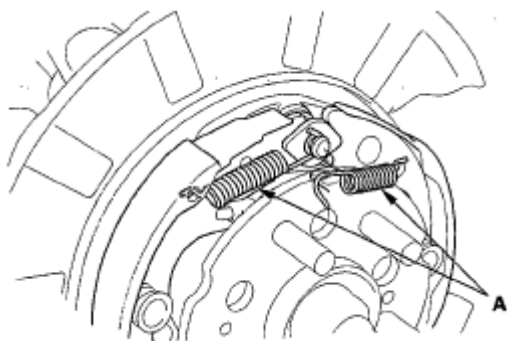


Fig. 55: Identifying Upper Return Springs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the tension pins (A) by pushing the respective retainer (B) and turning the pin.

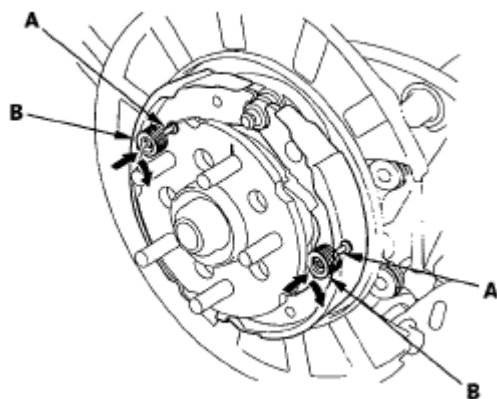


Fig. 56: Identifying Tension Pins And Retainer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the strut (A).

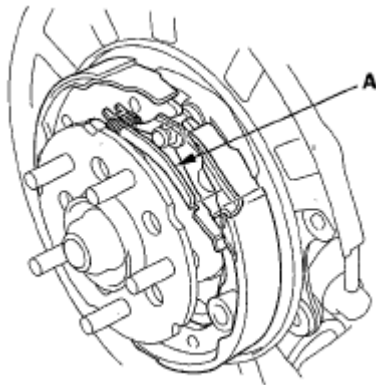


Fig. 57: Identifying Strut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Lower the parking brake shoe assembly.
8. Remove the forward brake shoe (A) and the adjuster assembly (B) by removing the lower return spring (C).

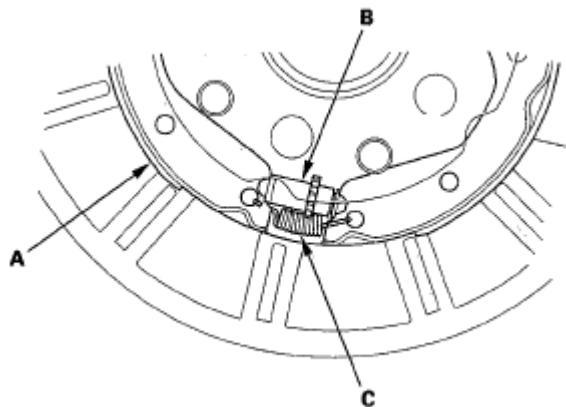


Fig. 58: Identifying Brake Shoe, Adjuster Assembly And Lower Return Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the rearward brake shoe by disconnecting the parking brake cable (A) from the parking brake lever (B).

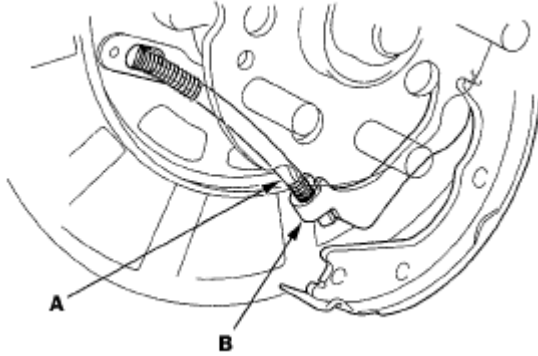


Fig. 59: Identifying Parking Brake Cable And Parking Brake Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the U-clip (A), wave washer (B), and parking brake lever (C) from the brake shoe (D).

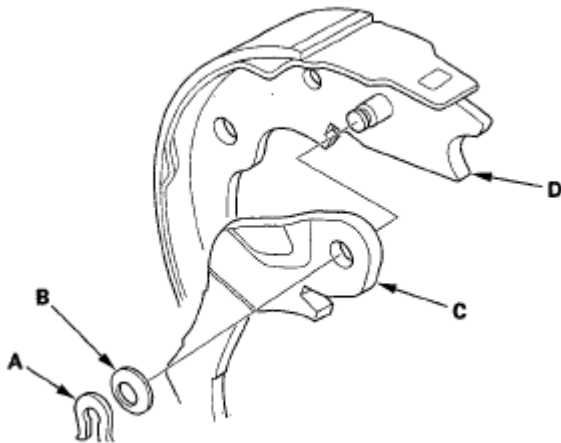


Fig. 60: Identifying U-Clip, Wave Washer And Parking Brake Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

1. Apply Plastilube #2 grease to the sliding surface of the pivot pin (A) of the rearward brake shoe (B).

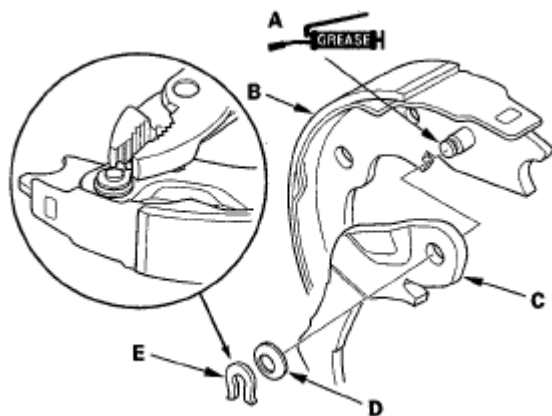


Fig. 61: Identifying Grease Area Of Sliding Surface And Pivot Pin
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parking brake lever (C) and wave washer (D) on the pivot pin, and secure with a new U-clip (E).
 - Install the wave washer with its convex side facing out.
 - Pinch the U-clip securely to prevent the parking brake lever from coming off the brake shoe.
3. Connect the parking brake cable (A) to the parking brake lever (B). Apply Plastilube #2 grease to the cable contact surface (C) on the backing plate.

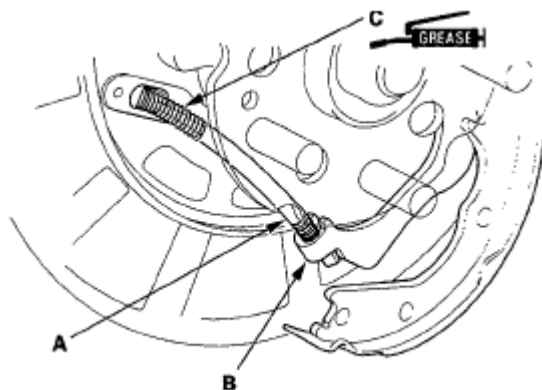


Fig. 62: Identifying Parking Brake Cable And Parking Brake Lever
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Apply a thin coat of Plastilube #2 grease to the shoe ends and strut ends (A), sliding surfaces (B), and opposite edges of the parking brake shoe (C) as shown. Wipe off any excess. Keep the grease off the brake linings.

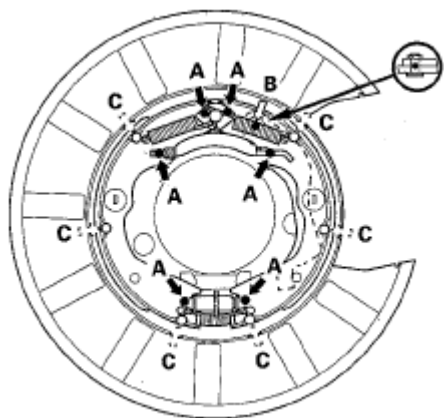


Fig. 63: Identifying Strut Ends, Sliding Surfaces And Parking Brake Shoe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the tension pin (A), the retainer spring (B), and the retainer (C) on the rearward brake shoe (D). Make sure the tension pin does not contact the parking brake lever.

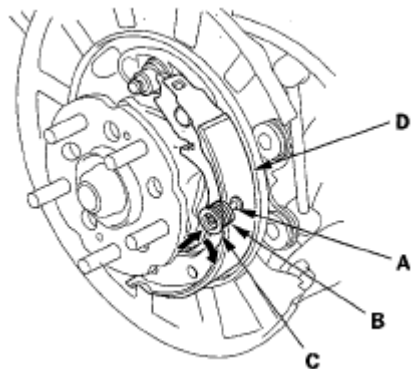


Fig. 64: Identifying Tension Pin, Retainer Spring And Retainer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install connecting rods A and B on the adjuster nut (C).

NOTE:

- Clean the threaded portions of connecting rod A and the sliding surface of connecting rod B, then coat them with rubber grease.
- Shorten connecting rod A by fully turning the adjuster nut.

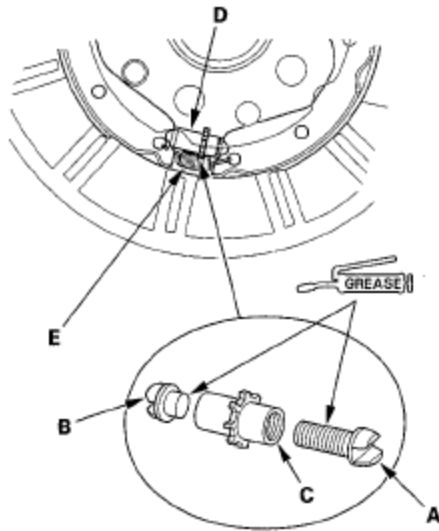


Fig. 65: Identifying Connecting Rods And Adjuster Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Position the brake shoe adjuster assembly (D) on the parking brake shoes.
8. Hook the lower return spring (E) on the parking brake shoes.
9. Install the rod spring (A) to the strut (B) first. Then install the strut on the parking brake shoes.

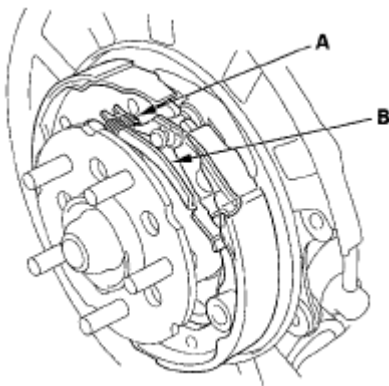


Fig. 66: Identifying Rod Spring And Strut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the tension pin (A), the retainer spring (B), and the retainer (C) on the forward brake shoe (D).

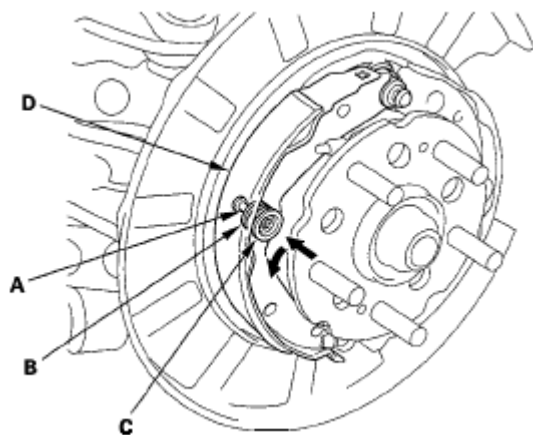


Fig. 67: Identifying Tension Pin, Retainer Spring And Retainer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the forward upper return spring (A) as shown.

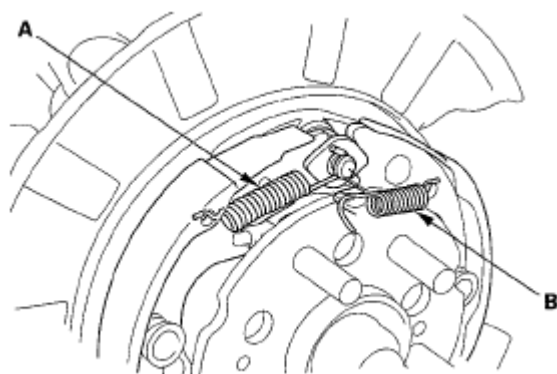


Fig. 68: Identifying Upper Return Spring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the rearward upper return spring (B) as shown.
13. Install the rear brake disc/drum and the rear brake caliper bracket in the reverse order of removal.
14. Do the major parking brake adjustment (see **MAJOR ADJUSTMENT (TO BE DONE WHEN REPLACING PARKING BRAKE SHOES AND AFTER LINING SURFACE BREAK-IN)**).

PARKING BRAKE SHOE LINING BREAK-IN

WARNING: Do this operation in a safe area.

NOTE:

- Do the brake lining surface break-in when replacing shoes with new brake linings and/or new rear brake disc/drum.

- Check the number of parking brake lever clicks. Adjust the parking brake before lining surface break-in (see MINOR ADJUSTMENT).

1. Park the vehicle on a firm, level surface.
2. Release the parking brake pedal.
3. Press the parking brake pedal 5 clicks.
4. Drive the vehicle for 1/4 mile (400 m) at about 31 mph (50 km/h).
5. Stop the vehicle, and release the parking brake for 5-10 minutes to allow the brake disc/drum to cool.
6. Repeat steps 3 through 5 two more times.
7. Check the parking brake pedal adjustment (see PEDAL FREE PLAY).

BRAKE PEDAL REPLACEMENT

1. Remove the driver's dashboard undercover (see DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION).
2. Remove the TPMS control unit (see TPMS CONTROL UNIT REPLACEMENT).
3. Disconnect the brake pedal position switch connector (A), and remove the harness clips.

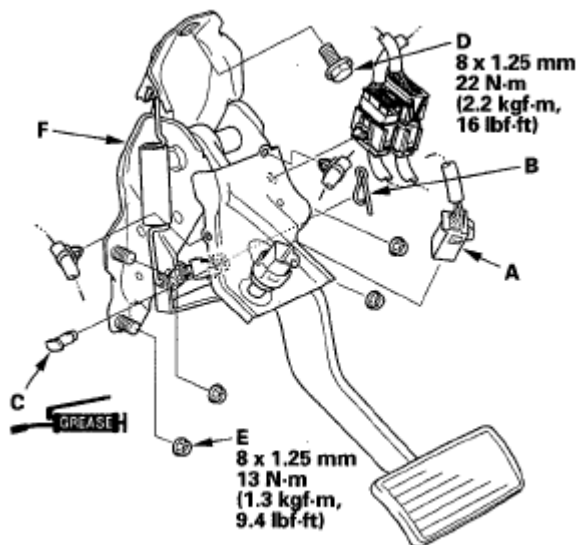


Fig. 69: Identifying Brake Pedal Position Switch Connector And Harness Clips With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the lock pin (B) and joint pin (C).
5. Remove the harness and connector clips.
6. Remove the brake pedal bracket mounting bolt (D) and nuts (E).
7. Remove the brake pedal with bracket (F).
8. Install in the reverse order of removal.

2008 Acura MDX

2007-08 BRAKES Conventional Brake Components - MDX

9. Do the brake pedal and brake pedal position switch adjustment (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

BRAKE HOSE AND LINE INSPECTION

1. Inspect the brake hoses for damage, deterioration, leaks, interference, and twisting.
2. Check the brake lines for damage, rusting, and leaks. Also check for bent brake lines.
3. Check for leaks at hose and line joints and connections, and retighten if necessary.
4. Check the master cylinder and the VSA modulator-control unit for damage and leaks.

BRAKE HOSE AND LINE

Connection Point	Component	Connected to	Specified Torque Value	Note
A	Front brake caliper	Brake hose	34 N.m (3.5 kgf.m, 25 lbf.ft)	Banjo bolt
		Bleed screw	9 N.m (0.9 kgf.m, 7 lbf.ft)	
B	Rear brake caliper	Brake hose	34 N.m (3.5 kgf.m, 25 lbf.ft)	Banjo bolt
		Bleed screw	9 N.m (0.9 kgf.m, 7 lbf.ft)	
C	Brake hose	Brake line	15 N.m (1.5 kgf.m, 11 lbf.ft)	Flare nut
D	Master cylinder	Brake line	22 N.m (2.2 kgf.m, 16 lbf.ft)	Flare nut
E	VSA modulator-control unit	Brake line (12 mm nut)	22 N.m (2.2 kgf.m, 16 lbf.ft)	Flare nut
		Brake line (10 mm nut)	15 N.m (1.5 kgf.m, 11 lbf.ft)	Flare nut

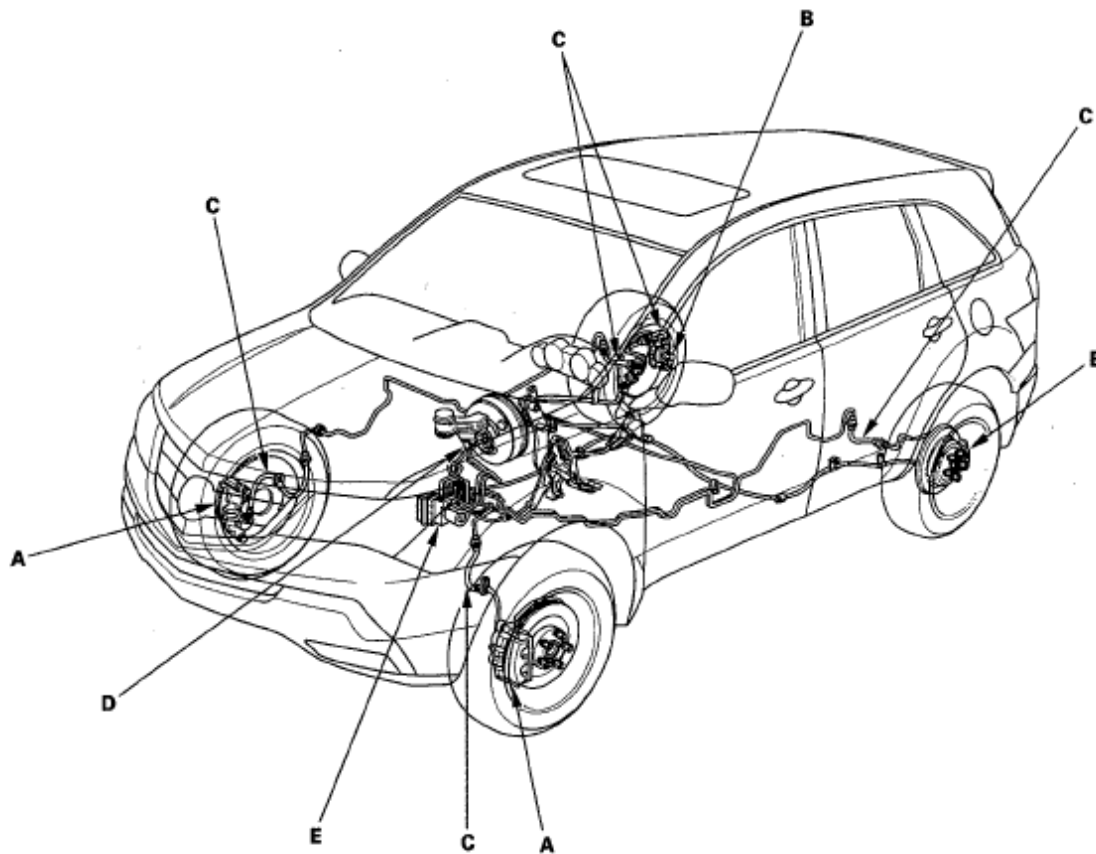


Fig. 70: Identifying Brake Hose And Line

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRAKE HOSE REPLACEMENT

NOTE:

- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent material.

FRONT

1. Remove the front wheel.
2. Disconnect the brake line (A) from the brake hose (B), then remove the brake hose clip (C).

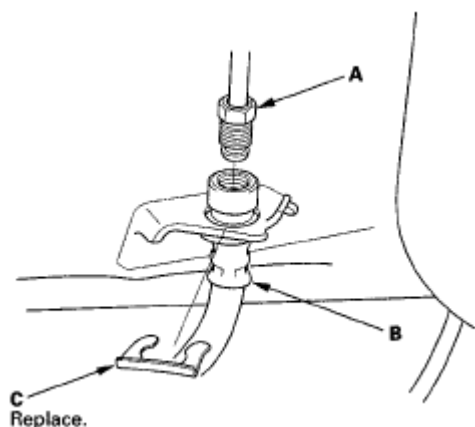


Fig. 71: Identifying Brake Line, Brake Hose And Brake Hose Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the banjo bolt (A), and disconnect the brake hose (B) from the caliper.

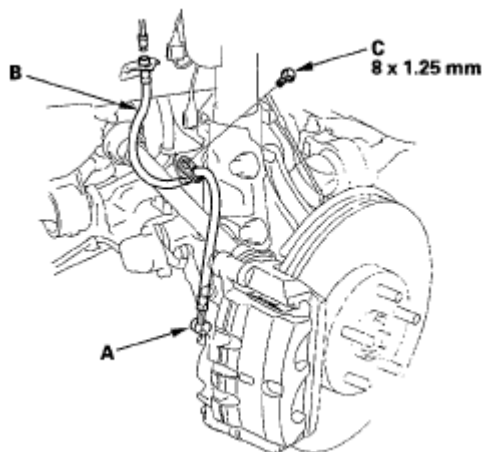


Fig. 72: Identifying Banjo Bolt, Brake Hose And Caliper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake hose mounting bolt (C), then remove the brake hose.
5. Install the brake hose (A) with the mounting bolt (B).

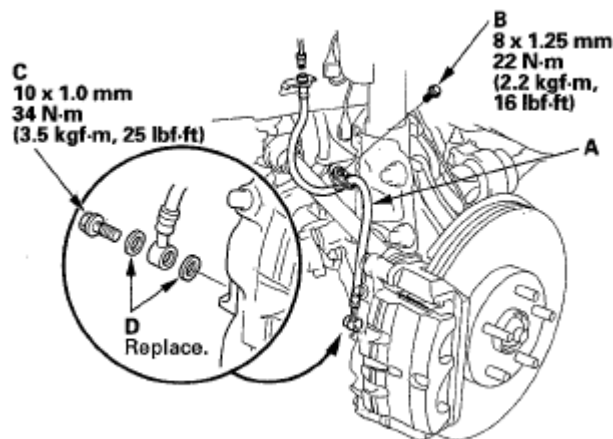


Fig. 73: Identifying Brake Hose And Mounting Bolt With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Connect the brake hose to the caliper with the banjo bolt (C) and new sealing washers (D).
7. Install a new brake hose clip (A) to the brake hose (B) on the bracket, then connect the brake line (C). Do not twist the brake hose.

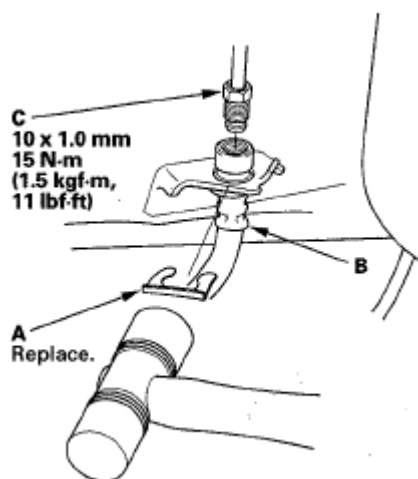


Fig. 74: Identifying Banjo Bolt And Sealing Washers With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. After installing the brake hose, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
9. Do the following checks:
 - Check the brake hose and line joint for leaks, and tighten if necessary.
 - Check the brake hoses for interference and twisting.
10. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.

1. Remove the rear wheel.
2. Disconnect the brake lines (A) from the brake hoses (B), then remove the brake hose clips (C).

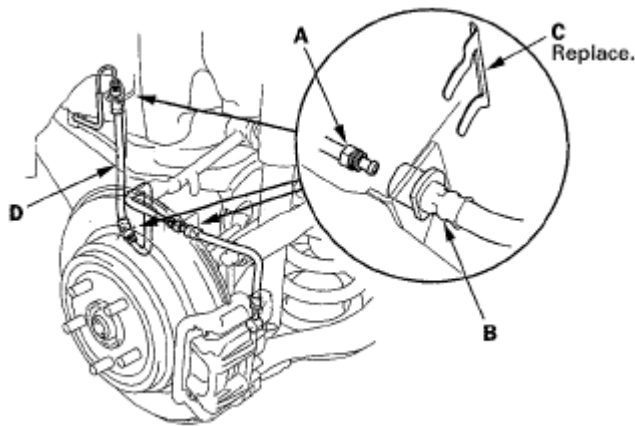


Fig. 75: Identifying Brake Lines, Brake Hoses And Brake Hose Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the front side brake hose (D).
4. Remove the banjo bolt (A), and disconnect the brake hose from the caliper.

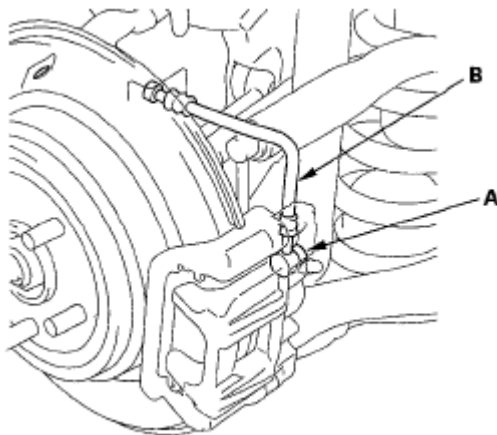


Fig. 76: Identifying Banjo Bolt And Front Side Brake Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the rear side brake hose (B).
6. Connect the rear side brake hose to the caliper with the banjo bolt (A) and new sealing washers (B).

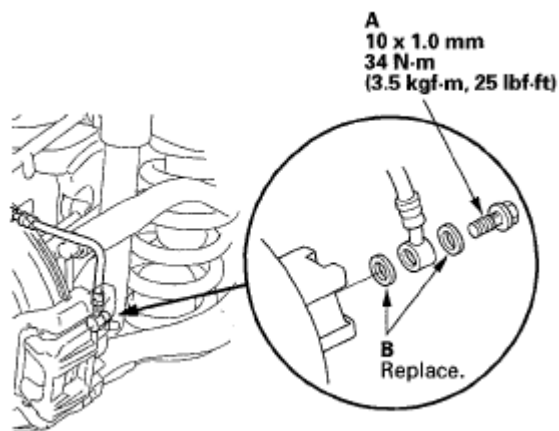


Fig. 77: Identifying Banjo Bolt And Sealing Washers With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install new brake hose clip (A) to the brake hoses (B) on the brackets, then connect the brake lines (C). Do not twist the brake hoses.

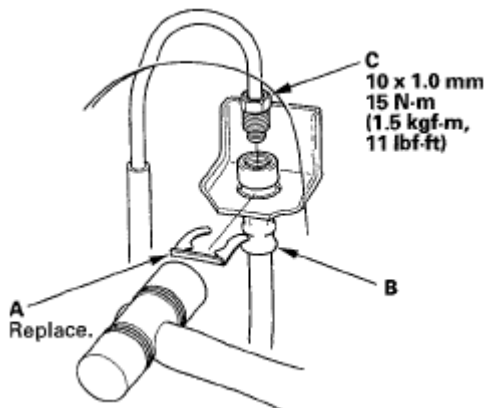


Fig. 78: Identifying Brake Hose Clip, Brake Hoses And Brake Lines With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. After installing the brake hoses, bleed the brake system (see **BRAKE SYSTEM BLEEDING**).
9. Do the following checks:
 - Check the brake hose and line joint for leaks, and tighten if necessary.
 - Check the brake hoses for interference and twisting.
10. Clean the mating surfaces of the brake disc/drum and the inside of the wheel, then install the rear wheel.

PARKING BRAKE CABLE REPLACEMENT

EXPLODED VIEW

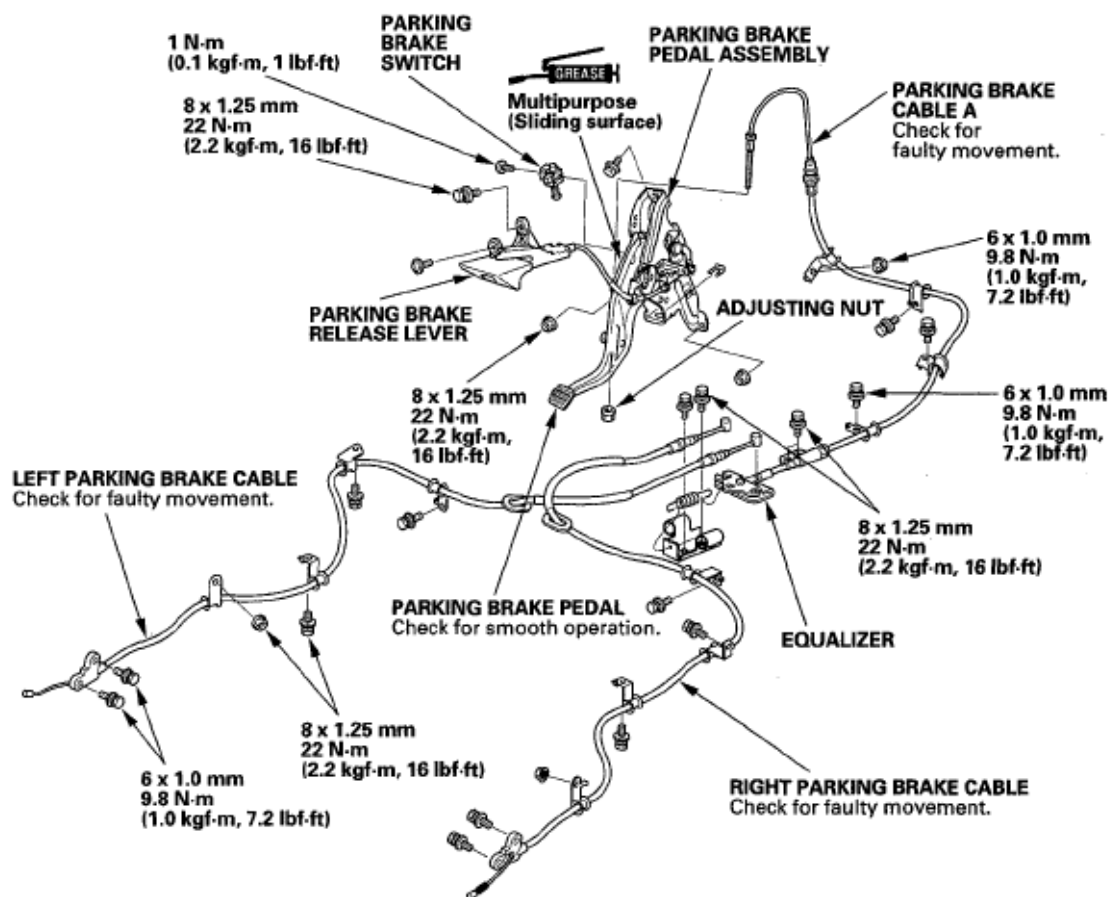


Fig. 79: Exploded View Of Parking Brake Cable With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- The parking brake cables must not be bent or distorted. This will lead to stiff operation and premature cable failure.
- Refer to the EXPLODED VIEW as needed during this procedure.

1. Loosen the parking brake cable adjusting nut (see MINOR ADJUSTMENT).
2. Remove the parking brake shoes, and disconnect the parking brake cable from the parking brake lever (see PARKING BRAKE SHOE REPLACEMENT).
3. Remove the parking brake cable mounting bolts from the backing plate (A).

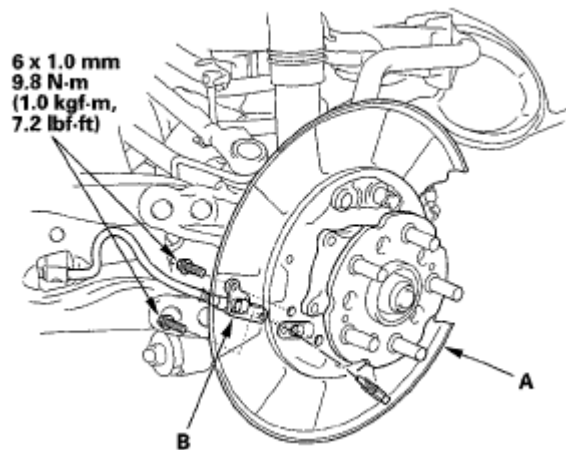


Fig. 80: Identifying Parking Brake Cable Mounting Bolts And Backing Plate With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the parking brake cable (B) and remove it from the backing plate.
5. Reinstall the parking brake cable in the reverse order of removal, and note these items:
 - Be careful not to bend or distort the cable.
 - Connect the parking brake cable to the brake lever, and install the parking brake shoes and rear brake disc/drum (see **PARKING BRAKE SHOE REPLACEMENT**).
 - Do the parking brake adjustment (see **MINOR ADJUSTMENT**). Apply the parking brake firmly 10 times then adjust it again.

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2007-09 ACCESSORIES AND EQUIPMENT

Bumpers - MDX

FRONT BUMPER REMOVAL/INSTALLATION

NOTE:

- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the front bumper.
- Take care not to scratch the front bumper and body.

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. Remove the bolts (A, B), screws (C, D), and clips (E, F) securing the front bumper (G).

Fastener Locations

A ▶ : Bolt, 2 B ▶ : Bolt, 2 C ▶ : Screw, 2

D ▶ : Screw, 2 E ▶ : Clip, 2 F ▶ : Clip, 9

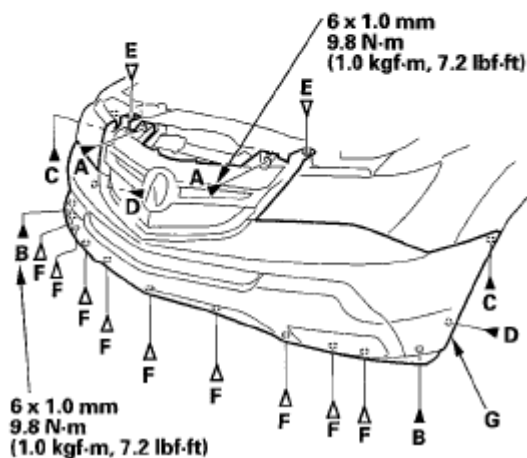


Fig. 1: Identifying Front Bumper Bolts, Screw And Nuts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull on the front bumper (A) at the wheel arch areas to release it from the hooks (B) on the side spacers (C).

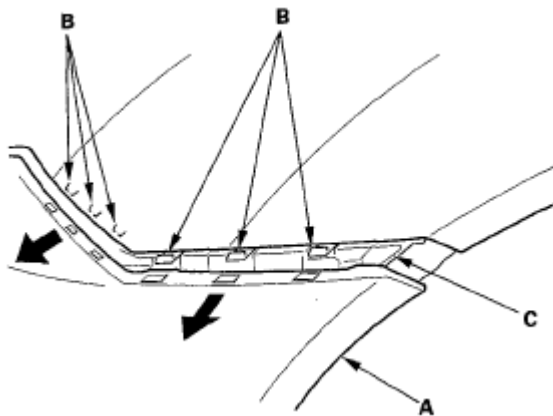


Fig. 2: Identifying Front Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With the help of an assistant, while pulling the wheel arch portion away from the side spacer (A), pull the front bumper to release the bumper from the hooks (B) on the corner upper beam (C).

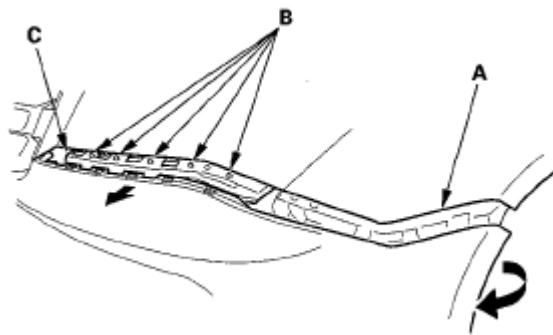


Fig. 3: Identifying Wheel Arch Of Side Spacer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Canada models with headlight washer: While pushing the retainer (A), pull the headlight washer tube (B) to disconnect it from a nozzle (C) of the washer motor. Release the washer tube from the tube clip (D).

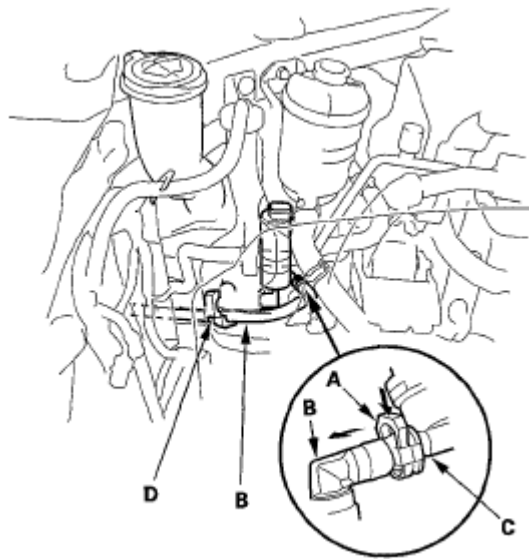


Fig. 4: Identifying Retainer, Headlight Washer Tube, Nozzle And Washer Motor
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With the help of an assistant, disconnect the front fog light connectors (A), then remove the front bumper (B).

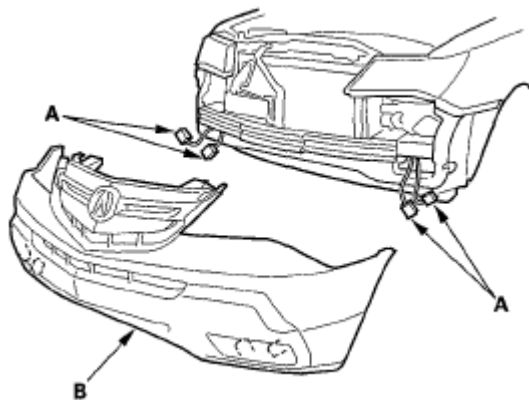


Fig. 5: Identifying Front Fog Light Connectors And Front Bumper
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the bumper in the reverse order of removal, and note these items:
 - Make sure the front fog light connectors are plugged in properly, and the headlight washer tube is connected properly.
 - Make sure the front bumper engages the hooks (of both center upper beams and side spacers) on each side securely.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

FRONT BUMPER SKID TRIM REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the front bumper
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the front bumper (see [FRONT BUMPER REMOVAL/INSTALLATION](#)).
2. Remove all of the screws. Pry all of the hooks (A) up with a trim tool, then remove the front bumper skid trim (B) from the front bumper (C).

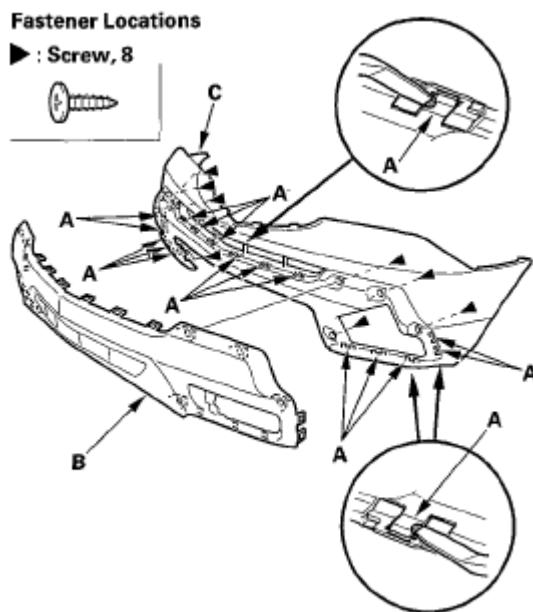


Fig. 6: Identifying Front Bumper Skid Trim, Front Bumper And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and push the hooks into place securely.

REAR BUMPER REMOVAL/INSTALLATION

NOTE:

- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the rear bumper.

- Take care not to scratch the rear bumper and body.

1. From the rear wheel arches on both sides, remove the screws (A, B, C) and clips (D) securing the rear bumper (E), and rear fender cover (F).

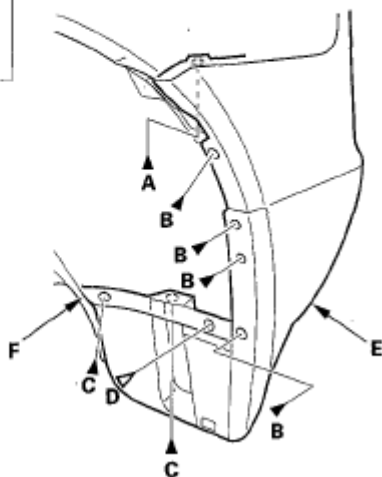
Fastener Locations**A ▶ : Screw, 2 B ▶ : Screw, 8 C ▶ : Screw, 4****D ▶ : Clip, 2**

Fig. 7: Identifying Rear Bumper, Rear Fender Cover, Clips And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove both taillights(See TAILLIGHT REPLACEMENT .

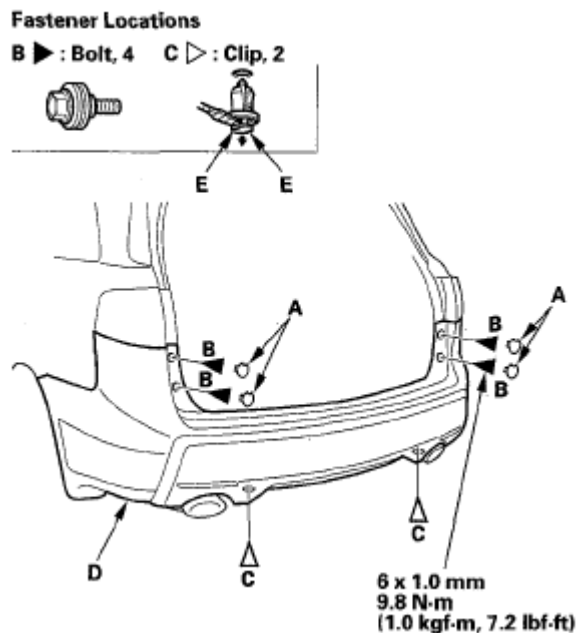


Fig. 8: Identifying Clips, Cap And Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the caps (A). Remove the bolts (B) and clips (C) securing the rear bumper (D).

NOTE: To remove the clips, pry the inner clip up at the edge near the line (E) on its head.

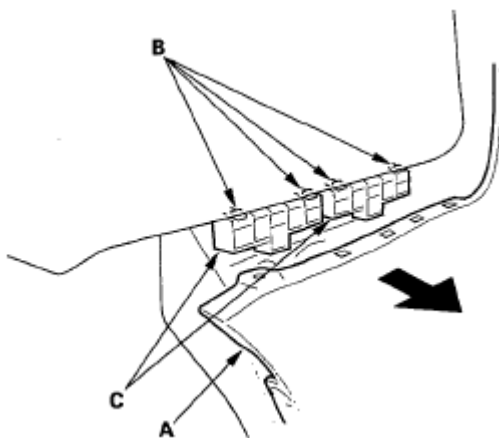


Fig. 9: Identifying Rear Bumper
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull on the rear bumper (A) at the wheel arch areas to release it from the hooks (B) on the side spacers (C).

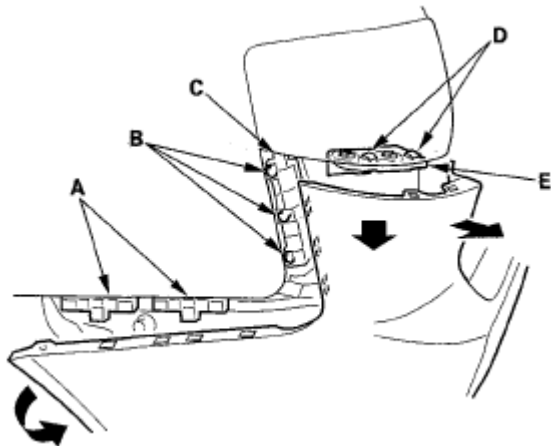


Fig. 10: Identifying Hooks, Side Upper Spacer And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With the help of an assistant, while pulling the wheel arch portion away from the side spacers (A), pull the rear bumper to release the bumper from the hooks (B) on the side upper spacer (C), and from the hooks (D) on the side bracket (E).

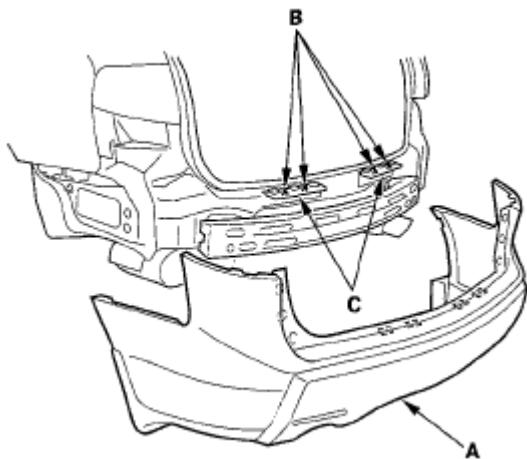


Fig. 11: Identifying Bumper, Hooks And Upper Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With the help of an assistant, pull out on the rear bumper to release the bumper (A) from the hooks (B) on both upper brackets (C).
7. Install the bumper in the reverse order of removal, and note these items:
 - Make sure the rear bumper engages the hooks (of both the side bracket, side spacers, and side upper spacers) on each side securely.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

REAR BUMPER SKID TRIM REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the front bumper.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the rear bumper (see REAR BUMPER REMOVAL/INSTALLATION).
2. Remove all of the bolts (A) and screws (B). Pry all of the hooks (C) up with a trim tool, then remove the rear bumper skid trim (D) from the rear bumper (E).

Fastener Locations

A ► : Bolt, 2 B ► : Screw, 7

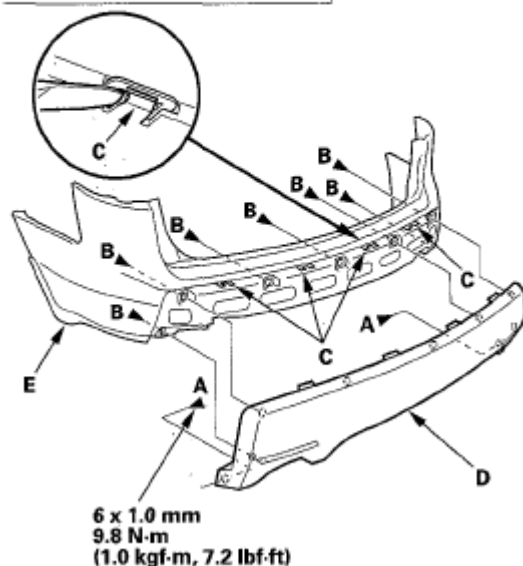


Fig. 12: Identifying Rear Bumper Skid Trim And Rear Bumper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and push the hooks into place securely.

REAR BUMPER AIR SPOILER REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper.

1. Remove the rear bumper (see **REAR BUMPER REMOVAL/INSTALLATION**).
2. Remove the bolts (A) and clips (B), then remove the rear bumper air spoiler (C) from the rear bumper (D). Take care not to scratch the rear bumper.

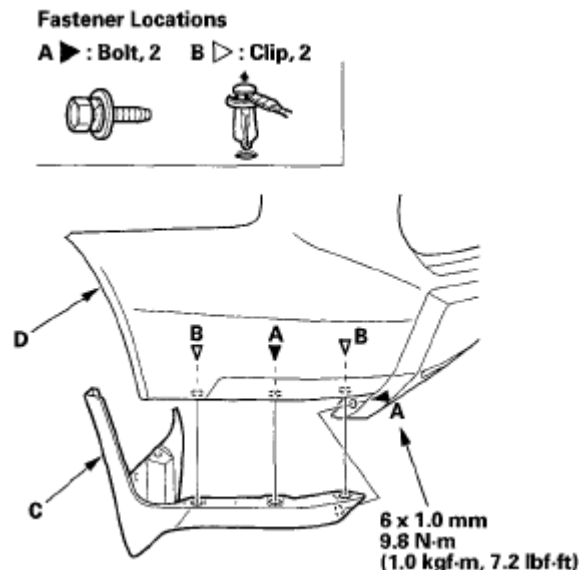


Fig. 13: Identifying Rear Bumper Air Spoiler, Bolts And Screws With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the spoiler in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

REAR BUMPER REFLECTOR REPLACEMENT

NOTE:

- Put on gloves to prevent damage.
- Take care not to scratch the rear bumper and body.

1. Push out the clip (A), release the hook (B), then remove the rear bumper reflector (C).

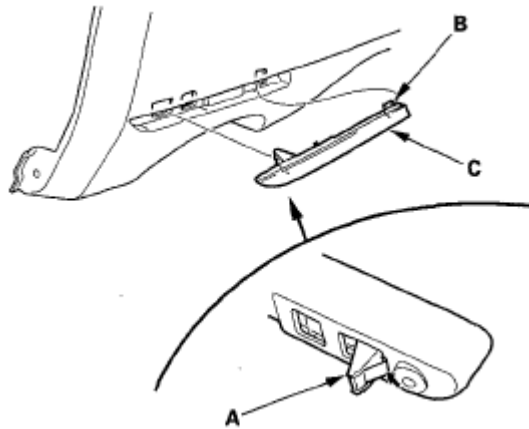


Fig. 14: Identifying Rear Bumper Reflector Clip And Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Reattach the hook to the rear bumper first, and push the clip into place securely.

2008 Acura MDX
2007-09 ENGINE PERFORMANCE Catalytic Converter System - MDX

2007-09 ENGINE PERFORMANCE

Catalytic Converter System - MDX

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Catalytic Converter System - MDX

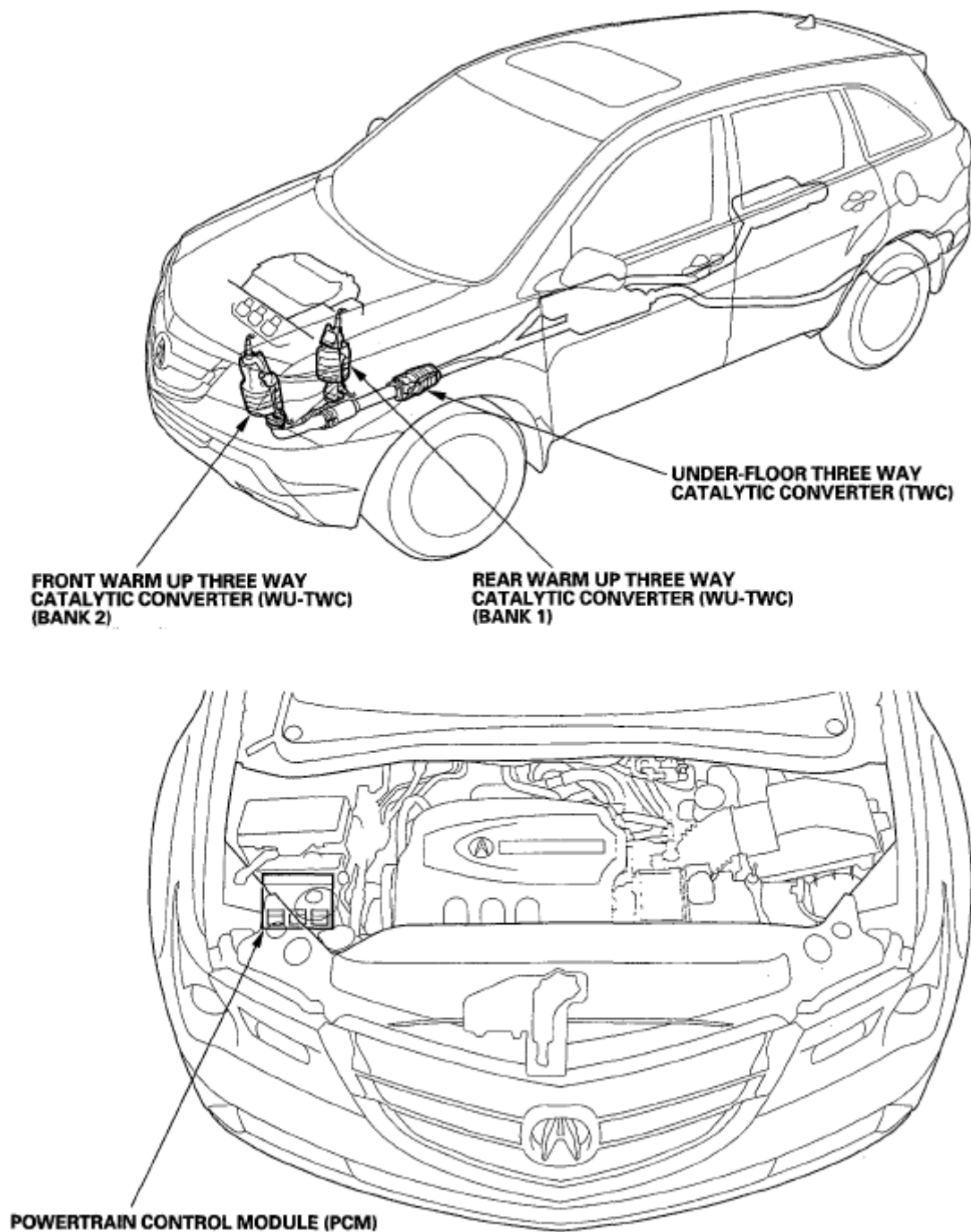


Fig. 1: Identifying Catalytic Converter System Component
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

**DTC P0420: REAR BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1);
DTC P0430: FRONT BANK CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2)**

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If some of the DTCs listed below are stored at the same time as DTC P0420 and/or P0430*, troubleshoot those DTCs first, then recheck for DTC P0420 and/or P0430*.

P0137, P0138, P0157, P0158, P2270, P2271, P2272*, P2273*: Secondary HO2S (Sensor 2)

P0141, P0161: Secondary HO2S (Sensor 2) heater

- **P0300: Random misfire.**
- **P0301 - P0306: No. 1, No. 2, No. 3, No. 4, No. 5, or No. 6 cylinder misfire detected.**
- **Poor quality fuel can cause these DTCs.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Vehicle speed between 45-75 mph (72-120 km/h) for 5 minutes or more
 - Maintain the vehicle speed at 55 mph (88 km/h) for 1 minute or more with cruise control set
5. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

Does the screen indicate EXECUTING?

YES - Go to step 6.

NO - Go to step 4 and recheck.

6. Continue test driving until a result comes on.
7. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Catalytic Converter System - MDX

YES - Go to step 8.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 4 and recheck.

8. Turn the ignition switch OFF.
9. Replace the WU-TWC:
 - For DTC P0420, replace the rear WU-TWC (Bank 1) (see **REAR**).
 - For DTC P0430, replace the front WU-TWC (Bank 2) (see **FRONT**).
10. Turn the ignition switch ON (II).
11. Reset the PCM with the HDS.
12. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
13. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
14. Test-drive for about 10 minutes, continually changing the vehicle speed.
15. Check the CAT MONITOR CONDITION B1 (B2)* in the DATA LIST with the HDS.

Is the condition OK?

YES - Go to step 16.

NO - Go to step 13 and recheck.

16. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Vehicle speed between 45-75 mph (72-120 km/h) for 5 minutes or more
 - Maintain the vehicle speed at 55 mph (88 km/h) for 1 minute or more with cruise control set.
17. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

Does the screen indicate EXECUTING?

YES - Go to step 18.

NO - Go to step 16 and recheck.

18. Continue test driving until a result comes on.
19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0420 and/or P0430 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (sensor 2) and the PCM,

then go to step 1.

NO - Go to step 20.

20. Monitor the OBD STATUS for DTC P0420 and/or P0430* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 19, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 16.

WARM UP TWC REMOVAL/INSTALLATION

FRONT

1. Remove the radiator and A/C condenser fan assemblies (see **RADIATOR AND FAN REPLACEMENT**).
2. Disconnect the front air fuel ratio (A/F) sensor connector and front secondary heated oxygen sensor (secondary HO2S) connector.
3. Carefully remove the front WU-TWC.

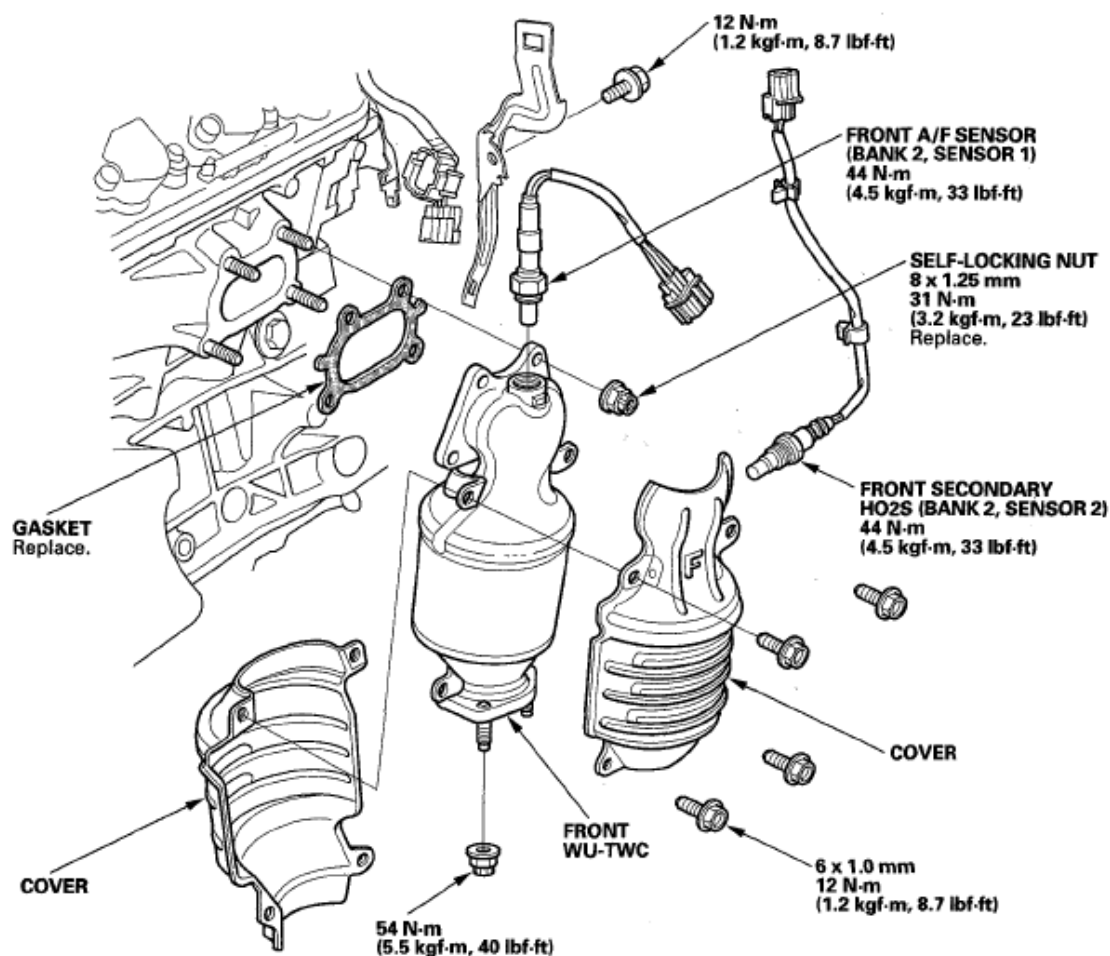


Fig. 2: Identifying Front Air Fuel Ratio Sensor Connector And Front Secondary Heated Oxygen Sensor Connector With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully install the front WU-TWC, and tighten the nuts in a crisscross pattern in two or three steps.
5. Install the parts in the reverse order of removal.

REAR

1. Remove exhaust pipe A (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
2. Remove the intermediate shaft (see **INTERMEDIATE SHAFT REMOVAL**).
3. Disconnect the rear air fuel ratio (A/F) sensor connector and the rear secondary heated oxygen sensor (secondary HO2S) connector.
4. Remove the rear WU-TWC bracket, then remove the rear WU-TWC.

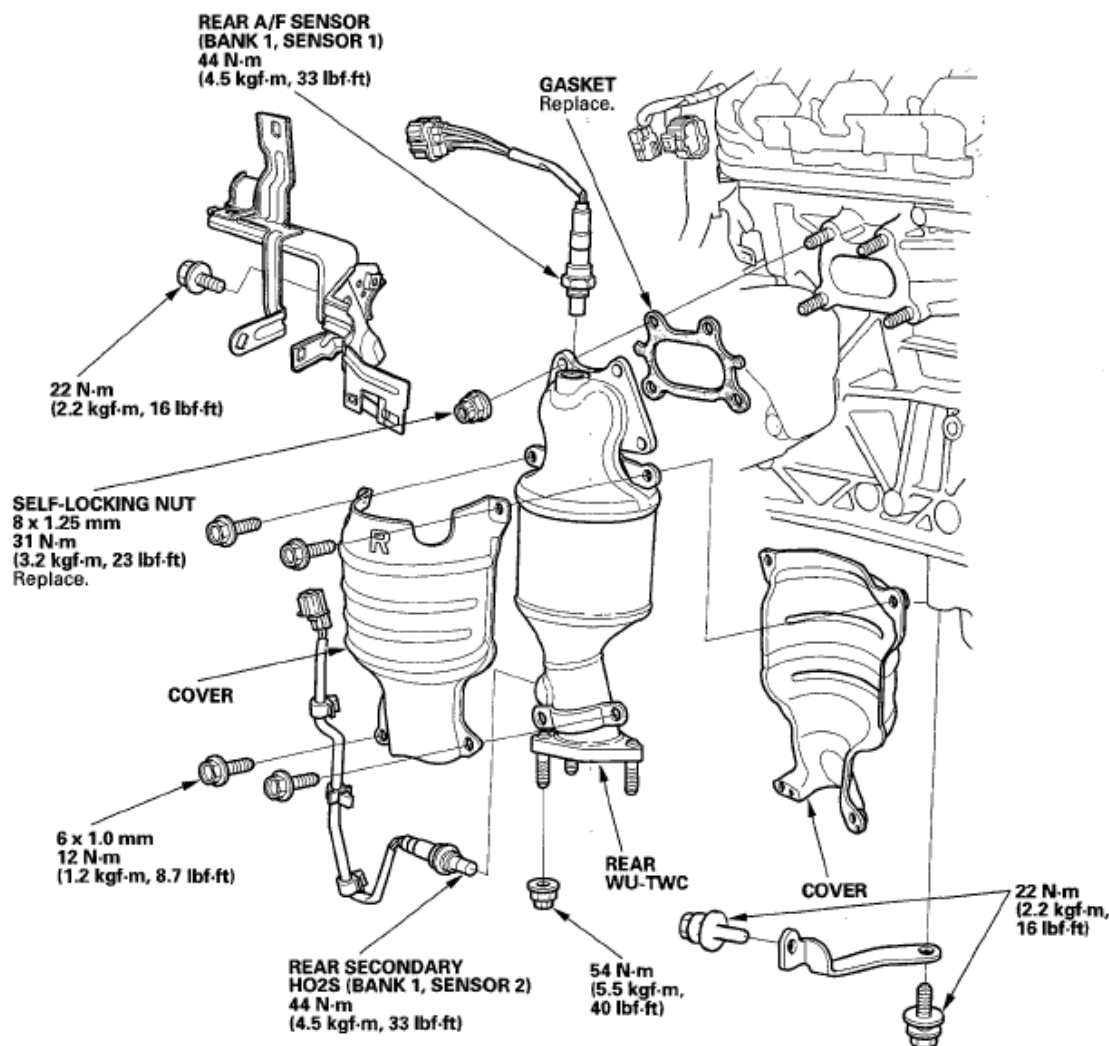


Fig. 3: Identifying Rear Air Fuel Ratio Sensor Connector And Rear Secondary Heated Oxygen Sensor Connector With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the rear WU-TWC, and tighten the nuts in a crisscross pattern in two or three steps.
6. Install the parts in the reverse order of removal.

UNDER-FLOOR TWC REMOVAL/INSTALLATION

1. Remove the under-floor TWC (A).

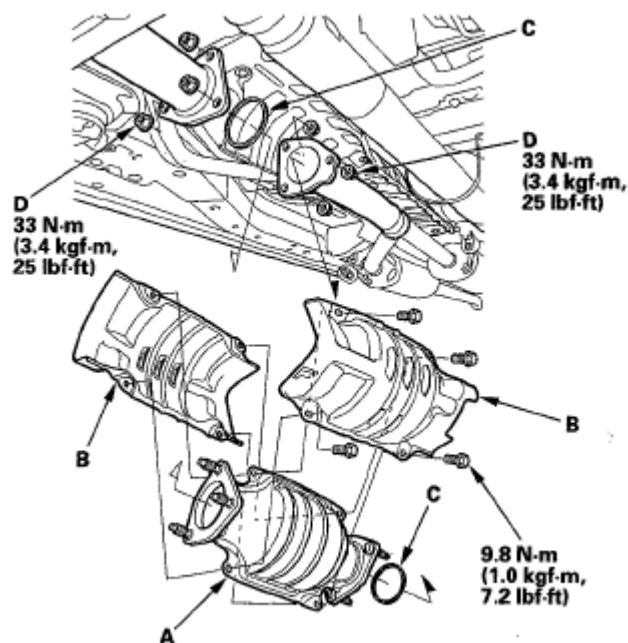


Fig. 4: Identifying Converter Cover And Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the converter cover (B).
3. Install the parts in the reverse order of removal with new gaskets (C) and new self-locking nuts (D).

2007-09 ELECTRICAL

Charging System - MDX

COMPONENT LOCATION INDEX

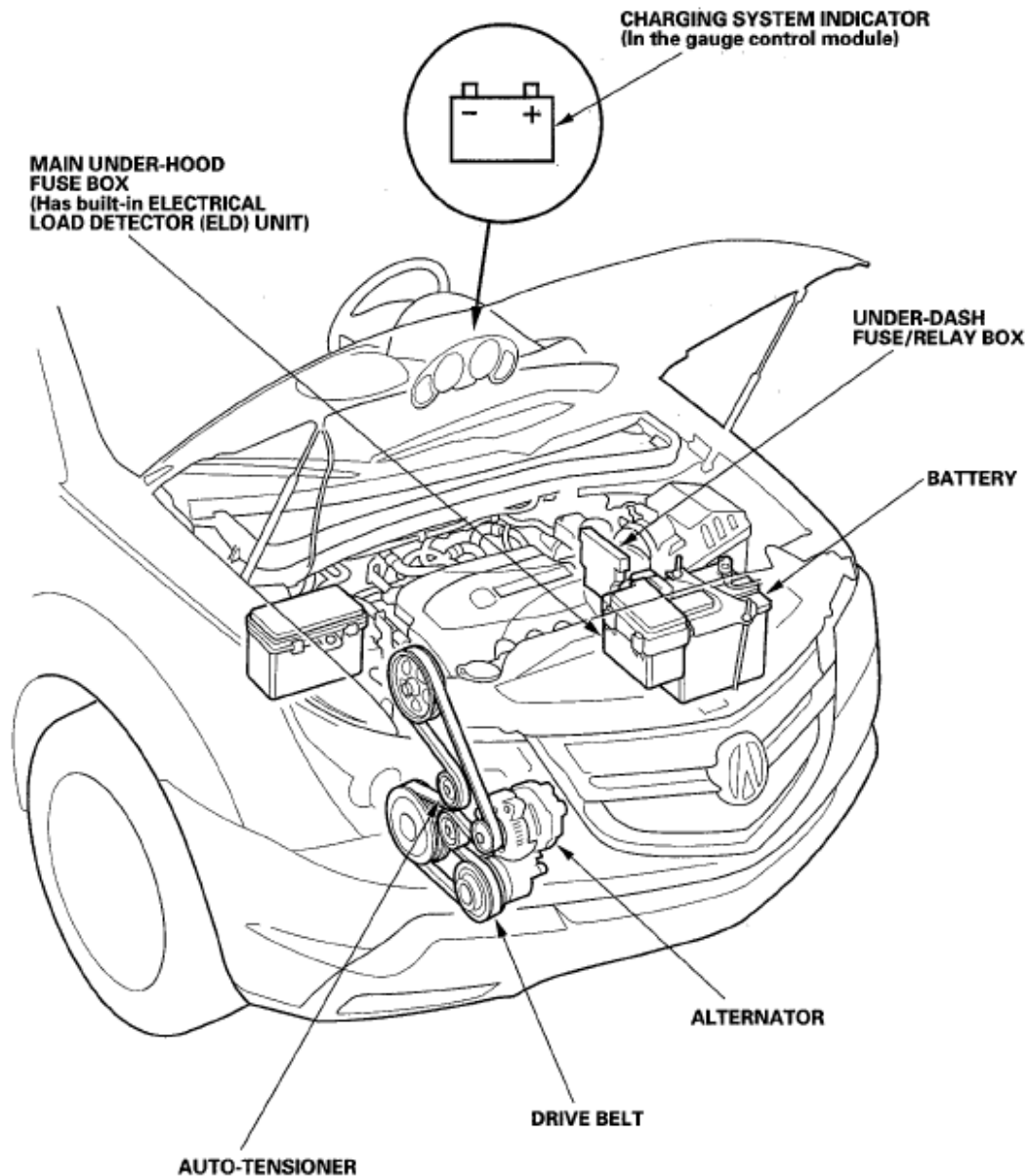


Fig. 1: Identifying Charging System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

2008 Acura MDX

2007-09 ELECTRICAL Charging System - MDX

TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Charging system indicator does not come on with the ignition switch ON (II)	Troubleshoot the charging system indicator circuit (see <u>CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING</u>).	
Charging system indicator stays on	1. Check for a broken drive belt (see <u>DRIVE BELT INSPECTION</u>). 2. Check the drive belt auto-tensioner (see <u>DRIVE BELT AUTO-TENSIONER INSPECTION</u>). 3. Troubleshoot the charging system indicator circuit (see <u>CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING</u>).	
Battery discharged	1. Check for a poor connection at the battery terminal. 2. Test the battery (see <u>BATTERY TEST</u>). 3. Check for a broken drive belt (see <u>DRIVE BELT INSPECTION</u>). 4. Check the drive belt auto-tensioner (see <u>DRIVE BELT AUTO-TENSIONER INSPECTION</u>). 5. Troubleshoot the alternator and regulator circuit (see <u>ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING</u>). 6. Check for excessive parasitic electrical current draw with the ignition switch in the LOCK (0) position, and the key removed. The multiplex control unit may take up to 10 minutes to turn off (sleep mode) for some models.	
Battery overcharged	1. Test the battery (see <u>BATTERY TEST</u>). 2. Troubleshoot the alternator and regulator circuit (see <u>ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING</u>).	

CIRCUIT DIAGRAM

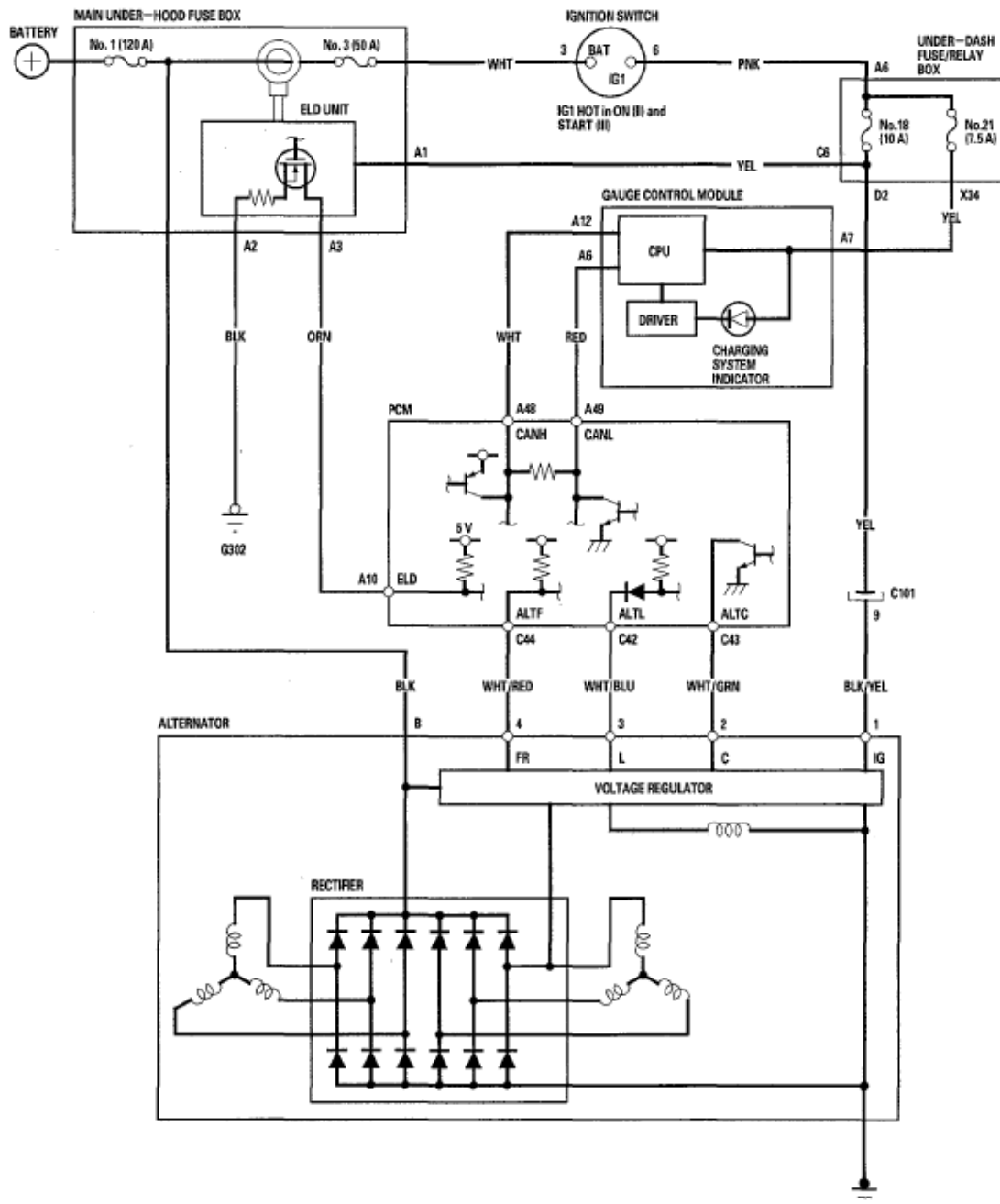


Fig. 2: Charging System - Circuit Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch to ON (II).

Does the charging system indicator come on?

YES - Go to step 2.

NO - Go to step 14.

2. Start the engine. Hold the engine speed at 2,000 rpm for 1 minute.

Does the charging system indicator go off?

YES - Charging system indicator circuit is OK. Go to the **ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING** (see).

NO - Go to step 3.

3. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**).

Does the charging system indicator flash?

YES - Go to step 4.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

4. Turn the ignition switch to LOCK (0).
5. Disconnect the alternator 4P connector.
6. Turn the ignition switch to ON (II).

Does the charging system indicator go off?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), or repair the alternator (see **ALTERNATOR OVERHAUL**).

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 in **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
9. Turn the ignition switch to ON (II).
10. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
11. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C42 and body ground.

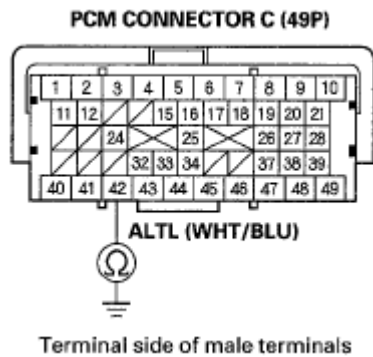


Fig. 3: Identifying Continuity Between PCM Connector Terminal C42 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the alternator and the PCM.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

14. Do the gauge control module self-diagnostic function procedure (see **SELF-DIAGNOSTIC FUNCTION**).

Does the charging system indicator flash?

YES - Go to step 15.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

15. Turn the ignition switch to LOCK (0).
16. Disconnect the alternator 4P connector.
17. Connect alternator 4P connector terminal No. 3 and body ground with a jumper wire.

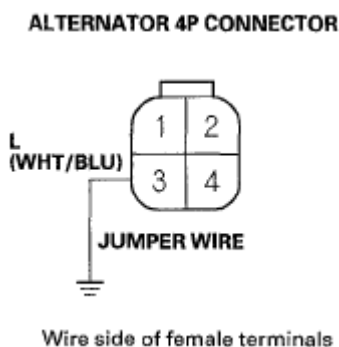


Fig. 4: Identifying Alternator 4P Connector Terminal No. 3 And Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Turn the ignition switch to ON (II).

Does the charging system indicator come on?

YES - Replace the alternator (see ALTERNATOR REMOVAL AND INSTALLATION), or repair the alternator (see ALTERNATOR OVERHAUL).

NO - Go to step 19.

19. Connect the HDS to the DLC (see step 2 in HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)).
20. Turn the ignition switch to ON (II).
21. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
22. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

23. Disconnect PCM connector C (49P).
24. Check for continuity between PCM connector terminal C42 and alternator 4P connector terminal No. 3.

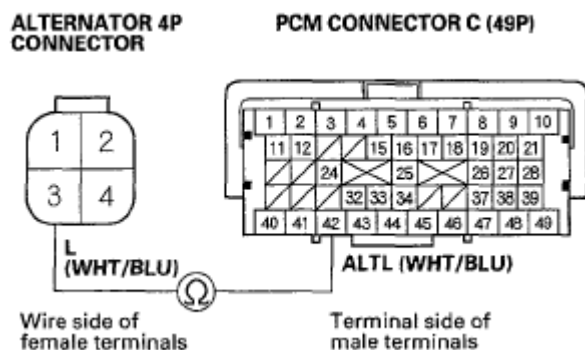


Fig. 5: Identifying Continuity Between PCM Connector Terminal C42 And Alternator 4P Connector Terminal No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see PCM REPLACEMENT).

NO - Repair open in the wire between the alternator and the PCM.

ALTERNATOR AND REGULATOR CIRCUIT TROUBLESHOOTING

1. Make sure the battery connections are good and the battery is fully charged (see **BATTERY TEST**).
2. Remove the engine cover (see step **IGNITION COIL REMOVAL/INSTALLATION**).
3. Connect a VAT-40 (or equivalent tester), and turn the selector switch to position 1 (starting).

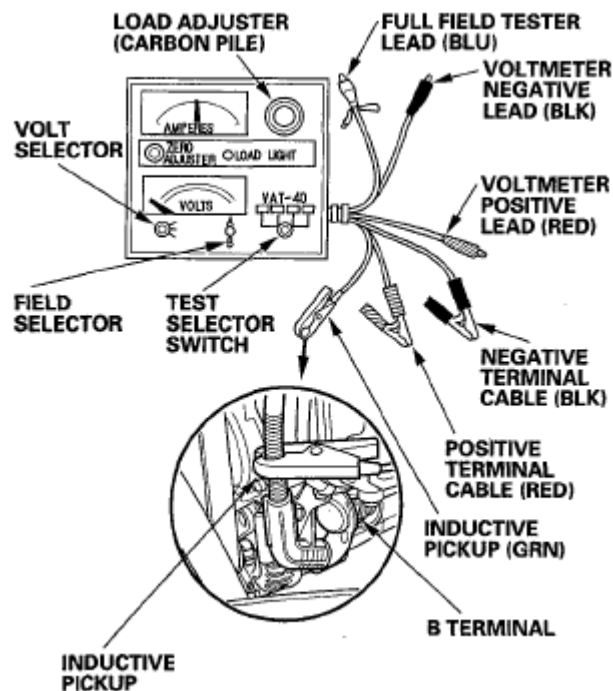


Fig. 6: Identifying VAT-40 (Or Equivalent Tester)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Start the engine. Hold the engine speed at 3,000 rpm, with no load, until the radiator fan comes on, then let it idle.
5. Raise the engine speed to 2,000 rpm, and hold it there.

Is the voltage over 15.1 V?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**) or rear housing assembly (see **ALTERNATOR OVERHAUL**).

NO - Go to step 6.

6. Release the accelerator pedal, and let the engine idle.
7. Turn off all the accessories. Select the charging test on the tester.
8. Remove the inductive pickup, and zero the ammeter.
9. Place the inductive pickup over the B terminal wire of the alternator so the arrow points away from the alternator.

10. Raise the engine speed to 2,000 rpm, and hold it there.

Is the voltage less than 13.5 V?

YES - Go to **ALTERNATOR CONTROL CIRCUIT TROUBLESHOOTING** .

NO - Go to step 11.

11. Apply a load with the VAT-40 until the battery voltage drops between 12-13.5 V.

Is the amperage 87.5 A or more?

YES - The charging system is OK.

NOTE: **If the charging system indicator is still on, replace the alternator (see ALTERNATOR REMOVAL AND INSTALLATION).**

NO - Replace the alternator (see ALTERNATOR REMOVAL AND INSTALLATION), or repair the alternator (see ALTERNATOR OVERHAUL).

ALTERNATOR CONTROL CIRCUIT TROUBLESHOOTING

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 in **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs. If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Disconnect the alternator 4P connector from the alternator.
6. Start the engine, and turn on the headlights to high beam.
7. Measure the voltage between alternator 4P connector terminal No. 2 and the positive terminal of the battery.

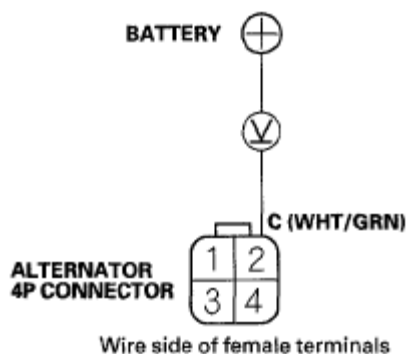


Fig. 7: Identifying Voltage Between Alternator 4P Connector Terminal No. 2 And Positive

Terminal Of Battery

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there less than 1 V?***YES** - Go to step 8.**NO** - Go to step 11.

8. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

9. Disconnect PCM connector C (49P).
10. Check for continuity between PCM connector terminal C43 and body ground.

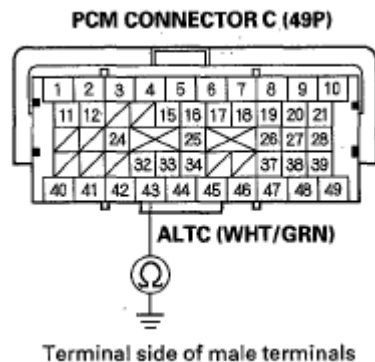


Fig. 8: Identifying Continuity Between PCM Connector Terminal C43 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short in the wire between the alternator and the PCM.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

11. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C43 and alternator 4P connector terminal No. 2.

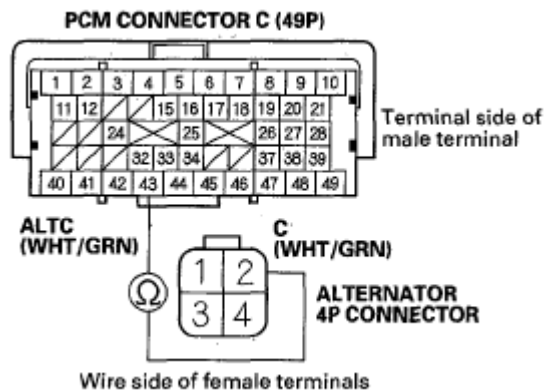


Fig. 9: Identifying Continuity Between PCM Connector Terminal C43 And Alternator 4P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the alternator (see ALTERNATOR REMOVAL AND INSTALLATION), or repair the alternator (see ALTERNATOR OVERHAUL).

NO - Repair open in the wire between the alternator and the PCM.

DRIVE BELT INSPECTION

1. Inspect the belt for cracks and damage. If the belt is cracked or damaged, replace it.
2. Check that the auto-tensioner indicator (A) is within the standard range (B) as shown. If it is out of the standard range, replace the drive belt (see DRIVE BELT REPLACEMENT).

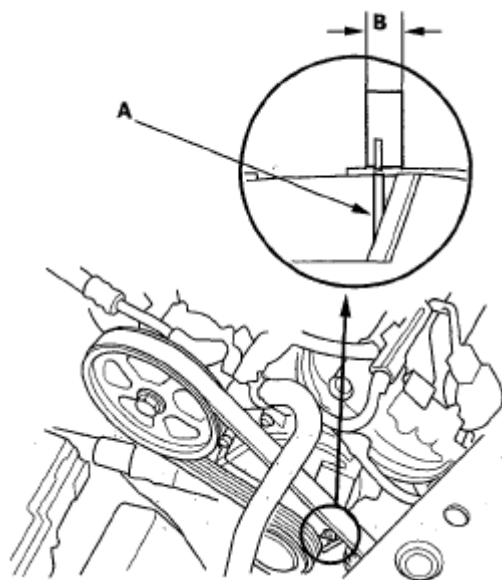


Fig. 10: Identifying Auto-Tensioner Indicator

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVE BELT REPLACEMENT

Special Tools Required

Belt tension release tool Snap-on YA9317 or equivalent, commercially available

1. Move the auto-tensioner (A) using the belt tension release tool to relieve tension from the drive belt (B), then remove the drive belt.

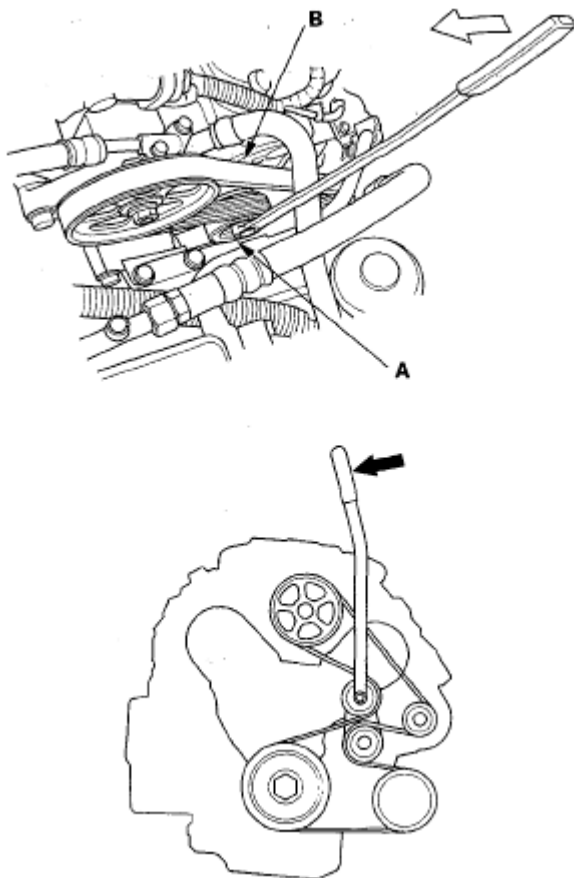


Fig. 11: Identifying Auto-Tensioner With Belt Tension Release Tool
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the new belt in the reverse order of removal.

DRIVE BELT AUTO-TENSIONER INSPECTION

Special Tools Required

Belt tension release tool Snap-on YA9317 or equivalent, commercially available

1. Turn the ignition switch to ON (II), then make sure to turn the A/C switch OFF.
2. With the engine OFF, check the position of the auto-tensioner indicator's pointer (A). Start the engine, then check the position again with the engine idling. If the position of the indicator moves or fluctuates a lot, replace the auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).

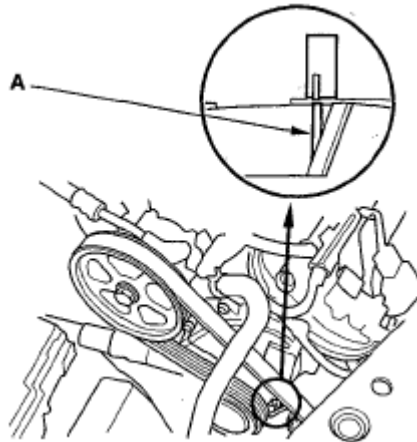


Fig. 12: Identifying Auto-Tensioner Indicator's Pointer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for abnormal noise from the tensioner pulley. If you hear any abnormal noise, replace the auto-tensioner pulley.
4. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
5. Move the auto-tensioner within its limit using the belt tension release tool in the direction shown. Check that the tensioner moves smoothly and without any abnormal noise. If the tensioner does not move smoothly, or you hear abnormal noise, replace the auto-tensioner.

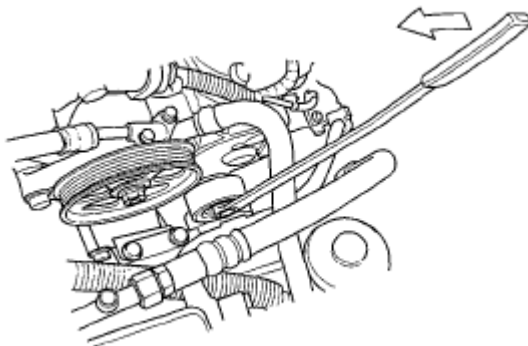


Fig. 13: Identifying Tensioner Moves Smoothly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
7. Clamp the auto-tensioner (A) by using a 10 mm bolt (B), 8 mm bolt (C), and a vise (D) as shown. Do not clamp the auto-tensioner itself.

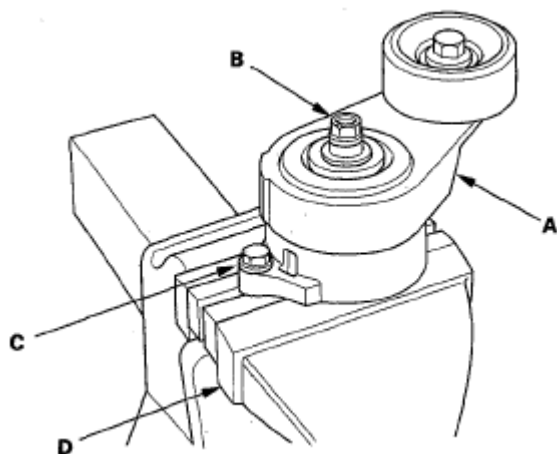


Fig. 14: Identifying Auto-Tensioner In Vise

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Attach a torque wrench (A) to the pulley bolt. Measure the torque when the tensioner is turned counterclockwise. If the torque is less than the specified value, replace the auto-tensioner.

Auto-tensioner Spring Torque:

50.5 N.m (5.15 kgf.m, 37.2 lbf.ft)

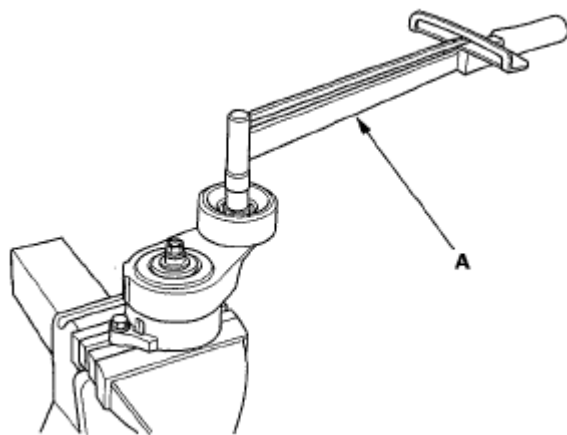


Fig. 15: Tightening Auto-Tensioner Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVE BELT AUTO-TENSIONER REPLACEMENT

1. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
2. Remove the splash shield (see step 31 in **ENGINE REMOVAL**).
3. Remove the auto-tensioner.

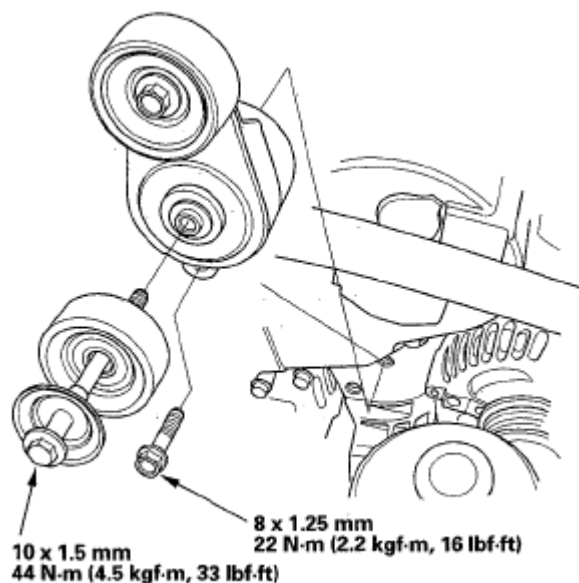


Fig. 16: Identifying Drive Belt Auto-Tensioner Pulley With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the auto-tensioner in the reverse order of removal.

TENSIONER PULLEY REPLACEMENT

1. Remove the auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
2. Remove the pulley bolt (A) (left-hand threads), and remove the tensioner pulley (B).

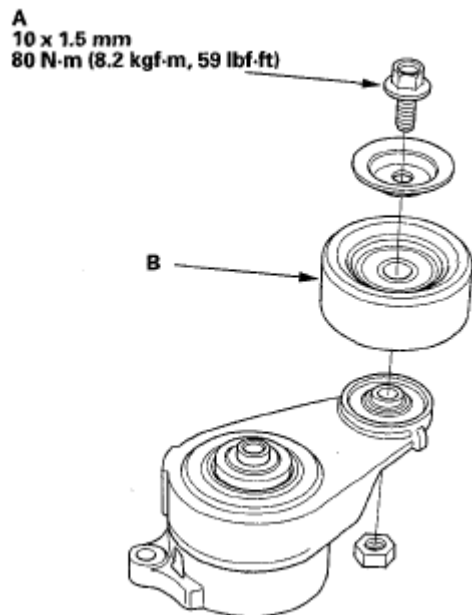


Fig. 17: Identifying Tensioner Pulley Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the tensioner pulley in the reverse order of removal.

ALTERNATOR REMOVAL AND INSTALLATION

REMOVAL

1. Make sure you have the anti-theft codes for the audio system and navigation system (if equipped). Make sure the ignition switch is in the LOCK (0) position.
2. Disconnect the negative cable from the battery.
3. Remove the engine cover (see step 1 in **IGNITION COIL REMOVAL/INSTALLATION**).
4. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
5. Remove the A/C suction line from brackets (A).

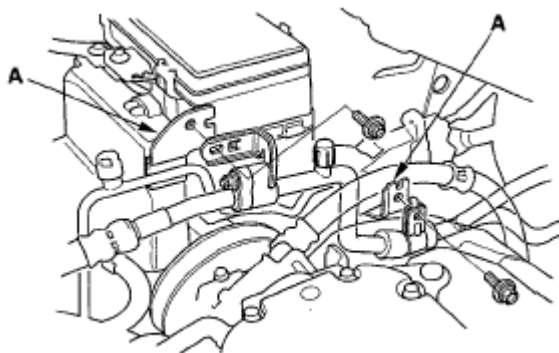


Fig. 18: Identifying A/C Suction Line From Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the coolant reservoir (A), then remove power steering fluid reservoir (B) from the bracket.

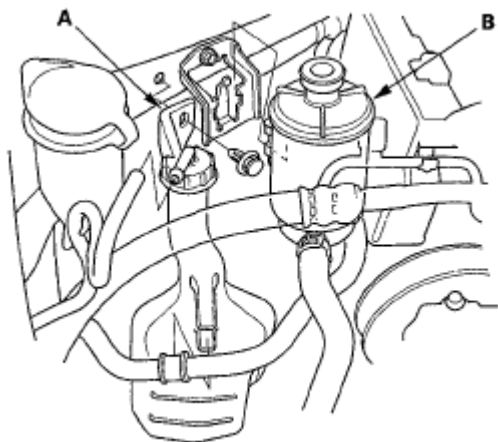


Fig. 19: Identifying Coolant Reservoir And Power Steering Fluid Reservoir

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the harness bracket (A), then disconnect the A/C compressor clutch connector (B).

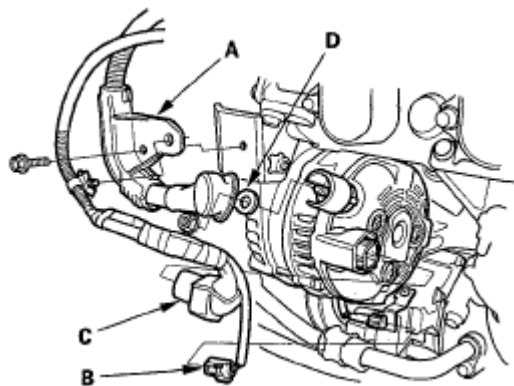


Fig. 20: Identifying Harness Bracket And A/C Compressor Clutch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the alternator connector (C) and the BLK wire (D) from the alternator.
9. Remove the mounting bolt (A) and alternator bracket mounting bolt (B), then remove the alternator.

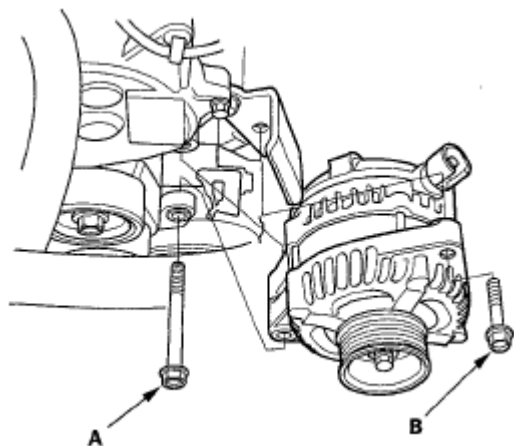


Fig. 21: Identifying Alternator Mounting Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the alternator, and tighten the mounting bolt (A) and bracket mounting bolt (B).

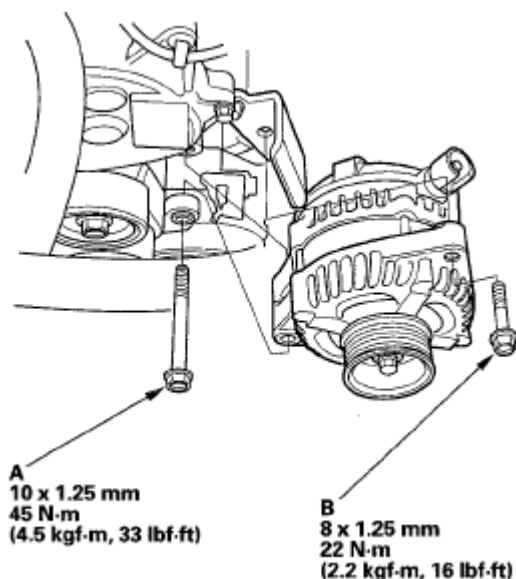


Fig. 22: Identifying Bracket Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the alternator connector (A) and BLK wire (B) to the alternator.

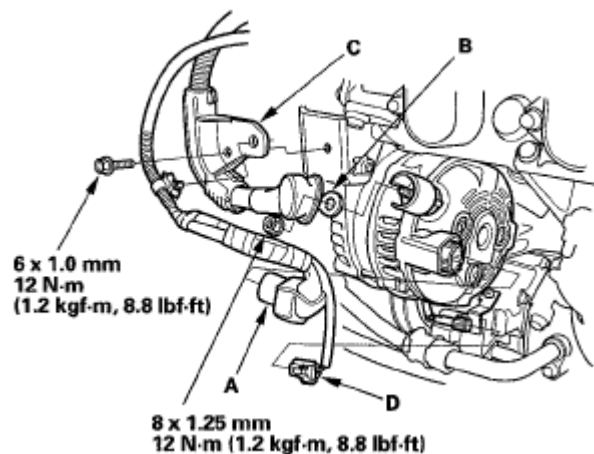


Fig. 23: Identifying Alternator Connector And BLK Wire With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the harness bracket (C), then connect the A/C compressor clutch connector (D).
4. Install the power steering fluid reservoir (A) to the bracket, then install the coolant reservoir (B).

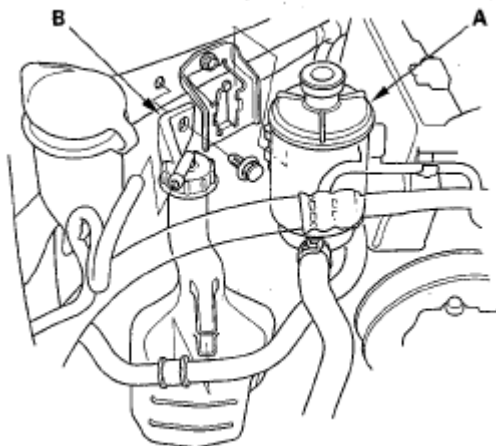


Fig. 24: Identifying Power Steering Fluid Reservoir And Coolant Reservoir
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the A/C suction line to the brackets (A).

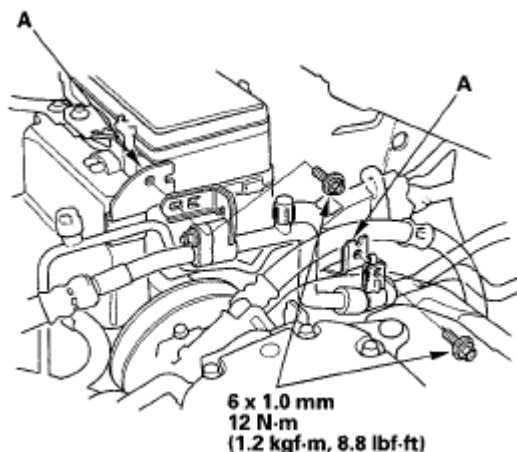


Fig. 25: Identifying A/C Suction Line To Brackets With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the drive belt (see **DRIVE BELT INSPECTION**).
7. Install the engine cover (see step 1 in **IGNITION COIL REMOVAL/INSTALLATION**).
8. Do the battery terminal reconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
9. Do the steering column position memorization (see **STEERING COLUMN POSITION MEMORIZATION**).
10. Enter the anti-theft codes for the audio system and navigation system (if equipped).
11. Set the clock (on vehicles without navigation).

ALTERNATOR OVERHAUL

EXPLODED VIEW

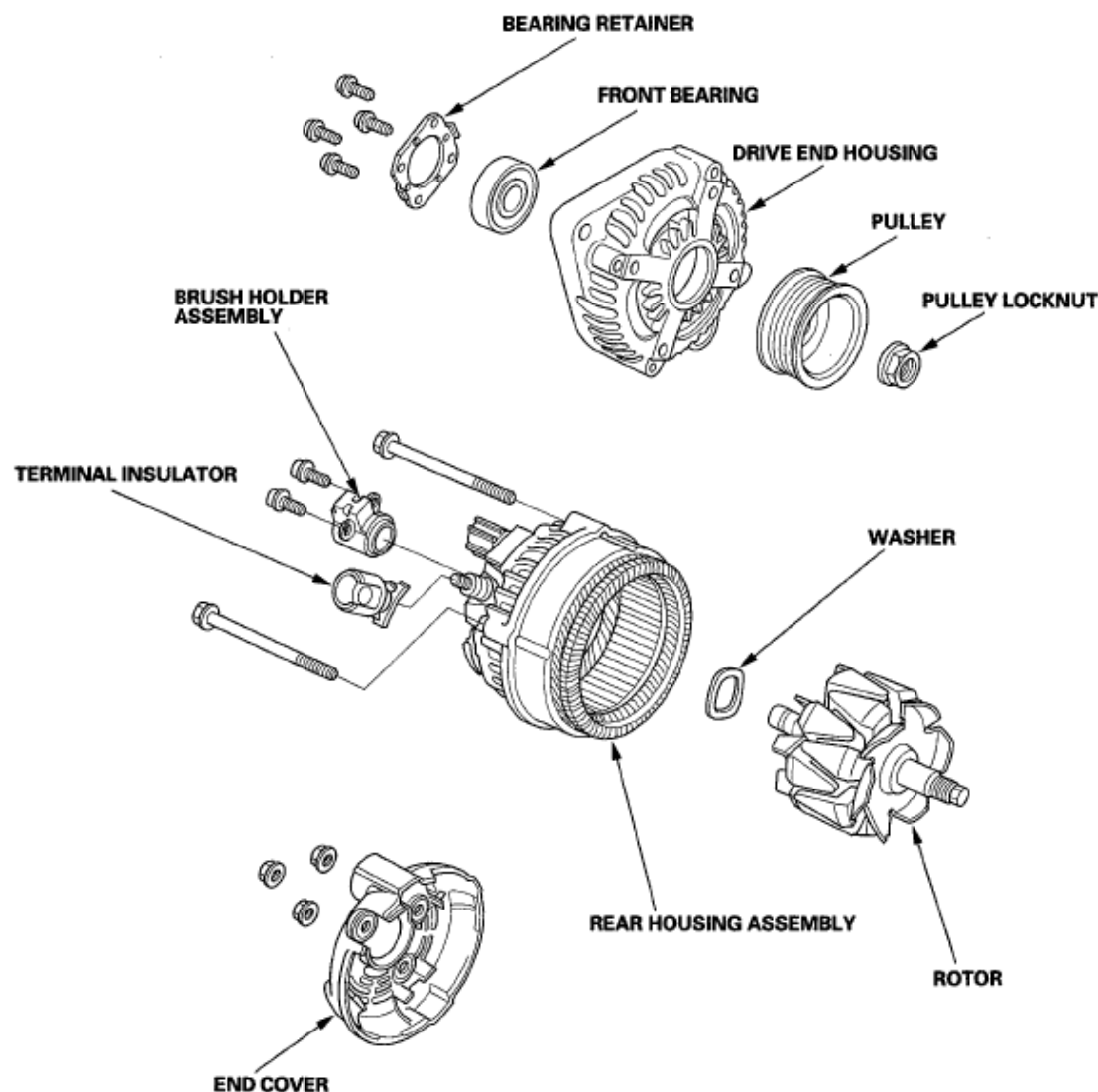


Fig. 26: Exploded View Of Alternator Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Handle driver 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300

NOTE: Refer to the EXPLODED VIEW as needed during this procedure.

Alternator Disassembly

1. Test the alternator and regulator before you remove them (see CHARGING SYSTEM INDICATOR

CIRCUIT TROUBLESHOOTING).

2. Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**).
3. If the front bearing needs replacing, remove the pulley locknut with a 10 mm wrench (A) and a 22 mm wrench (B). If necessary, use an impact wrench.

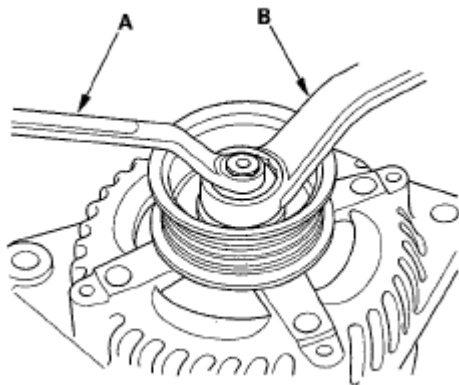


Fig. 27: Identifying Pulley Locknut With Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the three flange nuts.

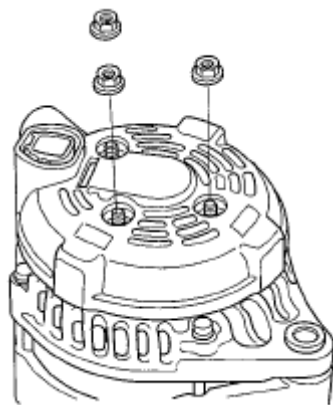


Fig. 28: Identifying Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the end cover (A) and the insulator (B). A.

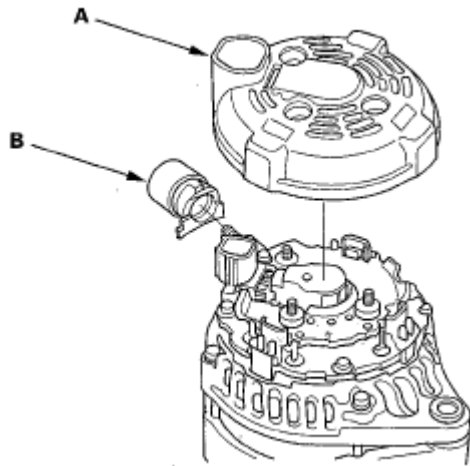


Fig. 29: Identifying Cover And Insulator

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brush holder.

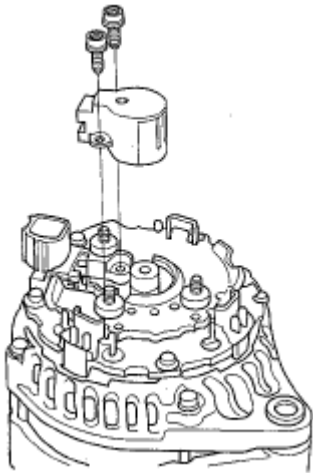


Fig. 30: Identifying Brush Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the four bolts, then remove the rear housing assembly (A) and washer (B).

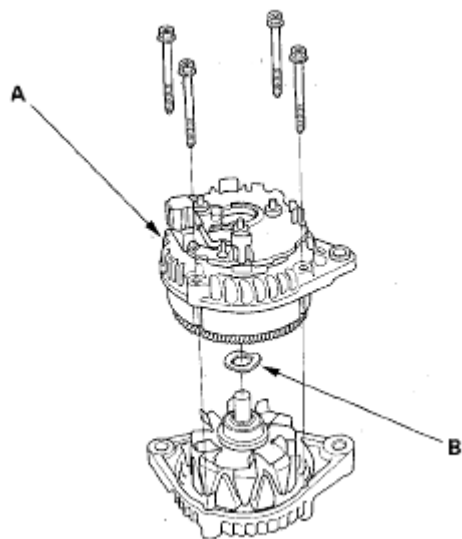


Fig. 31: Identifying Rear Housing Assembly And Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If you are not replacing the front bearing, go to step 13. Remove the rotor from the drive end housing.

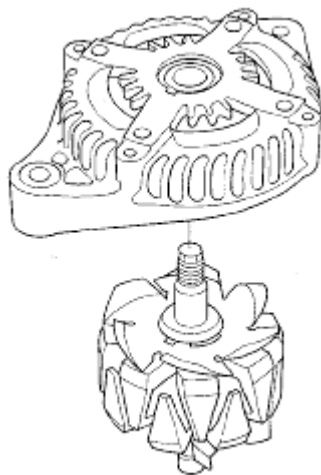


Fig. 32: Identifying Rotor From Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Inspect the rotor shaft for scoring, and inspect the bearing journal surface in the drive end housing for seizure marks.
- If the rotor is damaged, replace the rotor assembly.
 - If the rotor is OK, go to step 10.
10. Remove the front bearing retainer plate.

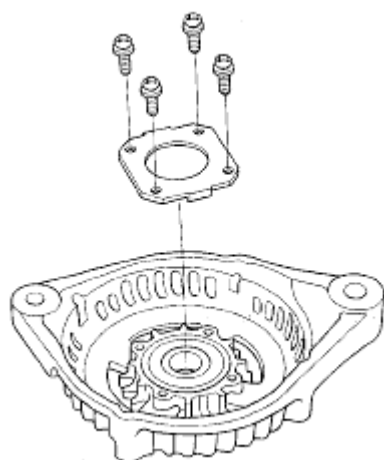


Fig. 33: Identifying Front Bearing Retainer Plate With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Drive out the front bearing with a brass drift and hammer.

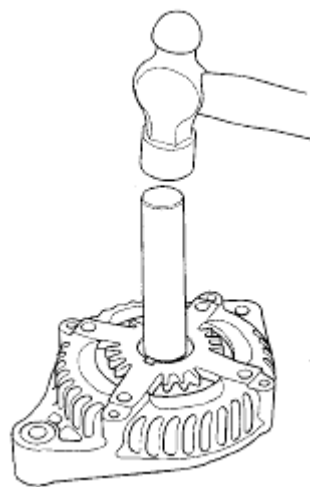


Fig. 34: Driving Front Bearing Out With Brass Drift And Hammer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install a new front bearing in the drive end housing with a hammer, the handle driver, and attachment (42x47 mm).

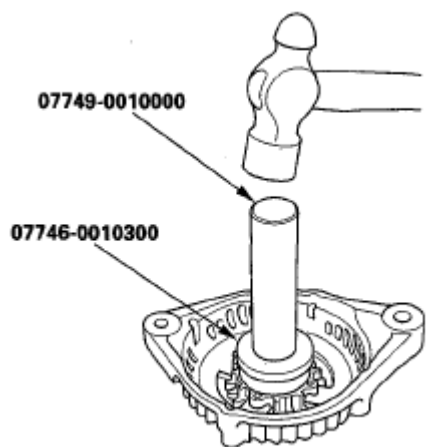


Fig. 35: Installing Front Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Alternator Brush Inspection

13. Measure the length of both brushes (A) with a vernier caliper (B).
 - If either brush is shorter than the service limit, replace the brush holder assembly.
 - If the brush length is OK, go to step 14.

Alternator Brush Length

Standard (New): 10.5 mm (0.41 in.)

Service Limit: 1.5 mm (0.06 in.)

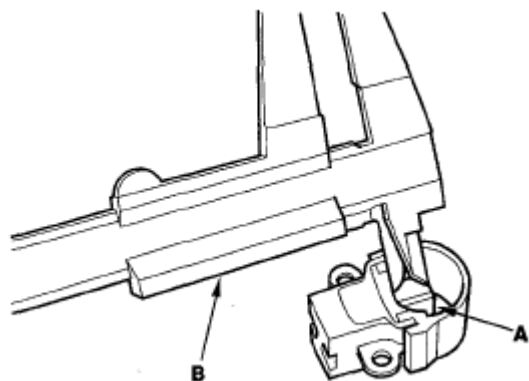


Fig. 36: Measuring Length Of Both Brushes With Vernier Caliper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rotor Slip Ring Test

14. Check for continuity between the slip rings (A).

- If there is continuity, go to step 15.
- If there is no continuity, replace the rotor assembly.

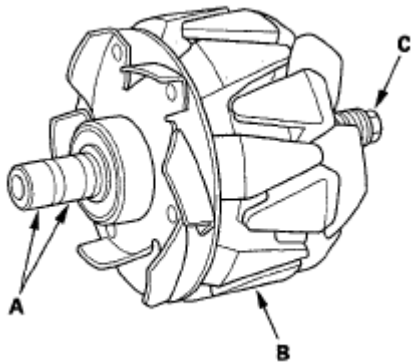


Fig. 37: Identifying Slip Rings And Rotor With Rotor Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check for continuity between each slip ring and the rotor (B) and the rotor shaft (C).
 - If there is no continuity, replace the rear housing assembly, and go to step 16.
 - If there is continuity, replace the rotor assembly.
16. Assemble the alternator in the reverse order of disassembly, and note these items:
 - Be careful not to get any grease or oil on the slip rings.
 - If you removed the pulley, tighten its locknut to 110 N.m (11.2 kgf.m, 81.0 lbf.ft) when you reinstall it.

2007-09 HVAC

Rear Climate Control - MDX

COMPONENT LOCATION INDEX

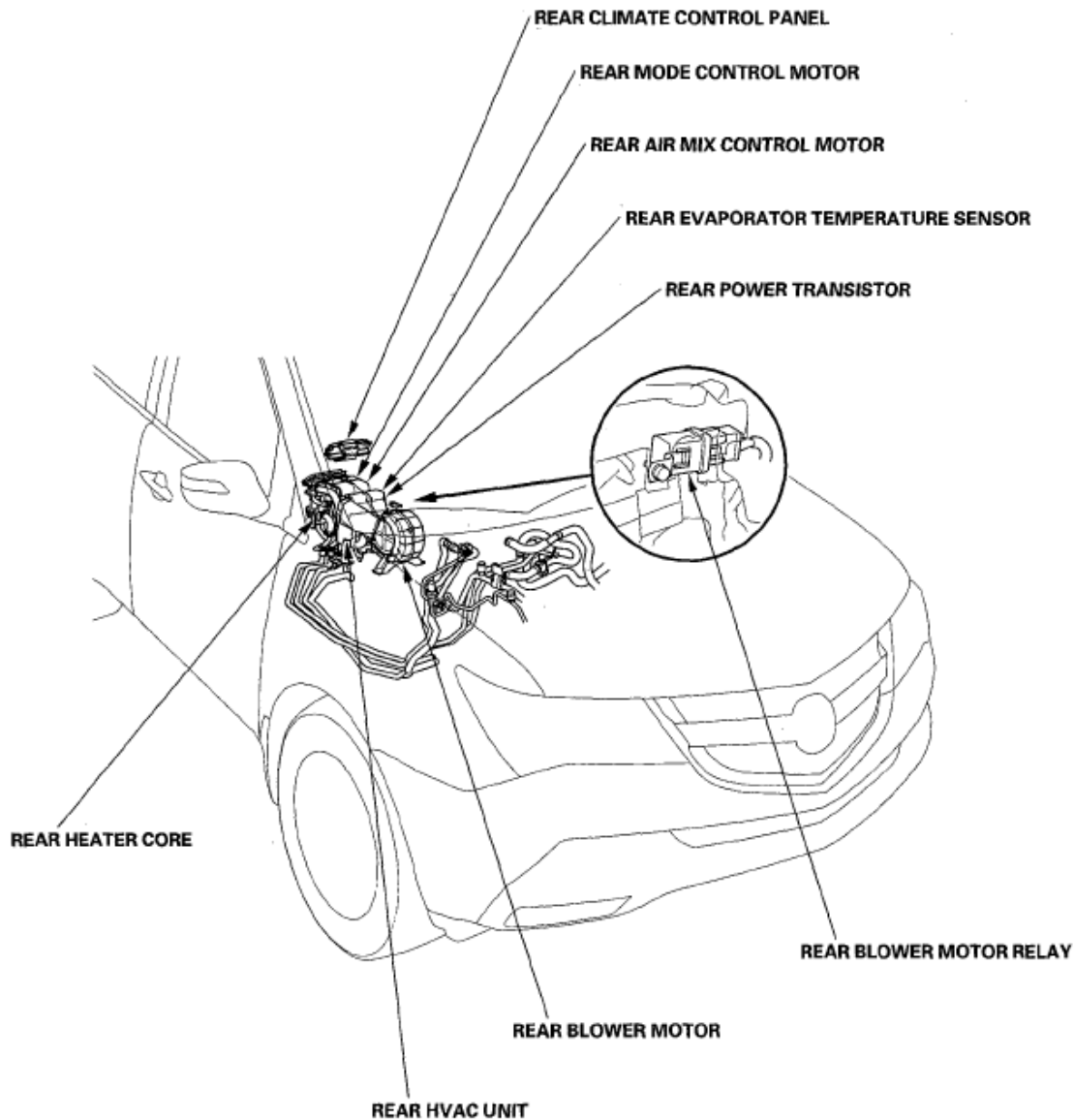


Fig. 1: Identifying Rear Climate Control Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

REAR CLIMATE CONTROL DOOR POSITIONS

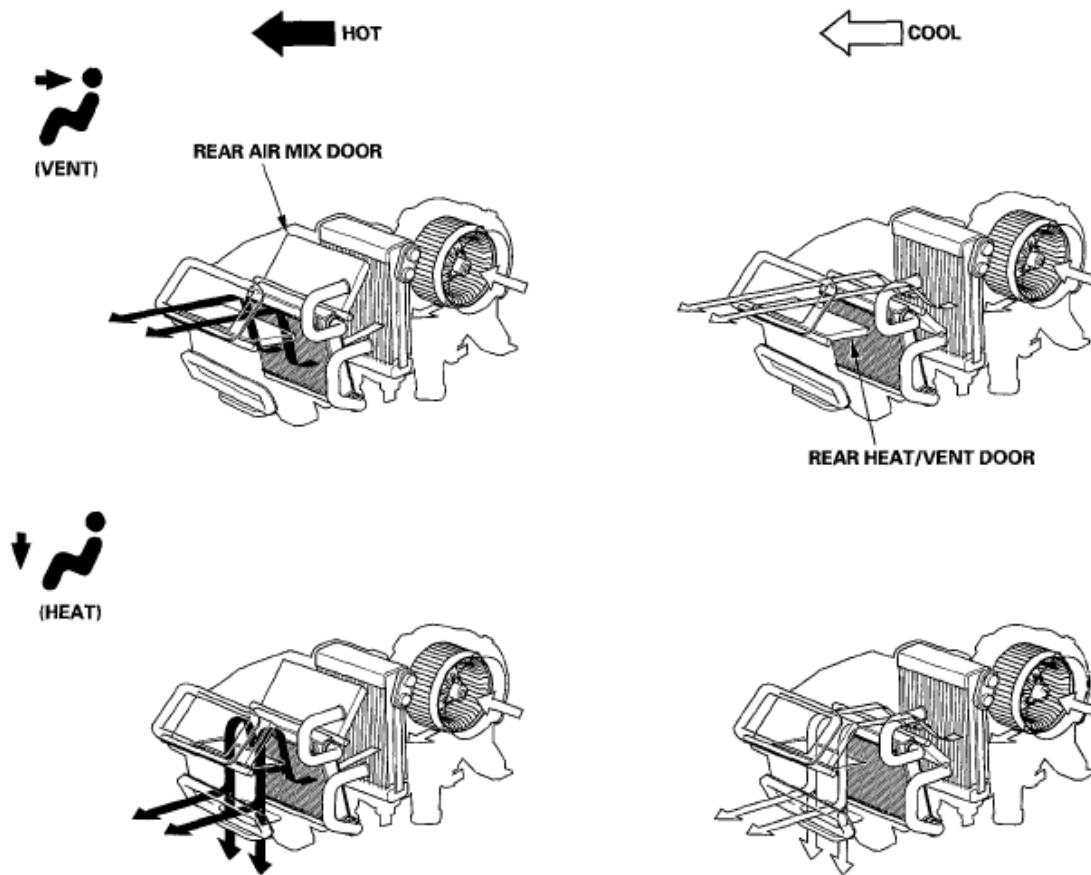
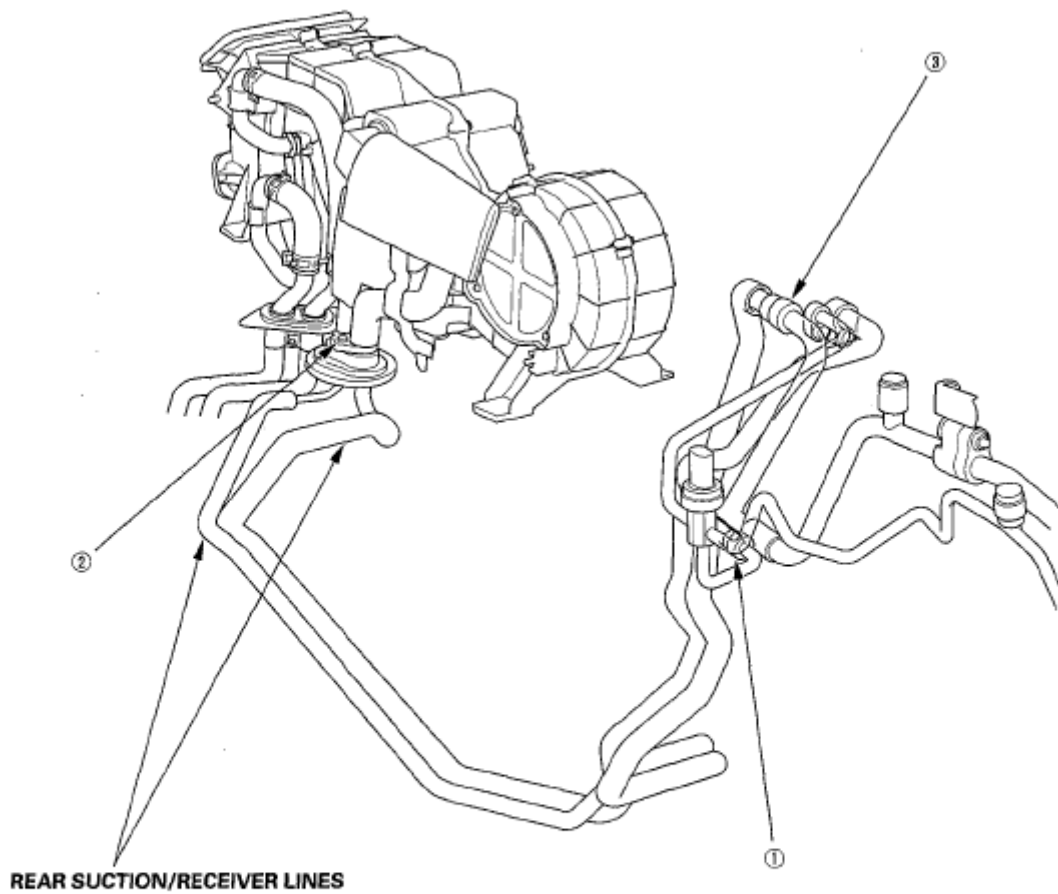


Fig. 2: Identifying Rear Climate Control Door Positions (Heat And Vent)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR A/C LINE REPLACEMENT



- ① Front receiver line to the rear receiver line (16 x 1.5 mm): 13.2 N·m (1.4 kgf·m, 9.8 lbf·ft)
- ② Rear suction/receiver lines to rear evaporator (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ③ Front suction line to rear suction line (24 x 1.5 mm): 31.9 N·m (3.3 kgf·m, 23.5 lbf·ft)

Fig. 3: Identifying Rear Suction And Receiver Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR HEATER LINE REPLACEMENT

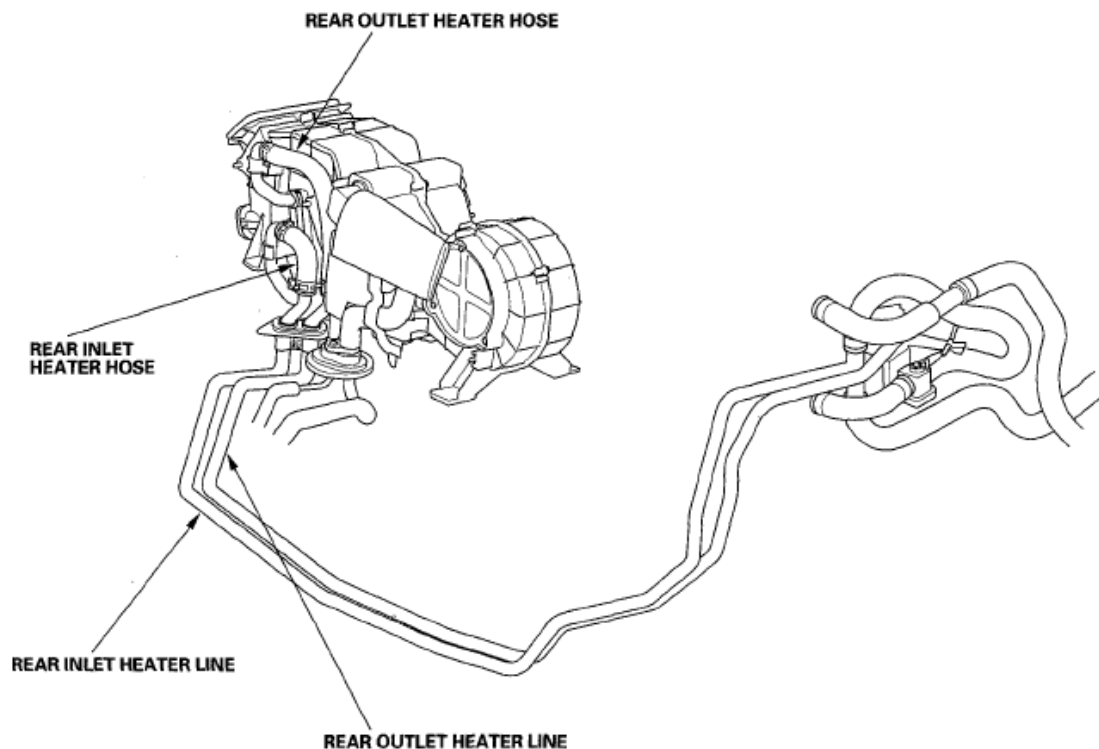
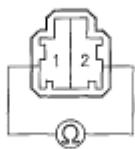


Fig. 4: Identifying Rear Heater Line And Rear Outlet Heater Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR EVAPORATOR TEMPERATURE SENSOR TEST

1. Remove the rear evaporator temperature sensor (see REAR EVAPORATOR TEMPERATURE SENSOR REPLACEMENT).
2. Dip the sensor in ice water, and measure the resistance between its terminals.

REAR EVAPORATOR TEMPERATURE SENSOR



Terminal side of male terminals

Fig. 5: Identifying Terminal Side Of Male Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Then pour warm water on the sensor, and check for a change in the resistance.
4. Compare the resistance readings with the specifications shown in the graph; the resistance should be within the specifications.

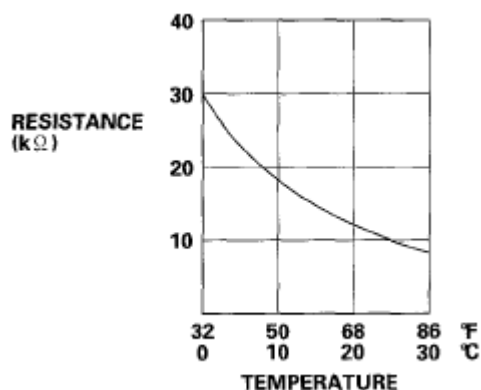


Fig. 6: Resistance And Temperature Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the resistance is not as specified, replace the rear evaporator temperature sensor (see **REAR EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

REAR EVAPORATOR TEMPERATURE SENSOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

- Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
- Disconnect the 2P connector (A) from the rear evaporator temperature sensor (B), then remove the connector clip (C). Remove the self-tapping screw and the rear evaporator temperature sensor from the rear HVAC unit.

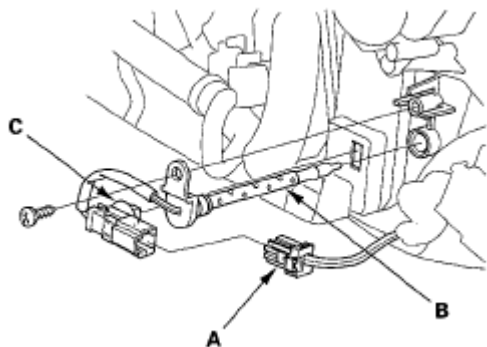


Fig. 7: Identifying 2P Connector And Connector Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the sensor in the reverse order of removal.

REAR POWER TRANSISTOR TEST

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the driver's center console trim (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Disconnect the 4P connector from the rear power transistor.
4. Measure the resistance between the No. 3 and No. 4 terminals of the rear power transistor. It should be about 1.5 kohms.
 - If the resistance is within the specifications, go to step 5.
 - If the resistance is not within the specifications, replace the rear power transistor.

NOTE: Also check the rear blower motor. Rear power transistor failure can be caused by a defective rear blower motor.

REAR POWER TRANSISTOR

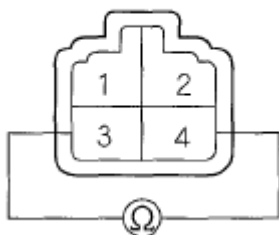


Fig. 8: Identifying Rear Power Transistor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Carefully release the lock tab on the No. 1 terminal (BLU) (A) in the 4P connector, then remove the terminal and insulate it from body ground.

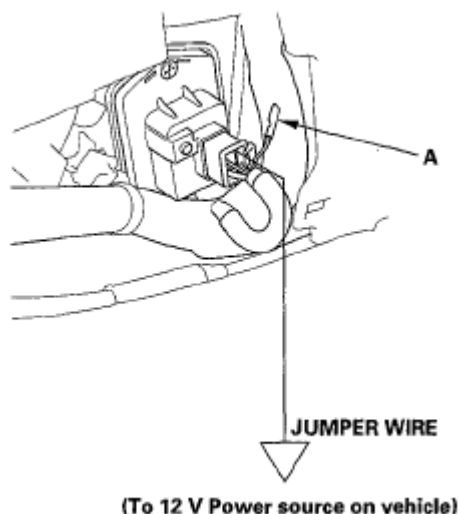


Fig. 9: Identifying Lock Tab On No. 1 Terminal (BLU)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reconnect the 4P connector to the rear power transistor.
7. Make sure the BLU wire is completely isolated, then supply 12 V to the No. 1 cavity with a jumper wire.
8. Turn the ignition switch to ON (II), and check that the rear blower motor runs at high speed.
 - If the rear blower motor does not run, replace the rear power transistor.

NOTE: A faulty rear blower motor can cause the rear power transistor to fail. If the rear power transistor is replaced, also check the rear blower motor for binding, and replace it if necessary.

- If the rear blower motor runs, the rear power transistor is OK.

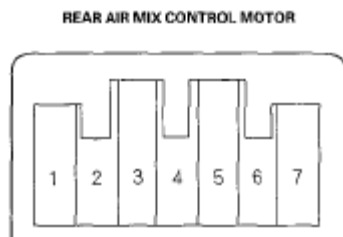
REAR AIR MIX CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the 7P connector from the rear air mix control motor.

NOTE: Incorrectly applying power and ground to the rear air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the rear air mix control motor, and ground the No. 2 terminal; the rear air mix control motor should run, and stop at Max Hot. If it doesn't, reverse the connections; the rear air mix control motor should run, and stop at Max Cool. When the rear air mix control motor stops running, disconnect battery power immediately.

**Fig. 10: Identifying Rear Air Mixture Control Motor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the rear air mix control motor did not run in step 2, remove it, then check the rear air mix control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the rear air mix control motor (see REAR AIR MIX CONTROL MOTOR REPLACEMENT).
 - If the linkage or door sticks or binds, repair them as needed.

- If the rear air mix control motor runs smoothly, go to step 4.
- 4. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 to 7.8 kohms.
- 5. Reconnect the rear air mix control motor 7P connector, then turn the ignition switch to ON (II).
- 6. Using the backprobe set, measure the voltage between the No. 3 and No. 7 terminals.

Max Cool: about 0.5 V

Max Hot: about 4.5 V

- 7. If either the resistance or voltage readings are not as specified, replace the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR REPLACEMENT**).

REAR AIR MIX CONTROL MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the rear air mix control motor (B). Remove the self-tapping screws and the rear air mix control motor from the HVAC unit.

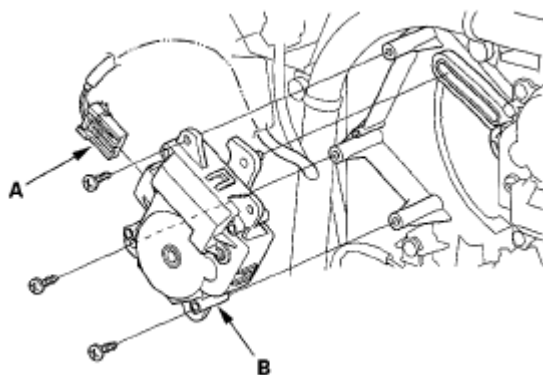


Fig. 11: Identifying 7P Connector And Rear Air Mix Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

REAR MODE CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Disconnect the 7P connector from the rear mode control motor.

NOTE: **Incorrectly applying power and ground to the rear mode control motor will damage it. Follow the instructions carefully.**

2. Connect battery power to the No. 1 terminal of the rear mode control motor, and ground the No. 5 and No. 7 terminals; the rear mode control motor should run smoothly. To avoid damaging the rear mode control motor, do not reverse power and ground. Disconnect the No. 5 or No. 7 terminals from ground; the rear mode control motor should stop at Vent (when the No. 5 terminal is disconnected) or Heat (when the No. 7 terminal is disconnected). Don't cycle the rear mode control motor for a long time.

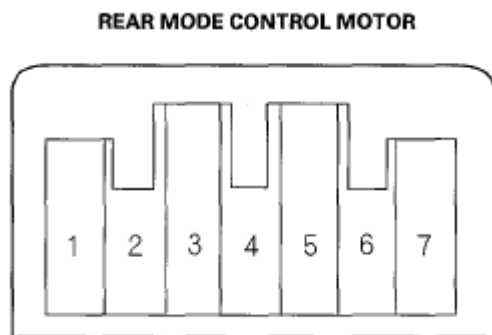


Fig. 12: Identifying Rear Mode Control Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the rear mode control motor did not run in step 2, remove it, then check the rear mode control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the rear mode control motor (see **REAR MODE CONTROL MOTOR REPLACEMENT**).
 - If the linkage or door stick or bind, repair them as needed.

REAR MODE CONTROL MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the rear mode control motor (B). Remove the rod (C) of the rear mode control motor from the rear mode control linkage (D). Remove the self-tapping screws and the rear mode control motor from the rear HVAC unit.

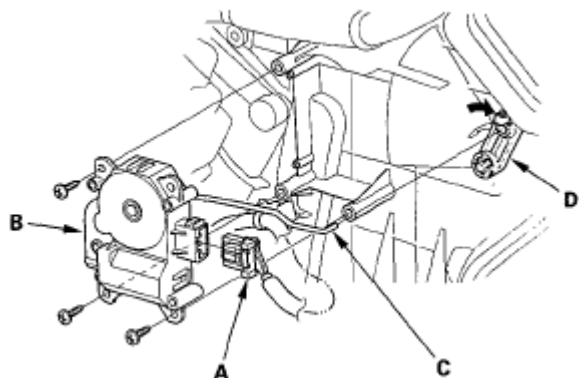


Fig. 13: Identifying 7P Connector, Rear Mode Control Motor And Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

REAR CLIMATE CONTROL PANEL REMOVAL/INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the HVAC trim (see **CENTER CONSOLE REAR TRIM REMOVAL/ INSTALLATION**).
2. Remove the self-tapping screws and the rear climate control panel (A).

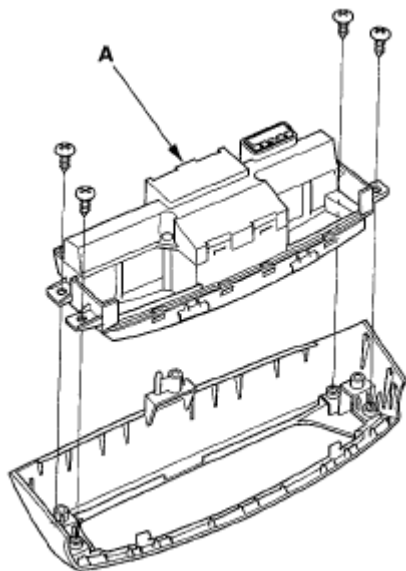


Fig. 14: Identifying Rear Climate Control Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the control panel in the reverse order of removal. After installation, operate the various functions to see whether works properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

REAR BLOWER MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the rear blower motor (B), then remove the wire harness clips (C). Remove the self-tapping screws and the rear blower motor from the rear HVAC unit.

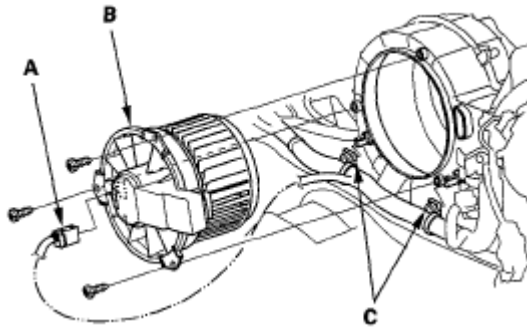


Fig. 15: Identifying 2P Connector, Rear Blower Motor And Wire Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal.

REAR HEATER CORE REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. When the engine is cool, drain the engine coolant from the radiator (see **COOLANT CHECK**).
2. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
3. Slide the hose clamps (A) back, then disconnect the rear inlet heater hose (B) and the rear outlet heater hose (C) from the rear heater core. Note the orientation of the hose.

Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.

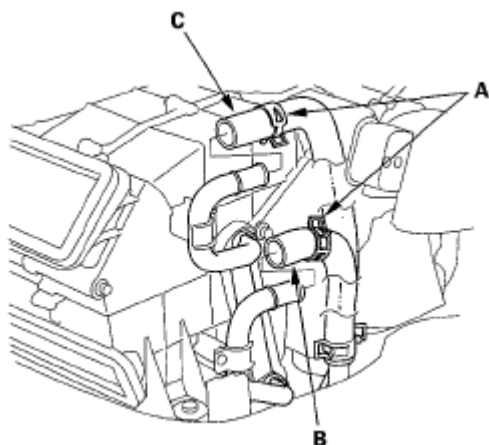


Fig. 16: Identifying Hose Clamps, Rear Outlet Heater Hose And Rear Inlet Heater Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn over the carpet. Remove the self-tapping screws and the clamps (A). Carefully pull out the rear heater core (B) without bending lines.

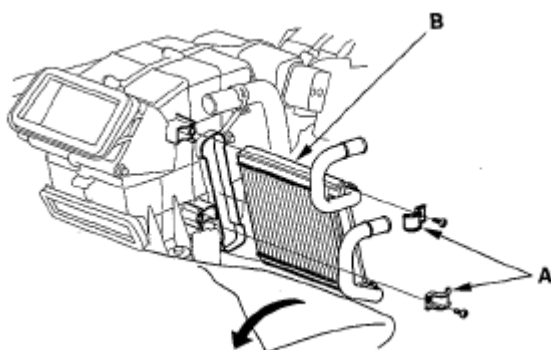


Fig. 17: Identifying Rear Heater Core
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the unit in the reverse order of removal, and note these items:
 - Do not interchange the inlet and outlet heater, hoses, and install the hose clamps securely.
 - Refill the cooling system with engine coolant (see **COOLANT CHECK**).
 - Make sure that there is no coolant leakage.
 - Make sure that there is no air leakage.

REAR HVAC UNIT REMOVAL/INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. When the engine is cool, drain the engine coolant from the radiator (see **COOLANT CHECK**).

2. Recover the refrigerant with a recovery/recycling/ charging station (see **REFRIGERANT RECOVERY**).
3. Remove the center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**).
4. Slide the hose clamps (A) back, then disconnect the rear inlet heater hose (B) and the rear outlet heater hose (C) from the rear heater core. Note the orientation of the hose.

Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.

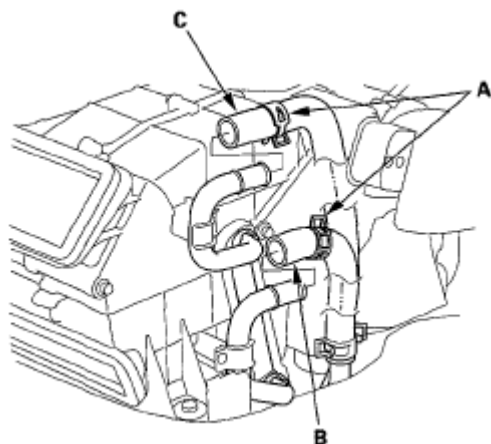


Fig. 18: Identifying Hose Clamps, Rear Inlet Heater Hose And Rear Outlet Heater Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Turn over the carpet. Remove the bolt, then disconnect the rear suction/receiver lines (A).

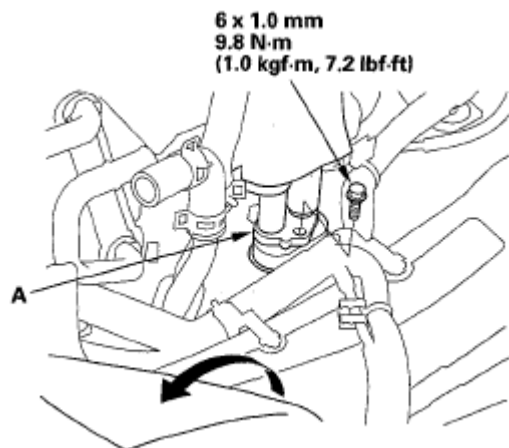


Fig. 19: Identifying Rear Suction And Receiver Lines With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the harness clips (A).

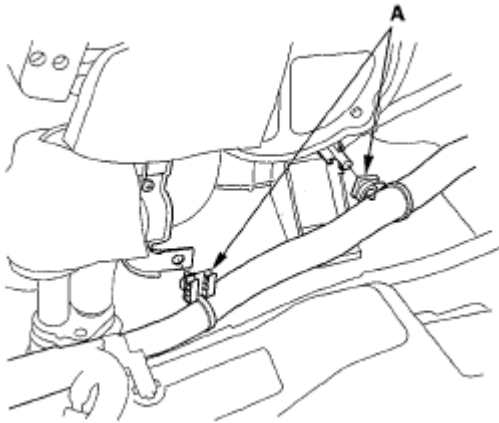


Fig. 20: Identifying Harness Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the connectors (A) from the rear mode control motor, the rear air mix control motor, rear evaporator temperature sensor, rear power transistor, and rear blower motor, then remove the harness clips (B) and connector clip (C).

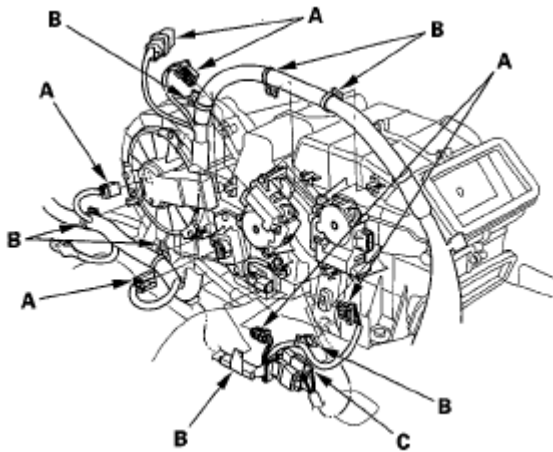


Fig. 21: Identifying Harness Clips, Connector Clip And Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the mounting bolts and rear HVAC unit (A). Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

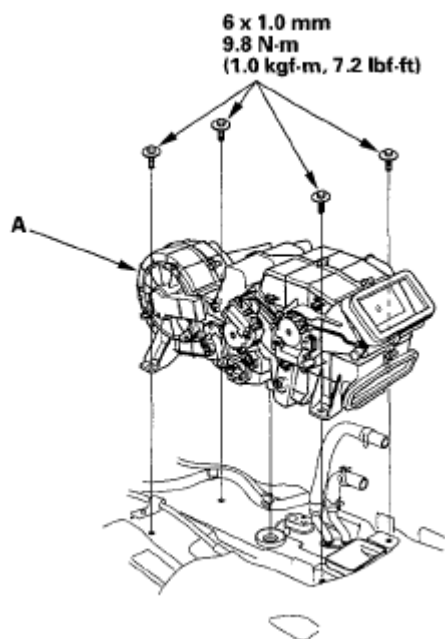


Fig. 22: Identifying Mounting Bolts And Rear HVAC Unit With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the rear heater core, and the rear evaporator core in the reverse order of removal.
10. Install the unit in the reverse order of removal, and note these items:
 - Do not interchange the inlet and outlet heater hoses, and install the hose clamps securely.
 - Refill the cooling system with engine coolant (see **COOLANT CHECK**).
 - Make sure that there is no coolant leakage.
 - Make sure that there is no air leakage.
 - If you're installing a new rear evaporator, add refrigerant oil (DENSO ND-OIL 8) (see **A/C SERVICE TIPS AND PRECAUTIONS**).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; If the refrigerant oil contacts the paint, wash it off immediately.
 - Charge the system (see **SYSTEM CHARGING**).

REAR HVAC UNIT COMPONENT REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE: The rear blower motor (A), the rear heater core (B), the rear evaporator sensor (C), the rear power transistor (D), the rear air mix control motor (E), the rear mode control motor (F), and the rear expansion valve (G) can be replaced without removing the rear HVAC unit.

1. Remove the self-tapping screw and the rear evaporator sensor. Remove the self-tapping screw and the clamp (H), then remove the bolts and the rear evaporator lines (I) with the rear expansion valve. If necessary, remove the rear expansion valve. Use a second wrench to hold the other fitting on the valve so the rear evaporator lines won't twist. Leave the first fitting loosely connected so you can use it to hold the valve while you loosen the second fitting.

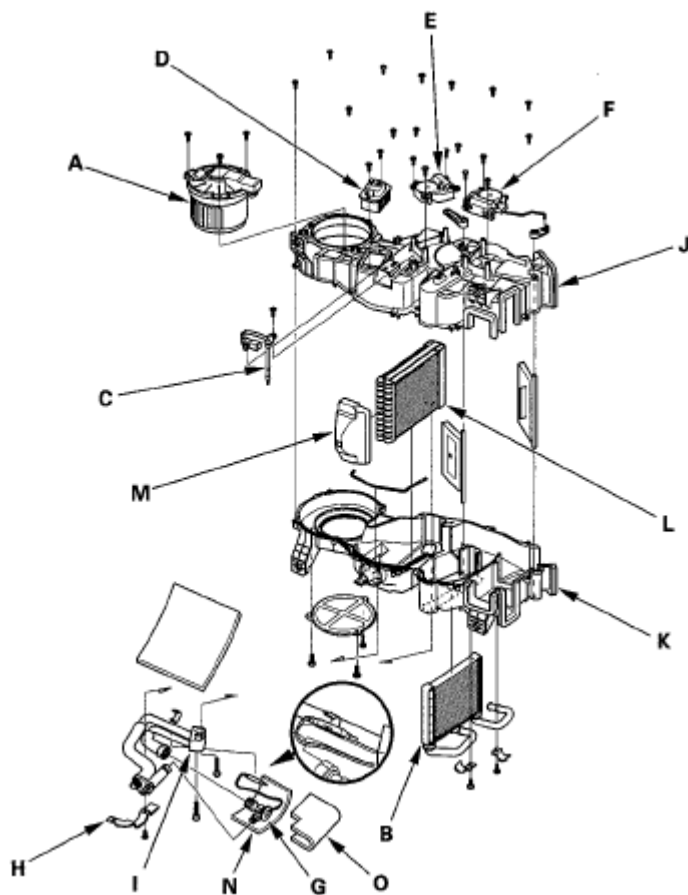


Fig. 23: Identifying Rear HVAC Unit Component
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If necessary, remove the rear blower motor (see [REAR BLOWER MOTOR REPLACEMENT](#)), the rear heater core (see [REAR HEATER CORE REPLACEMENT](#)), the rear power transistor, the rear air mix control motor (see [REAR AIR MIX CONTROL MOTOR TEST](#)), and the rear mode control motor (see [REAR MODE CONTROL MOTOR TEST](#)).
3. Remove the self-tapping screws, and carefully separate the left housing (J) from the right housing (K). Remove the rear evaporator core (U and plate (M).

4. Reassemble the unit in the reverse order of disassembly, and note these items;
 - Replace all O-rings with new ones at each fitting and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Make sure no air is leaking from the left upper housing and the right upper housing fitting and from the upper housings and the lower housing fitting.
 - Install the capillary tube (N) directly against the outlet line, and wrap it with electrical tape (O).
 - Before reassembly, make sure that the rear air mix control linkage and door move smoothly without binding.
 - Before reassembly, make sure that the rear mode control linkage and door move smoothly without binding.
 - After reassembly, make sure the rear air mix control motor runs smoothly (see **REAR AIR MIX CONTROL MOTOR TEST**).
 - After reassembly, make sure the rear mode control motor runs smoothly (see **REAR MODE CONTROL MOTOR TEST**).
 - Make sure that there is no coolant leakage.

2007-09 HVAC

Climate Control - MDX

COMPONENT LOCATION INDEX

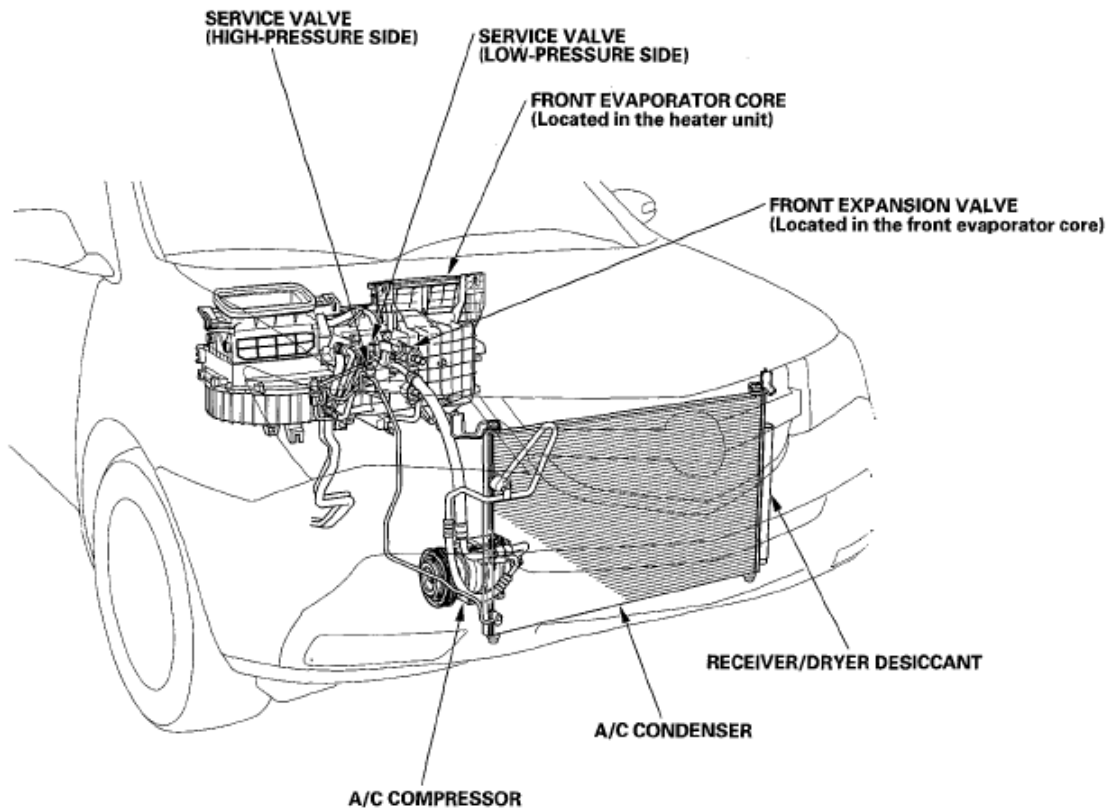


Fig. 1: Identifying Climate Control Component Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

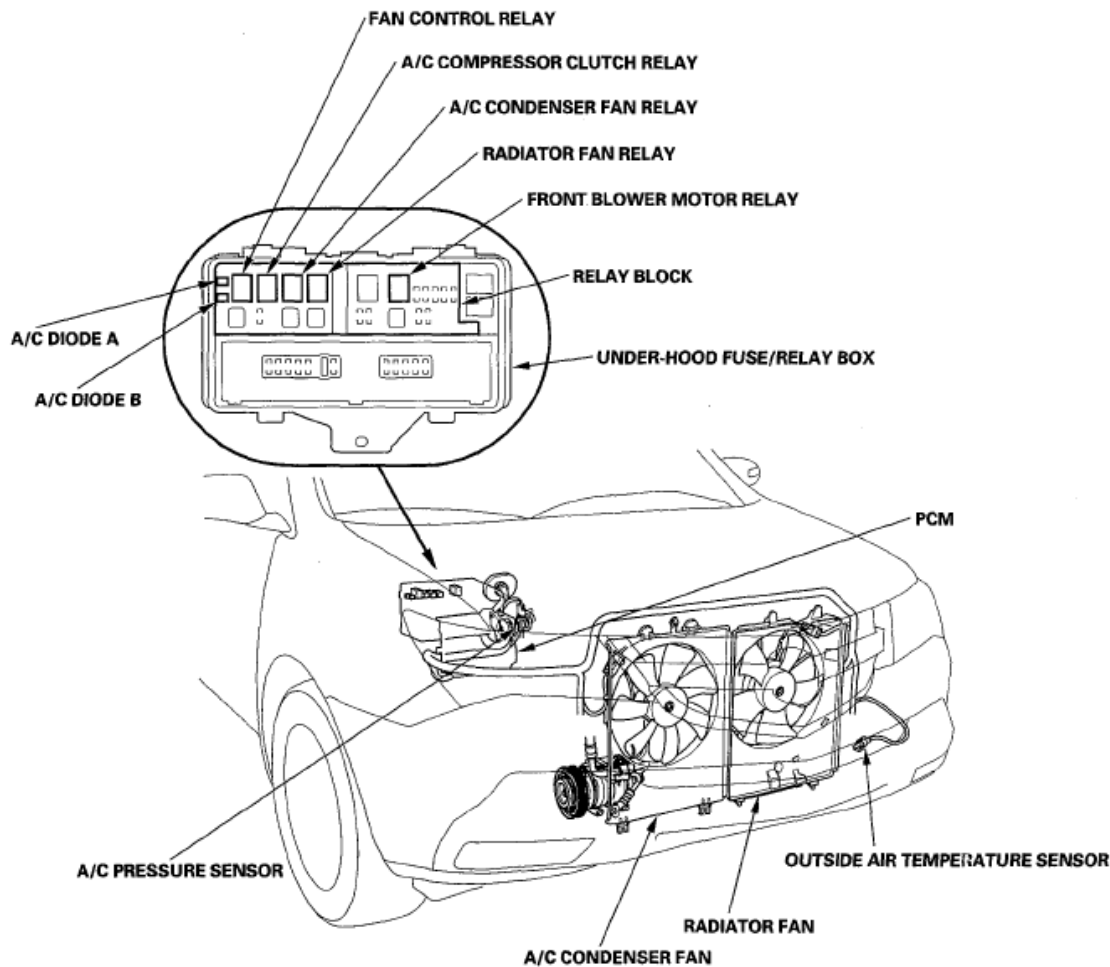


Fig. 2: Identifying Climate Control Component Location (2 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

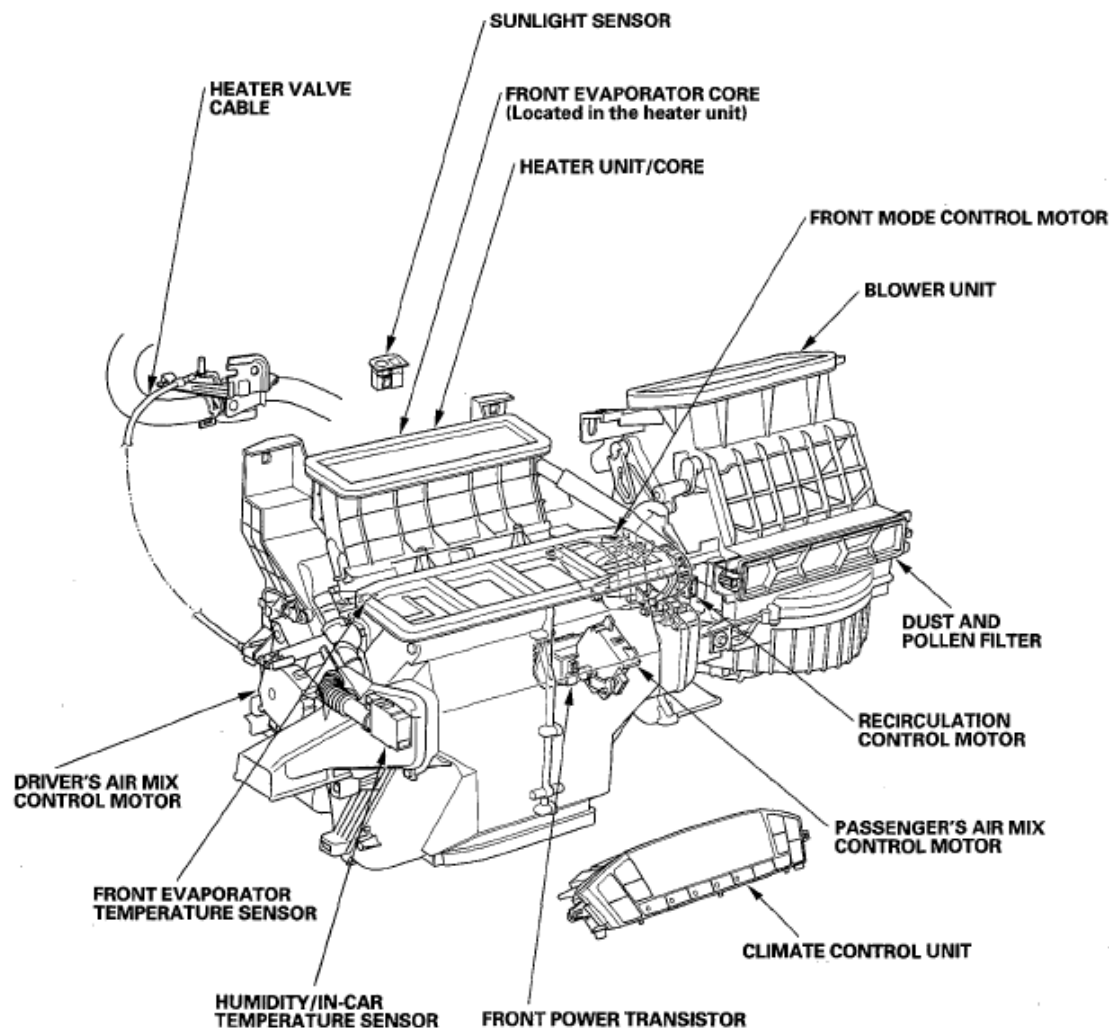


Fig. 3: Identifying Climate Control Component Location (3 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C SERVICE TIPS AND PRECAUTIONS

WARNING:

- Compressed air mixed with the R-134a forms a combustible vapor.
- The vapor can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

CAUTION:

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system, and do not attempt to use R-12 servicing equipment; damage to the air conditioning system or your servicing equipment will result. Use only service equipment that is U.L-listed and is certified to meet the requirements of SAE J2210 to remove R-134a from the air conditioning system.

If accidental system discharge occurs, ventilate the work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

- Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
- Keep moisture and dirt out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
- Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
- When tightening or loosening a fitting, use a second wrench to support the matching fitting.
- When discharging the system, use an R-134a refrigerant recovery/recycling/charging station; don't release refrigerant into the atmosphere.

A/C REFRIGERANT OIL REPLACEMENT

Recommended PAG oil: DENSO ND-OIL 8

- P/N 38897-PR7-A01AH: 120 mL (4 fl.oz)
- P/N 38899-PR7-A01: 40 mL (1 1/3 fl.oz)

Add the recommended refrigerant oil in the amount listed if you replace any of the following parts.

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if it gets on the paint, wash it off immediately.

A/C condenser (including Dryer Desiccant)	50 mL (1 2/3 fl.oz)
Front Evaporator	40 mL (1 1/3 fl.oz)
Rear Evaporator	30 mL (1 fl.oz)
Line or hose	10 mL (1/3 fl.oz)
Receiver/Dryer Desiccant	10 mL (1/3 fl.oz)
Leakage repair	25 mL (5/7 fl.oz)
A/C compressor	For A/C compressor replacement, subtract the volume of oil drained from the removed A/C

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

compressor from 125 mL (4 2/9 fl.oz), and drain the calculated volume of oil from the new A/C compressor: 135 mL (4 2/9 fl.oz) - Volume of removed A/C compressor = Volume to drain from new A/C compressor.

NOTE: Even if no oil is drained from the removed A/C compressor, don't drain more than 50 mL (1 2/3 fl.oz) from the new A/C compressor.

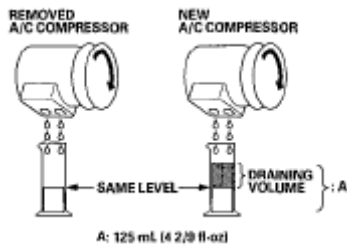
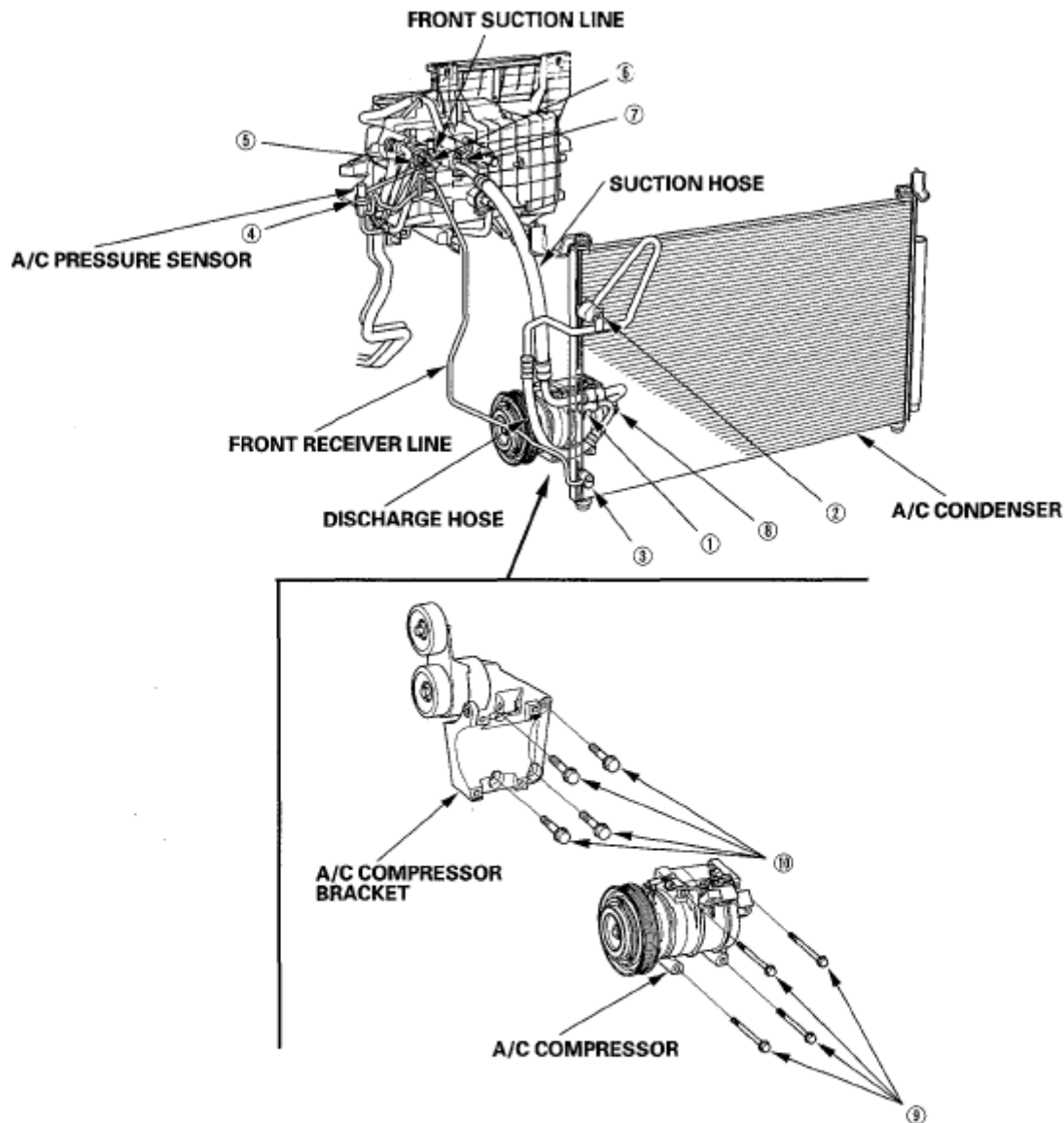


Fig. 4: Identifying Refrigerant Oil Level
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT A/C LINE REPLACEMENT



- ① Discharge hose to the A/C compressor (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ② Discharge hose to the A/C condenser (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ③ Front receiver line to the A/C condenser (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ④ A/C pressure sensor to the front receiver line (11 x 1.0 mm): 10.8 N-m (1.1 kgf-m, 8.0 lbf-ft)
- ⑤ Front receiver line to the front evaporator (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ⑥ Front suction line to the front evaporator (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ⑦ Front suction line to the suction hose (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ⑧ Suction hose to the A/C compressor (6 x 1.0 mm): 9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)
- ⑨ A/C compressor to the A/C compressor bracket (8 x 1.25 mm): 22 N-m (2.2 kgf-m, 16.2 lbf-ft)
- ⑩ A/C compressor to the engine block (10 x 1.25 mm): 45 N-m (4.6 kgf-m, 33.2 lbf-ft)

Fig. 5: Identifying Front A/C Line

Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C SYSTEM INSPECTION

Before troubleshooting any problem with the air conditioning system, do the following:

1. With the ignition switch in the LOCK (0), inspect the A/C components, pressure lines and hoses for stains that may indicate a refrigerant or a compressor oil leak.

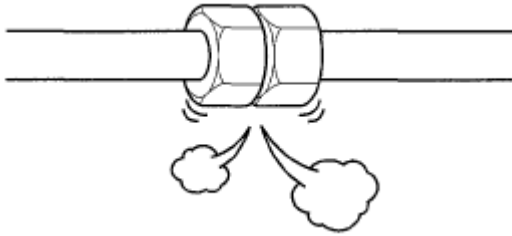


Fig. 6: Identifying Compressor Oil Leak

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the condenser for material clogging the fins or for damage to the fins:
 - Carefully clean any material from the condenser fins with water and detergent.
 - Be sure to dry the condenser completely.

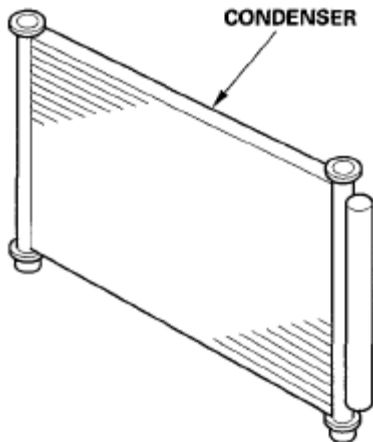


Fig. 7: Identifying Condenser

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the drive belt (see **DRIVE BELT INSPECTION**).
4. Make sure no material is blocking the airflow to the condenser.
5. Check the dust and pollen filter, and replace it if it is clogged (see **DUST AND POLLEN FILTER REPLACEMENT**).
6. Check the operation of the heater valve. Make sure the cable is adjusted properly (see **HEATER VALVE CABLE ADJUSTMENT**).
7. Start the engine, turn the air conditioning system on, and allow it to normalize for a few minutes.
8. Check that the A/C operates at each position of the blower fan switch (except OFF).
9. Check that the compressor clutch is engaged. The pressure plate should be rotating at the same speed as the pulley.

10. Check that the cooling fans operate when the compressor clutch is engaged.
11. Check that the engine idle speed is correctly maintained when the A/C is switched on and off when the compressor clutch is engaged and disengaged.

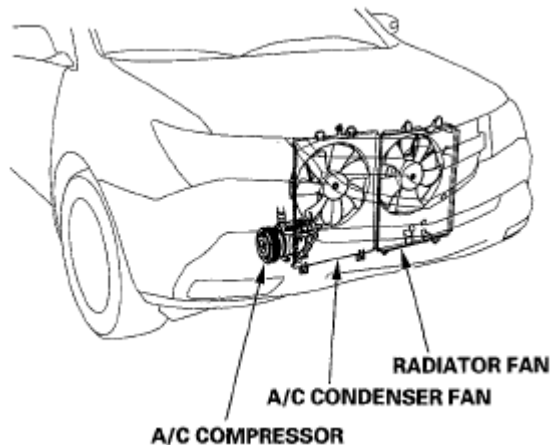


Fig. 8: Identifying Radiator Fan, A/C Condenser Fan And A/C Compressor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

1. Make sure the ignition switch is LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

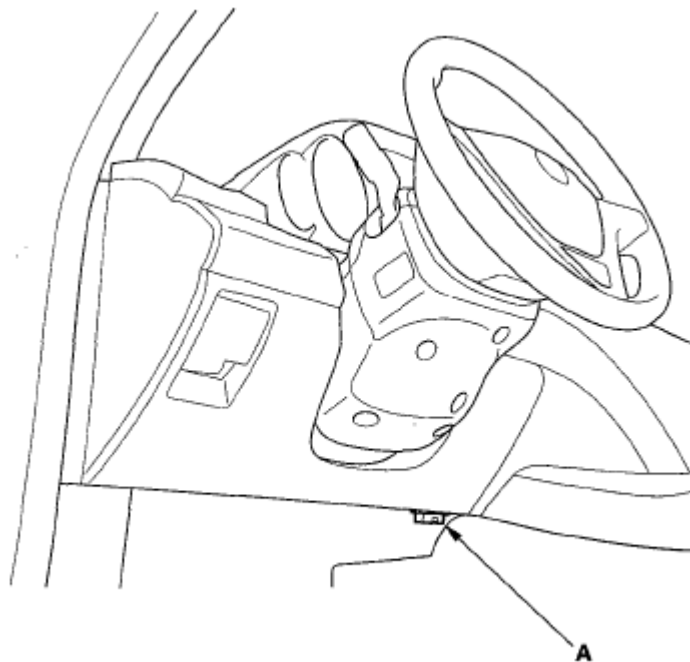


Fig. 9: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select DTCs in the HVAC/CLIMATE CONTROL menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting. If no DTCs are indicated, refer to symptom troubleshooting.

NOTE:

- After troubleshooting, clear the DTCs with the HDS.
- For specific operations, refer to the user's manual that came with the HDS.

HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS

1. Make sure the ignition switch is LOCK (0).
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select INSPECTION in the HVAC/CLIMATE CONTROL menu.

7. Select CLIMATE CONTROL SELF TEST in the INSPECTION menu.
8. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting.

NOTE:

- After troubleshooting, clear the DTCs with the HDS.
- For specific operations, refer to the user's manual that came with the HDS.

HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS

The climate control unit has a self-diagnostic function. To run the self-diagnostic function, do the following:

1. Turn the ignition switch to LOCK (0), and then ON (II).
2. Press and hold the OFF button, then press the RECIRCULATION CONTROL button five times within 10 seconds. Release the OFF and RECIRCULATION CONTROL buttons; then the self-diagnostic begins.

NOTE:

- The blower motor will run at various speeds regardless of what the panel is displaying.
- If there is any problem in the system, the system flashes "88 AUTO WINDSHIELD DEFROST" or alternately flashes "88 AUTO WINDSHIELD DEFROST" and one or more of the 14 segments (A through P). Refer to CHECKING FOR DTCs.
- If there are no problems detected, the segments will not illuminate, and the system will appear to be turned off.

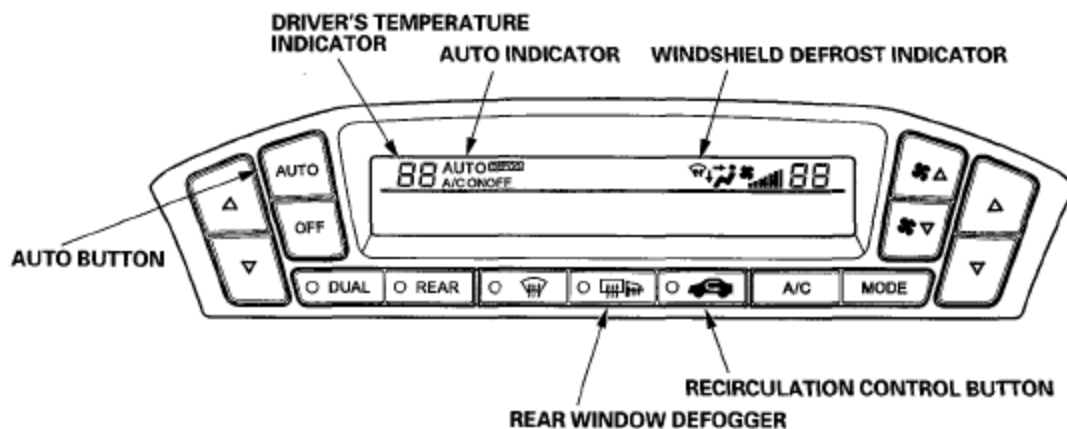


Fig. 10: Identifying Auto Button, Driver Temperature Indicator And Rear Window Defogger
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Turn the ignition switch to LOCK (0), to cancel the self-diagnostic function. After completing the repair work, run the self-diagnostic function again to make sure that there are no other DTCs.

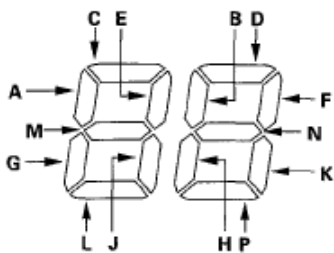
CHECKING FOR DTCs

The temperature display indicates single or multiple DTCs. If indicator segments A, B, C, E, G, J, M, N, AUTO, and WINDSHIELD DEFROST are on at the same time, there may be an open in the common ground wire. If no DTCs are present, the indicator remains blank.

DRIVER'S TEMPERATURE INDICATOR

AUTO INDICATOR

WINDSHIELD DEFROST INDICATOR



AUTO



Fig. 11: Identifying A/C Control Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC (DRIVER'S TEMPERATURE INDICATOR SEGMENT, AUTO, AND WINDSHIELD DEFROST INDICATOR) CHART

DTC (Driver's Temperature Indicator Segment, AUTO, and WINDSHIELD DEFROST Indicator)	Detection Item
A and AUTO	An open in the in-car temperature sensor circuit (see <u>DTC B1225 or DTC indicator A and AUTO: An Open in the In-car Temperature Sensor Circuit</u>)
B and AUTO	A short in the in-car temperature sensor circuit (see <u>DTC B1226 or DTC indicator B and AUTO: A Short in the In-car Temperature Sensor Circuit</u>)
C and AUTO	An open in the outside air temperature sensor circuit (see <u>DTC B1227 or DTC indicator C and AUTO: An Open in the Outside Air Temperature Sensor Circuit</u>)
D and AUTO	A short in the outside air temperature sensor circuit (see <u>DTC B1228 or DTC indicator D and AUTO: A Short in the Outside Air Temperature Sensor Circuit</u>)
E and AUTO	An open in the sunlight sensor circuit (see <u>DTC B1229 or DTC indicator E and AUTO: An Open in the Sunlight Sensor Circuit</u>)
F and AUTO	A short in the sunlight sensor circuit (see <u>DTC B1230 or DTC indicator F and AUTO: A Short in the Sunlight Sensor Circuit</u>)

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

G and AUTO	An open in the front evaporator temperature sensor circuit (see <u>DTC B1231 or DTC indicator G and AUTO: An Open in the Front Evaporator Temperature Sensor Circuit</u>)
Hand AUTO	A short in the front evaporator temperature sensor circuit (see <u>DTC B1232 or DTC indicator H and AUTO: A Short in the Front Evaporator Temperature Sensor Circuit</u>)
J and AUTO	An open in the driver's air mix control motor circuit (see <u>DTC B1233 or DTC indicator J and AUTO: An Open in the Driver's Air Mix Control Motor Circuit</u>)
K and AUTO	A short in the driver's air mix control motor circuit (see <u>DTC B1234 or DTC indicator K and AUTO: A Short in the Driver's Air Mix Control Motor Circuit</u>)
L and AUTO	A problem in the driver's air mix control linkage, door, or motor circuit (see <u>DTC B1235 or DTC indicator L and AUTO: A Problem in the Driver's Air Mix Control Linkage, Door, or Motor Circuit</u>)
M and AUTO	An open in the passenger's air mix control motor circuit (see <u>DTC B1236 or DTC indicator M and AUTO: An Open in the Passenger's Air Mix Control Motor Circuit</u>)
N and AUTO	A short in the passenger's air mix control motor circuit (see <u>DTC B1237 or DTC indicator N and AUTO: A Short in the Passenger's Air Mix Control Motor Circuit</u>)
P and AUTO	A problem in the passenger's air mix control linkage, door, or motor circuit (see <u>DTC B1238 or DTC indicator P and AUTO: A Problem in the Passenger's Air Mix Control Linkage, Door, or Motor Circuit</u>)
AUTO	Climate control unit lost communication with gauge control module (ECT message) (see <u>DTC B1205: Climate Control Unit Lost Communication with Gauge Control Module (VSP/NE message); DTC B1206 or DTC indicator AUTO: Climate Control Unit Lost Communication with Gauge Control Module (ECT message); DTC B1207: Climate Control Unit Lost Communication with Gauge Control Module (ILLUMI message)</u>)
A	An open or short in the front mode control motor circuit (see <u>DTC B1239 or DTC indicator A: An Open or Short in the Front Mode Control Motor Circuit</u>)
B	A problem in the front mode control linkage, doors, or motor circuit (see <u>DTC B1240 or DTC indicator B: A Problem in the Front Mode Control Linkage, Doors, or Motor Circuit</u>)
C	A problem in the front blower motor circuit (see <u>DTC B1241 or DTC indicator C: A Problem in the Front Blower Motor Circuit</u>)
F	An open in the rear air mix control motor circuit (see <u>DTC B1244 or DTC indicator F: An Open in the Rear Air Mix Control Motor Circuit</u>)
G	A short in the rear air mix control motor circuit (see <u>DTC B1245 or DTC indicator G: A Short in the Rear Air Mix Control Motor Circuit</u>)
H	A problem in the rear air mix control linkage, door, or motor circuit (see <u>DTC B1246 or DTC indicator H: A Problem in the Rear Air Mix</u>)

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

	<u>Control Linkage, Door, or Motor Circuit)</u>
J	An open or short in the recirculation control motor circuit (see <u>DTC B1215 or DTC indicator J: An Open or Short in the Recirculation Control Motor Circuit)</u>)
K	A problem in the recirculation control linkage, door, or motor circuit (see <u>DTC B2983 or DTC indicator K: A problem in the Recirculation Control Linkage, Door, or Motor Circuit)</u>)
M	A problem in the rear blower motor circuit (see <u>DTC B1223 or DTC indicator M: A Problem in the Rear Blower Motor Circuit)</u>)
N	An open in the rear evaporator temperature sensor circuit (see <u>DTC B1213 or DTC indicator N: An Open in the Rear Evaporator Temperature Sensor Circuit)</u>)
P	A short in the rear evaporator temperature sensor circuit (see <u>DTC B1214 or DTC indicator P: A Short in the Rear Evaporator Temperature Sensor Circuit)</u>)
A and WINDSHIELD DEFROST	An open in the humidity sensor circuit (see <u>DTC B2967 or DTC indicator A and WINDSHIELD DEFROST: An Open in the Humidity Sensor Circuit)</u>), a short in the humidity sensor circuit (see <u>DTC B2968 or DTC indicator A and WINDSHIELD DEFROST: A Short in the Humidity Sensor Circuit)</u>)
Band WINDSHIELD DEFROST	An open in the A/C pressure sensor circuit (see <u>DTC B2979 or DTC indicator B and WINDSHIELD DEFROST: An Open in the A/C Pressure Sensor Circuit)</u>), a short in the A/C pressure sensor circuit (see <u>DTC B2980 or DTC indicator B and WINDSHIELD DEFROST: A short in the A/C Pressure Sensor Circuit)</u>)

DISPLAYING SENSOR INPUTS AT THE CLIMATE CONTROL UNIT

The climate control unit has a mode that displays sensor inputs it receives. This mode shows you what the climate control unit is receiving from each of the sensors, one at a time, and it can help you determine if a sensor is faulty.

CHECK THESE ITEMS BEFORE USING THE SENSOR INPUT DISPLAY MODE

1. Turn the ignition switch to ON (II), and check the recirculation door function; press the recirculation button to switch from FRESH to RECIRC. The air volume and sound should change slightly.
2. Set the temperature control knob to the desired test temperature. When selecting the test temperature, note these items:
 - "Lo" temperature setting will default to MAX COOL, VENT, and RECIRC.
 - "Hi" temperature setting will default to MAX HOT, FLOOR, and FRESH.
 - 58 through 86°F settings will use the automatic climate control logic.
3. Turn the ignition switch to LOCK (0).

TO RUN THE SENSOR INPUT DISPLAY MODE, FOLLOW THESE STEPS

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

1. Turn the ignition switch to LOCK (0).
2. Press and hold both the AUTO and RECIRCULATION CONTROL buttons, then start the engine.
3. After the engine starts, release both buttons. The display panel control unit will flash the sensor number and then the value for that sensor. Record the value displayed.
4. To advance to the next sensor, press the REAR WINDOW DEFOGGER button.

SENSOR DISPLAYED CHART

Sensor	Item	Displayed Value
1	In-car Temperature	°C
2	Outside Air Temperature	°C
3	Solar Radiation Sensor Value: Dark = 00, Flashlight = 04, Cloudy = 10, Sunny = 65	kcal/m ² .h
4	Front Evaporator Outlet Air Temperature	°C
5	Driver's and Passenger's Air Mix Opening (Low value indicates cooler air distribution, higher value indicates warmer air distribution)	% of opening
6	Vent Temperature Air Out (TAO)	°C
7	Vehicle Speed (Vehicle must be driven to display speed)	km/h
8	A/C Pressure	10 kPa
9	Rear Air Mix Opening	% of opening
A	Rear Vent Temperature Air Out (TAO)	°C
B	Rear Evaporator Outlet Air Temperature	°C
C	Humidity Sensor Value	%rh
D	Fog Margin	°C
E	Solar Radiation azimuth (With navigation system)	10°
F	Solar Radiation angle of elevation (With navigation system)	10°

NOTE:

- The sensor values will be displayed in degrees Celsius (°C) or an alphanumeric code. Use the chart to convert the value to degrees Fahrenheit (°F).
- If the sensor value displays "Er" this indicates there is an open or short in the circuit or sensor. Check for DTCs using the HDS, or refer to CHECKING DTCS by DTC indication.
- If necessary, compare the sensor input display to a known-good vehicle under the same test conditions.
- If the sensor is out of the normal range, refer to the sensor test or substitute a known-good sensor, and recheck.

5. To cancel the sensor input display mode, press the AUTO button or turn the ignition switch to LOCK (0).

Celsius to Fahrenheit Conversion Table

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

CELSIUS TO FAHRENHEIT CONVERSION CHART

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0	32	10	50	20	68	30	86	40	104
1	34	11	52	21	70	31	88	41	106
2	36	12	54	22	72	32	90	42	108
3	37	13	55	23	73	33	91	43	109
4	39	14	57	24	75	34	93	44	111
5	41	15	59	25	77	35	95	45	113
6	43	16	61	26	79	36	97	46	115
7	45	17	63	27	81	37	99	47	117
8	46	18	64	28	82	38	100	48	118
9	48	19	66	29	84	39	102	49	120

CELSIUS TO FAHRENHEIT CONVERSION CHART

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
50	122	60	140	70	158	80	176	90	194
51	124	61	142	71	160	81	178	91	196
52	126	62	144	72	162	82	180	92	198
53	127	63	145	73	163	83	181	93	199
54	128	64	147	74	165	84	183	94	201
55	131	65	149	75	167	85	185	95	203
56	133	66	151	76	169	86	187	96	205
57	135	67	152	77	170	87	188	97	207
58	136	68	154	78	172	88	190	98	208
59	139	69	158	79	174	89	192	99	210

Alphanumeric Conversion Table**ALPHANUMERIC CONVERSION CHART**

Display Reading (Alphanumeric)	°C	°F	%
A1 thru A9	- 1 thru -9	30 thru 16	- 1 thru -9
B0 thru B9	- 10 thru -19	14 thru -2	-10 thru -19
C0 thru C9	-20 thru -29	-4 thru -20	-20 thru -29
D0 thru D9	-30 thru -39	-22 thru -38	-30 thru -39
E0 thru E9	-40 thru -49	-40 thru -58	-40 thru -49
F0 thru F9	--	--	+100 thru +109

DTC TROUBLESHOOTING INDEX**Checking the DTCs by HDS****DTC TROUBLESHOOTING CHART**

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2008 Acura MDX

2007-09 HVAC Climate Control - MDX

DTC	Detection Item or Symptom	ECU	DTC type
<u>B1200</u>	Communication bus line error (bus-off)	Climate control unit	Loss of communication
<u>B1202</u>	Climate control unit internal error	Climate control unit	Internal error
<u>B1205</u>	Climate control unit lost communication with gauge control module (VSP/NE message)	Climate control unit	Loss of communication
<u>B1206</u>	Climate control unit lost communication with gauge control module (ECT message)	Climate control unit	Loss of communication
<u>B1207</u>	Climate control unit lost communication with gauge control module (ILLUMI message)	Climate control unit	Loss of communication
<u>B1213</u>	An open in the rear evaporator temperature sensor circuit	Climate control unit	Signal error
<u>B1214</u>	A short in the rear evaporator temperature sensor circuit	Climate control unit	Signal error
<u>B1215</u>	An open or short in the recirculation control motor circuit	Climate control unit	Signal error
<u>B1223</u>	A problem in the rear blower motor circuit	Climate control unit	Signal error
<u>B1225</u>	An open in the in-car temperature sensor circuit	Climate control unit	Signal error
<u>B1226</u>	A short in the in-car temperature sensor circuit	Climate control unit	Signal error
<u>B1227</u>	An open in the outside air temperature sensor circuit	Climate control unit	Signal error
<u>B1228</u>	A short in the outside air temperature sensor circuit	Climate control unit	Signal error
<u>B1229</u>	An open in the sunlight sensor circuit	Climate control unit	Signal error
<u>B1230</u>	A short in the sunlight sensor circuit	Climate control unit	Signal error
<u>B1231</u>	An open in the front evaporator temperature sensor circuit	Climate control unit	Signal error
<u>B1232</u>	A short in the front	Climate control unit	Signal error

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

	evaporator temperature sensor circuit		
<u>B1233</u>	An open in the driver's air mix control motor circuit	Climate control unit	Signal error
<u>B1234</u>	A short in the driver's air mix control motor circuit	Climate control unit	Signal error
<u>B1235</u>	A problem in the driver's air mix control linkage, door, or motor circuit	Climate control unit	Signal error
<u>B1236</u>	An open in the passenger's air mix control motor circuit	Climate control unit	Signal error
<u>B1237</u>	A short in the passenger's air mix control motor circuit	Climate control unit	Signal error
<u>B1238</u>	A problem in the passenger's air mix control linkage, door, or motor circuit	Climate control unit	Signal error
<u>B1239</u>	An open or short in the front mode control motor circuit	Climate control unit	Signal error
<u>B1240</u>	A problem in the front mode control linkage, doors, or motor circuit	Climate control unit	Signal error
<u>B1241</u>	A problem in the front blower motor circuit	Climate control unit	Signal error
<u>B1244</u>	An open in the rear air mix control motor circuit	Climate control unit	Signal error
<u>B1245</u>	A short in the rear air mix control motor circuit	Climate control unit	Signal error
<u>B1246</u>	A problem in the rear air mix control linkage, door, or motor circuit	Climate control unit	Signal error
<u>B2965</u>	Climate control unit lost communication with rear climate control panel	Climate control unit	Loss of communication
<u>B2967</u>	An open in the humidity sensor circuit	Climate control unit	Signal error
<u>B2968</u>	A short in the humidity sensor circuit	Climate control unit	Signal error
<u>B2969</u>	Climate control unit lost communication with combination switch control unit (WIPSW	Climate control unit	Loss of communication

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

	message)		
<u>B2970</u>	Climate control unit lost communication with relay control module (RM message)	Climate control unit	Loss of communication
<u>B2979</u>	An open in the A/C pressure sensor circuit	Climate control unit	Signal error
<u>B2980</u>	A short in the A/C pressure sensor circuit	Climate control unit	Signal error
<u>B2981</u>	Climate control unit lost communication with navigation unit	Climate control unit	Loss of communication
<u>B2983</u>	A problem in the recirculation control linkage, door, or motor circuit	Climate control unit	Signal error
<u>B2991</u>	Climate control unit lost communication with audio unit	Climate control unit	Loss of communication

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Rear mode control doors do not change between ceiling vents (cool) and floor vents (hot)	Rear mode control motor circuit troubleshooting (see <u>REAR MODE CONTROL MOTOR CIRCUIT TROUBLESHOOTING</u>)	- HVAC DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Blown fuse No. 30 (10 A) in the under-dash fuse/relay box - Cleanliness and tightness of all terminals
Blower, heater controls, and A/C do not work	Climate control unit troubleshooting (see <u>CLIMATE CONTROL UNIT TROUBLESHOOTING</u>)	- HVAC DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Blown fuse No. 30 (10 A) in the under-dash fuse/relay box - Poor ground at G506 (see <u>GROUND TO COMPONENTS INDEX</u>) - Cleanliness and tightness of all terminals
		HVAC DTCs (see <u>GENERAL TROUBLESHOOTING</u>)

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

Both fans do not run at low speed with the A/C on (but the A/C compressor runs with the A/C on)	Radiator and A/C condenser fan low speed circuit troubleshooting (see <u>RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING</u>)	<u>INFORMATION</u>) - Blown fuse No. 15 (30 A) in the relay block, and No. 30 (10 A) in the under-dash fuse/relay box - Poor ground at G301 (see <u>GROUND TO COMPONENTS INDEX</u>) - Cleanliness and tightness of all terminals
The A/C condenser fan does not run at high speed (but both fans run at low speed and the A/C compressor operates with the A/C on)	A/C condenser fan high speed circuit troubleshooting (see <u>A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING</u>)	- HVAC DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Cleanliness and tightness of all terminals
Both fans do not run at high speed with the A/C on (but both fans run at low speed and the A/C compressor operates with the A/C on)	ECT troubleshooting: ECT sensor 2 circuit low voltage (see <u>DTC P2184: ECT SENSOR 2 CIRCUIT LOW VOLTAGE</u>), ECT sensor 2 circuit high voltage (see <u>DTC P2185: ECT SENSOR 2 CIRCUIT HIGH VOLTAGE</u>)	- Powertrain DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Cleanliness and tightness of all terminals
The A/C compressor clutch does not engage (but both fans run with the A/C on)	A/C compressor clutch circuit troubleshooting (see <u>A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING</u>)	- HVAC DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Blown fuse No. 17 (7.5 A) in the relay block, and No. 30 (10 A) in the under-dash fuse/relay box - Blower motor operation - Cleanliness and tightness of all terminals
Blower fan(s) runs slower than expected in cold weather	ECT troubleshooting: ECT sensor 2 circuit low voltage (see <u>DTC P2184: ECT SENSOR 2 CIRCUIT LOW VOLTAGE</u>), ECT sensor 2 circuit high voltage (see <u>DTC P2185: ECT SENSOR 2 CIRCUIT HIGH VOLTAGE</u>) NOTE: It is normal for the blower(s) to run slowly until the engine coolant temperature begins to rise. If the blower	- Powertrain DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>) - Blower motor operation

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

	continues to run slowly for an abnormal length of time, continue to troubleshoot the problem.	
HDS does not communicate with the climate control unit or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>)	
Insufficient heating	1. Check the coolant level (see <u>COOLANT CHECK</u>) 2. Check the radiator cap (see <u>RADIATOR CAP TEST</u>) 3. Check the operation of the air mix control motor and door (see <u>DRIVER'S AIR MIX CONTROL MOTOR TEST</u>) 4. Check the coolant temperature 5. Check the operation of the heater valve (see <u>HEATER VALVE CABLE ADJUSTMENT</u>) 6. Check the blower motor unit for obstructions 7. Check for air leaks around the ducts and vents 8. Check the inlet hose temperature • If it is COLD, check for restrictions in the hose, a damaged or leaking thermostat, and a damaged or leaking water pump. • If it is HOT, check for restrictions in the heater core. Back flush the heater core using standard commercially available equipment, or replace the heater core.	Damaged cylinder head gasket

SYSTEM DESCRIPTION

The air conditioning system removes heat from the passenger compartment by transferring heat from the ambient air to the evaporator. The evaporator cools the air with the refrigerant that is circulating through the evaporator. The refrigerant expands in the evaporator, and the evaporator becomes very cold and absorbs the heat from the ambient air. The blower fan pushes air across the evaporator where the heat is absorbed, and then it blows the cool air into the passenger compartment.

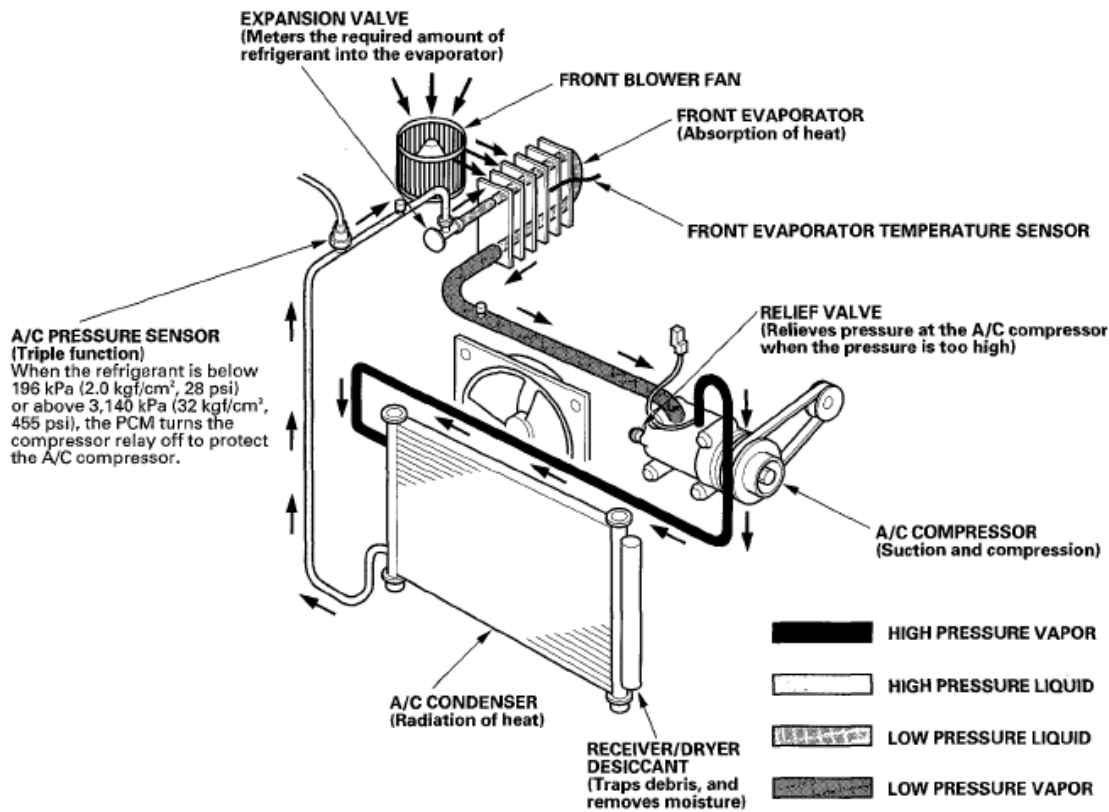


Fig. 12: Climate Control System Description

Courtesy of AMERICAN HONDA MOTOR CO., INC.

This vehicle uses HFC-134a (R-134a) refrigerant, which does not contain chlorofluorocarbons. Pay attention to the following service items:

- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (DENSO ND-OIL 8) designed for the R-134a A/C compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in A/C compressor failure.
- All A/C system parts (A/C compressor, discharge line, suction line, evaporator, A/C condenser, receiver/dryer, expansion valve, O-rings for joints) are designed for refrigerant R-134a. Do not exchange with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- R-12 and R-134a refrigerant servicing equipment are not interchangeable. Use only a recovery/recycling/charging station that is U.L.-listed and is certified to meet the requirements of SAE J2210 to service the R-134a air conditioning systems.
- Always recover refrigerant R-134a with an approved recovery/recycling/charging station before disconnecting any A/C fitting.

HUMIDITY/IN-CAR TEMPERATURE SENSOR

The humidity sensor consists of two sensors. One sensor is for humidity detection, and the other is for in-car temperature detection. When the climate control unit receives signals about the in-car condition from the humidity sensor, and judges that the humidity in the vehicle is very low, the climate control unit reduces the compressor run-time. Engine power loss is kept to a minimum, and fuel economy is increased.

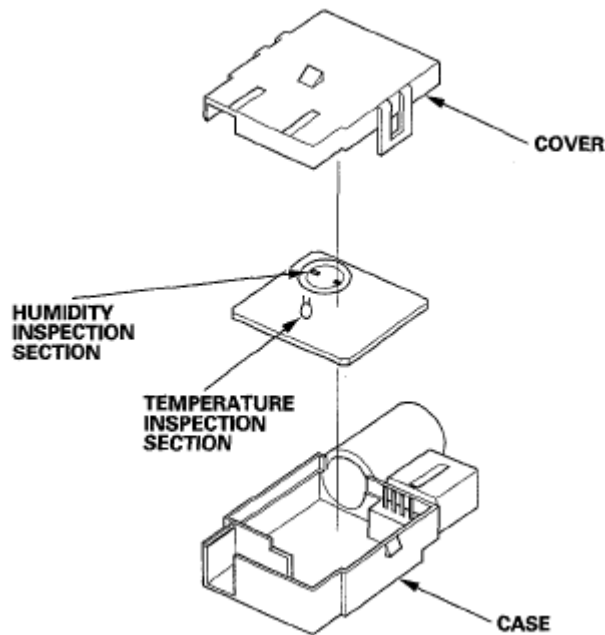


Fig. 13: Identifying Humidity/In-Car Temperature Sensor Component
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HUMIDITY/IN-CAR TEMPERATURE SENSOR QUALITY

The capacitance of the humidity sensor changes by the adsorption and the evaporation of moisture. The resistance change of the humidity sensor changes the output voltage.

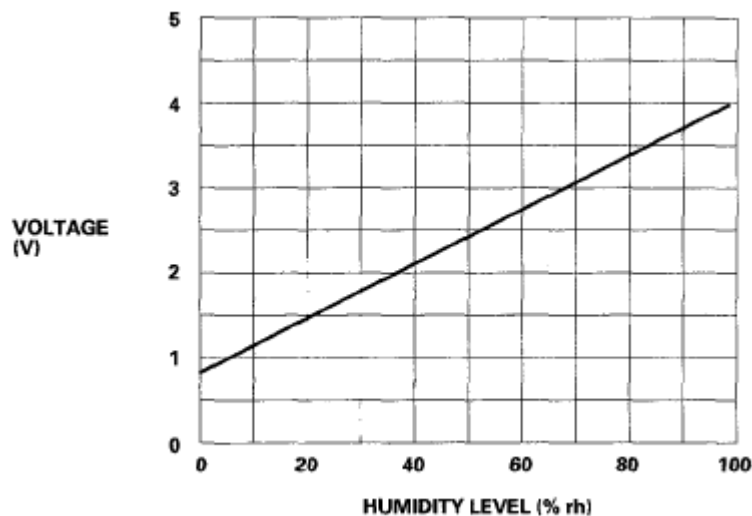


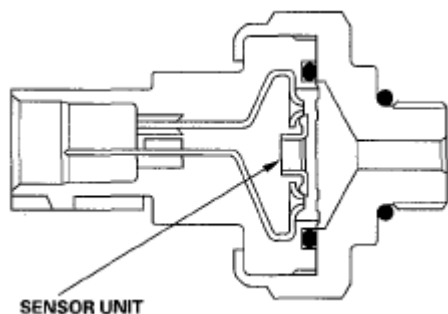
Fig. 14: Voltage Vs Humidity Level Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C PRESSURE SENSOR

The A/C pressure sensor converts A/C pressure into electrical signals to the PCM.

NOTE: The pressures can be monitored using the HDS PGM-FI Data List.

**Fig. 15: Identifying A/C Pressure Sensor**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

The response of the A/C pressure sensor is shown in the graph.

NOTE: When the refrigerant is below 196 kPa (2.0 kgf/cm² , 28 psi) or above 3,140 kPa (32 kgf/cm² , 455 psi), the PCM turns the compressor relay off to protect the A/C compressor.

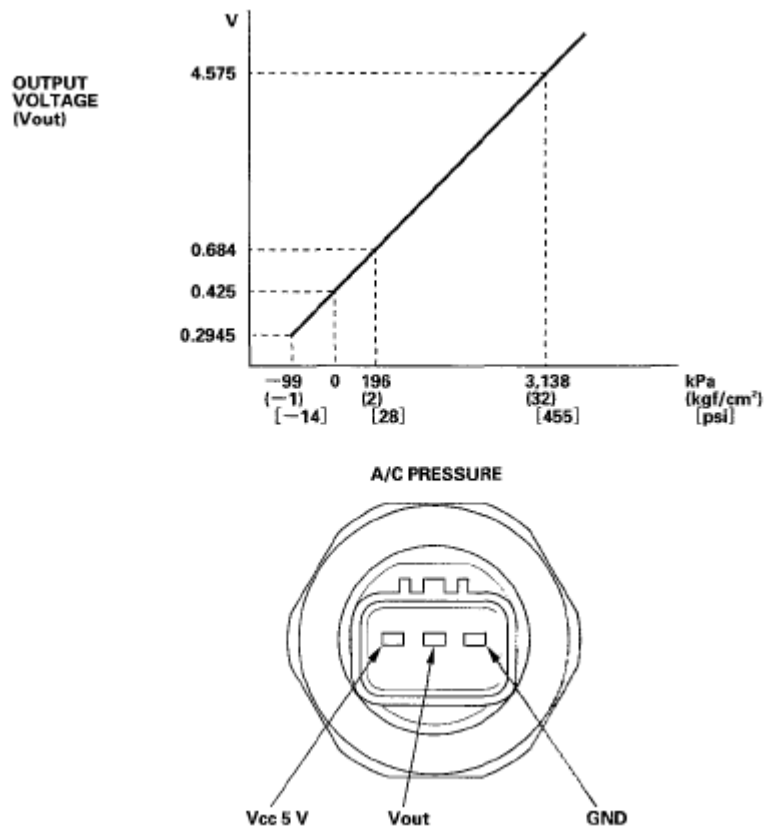


Fig. 16: A/C Pressure Sensor Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLIMATE CONTROL DOOR POSITIONS

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

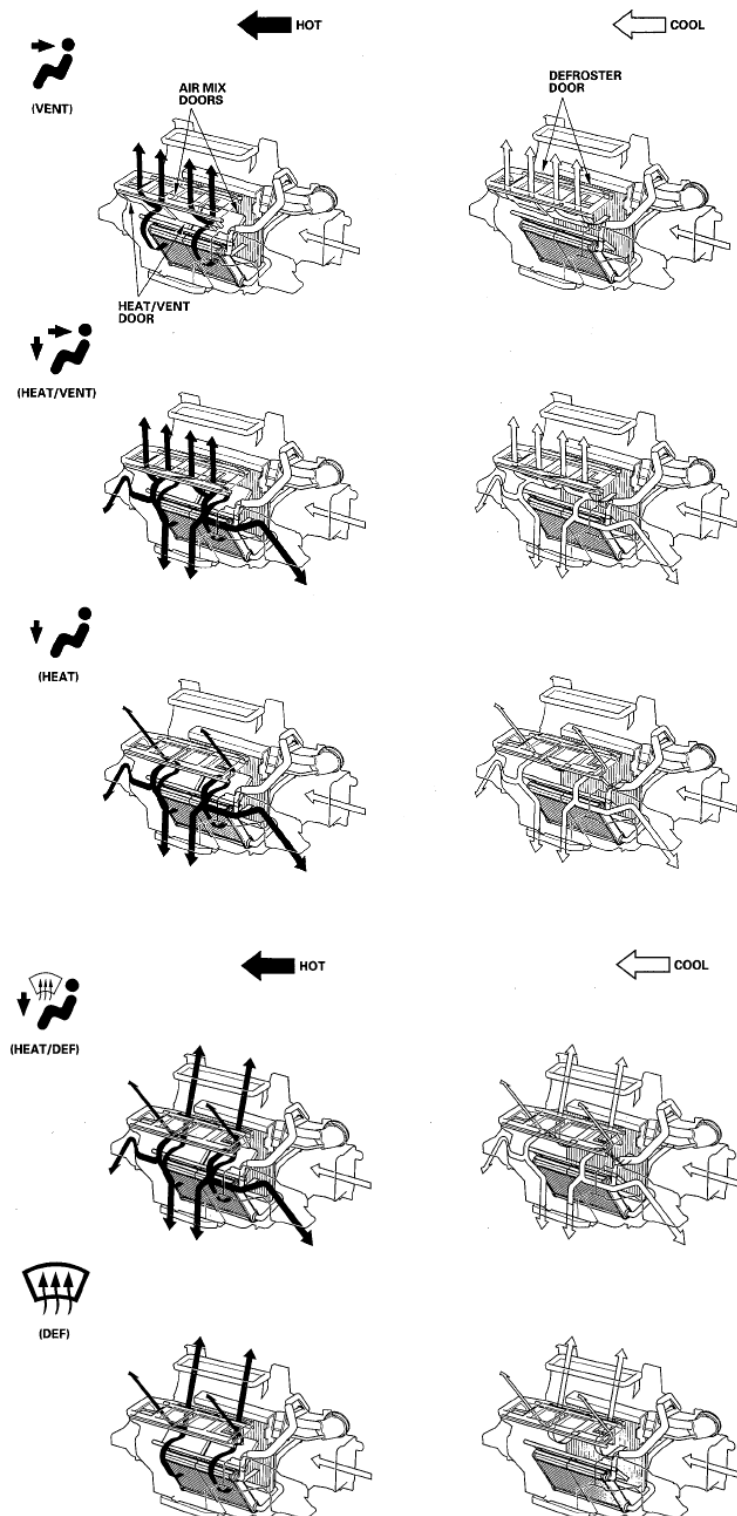


Fig. 17: Identifying Climate Control Door Positions
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DUAL AIR MIX CONTROL SYSTEM

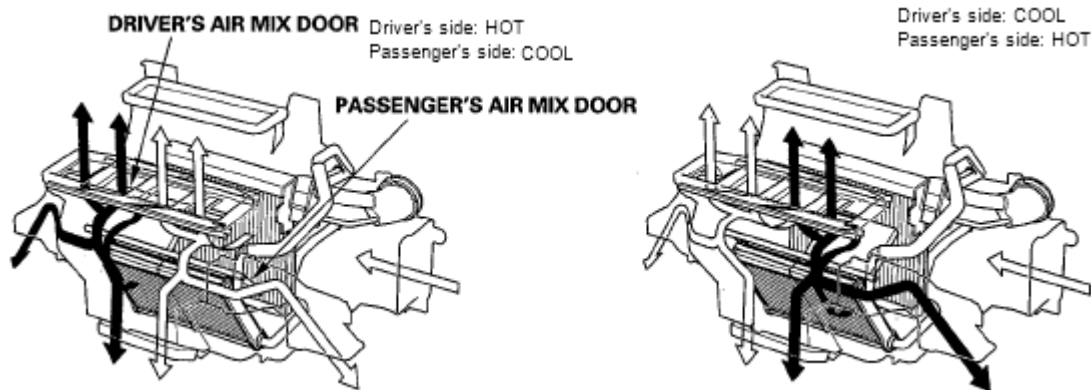


Fig. 18: Identifying Dual Air Mix Control System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

I-DUAL AND I-TRI CLIMATE CONTROL SYSTEM (WITH NAVIGATION SYSTEM)

The "i-Dual" climate control system automatically controls the temperature and the vent mode of the air direction to the driver's and passenger's side, depending on the angle of the sun, and the direction of the vehicle. It calculates information such as date, time, longitude, and latitude from the navigation system, as well as the radiant strength of the sun from the sunlight sensor, to determine the appropriate mode position and temperature to be directed to each side. The "i-Tri" climate control system is an addition of the automatic controls with the temperature and the vent mode of the air direction to the rear section to the "i-Dual" climate control system.

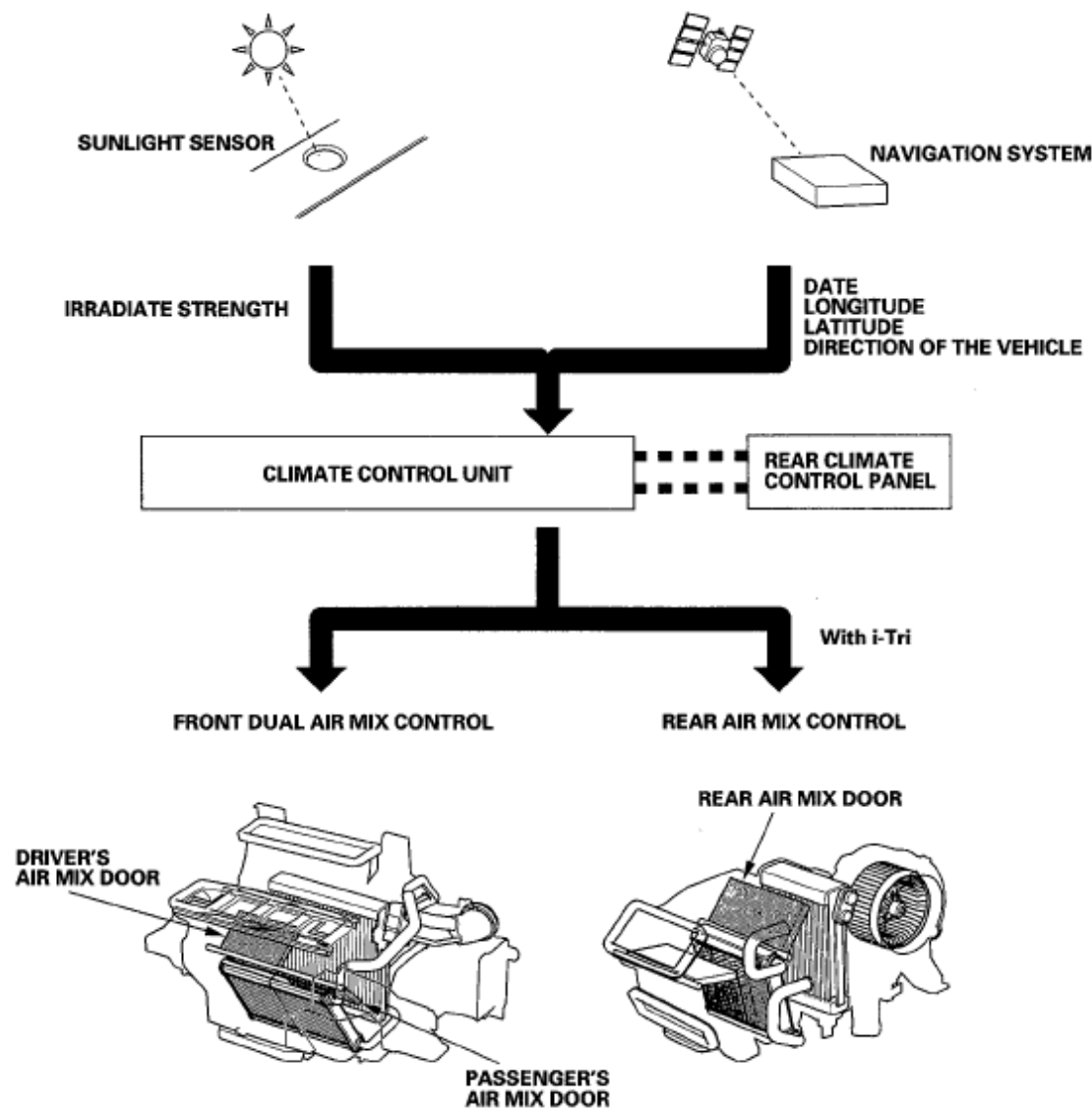


Fig. 19: Identifying I-Dual And I-Tri Climate Control System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

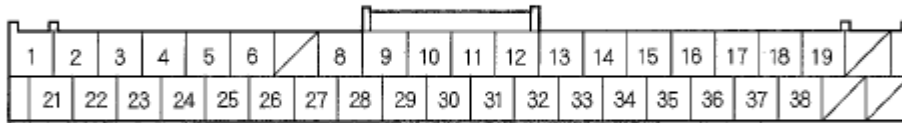
In the event that the navigation system malfunctions, or when driving in areas where the navigation system cannot determine the vehicle position (non-coverage areas, tunnels, etc.), the climate control system will operate the same as a vehicle without a navigation system.

CLIMATE CONTROL UNIT INPUTS AND OUTPUTS

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 20: Identifying Climate Control Unit Connector A (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR A

CLIMATE CONTROL UNIT INPUTS AND OUTPUTS - CONNECTOR A

Cavity	Wire color	Signal	
1	WHT	BACKUP	INPUT
2	YEL	NAVIGATION UNIT (SI) ⁽¹⁾	INPUT
3	YEL	IG2 (Power)	INPUT
4	LT GRN	B-CAN	INPUT/OUTPUT
5	LT BLU	IN-CAR TEMPERATURE SENSOR	OUTPUT
6	GRY	COMMON POTENTIAL 5V	OUTPUT
8	RED	SENSOR COMMON GROUND	INPUT
9	BLU	FRONT BLOWER FEEDBACK	INPUT
10	RED	FRONT POWER TRANSISTOR CONTROL	OUTPUT
11	PUR	DRIVER'S AIR MIX POTENTIAL	INPUT
12	PNK	DRIVER'S AIR MIX HOT	OUTPUT
13	LT BLU	DRIVER'S AIR MIX COOL	OUTPUT
14	LT GRN	PASSENGER'S AIR MIX HOT	OUTPUT
15	YEL	PASSENGER'S AIR MIX COOL	OUTPUT
16	GRN	FRONT MODE DEF	OUTPUT
17	ORN	FRONT MODE VENT	OUTPUT
18	YEL	FRESH	OUTPUT
19	ORN	RECIRCULATE	OUTPUT
21	BLU	NAVIGATION UNIT(CLK) ⁽¹⁾	OUTPUT
22	RED	NAVIGATION UNIT (SO) ⁽¹⁾	OUTPUT
23	LT BLU	ILLUMK+)	INPUT
24	BRN	FRONT EVAPORATOR TEMPERATURE SENSOR	OUTPUT
25	PUR	ACC	INPUT
26	LT GRN	A/C PRESSURE SENSOR	OUTPUT

2008 Acura MDX

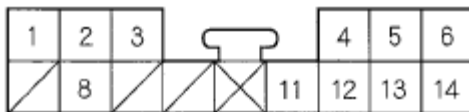
2007-09 HVAC Climate Control - MDX

27	YEL	HUMIDITY SENSOR	OUTPUT
28	PNK	OUTSIDE AIR TEMPERATURE SENSOR	OUTPUT
29	PUR	SUNLIGHT SENSOR	OUTPUT
30	BLU	PASSENGER'S AIR MIX POTENTIAL	INPUT
31	WHT	FRONT MODE CONTROL MODE 1	OUTPUT
32	LT GRN	FRONT MODE CONTROL MODE 2	OUTPUT
33	PUR	FRONT MODE CONTROL MODE 3	OUTPUT
34	BLU	FRONT MODE CONTROL MODE 4	OUTPUT
35	WHT	RECIRCULATION CONTROL MODE 1	OUTPUT
36	BLK	RECIRCULATION CONTROL MODE 2	OUTPUT
37	BLK	GROUND (G506)	OUTPUT
38	GRN	RECIRCULATION CONTROL MODE 3	OUTPUT

(1) With navigation system

CLIMATE CONTROL UNIT INPUTS AND OUTPUTS

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 21: Identifying Climate Control Unit Connector B (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTOR B

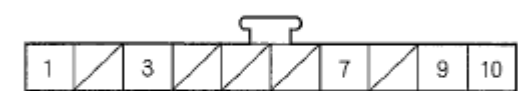
CLIMATE CONTROL UNIT INPUTS AND OUTPUTS - CONNECTOR B

Cavity	Wire color	Signal	
1	GRN	REAR AIR MIX COOL	OUTPUT
2	PNK	REAR AIR MIX HOT	OUTPUT
3	YEL	REAR MODE HEAT	INPUT
4	BLK	REAR MODE VENT	INPUT
5	PUR	REAR AIR MIX POTENTIAL	INPUT
6	LT BLU	REAR EVAPORATOR TEMPERATURE SENSOR	OUTPUT
8	BLU	AUDIO UNIT (HVAC BUS)	INPUT/OUTPUT
11	ORN	REAR CLIMATE CONTROL PANEL (A/C BUS RX)	INPUT/OUTPUT
12	GRN	REAR CLIMATE CONTROL PANEL (A/C BUS TX)	INPUT/OUTPUT

13	RED	REAR BLOWER FEEDBACK	INPUT
14	BLU	REAR POWER TRANSISTOR CONTROL	OUTPUT

REAR CLIMATE CONTROL UNIT INPUTS AND OUTPUTS

REAR CLIMATE CONTROL PANEL 10P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying Rear Climate Control Panel 10P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR CLIMATE CONTROL UNIT INPUTS AND OUTPUTS

Cavity	Wire color	Signal	
1	YEL	IG2 (Power)	INPUT
3	BLK	GROUND (G506)	OUTPUT
7	LT BLU	ILLUMI (+)	INPUT
9	GRN	CLIMATE CONTROL UNIT (A/C BUS TX)	INPUT/OUTPUT
10	ORN	CLIMATE CONTROL UNIT (A/C BUS RX)	INPUT/OUTPUT

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

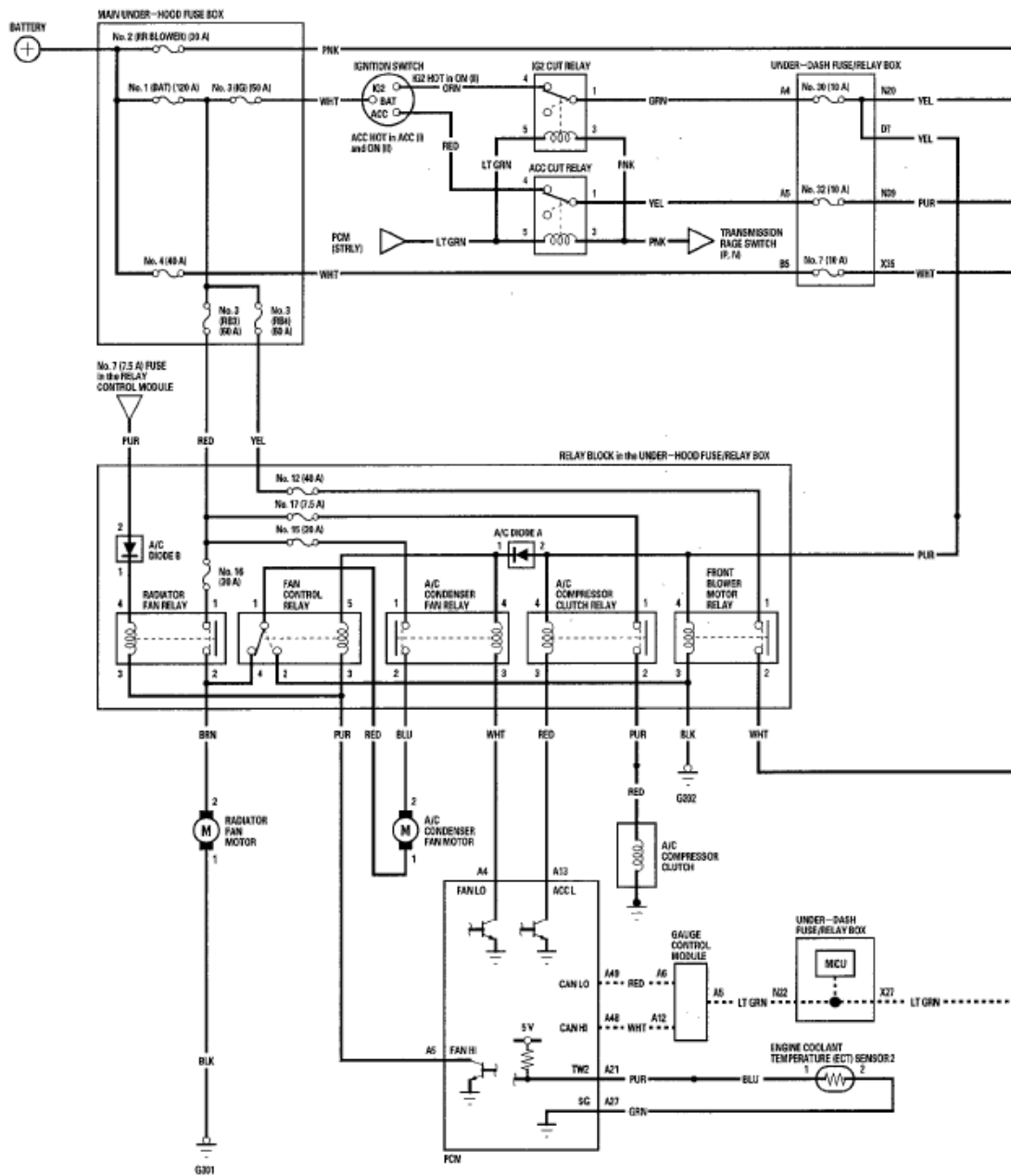


Fig. 23: Climate Control Circuit Diagram (1 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

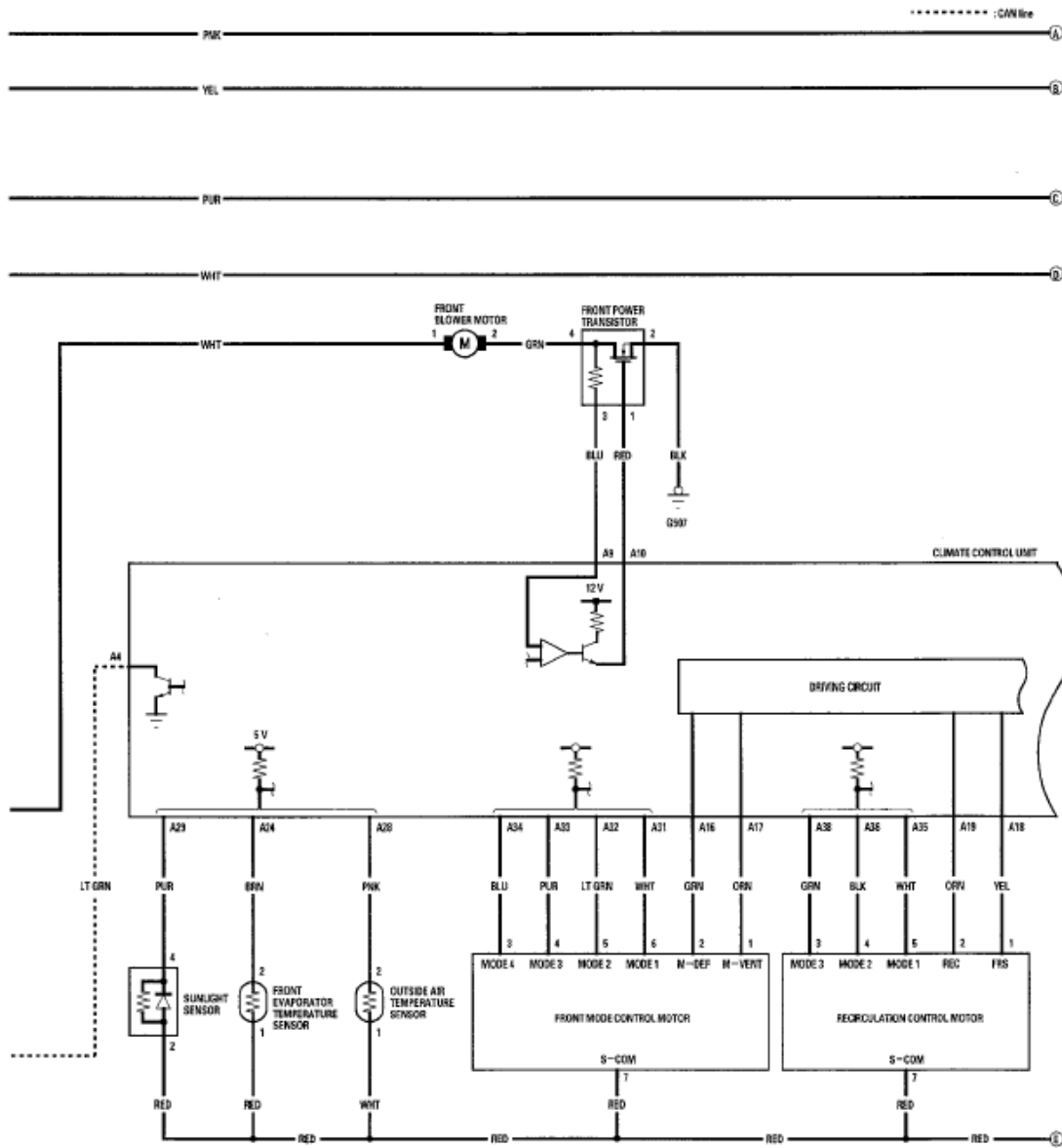


Fig. 24: Climate Control Circuit Diagram (2 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

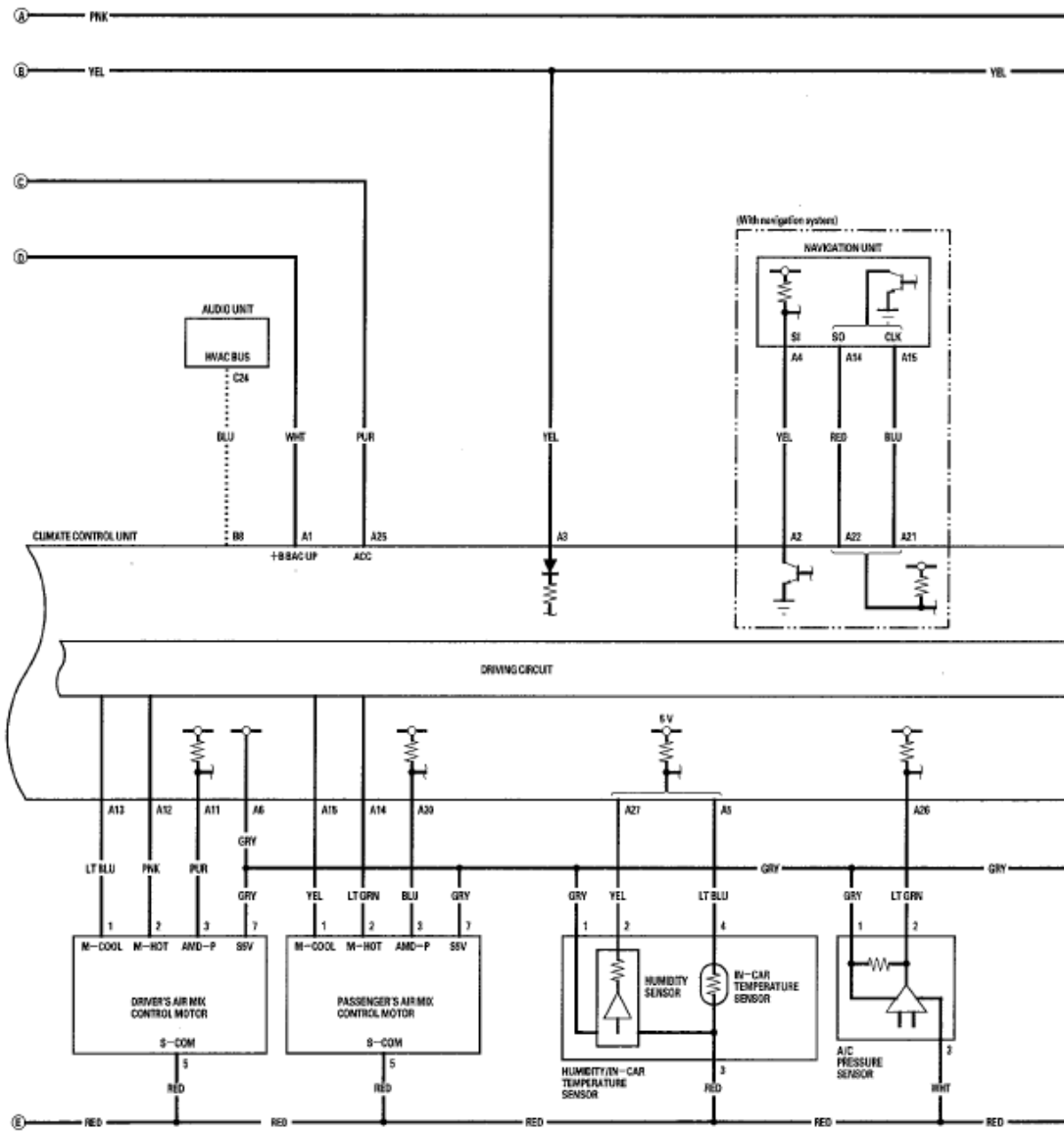


Fig. 25: Climate Control Circuit Diagram (3 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

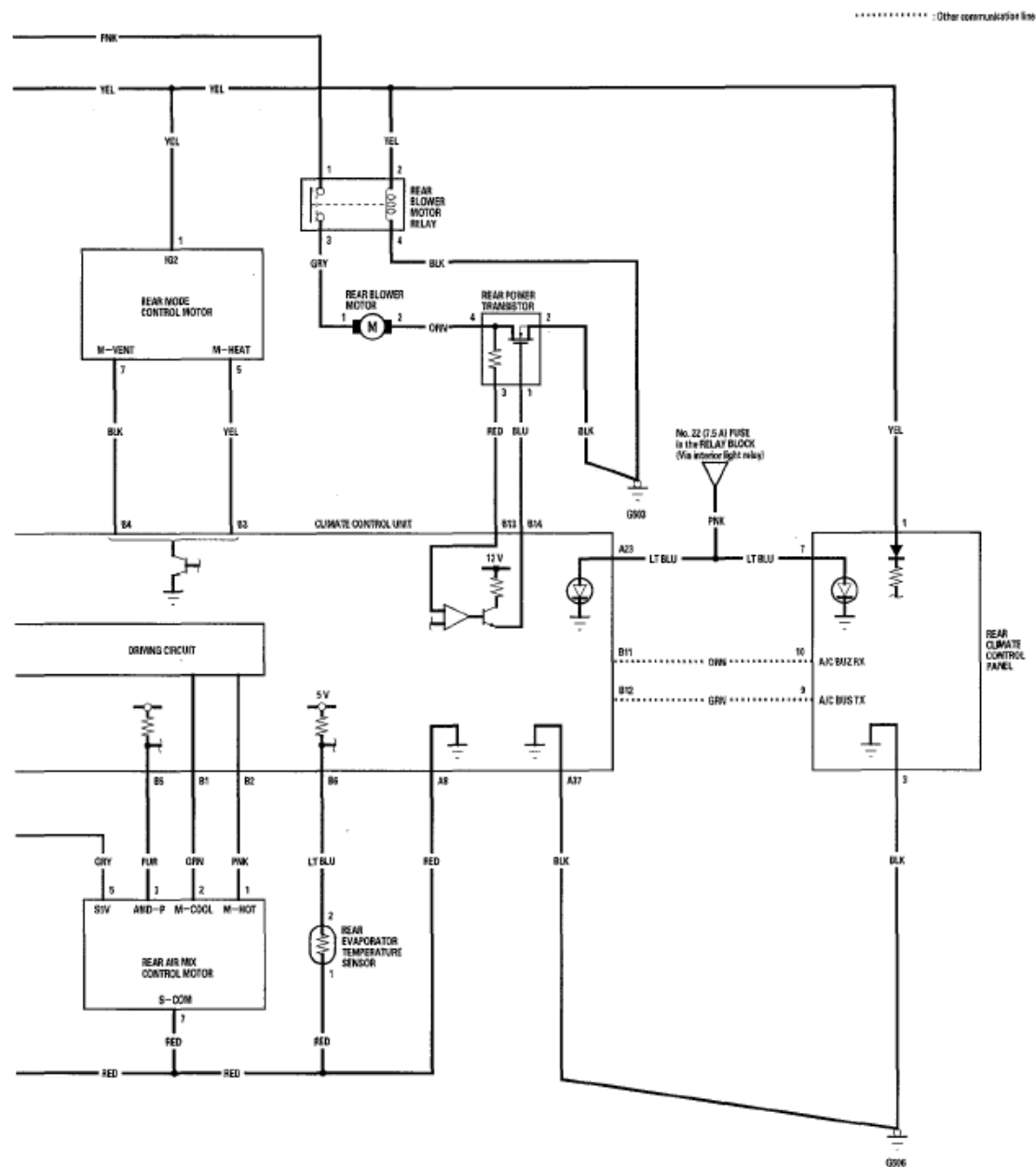


Fig. 26: Climate Control Circuit Diagram (4 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1202: CLIMATE CONTROL UNIT INTERNAL ERROR

NOTE: Check the battery condition (see BATTERY TEST) and the charging system (see CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING).

1. Clear the DTC with the HDS.

2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Wait for 6 seconds or more.
4. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
5. Check for DTCs.

Is DTC B1202 indicated?

YES - The climate control unit is faulty, replace the climate control unit.

NO - Intermittent failure, the climate control unit is OK at this time.

DTC B1205: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VSP/NE MESSAGE); DTC B1206 OR DTC INDICATOR AUTO: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (ECT MESSAGE); DTC B1207: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (ILLUMI MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-can diagnosis test mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Wait for 6 seconds or more.
4. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
5. Check the DTCs.

Are DTCs B1205, and/or B1206 or AUTO, and/or B1207 indicated?

YES - Go to step 6.

NO - Intermittent failure, check for loose wires or poor connections on the climate control unit connector A (40P).

6. Check for DTCs using the HDS.

Are any of the following DTCs indicated; B1011, B1060, B2160, B1357, B1805, B1408, or B2157?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the climate control unit troubleshooting (see **CLIMATE CONTROL UNIT**).

TROUBLESHOOTING).**DTC B1213 OR DTC INDICATOR N: AN OPEN IN THE REAR EVAPORATOR TEMPERATURE SENSOR CIRCUIT**

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1213 or N indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear evaporator temperature sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Remove the rear evaporator temperature sensor (see **REAR EVAPORATOR TEMPERATURE SENSOR TEST**), and test it (see **REAR EVAPORATOR TEMPERATURE SENSOR TEST**).

Is the rear evaporator temperature sensor OK?

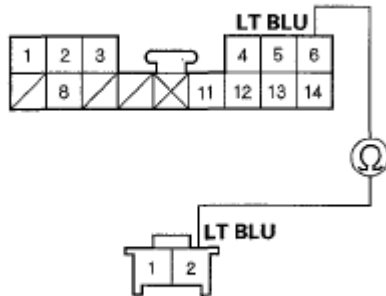
YES - Go to step 7.

NO - Replace the rear evaporator temperature sensor.

7. Disconnect climate control unit connector B (14P).
8. Check for continuity between climate control unit connector B (14P) No. 6 terminal and the rear evaporator temperature sensor 2P connector No. 2 terminal.

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals



**REAR EVAPORATOR TEMPERATURE SENSOR
2P CONNECTOR**

Wire side of female terminals

Fig. 27: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 6 And No. 2 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

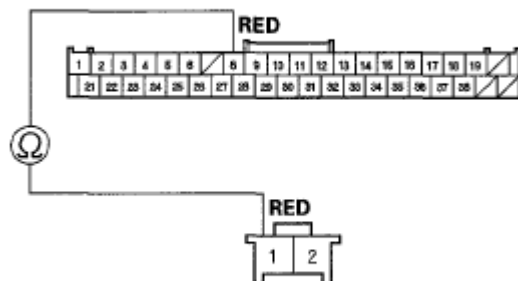
YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the rear evaporator temperature sensor.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and the rear evaporator temperature sensor 2P connector No. 1 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals



**REAR EVAPORATOR TEMPERATURE SENSOR
2P CONNECTOR**

Wire side of female terminals

Fig. 28: Identifying Continuity Between No. 8 And Rear Evaporator Temperature Sensor 2P Connector No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P), B (14P), and at the rear evaporator temperature sensor 2P connector. If the connections are good, substitute a known-

good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Repair open in the wire between the climate control unit and the rear evaporator temperature sensor.

DTC B1214 OR DTC INDICATOR P: A SHORT IN THE REAR EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1214 or P indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Turn the ignition switch to LOCK (0).
6. Remove the rear evaporator temperature sensor (see **REAR EVAPORATOR TEMPERATURE SENSOR TEST**), and test it (see **REAR EVAPORATOR TEMPERATURE SENSOR TEST**).

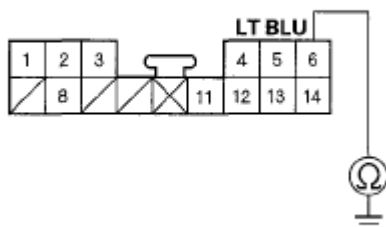
Is the rear evaporator temperature sensor OK?

YES - Go to step 7.

NO - Replace the rear evaporator temperature sensor.

7. Disconnect climate control unit connector A (40P) and B(14P).
8. Check for continuity between climate control unit connector B (14P) No. 6 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 29: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the rear evaporator temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and climate control unit connector B (14P) No. 6 terminal.

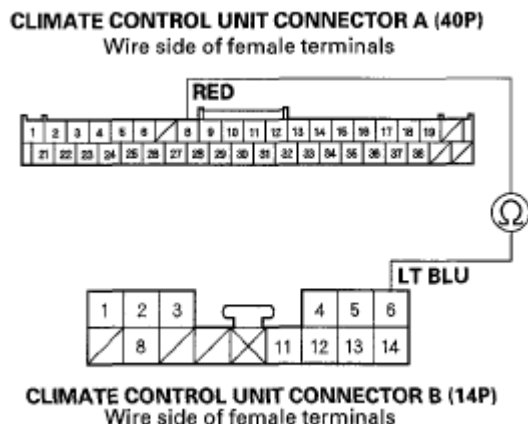


Fig. 30: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 6 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the climate control unit and the rear evaporator temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1215 OR DTC INDICATOR J: AN OPEN OR SHORT IN THE RECIRCULATION CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1215 or J indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the recirculation control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the recirculation control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

Is the recirculation control motor OK?

YES - Go to step 7.

NO - Replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).

7. Disconnect the recirculation control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the recirculation control motor 7P connector.

40P: 7P:

No. 8 No. 7

No. 35 No. 5

No. 36 No. 4

No. 38 No. 3

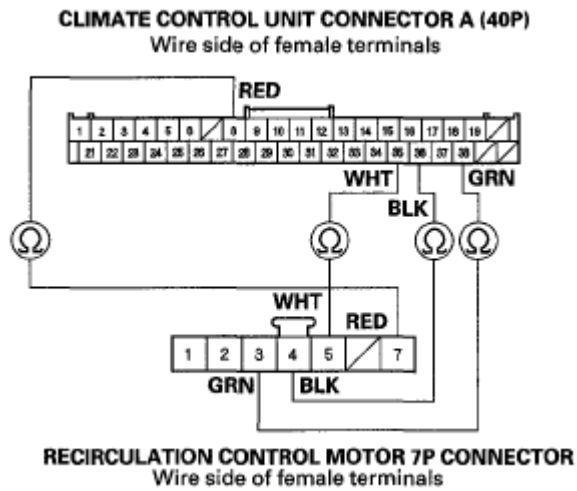


Fig. 31: Identifying Continuity Between Climate Control Unit A (40P) And Recirculation Control Motor 7P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

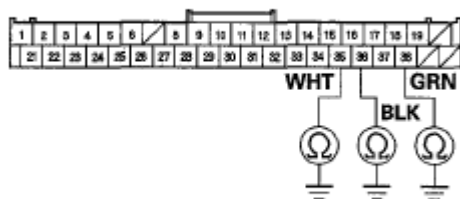
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the recirculation control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 35,36, and 38 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 32: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 35,36, And 38 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the recirculation control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) terminals as follows.

TERMINALS REFERENCE CHART

From terminal	To terminals
35	36, 38
36	38

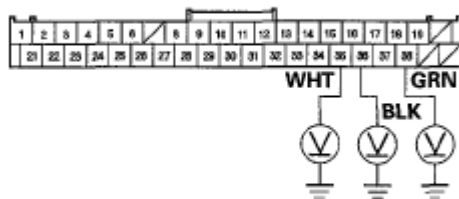
Is there continuity between any of the terminals?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Reconnect climate control unit connector A (40 P).
13. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 33: Identifying Same Terminals For Voltage To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s) between the climate control unit and the recirculation control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Check for loose wires or poor connections at climate control unit connector A (40P) and at the recirculation control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1223 OR DTC INDICATOR M: A PROBLEM IN THE REAR BLOWER MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).

3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1223 or M indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear blower motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Check the No. 2 (RR BLOWER) (30 A) fuse in the under-hood fuse box, and the No. 30 (10 A) fuse in the under-dash fuse/relay box.

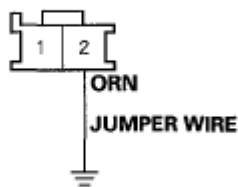
Are the fuses OK?

YES - Go to step 7.

NO - Replace the fuse(s), and recheck. If fuse(s) blow again, check for a short in the No. 2 (RR BLOWER) (30 A) and No. 30 (10 A) fuse(s) circuit.

7. Connect the rear blower motor 2P connector No. 2 terminal to body ground with a jumper wire.

REAR BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 34: Identifying Rear Blower Motor 2P Connector No. 2 Terminal To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II).

Does the rear blower motor run at high speed?

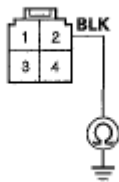
YES - Go to step 9.

NO - Go to step 24.

9. Turn the ignition switch to LOCK (0).

10. Disconnect the jumper wire.
11. Disconnect the rear power transistor 4P connector.
12. Check for continuity between the rear power transistor 4P connector No. 2 terminal and body ground.

REAR POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

Fig. 35: Identifying Continuity Between Rear Power Transistor 4P Connector No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Check for an open in the wire between the rear power transistor and body ground. If the wire is OK, check for poor ground at G503 (see **GROUND TO COMPONENTS INDEX**).

13. Connect the rear power transistor 4P connector No. 2 and No. 4 terminals with a jumper wire.

REAR POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

Fig. 36: Identifying Rear Power Transistor 4P Connector No. 2 And No. 4 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

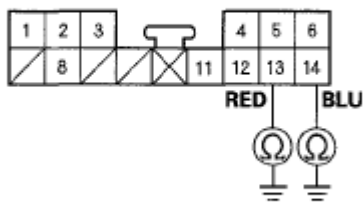
14. Turn the ignition switch to ON (II).

Does the rear blower motor run at high speed?

YES - Go to step 15.

NO - Repair open in the ORN wire between the rear power transistor and the rear blower motor.

15. Turn the ignition switch to LOCK (0).
16. Disconnect the jumper wire.
17. Disconnect climate control unit connector B (14P).
18. Check for continuity between body ground and climate control unit connector B (14P) No. 13 and No. 14 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 37: Identifying Continuity Between Body Ground And Climate Control Unit Connector B (14P) No. 13 And No. 14 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the rear power transistor.

NO - Go to step 19.

19. Check for continuity between the following terminals of climate control unit connector B (14P) and the rear power transistor 4P connector.

14P	4P
No. 13	No. 3
No. 14	No. 1

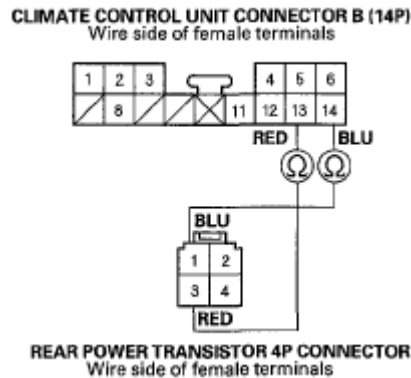


Fig. 38: Identifying Continuity Between Climate Control Unit B (14P) And Rear Power Transistor 4P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire(s) between the climate control unit and the rear power transistor.

20. Turn the ignition switch to ON (II).
21. Measure the voltage between body ground and climate control unit connector B (14P) No. 13 and No. 14 terminals individually.

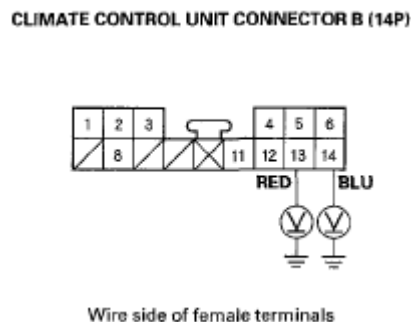


Fig. 39: Measuring Voltage Between Body Ground And Climate Control Unit Connector B (14P) No. 13 And No. 14 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s).

NO - Go to step 22.

22. Reconnect climate control unit connector B (14P).

23. Test the rear power transistor (see **REAR POWER TRANSISTOR TEST**).

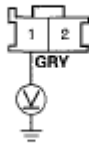
Is the rear power transistor OK?

YES - Check for loose wires or poor connections at climate control unit connector B (14P) and at the rear power transistor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Replace the rear power transistor (see **REAR POWER TRANSISTOR TEST**).

24. Disconnect the jumper wire.
25. Disconnect the rear blower motor 2P connector.
26. Measure the voltage between the rear blower motor 2P connector No. 1 terminal and body ground.

REAR BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 40: Measuring Voltage Between Rear Blower Motor 2P Connector No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the rear blower motor (see **REAR CLIMATE CONTROL PANEL REMOVAL/INSTALLATION**).

NO - Go to step 27.

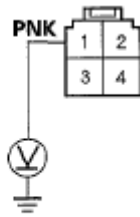
27. Turn the ignition switch to LOCK (0).
28. Remove the rear blower motor relay from the dashboard wire harness, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 29.

NO - Replace the rear blower motor relay.

29. Measure the voltage between the rear blower motor relay 4P socket No. 1 terminal and body ground.



Wire side of female terminals

Fig. 41: Measuring Voltage Between Rear Blower Motor Relay 4P Socket No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

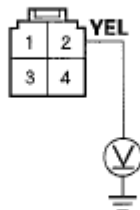
Is there battery voltage?

YES - Go to step 30.

NO - Repair open in the wire between the No. 2 (RR BLOWER) (30 A) in the under-hood fuse box and the rear blower motor relay.

30. Turn the ignition switch to ON (II).
31. Measure the voltage between the rear blower motor relay 4P socket No. 2 terminal and body ground.

REAR BLOWER MOTOR RELAY 4P SOCKET



Wire side of female terminals

Fig. 42: Measuring Voltage Between Rear Blower Motor Relay 4P Socket No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

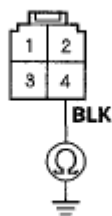
Is there battery voltage?

YES - Go to step 32.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the rear blower motor relay.

32. Turn the ignition switch to LOCK (0).
33. Check for continuity between the rear blower motor relay 4P socket No. 4 terminal and body ground.

REAR BLOWER MOTOR RELAY 4P SOCKET



Wire side of female terminals

Fig. 43: Identifying Continuity Between Rear Blower Motor Relay 4P Socket No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the GRY wire between the rear blower motor relay and the blower motor.

NO - Check for an open in the wire between the rear blower motor relay and body ground. If the wire is OK, check for poor ground at G503 (see **GROUND TO COMPONENTS INDEX**).

DTC B1225 OR DTC INDICATOR A AND AUTO: AN OPEN IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1225 or A and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the in-car temperature sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

Is the in-car temperature sensor OK?

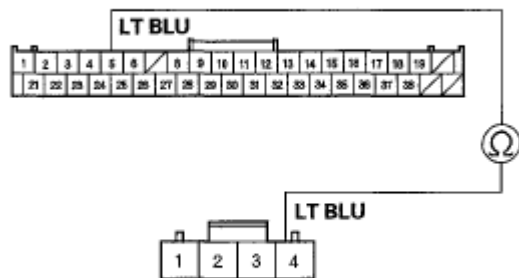
YES - Go to step 7.

NO - Replace the humidity/in-car temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 5 terminal and the humidity/in-car temperature sensor 4P connector No. 4 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR

Wire side of female terminals

Fig. 44: Identifying Continuity Between No. 5 And Humidity/In-Car Temperature Sensor 4P Connector No. 4 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

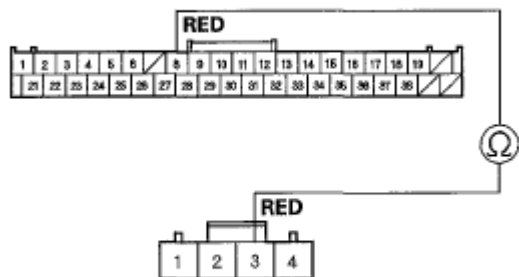
YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the in-car temperature sensor.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and the humidity/in-car temperature sensor 4P connector No. 3 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR

Wire side of female terminals

Fig. 45: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 3 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the humidity/in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire between the climate control unit and the in-car temperature sensor.

DTC B1226 OR DTC INDICATOR B AND AUTO: A SHORT IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1226 or B and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

Is the in-car temperature sensor OK?

YES - Go to step 7.

NO - Replace the humidity/in-car temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 5 terminal and body ground.

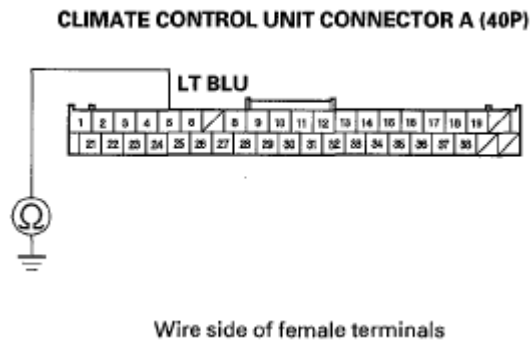


Fig. 46: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the in-car temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector A (40P) No. 5 and No. 8 terminals.

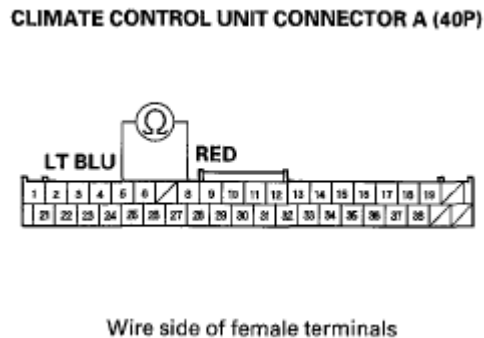


Fig. 47: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 5 And No. 8 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the climate control unit and the in-car temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1227 or C and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the outside air temperature sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**).

Is the outside air temperature sensor OK?

YES - Go to step 7.

NO - Replace the outside air temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 28 terminal and the outside air temperature sensor 2P connector No. 2 terminal.

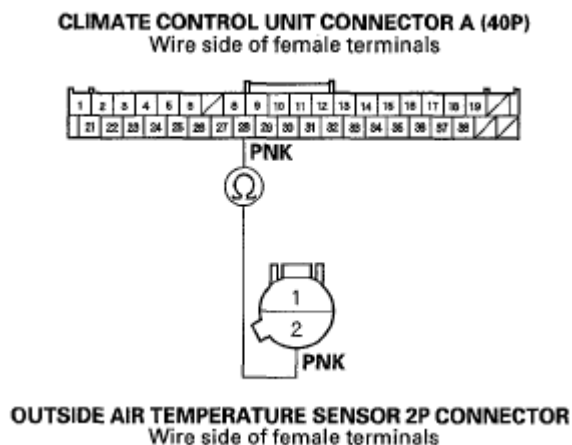


Fig. 48: Identifying Continuity Between No. 28 And Outside Air Temperature Sensor 2P Connector No. 2 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the outside air temperature sensor.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and the outside air temperature sensor 2P connector terminal No. 1.

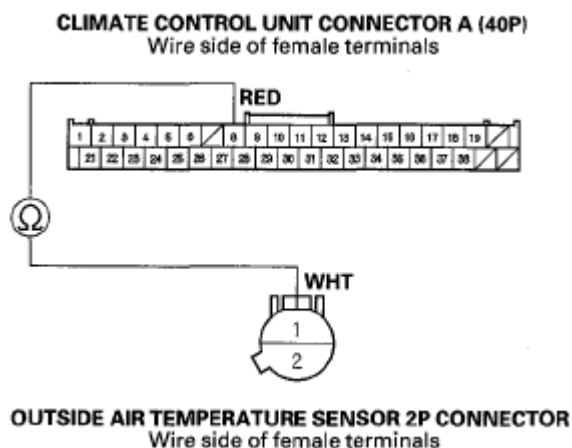


Fig. 49: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the outside air temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire between the climate control unit and the outside air temperature sensor.

DTC B1228 OR DTC INDICATOR D AND AUTO: A SHORT IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1228 or D and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Turn the ignition switch to LOCK (0).
6. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**).

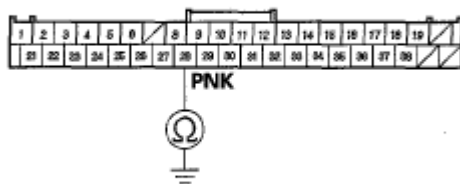
Is the outside air temperature sensor OK?

YES - Go to step 7.

NO - Replace the outside air temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 28 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 50: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 28 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

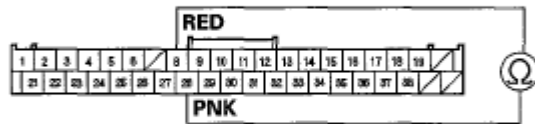
Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the outside air temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector A (40P) No. 8 and No. 28 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 51: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 28 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the climate control unit and the outside air temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1229 OR DTC INDICATOR E AND AUTO: AN OPEN IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

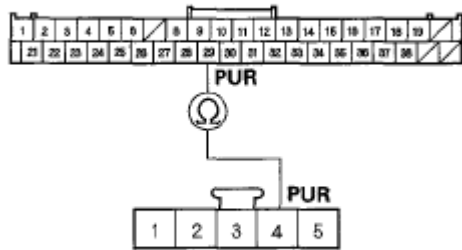
Is DTC B1229 or E and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the sunlight sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the sunlight sensor 5P connector.
7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 29 terminal and the sunlight sensor 5P connector No. 4 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)
Wire side of female terminals



SUNLIGHT SENSOR 5P CONNECTOR
Wire side of female terminals

Fig. 52: Identifying Continuity Between No. 29 And Sunlight Sensor 5P Connector No. 4 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

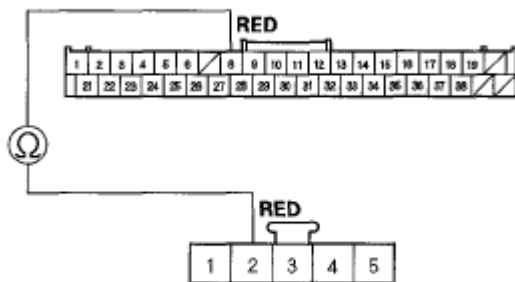
Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the sunlight sensor.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and the sunlight sensor 5P connector No. 2 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)
Wire side of female terminals



SUNLIGHT SENSOR 5P CONNECTOR
Wire side of female terminals

Fig. 53: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 2 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the climate control unit and the sunlight sensor.

10. Reconnect the sunlight sensor 5P connector.

11. Reconnect climate control unit connector A (40P).
12. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the sunlight sensor 5P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

DTC B1230 OR DTC INDICATOR F AND AUTO: A SHORT IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

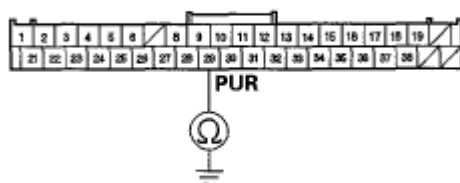
Is DTC B1230 or F and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the sunlight sensor 5P connector.
7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 29 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 54: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 29 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

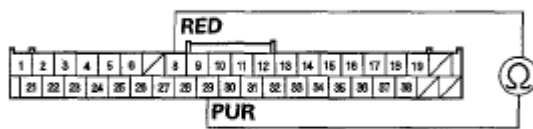
Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the sunlight sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector A (40P) No. 8 and No. 29 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 55: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 29 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the climate control unit and the sunlight sensor.

NO - Go to step 10.

10. Reconnect the sunlight sensor 5P connector.
11. Reconnect climate control unit connector A (40P).
12. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?

YES - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

DTC B1231 OR DTC INDICATOR G AND AUTO: AN OPEN IN THE FRONT EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION**).

WITH THE HDS) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1231 or G and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the front evaporator temperature sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Remove the front evaporator temperature sensor (see **FRONT EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **FRONT EVAPORATOR TEMPERATURE SENSOR TEST**).

Is the front evaporator temperature sensor OK?

YES - Go to step 7.

NO - Replace the front evaporator temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 24 terminal and the front evaporator temperature sensor 2P connector No. 2 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)
Wire side of female terminals



**FRONT EVAPORATOR TEMPERATURE SENSOR
2P CONNECTOR**
Wire side of female terminals

Fig. 56: Identifying Continuity Between No. 24 And Front Evaporator Temperature Sensor 2P Connector No. 2 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the front evaporator temperature sensor.

9. Check for continuity between climate control unit connector A (40P) No. 8 terminal and the front evaporator temperature sensor 2P connector No. 1 terminal.

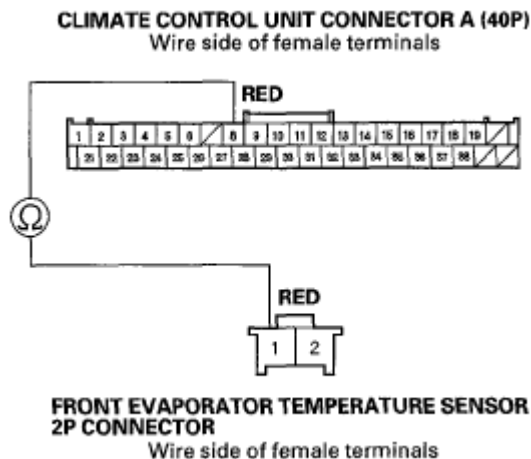


Fig. 57: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the front evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Repair open in the wire between the climate control unit and the front evaporator temperature sensor.

DTC B1232 OR DTC INDICATOR H AND AUTO: A SHORT IN THE FRONT EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1232 or H and AUTO indicated?

YES - Go to step 5

NO - Intermittent failure.

5. Turn the ignition switch to LOCK (0).
6. Remove the front evaporator temperature sensor (see **FRONT EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **FRONT EVAPORATOR TEMPERATURE SENSOR TEST**).

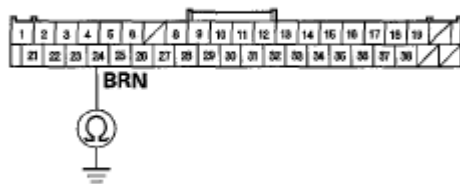
Is the front evaporator temperature sensor OK?

YES - Go to step 7.

NO - Replace the front evaporator temperature sensor.

7. Disconnect climate control unit connector A (40P).
8. Check for continuity between climate control unit connector A (40P) No. 24 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 58: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 24 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

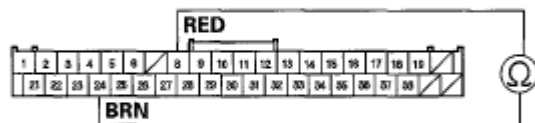
Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the front evaporator temperature sensor.

NO - Go to step 9.

9. Check for continuity between climate control unit connector A (40P) No. 8 and No. 24 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 59: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 8 And No. 24 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between the climate control unit and the front evaporator temperature sensor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1233 OR DTC INDICATOR J AND AUTO: AN OPEN IN THE DRIVER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1233 or J and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the driver's air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

Is the driver's air mix control motor OK?

YES - Go to step 7.

NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the driver's air mix control motor 7P connector.

40P	7P
No. 6	No. 7
No. 8	No. 5
No. 11	No. 3

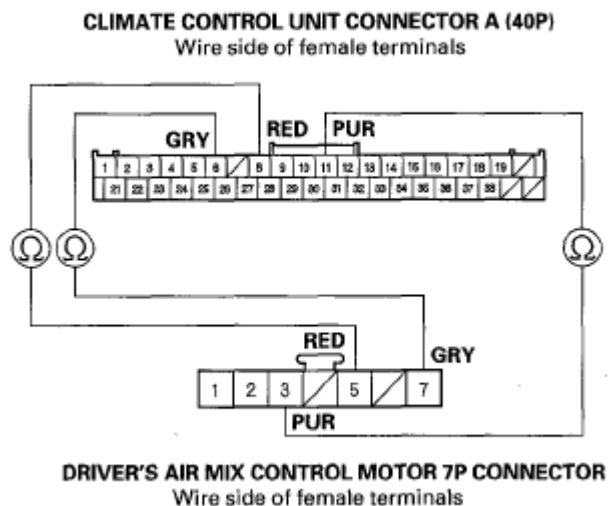


Fig. 60: Identifying Continuity Between Climate Control Unit A (40P) And Driver's Air Mix Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the driver's air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire(s) between the climate control unit and the driver's air mix control motor.

DTC B1234 OR DTC INDICATOR K AND AUTO: A SHORT IN THE DRIVER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).

3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1234 or K and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Check for DTCs.

Are these DTCs also present; B1237 or N and AUTO, and/or B1245 or G, and/or B2968 or A and WINDSHIELD DEFROST, and/or B2980 or B and WINDSHIELD DEFROST?

YES - Go to step 13.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

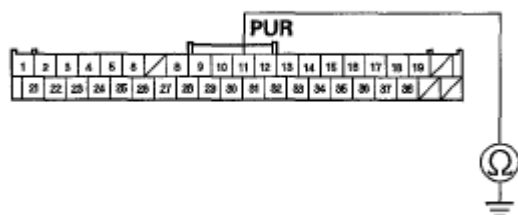
Is the driver's air mix control motor OK?

YES - Go to step 8.

NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

8. Disconnect the driver's air mix control motor 7P connector.
9. Disconnect climate control unit connector A (40P).
10. Check for continuity between body ground and climate control unit connector A (40P) No. 11 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 61: Identifying Continuity Between Body Ground And Climate Control Unit Connector A

(40P) No. 11 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

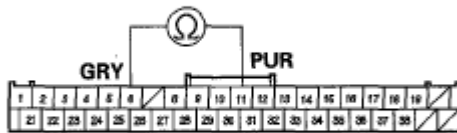
Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the driver's air mix control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) No. 6 and No. 11 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 62: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

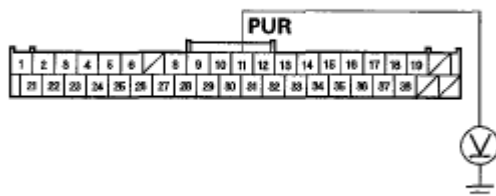
Is there continuity?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 11 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 63: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 11 Terminal And

Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire between the climate control unit and the driver's air mix control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

13. Turn the ignition switch to LOCK (0), and disconnect the climate control unit.
14. Disconnect these items:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor
15. Check for continuity between climate control unit connector A (40P) No. 6 terminal and body ground.

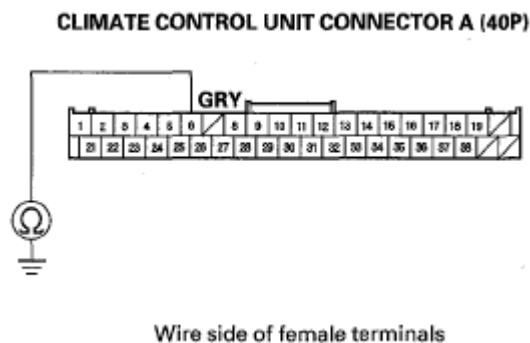


Fig. 64: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), and check the same terminal for voltage to body ground.

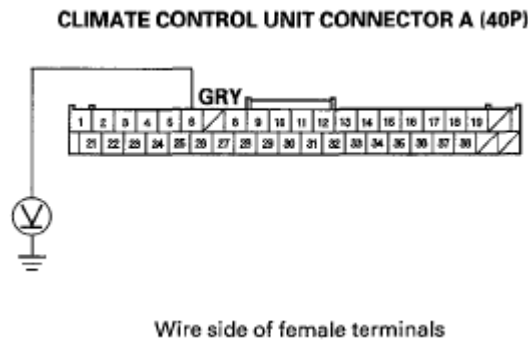


Fig. 65: Identifying Same Terminal For Voltage To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Reconnect the climate control unit connector (40P).
19. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 6 terminal and body ground.

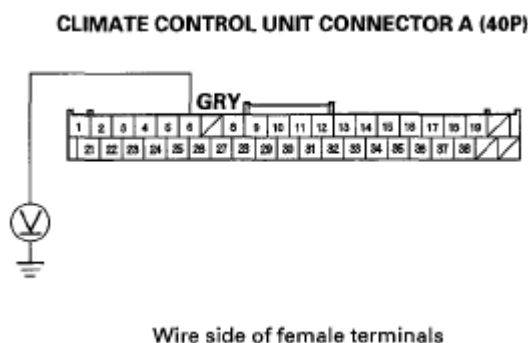


Fig. 66: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector A (40P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

20. While checking the same terminal for voltage to ground, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Rear air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

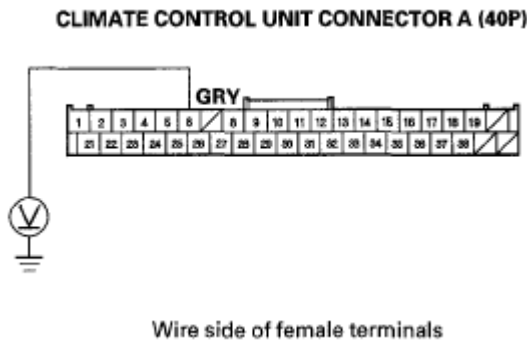


Fig. 67: Identifying Climate Control Unit Connector A (40P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the component that caused the voltage drop.

DTC B1235 OR DTC INDICATOR L AND AUTO: A PROBLEM IN THE DRIVER'S AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1235 or L and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the driver's air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

Is the driver's air mix control motor OK?

YES - Go to step 7.

NO - Replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**), or repair the driver's air mix control linkage or door.

7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the driver's air mix control motor 7P connector.

40P	7P
No. 12	No. 2
No. 13	No. 1

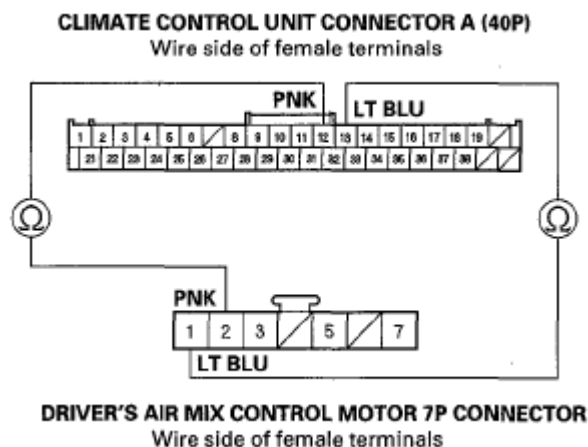


Fig. 68: Identifying Continuity Between Climate Control Unit A (40P) And Driver's Air Mix Control Motor 7P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the driver's air mix control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 12 and No. 13 terminals individually.

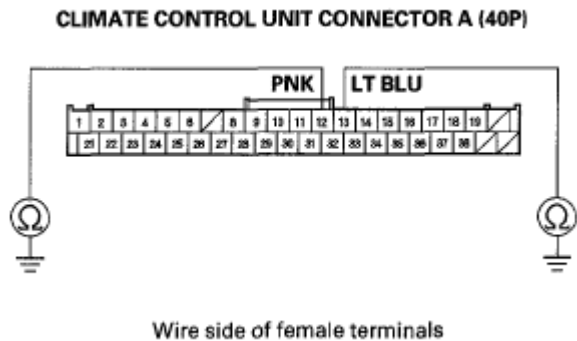


Fig. 69: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 12 And No. 13 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the driver's air mix control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1236 OR DTC INDICATOR M AND AUTO: AN OPEN IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1236 or M and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the passenger's air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?

YES - Go to step 7.

NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the passenger's air mix control motor 7P connector.

40P	7P
No. 6	No. 7
No. 8	No. 5
No. 30	No. 3

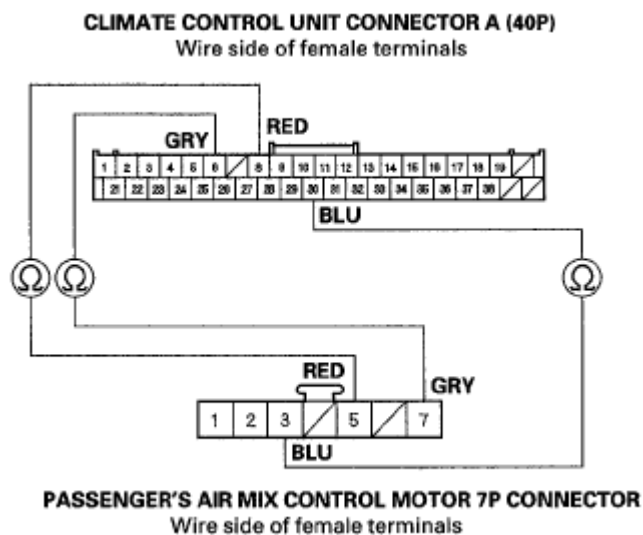


Fig. 70: Identifying Continuity Between Climate Control Unit A (40P) And Passenger's Air Mix Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the passenger's air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire(s) between the climate control unit and the passenger's air mix control motor.

CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1237 or N and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B1245 or G, and/or B2968 or A and WINDSHIELD DEFROST, and/or B2980 or B and WINDSHIELD DEFROST?

YES - Go to step 13.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

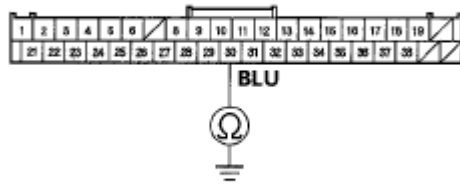
Is the passenger's air mix control motor OK?

YES - Go to step 8.

NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

8. Disconnect the passenger's air mix control motor 7P connector.
9. Disconnect climate control unit connector A (40P).
10. Check for continuity between body ground and climate control unit connector A (40P) No. 30 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 71: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 30 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

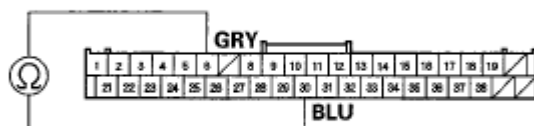
Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the passenger's air mix control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) No. 6 and No. 30 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 72: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 And No. 30 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

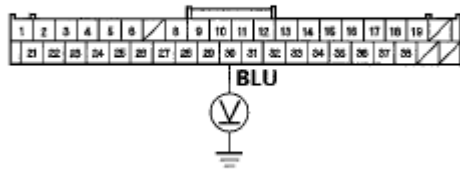
Is there continuity?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 30 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 73: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 30 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

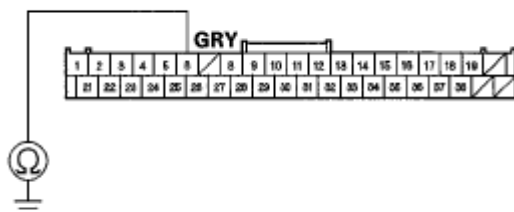
Is there any voltage?

YES - Repair short to power in the wire(s) between the climate control unit and the passenger's air mix control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

13. Turn the ignition switch to LOCK (0), and disconnect the climate control unit.
14. Disconnect these items:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor
15. Check for continuity between climate control unit connector A (40P) No. 6 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 74: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), and check the same terminal for voltage to body ground.

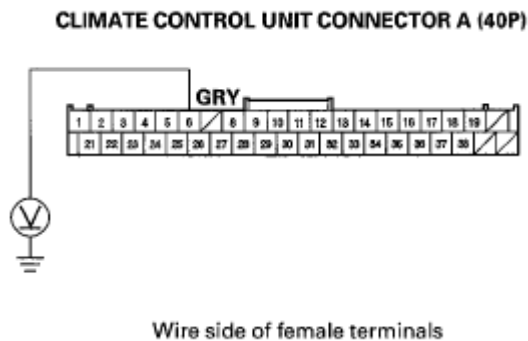


Fig. 75: Identifying Same Terminal For Voltage To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Reconnect the climate control unit connector (40P).
19. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 6 terminal and body ground.

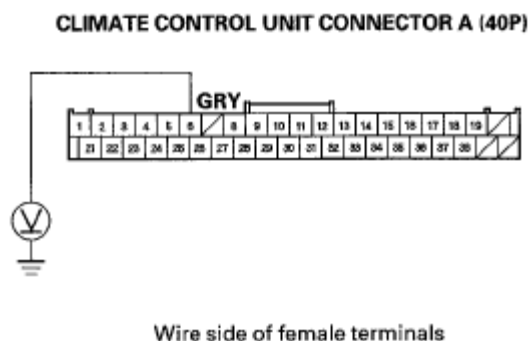


Fig. 76: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector A (40P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

20. While checking the same terminal for voltage to ground, reconnect these items individually and note the voltage reading each time:
- Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor

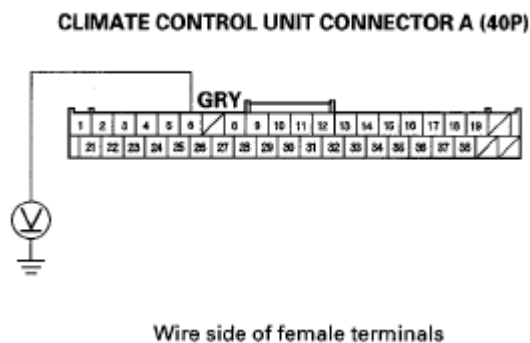


Fig. 77: Identifying Same Terminal For Voltage To Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the component that caused the voltage drop.

DTC B1238 OR DTC INDICATOR P AND AUTO: A PROBLEM IN THE PASSENGER'S AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).

4. Check for DTCs.

Is DTC B1238 or P and AUTO indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the passenger's air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?

YES - Go to step 7.

NO - Replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**), or repair the passenger's air mix control linkage or door.

7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the passenger's air mix control motor 7P connector.

40P	7P
No. 14	No. 2
No. 15	No. 1

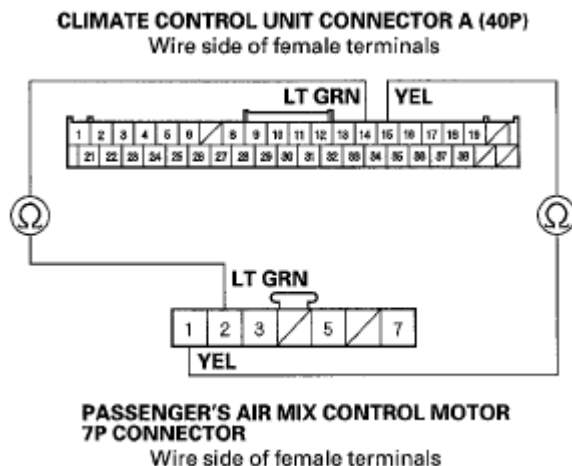


Fig. 78: Identifying Continuity Between Climate Control Unit A (40P) And Passenger's Air Mix Control Motor 7P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the passenger's air mix control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 14 and No. 15 terminals individually.

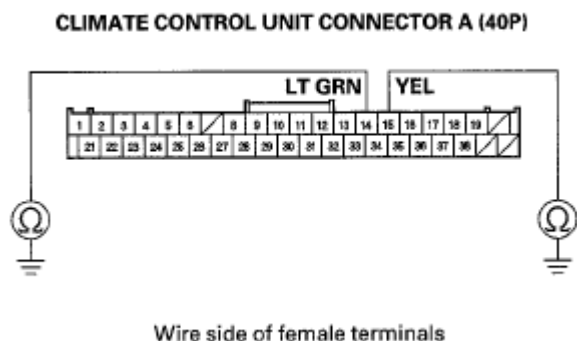


Fig. 79: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 14 And No. 15 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the passenger's air mix control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1239 OR DTC INDICATOR A: AN OPEN OR SHORT IN THE FRONT MODE CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1239 or A indicated?

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the front mode control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the front mode control motor (see **FRONT MODE CONTROL MOTOR TEST**).

Is the front mode control motor OK?

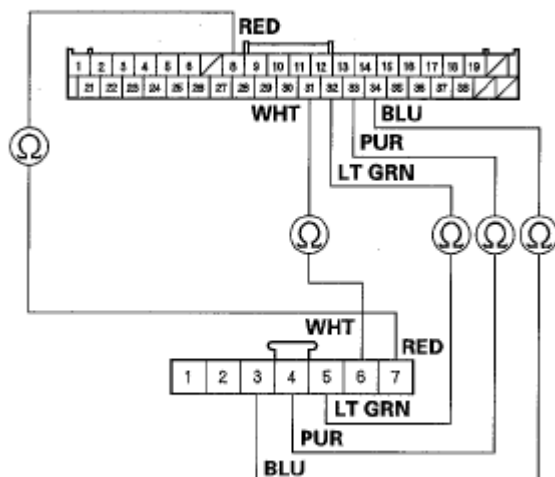
YES - Go to step 7.

NO - Replace the front mode control motor (see **FRONT MODE CONTROL MOTOR REPLACEMENT**).

7. Disconnect the front mode control motor 7P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the front mode control motor 7P connector.

40P	7P
No. 8	No. 7
No. 31	No. 6
No. 32	No. 5
No. 33	No. 4
No. 34	No. 3

CLIMATE CONTROL UNIT CONNECTOR A (40P)
Wire side of female terminals



FRONT MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Fig. 80: Identifying Continuity Between Climate Control Unit A (40P) And Front Mode Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

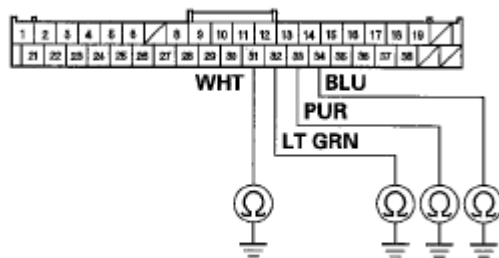
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the front mode control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 31,32, 33, and 34 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 81: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 31,32, 33, And 34 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the front mode control motor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) terminals as follows.

TERMINALS REFERENCE CHART

From terminal	To terminals
31	32, 33, 34
32	33, 34
33	34

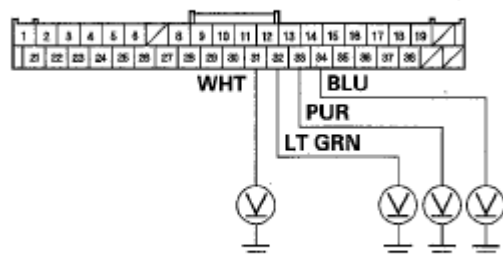
Is there continuity between any of the terminals?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 82: Identifying Same Terminals For Voltage To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s) between the climate control unit and the front mode control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Check for loose wires or poor connections at climate control unit connector A (40P) and at the front mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

DTC B1240 OR DTC INDICATOR B: A PROBLEM IN THE FRONT MODE CONTROL LINKAGE, DOORS, OR MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1240 or B indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the mode control motor circuit.

5. Turn the ignition switch to LOCK (0).

6. Test the front mode control motor (see **FRONT MODE CONTROL MOTOR TEST**).

Is the front mode control motor OK?

YES - Go to step 7.

NO - Replace the front mode control motor (see **FRONT MODE CONTROL MOTOR REPLACEMENT**), or repair the front mode control linkage or doors.

7. Disconnect the front mode control motor 7P connector.
 8. Disconnect climate control unit connector A (40P).
 9. Check for continuity between the following terminals of climate control unit connector A (40P) and the front mode control motor 7P connector.

40P	7P
No. 16	No. 2
No. 17	No. 1

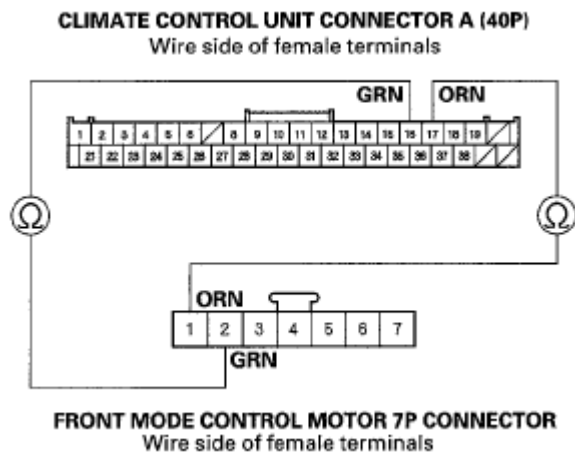


Fig. 83: Identifying Continuity Between Climate Control Unit A (40P) And Front Mode Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the front mode control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 16 and No. 17 terminals individually.

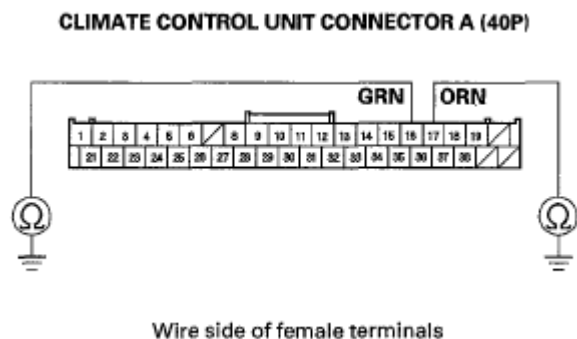


Fig. 84: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 16 And No. 17 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the front mode control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B1241 OR DTC INDICATOR C: A PROBLEM IN THE FRONT BLOWER MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1241 or C indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the front blower motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Check the No. 12 (40 A) fuse in the relay block, and the No. 30 (10 A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

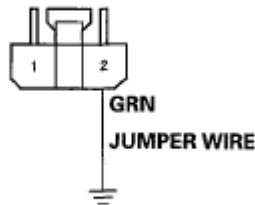
YES - Go to step 7.

NO - Replace the fuse(s), and recheck. If fuse(s) blow again, check for a short in the No. 12 (40 A) and

No. 30 (10 A) fuse(s) circuit.

7. Connect the front blower motor 2P connector No. 2 terminal to body ground with a jumper wire.

FRONT BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 85: Identifying Front Blower Motor 2P Connector No. 2 Terminal To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch to ON (II).

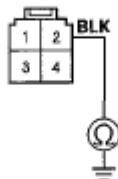
Does the front blower motor run at high speed?

YES - Go to step 9.

NO - Go to step 24.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the jumper wire.
11. Disconnect the front power transistor 4P connector.
12. Check for continuity between the front power transistor 4P connector No. 2 terminal and body ground.

FRONT POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

Fig. 86: Identifying Continuity Between Front Power Transistor 4P Connector No. 2 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

NO - Check for an open in the wire between the front power transistor and body ground. If the wire is OK, check for poor ground at G507 (see **GROUND TO COMPONENTS INDEX**).

13. Connect the front power transistor 4P connector No. 2 and No. 4 terminals with a jumper wire.

FRONT POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

Fig. 87: Identifying Front Power Transistor 4P Connector No. 2 And No. 4 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Turn the ignition switch to ON (II).

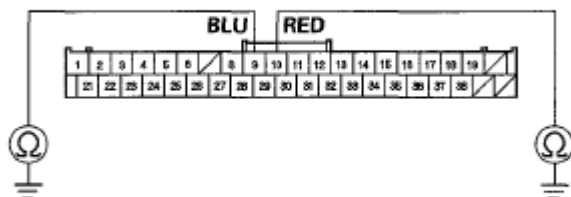
Does the front blower motor run at high speed?

YES - Go to step 15.

NO - Repair open in the GRN wire between the front power transistor and the front blower motor.

15. Turn the ignition switch to LOCK (0).
16. Disconnect the jumper wire.
17. Disconnect climate control unit connector A (40P).
18. Check for continuity between body ground and climate control unit connector A (40P) No. 9 and No. 10 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 88: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 9 And No. 10 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the front power transistor.

NO - Go to step 19.

19. Check for continuity between the following terminals of climate control unit connector A (40P) and the front power transistor 4P connector.

40P: 4P:

No. 9 No. 3

No. 10 No. 1

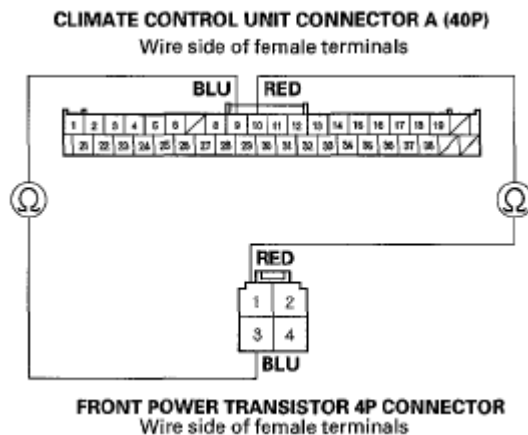


Fig. 89: Identifying Continuity Between Climate Control Unit A (40P) And Front Power Transistor 4P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire(s) between the climate control unit and the front power transistor.

20. Turn the ignition switch to ON (II).
21. Measure the voltage between body ground and climate control unit connector A (40P) No. 9 and No. 10 terminals individually.

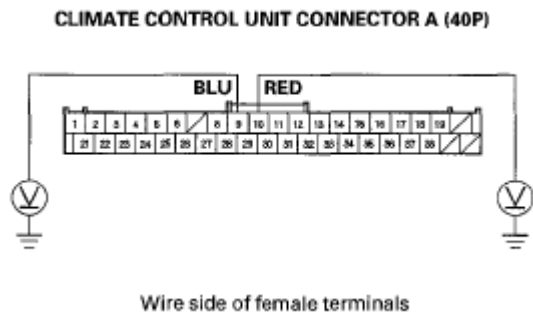


Fig. 90: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (40P) No. 9 And No. 10 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s).

NO - Go to step 22.

22. Reconnect climate control unit connector A (40P).
23. Test the front power transistor (see **FRONT POWER TRANSISTOR TEST**).

Is the front power transistor OK?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the front power transistor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Replace the front power transistor (see **FRONT POWER TRANSISTOR TEST**).

24. Disconnect the jumper wire.
25. Disconnect the front blower motor 2P connector.
26. Measure the voltage between the front blower motor 2P connector No. 1 terminal and body ground.

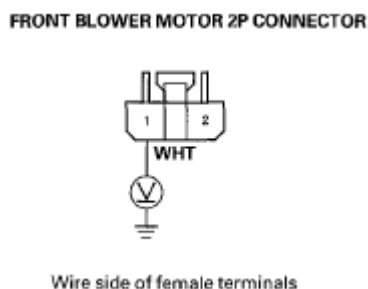


Fig. 91: Measuring Voltage Between Front Blower Motor 2P Connector No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the front blower motor (see **BLOWER UNIT COMPONENT REPLACEMENT**).

NO - Go to step 27.

27. Turn the ignition switch to LOCK (0).

28. Remove the front blower motor relay from the relay block, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 29.

NO - Replace the front blower motor relay.

29. Measure the voltage between the front blower motor relay 4P socket No. 1 terminal and body ground.

FRONT BLOWER MOTOR RELAY 4P SOCKET

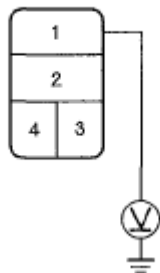


Fig. 92: Measuring Voltage Between Front Blower Motor Relay 4P Socket No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 30.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

30. Turn the ignition switch to ON (II).

31. Measure the voltage between the front blower motor relay 4P socket No. 4 terminal and body ground.

FRONT BLOWER MOTOR RELAY 4P SOCKET

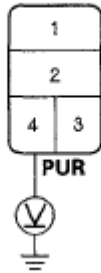


Fig. 93: Measuring Voltage Between Front Blower Motor Relay 4P Socket No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 32.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the front blower motor relay.

32. Turn the ignition switch to LOCK (0).
33. Check for continuity between the front blower motor relay 4P socket No. 3 terminal and body ground.

FRONT BLOWER MOTOR RELAY 4P SOCKET

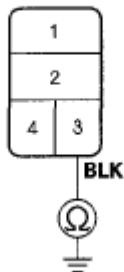


Fig. 94: Identifying Continuity Between Front Blower Motor Relay 4P Socket No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the WHT wire between the front blower motor relay and the blower motor.

NO - Check for an open in the wire between the front blower motor relay and body ground. If the wire is OK, check for poor ground at G202 (see **GROUND TO COMPONENTS INDEX**).

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1244 or F indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**).

Is the rear air mix control motor OK?

YES - Go to step 7.

NO - Replace the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**).

7. Disconnect the rear air mix control motor 7P connector.
8. Disconnect climate control unit connector A (40P) and B (14P).
9. Check for continuity between the following terminals of climate control unit connector A (40P), B (14P), and the rear air mix control motor 7P connector.

40P	7P
No. 6	No. 5
No. 8	No. 7
14P	7P
No. 5	No. 3

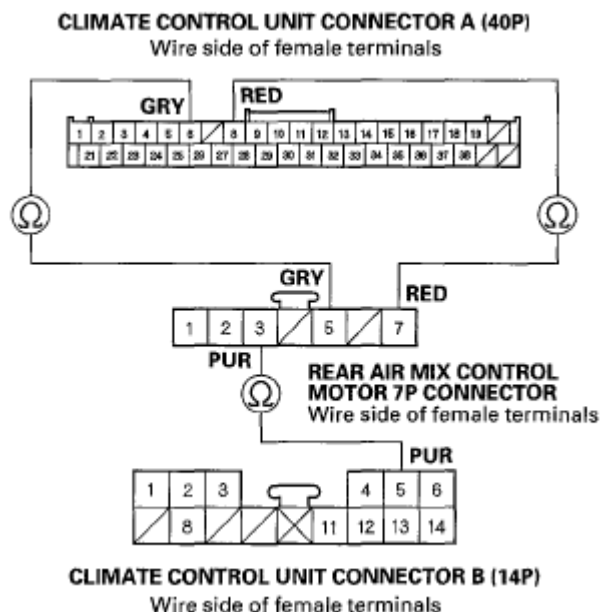


Fig. 95: Identifying Continuity Between Climate Control Unit A (40P), B (14P), And Rear Air Mix Control Motor 7P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P), B (14P), and at the rear air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire(s) between the climate control unit and the rear air mix control motor.

DTC B1245 OR DTC INDICATOR G: A SHORT IN THE REAR AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1245 or G indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B2968 or A and WINDSHIELD DEFROST, and/or B2980 or B and WINDSHIELD DEFROST?

YES - Go to step 13.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Test the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**).

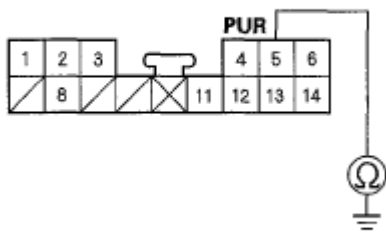
Is the rear air mix control motor OK?

YES - Go to step 8.

NO - Replace the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**).

8. Disconnect the rear air mix control motor 7P connector.
9. Disconnect climate control unit connector A (40P) and B (HP).
10. Check for continuity between climate control unit connector B (14P) No. 5 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 96: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the rear air mix control motor.

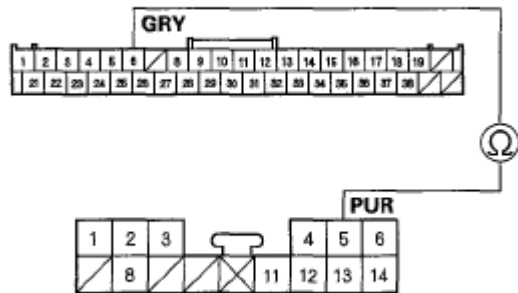
NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) No. 6 terminal and climate control

unit connector B (14P) No. 5 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals



CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals

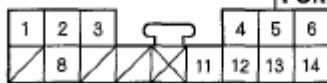


Fig. 97: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 And No. 5 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

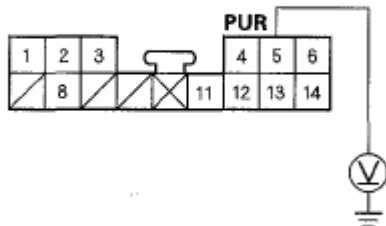
Is there continuity?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector B (14P) No. 5 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 98: Measuring Voltage Between Climate Control Unit Connector B (14P) No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire between the climate control unit and the rear air mix control motor. This short may also damage the climate control unit. Repair the short to power before replacing

the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

13. Turn the ignition switch to LOCK (0), and disconnect climate control unit connector A (40P).
14. Disconnect these items:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor
15. Check for continuity between climate control unit connector A (40P) No. 6 terminal and body ground.

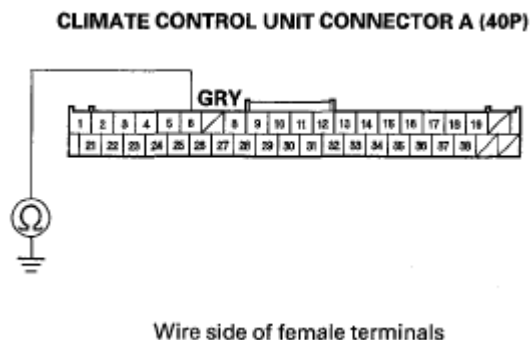


Fig. 99: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), and check the same terminal for voltage to body ground.

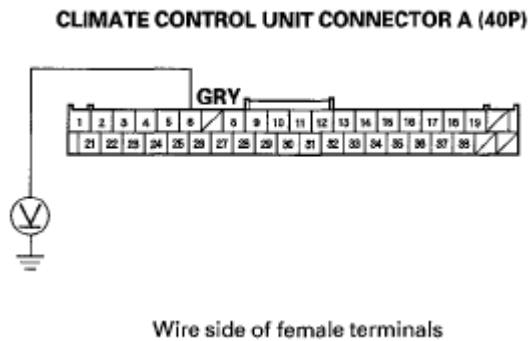


Fig. 100: Identifying Same Terminal For Voltage To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Reconnect the climate control unit connector (40P).
19. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 6 terminal and body ground.

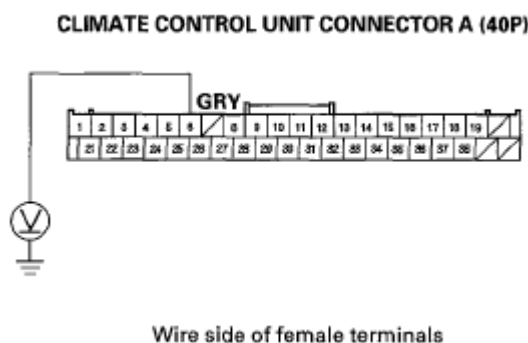


Fig. 101: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector A (40P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

20. While checking the same terminal for voltage to ground, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Rear air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

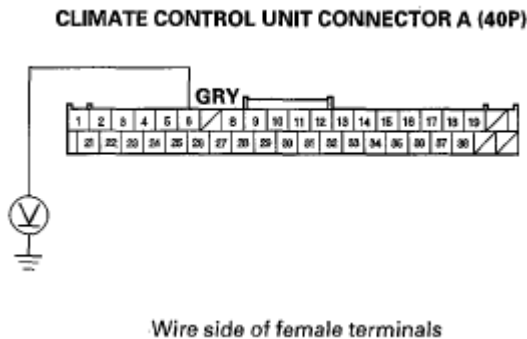


Fig. 102: Identifying Climate Control Unit Connector A (40P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the component that caused the voltage drop.

DTC B1246 OR DTC INDICATOR H: A PROBLEM IN THE REAR AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B1246 or H indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear air mix control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**).

Is the rear air mix control motor OK?

YES - Go to step 7.

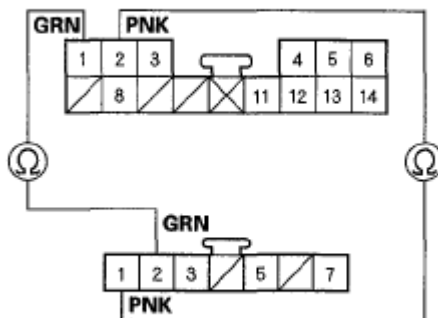
NO - Replace the rear air mix control motor (see **REAR AIR MIX CONTROL MOTOR TEST**), or repair the rear air mix control linkage or door.

7. Disconnect the rear air mix control motor 7P connector.
8. Disconnect climate control unit connector B (14P).
9. Check for continuity between the following terminals of climate control unit connector B (14P) and the rear air mix control motor 7P connector.

14P	7P
No. 1	No. 2
No. 2	No. 1

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals



REAR AIR MIX CONTROL MOTOR 7P CONNECTOR

Wire side of female terminals

Fig. 103: Identifying Continuity Between Climate Control Unit B (14P) And Rear Air Mix Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

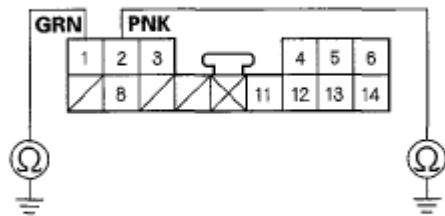
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the rear air mix control motor.

10. Check for continuity between body ground and climate control unit connector B (14P) No. 1 and No. 2 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 104: Identifying Continuity Between Body Ground And Climate Control Unit Connector B (14P) No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the rear air mix control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B2965: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH REAR CLIMATE CONTROL PANEL

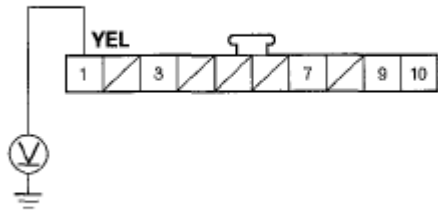
1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
4. Check for DTCs.

Is DTC B2965 indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear climate control panel and climate control unit circuit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the rear climate panel 10P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between the rear climate control panel 10P connector No. 1 terminal and body ground.

REAR CLIMATE CONTROL PANEL 10P CONNECTOR

Wire side of female terminals

Fig. 105: Measuring Voltage Between Rear Climate Control Panel 10P Connector No. 1 Terminal And Body Ground

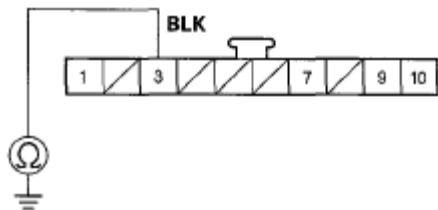
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the rear climate control panel.

9. Turn the ignition switch to LOCK (0).
10. Check for continuity between the rear climate control panel 10P connector No. 3 terminal and body ground.

REAR CLIMATE CONTROL PANEL 10P CONNECTOR

Wire side of female terminals

Fig. 106: Identifying Continuity Between Rear Climate Control Panel 10P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

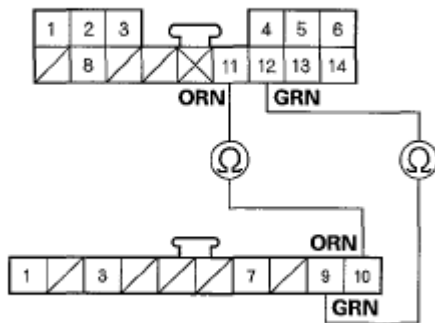
NO - Check for an open in the wire between the rear climate control panel and body ground. If the wire is OK, check for poor ground at G506 (see **GROUND TO COMPONENTS INDEX**).

11. Disconnect climate control unit connector B (14P).
12. Check for continuity between the following terminals of climate control unit connector B (14P) and the rear climate control panel 10P connector.

14P	10P
No. 11	No. 10
No. 12	No. 9

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals



REAR CLIMATE CONTROL PANEL 10P CONNECTOR

Wire side of female terminals

Fig. 107: Identifying Continuity Between Climate Control Unit B (14P) And Rear Climate Control Panel 10P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

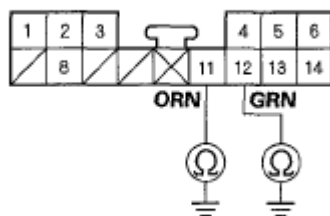
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire(s) between the climate control unit and the rear climate control panel.

13. Check for continuity between body ground and climate control unit connector B (14P) No. 11 and No. 12 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

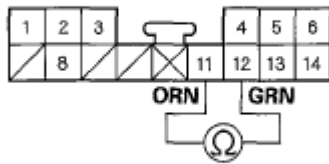
Fig. 108: Identifying Continuity Between Body Ground And Climate Control Unit Connector B

(14P) No. 11 And No. 12 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short to body ground in the wire(s) between the climate control unit and the rear climate control panel.**NO** - Go to step 14.

14. Check for continuity between climate control unit connector B (14P) No. 11 and No. 12 terminals.

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 109: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 11 And No. 12 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short in the wires between the climate control unit and the rear climate control panel.**NO** - Substitute a known-good rear climate control panel, and recheck. If the symptom/indication goes away, replace the original rear climate control panel.**DTC B2967 OR DTC INDICATOR A AND WINDSHIELD DEFROST: AN OPEN IN THE HUMIDITY SENSOR CIRCUIT**

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

*Is DTC B2967 or A and WINDSHIELD DEFROST indicated?***YES** - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the humidity sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

Is the humidity sensor OK?

YES - Go to step 7.

NO - Replace the humidity/in-car temperature sensor.

7. Disconnect the humidity/in-car temperature sensor 4P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the humidity/in-car temperature sensor 4P connector.

40P	4P
No. 6	No. 1
No. 8	No. 3
No. 27	No. 2

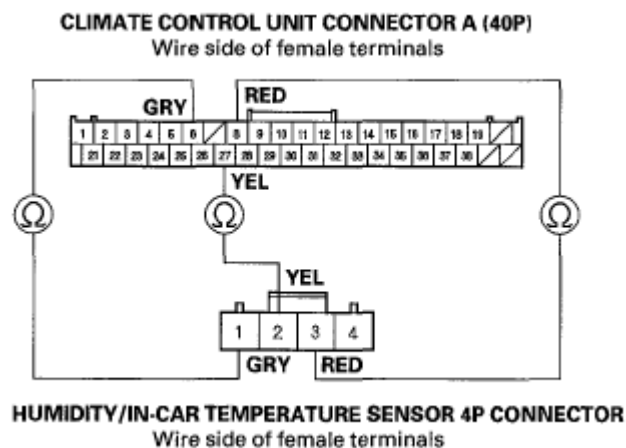


Fig. 110: Identifying Continuity Between Climate Control Unit A (40P) And Humidity/In-Car Temperature Sensor 4P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector A (40P) and at the humidity/in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate

control unit.

NO - Repair open in the wire(s) between the climate control unit and the humidity sensor.

DTC B2968 OR DTC INDICATOR A AND WINDSHIELD DEFROST: A SHORT IN THE HUMIDITY SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B2968 or A and WINDSHIELD DEFROST indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B1245 or G, and/or B2980 or B and WINDSHIELD DEFROST?

YES - Go to step 13.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**), and test it (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST**).

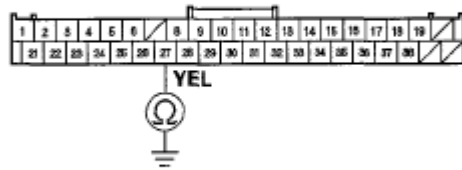
Is the humidity sensor OK?

YES - Go to step 8.

NO - Replace the humidity/in-car temperature sensor.

8. Disconnect the humidity/in-car temperature sensor 4P connector.
9. Disconnect climate control unit connector A (40P).
10. Check for continuity between body ground and climate control unit connector A (40P) No. 27 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 111: Checking Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 27 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the humidity sensor.

NO - Go to step 11.

11. Check for continuity between climate control unit connector A (40P) No. 6 and No. 27 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 112: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 And No. 27 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

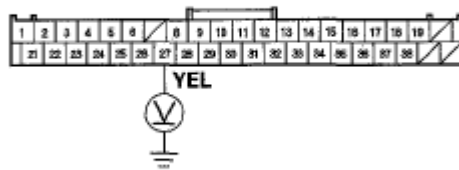
Is there continuity?

YES - Repair the short in the wires.

NO - Go to step 12.

12. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 27 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 113: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 27 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

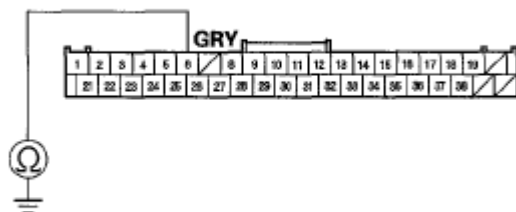
Is there any voltage?

YES - Repair short to power in the wire between the climate control unit and the humidity sensor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

13. Turn the ignition switch to LOCK (0), and disconnect climate control unit connector A (40P).
14. Disconnect these items:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor
15. Check for continuity between climate control unit connector A (40P) No. 6 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 114: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire.

NO - Go to step 16.

16. Turn the ignition switch to ON (II), and check the same terminal for voltage to body ground.

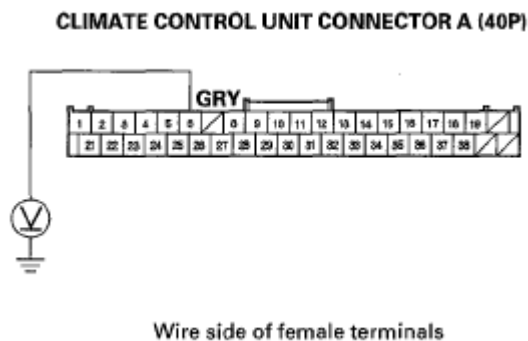


Fig. 115: Identifying Same Terminal For Voltage To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Reconnect the climate control unit connector (40P).
19. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 6 terminal and body ground.

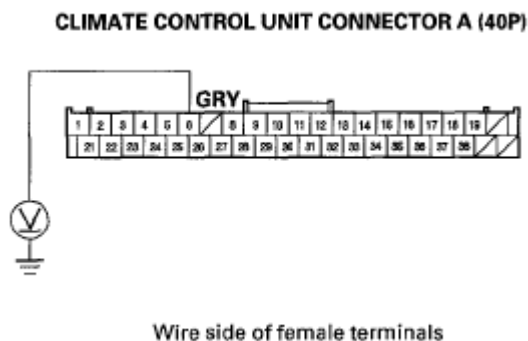


Fig. 116: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 20.

NO - Check for a loose wire or poor connection at climate control unit connector A (40P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

20. While checking the same terminal for voltage to ground, reconnect these items individually and note the voltage reading each time:
- Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor

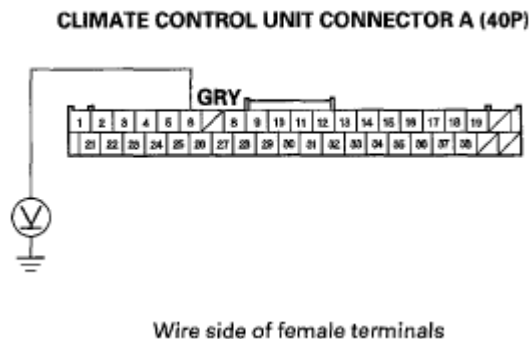


Fig. 117: Identifying Climate Control Unit Connector A (40P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the component that caused the voltage drop.

DTC B2969: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (WIPSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the B-can system diagnosis test mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).

3. Wait for 6 seconds or more.
4. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
5. Check the DTCs.

Is DTC B2969 indicated?

YES - Go to step 6.

NO - Intermittent failure, check for loose wire or poor connection on the climate control unit connector A (40P).

6. Check for DTCs with the HDS.

Are any of the following DTCs indicated; B1958, B1063, or B1156 indicated?

YES - Do the wiper/washer switch (combination switch control unit) input test (see **WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST**).

NO - Do the climate control unit troubleshooting (see **CLIMATE CONTROL UNIT TROUBLESHOOTING**).

DTC B2970: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH RELAY CONTROL MODULE (RM MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the B-can system diagnosis test mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Wait for 6 seconds or more.
4. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
5. Check the DTCs.

Is DTC B2970 indicated?

YES - Go to step 6.

NO - Intermittent failure, check for loose wire or poor connection on the climate control unit connector A (40P).

6. Check for DTCs with the HDS.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

Are any of the following DTCs indicated; B1005, B1959, B2162 or B1158 indicated?

YES - Do the relay control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the climate control unit troubleshooting (see **CLIMATE CONTROL UNIT TROUBLESHOOTING**).

DTC B2979 OR DTC INDICATOR B AND WINDSHIELD DEFROST: AN OPEN IN THE A/C PRESSURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B2979 or B and WINDSHIELD DEFROST indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the A/C pressure sensor circuit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the A/C pressure sensor 3P connector.
7. Disconnect climate control unit connector A (40P).
8. Check for continuity between the following terminals of climate control unit connector A (40P) and the A/C pressure sensor 3P connector.

40P	3P
No. 6	No. 1
No. 8	No. 3
No. 26	No. 2

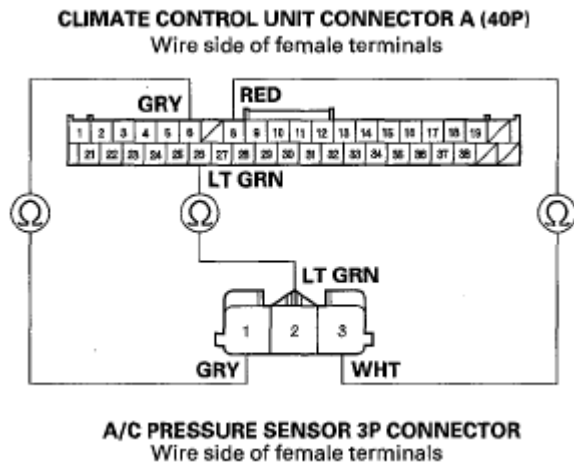


Fig. 118: Identifying Continuity Between Climate Control Unit A (40P) And A/C Pressure Sensor 3P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire(s) between the climate control unit and the A/C pressure sensor.

9. Reconnect climate control unit connector A (40P).
10. Turn the ignition switch to ON (II).
11. Measure the voltage between climate control unit connector A (40P) No. 6 and No. 8 terminals, and between climate control unit connector A (40P) No. 8 and No. 26 terminals.

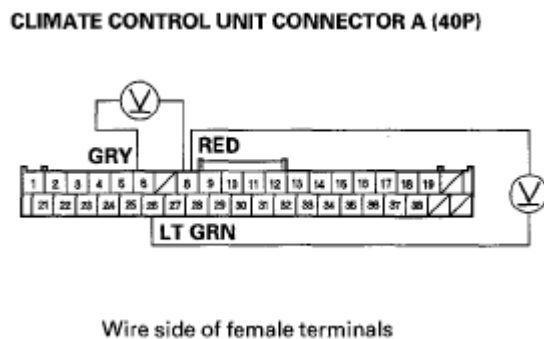


Fig. 119: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 And No. 8 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the A/C pressure sensor.

NO - Check for loose wires or poor connections at climate control unit connector A (40P) and at the A/C pressure sensor 3P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

DTC B2980 OR DTC INDICATOR B AND WINDSHIELD DEFROST: A SHORT IN THE A/C PRESSURE SENSOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check for DTCs.

Is DTC B2980 or B and WINDSHIELD DEFROST indicated?

YES - Go to step 5.

NO - Intermittent failure.

5. Check for DTCs.

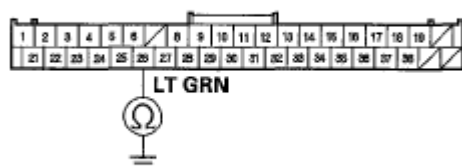
Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B1245 or G, and/or B2968 or A and WINDSHIELD DEFROST?

YES - Go to step 16.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the A/C pressure sensor 3P connector.
8. Disconnect climate control unit connector A (40P).
9. Check for continuity between body ground and climate control unit connector A (40P) No. 26 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

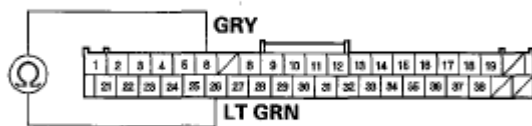
Fig. 120: Identifying Continuity Between Body Ground And Climate Control Unit Connector A

(40P) No. 26 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short to body ground in the wire between the climate control unit and the A/C pressure sensor.**NO** - Go to step 10.

10. Check for continuity between climate control unit connector A (40P) No. 6 and No. 26 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

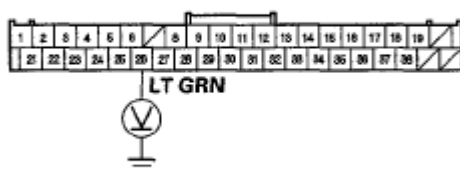
Wire side of female terminals

Fig. 121: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 And No. 26 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair the short in the wires.**NO** - Go to step 11.

11. Turn the ignition switch to ON (II), and measure the voltage between body ground and climate control unit connector A (40P) No. 26 terminal.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 122: Measuring Voltage Between Body Ground And Climate Control Unit Connector A (40P)

No. 26 Terminal

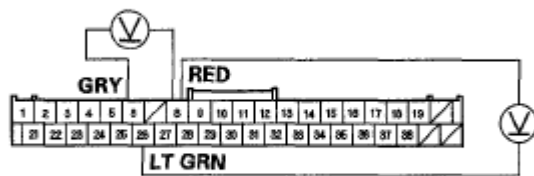
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire between the climate control unit and the A/C pressure sensor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Reconnect climate control unit connector A (40P).
14. Turn the ignition switch to ON (II).
15. Measure the voltage between climate control unit connector A (40P) No. 6 and No. 8 terminals, and between climate control unit connector A (40P) No. 8 and No. 26 terminals.

CLIMATE CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 123: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 And No. 8 And No. 26 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the A/C pressure sensor.

NO - Check for loose wires or poor connections at climate control unit connector A (40P) and at the A/C pressure sensor 3P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

16. Turn the ignition switch to LOCK (0), and disconnect climate control unit connector A (40P).
17. Disconnect these items:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor

- A/C pressure sensor

18. Check for continuity between climate control unit connector A (40P) No. 6 terminal and body ground.

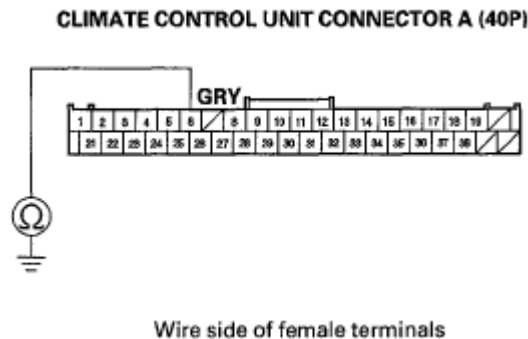


Fig. 124: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire.

NO - Go to step 19.

19. Turn the ignition switch to ON (II), and check the same terminal for voltage to body ground.

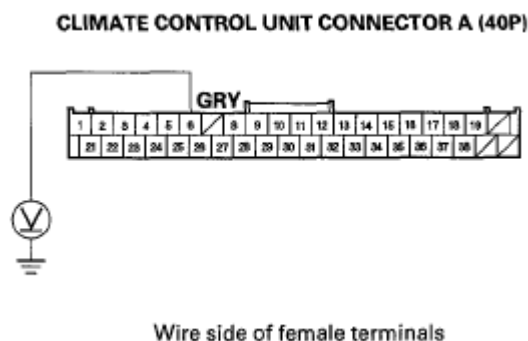


Fig. 125: Identifying Same Terminal For Voltage To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 20.

20. Turn the ignition switch to LOCK (0).

21. Reconnect climate control unit connector (40P).
22. Turn the ignition switch to ON (II), and measure the voltage between climate control unit connector A (40P) No. 6 terminal and body ground.

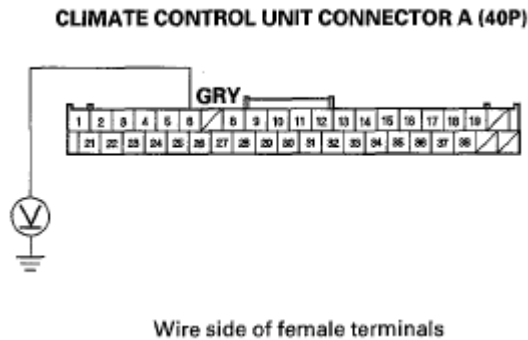


Fig. 126: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 23.

NO - Check for a loose wire or poor connection at climate control unit connector A (40P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/ indication goes away, replace the original climate control unit.

23. While checking the same terminal for voltage to ground, reconnect these items individually and note the voltage reading each time:
 - Driver's air mix control motor
 - Passenger's air mix control motor
 - Rear air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor

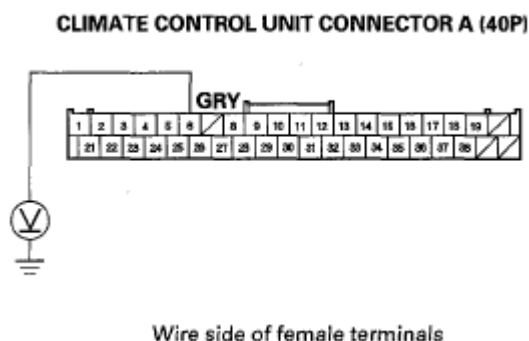


Fig. 127: Identifying Same Terminal For Voltage To Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the voltage remain at about 5 V?

YES - Substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Replace the component that caused the voltage drop.

DTC B2981: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH NAVIGATION UNIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
4. Check the DTCs.

Is DTC B2981 indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the navigation unit and climate control unit circuit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect navigation unit connector A (20P).
7. Disconnect climate control unit connector A (40P).
8. Check for continuity between the following terminals of climate control unit connector A (40P) and navigation unit connector A (20P).

40P	20P
No. 2	No. 4
No. 21	No. 15
No. 22	No. 14

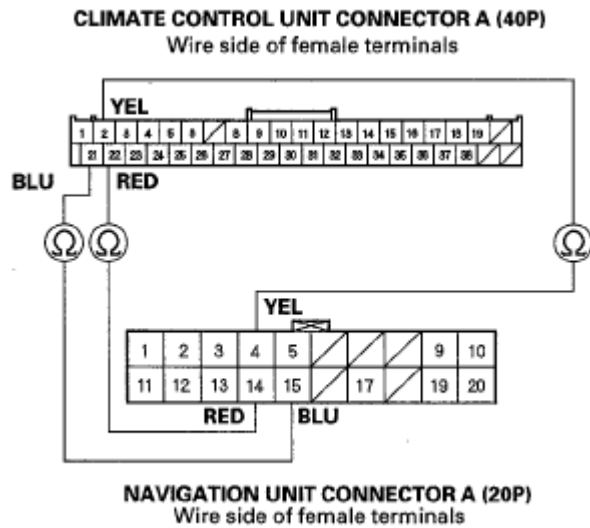


Fig. 128: Identifying Continuity Between Climate Control Unit A (40P) And Navigation Unit Connector A (20P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire(s) between the climate control unit and the navigation unit.

9. Check for continuity between body ground and navigation unit connector A (20P) No. 4,14, and 15 terminals individually.

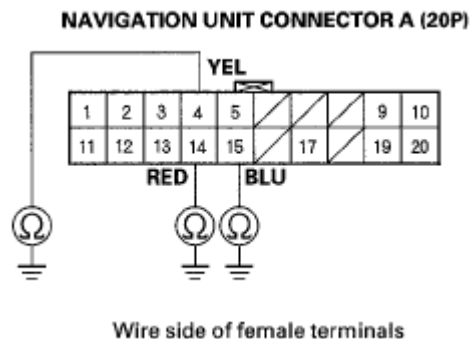


Fig. 129: Identifying Continuity Between Body Ground And Navigation Unit Connector A (20P) No. 4,14, And 15 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the navigation unit.

NO - Go to step 10.

10. Check for continuity between navigation unit connector A (20P) terminals as follows.

TERMINALS REFERENCE CHART

From terminal	To terminals
4	14, 15
14	15

Is there continuity between any of the terminals?

YES - Repair the short in the wires.

NO - Substitute a known-good navigation unit, and recheck. If the symptom goes away, replace the original navigation unit. If the symptom remains, substitute a known-good climate control unit and recheck. If the symptom goes away, replace the original climate control unit.

DTC B2983 OR DTC INDICATOR K: A PROBLEM IN THE RECIRCULATION CONTROL LINKAGE, DOOR, OR MOTOR CIRCUIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**) or climate control unit (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS**).
4. Check the DTCs.

Is DTC B2983 or K indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the recirculation control motor circuit.

5. Turn the ignition switch to LOCK (0).
6. Test the recirculation control motor (see **RECIRCULATION CONTROL MOTOR TEST**).

Is the recirculation control motor OK?

YES - Go to step 7.

NO - Replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**), or repair the recirculation control linkage or door.

7. Disconnect the recirculation control motor 7P connector.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

8. Disconnect climate control unit connector A (40P).
9. Check for continuity between the following terminals of climate control unit connector A (40P) and the recirculation control motor 7P connector.

40P	7P
No. 18	No. 1
No. 19	No. 2

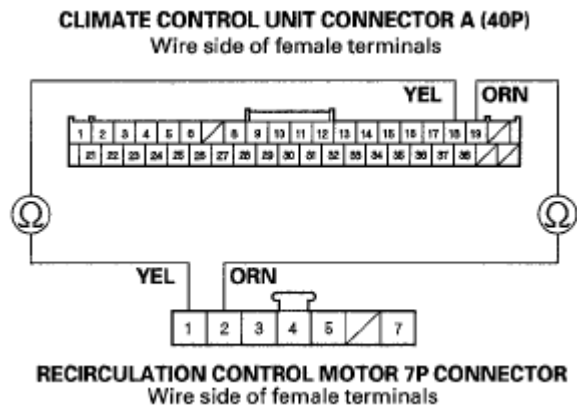


Fig. 130: Identifying Continuity Between Climate Control Unit A (40P) And Recirculation Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire(s) between the climate control unit and the recirculation control motor.

10. Check for continuity between body ground and climate control unit connector A (40P) No. 18 and No. 19 terminals individually.

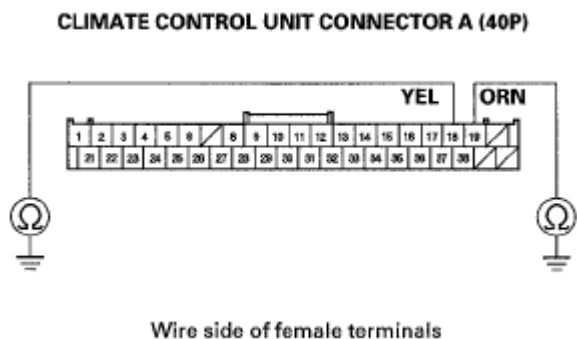


Fig. 131: Identifying Continuity Between Body Ground And Climate Control Unit Connector A (40P) No. 18 And No. 19 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the recirculation control motor.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.

DTC B2991: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH AUDIO UNIT

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II).
3. Do the self-diagnostic with the HDS (see **HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITH THE HDS**).
4. Check for DTCs.

Is DTC B2991 indicated?

YES - Go to step 5.

NO - Intermittent failure, check for loose wires or poor connections on the rear climate control panel and climate control unit circuit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect climate control unit connector B (14P).
7. Disconnect audio unit connector C (24P).
8. Check for continuity between climate control unit connector B (14P) No. 8 terminal and audio unit connector C (24P) No. 24 terminal.

CLIMATE CONTROL UNIT CONNECTOR B (14P)
Wire side of female terminals

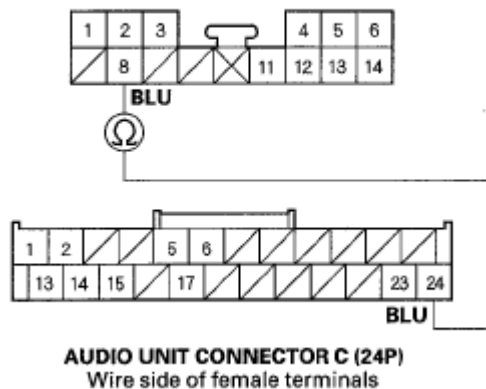


Fig. 132: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 8 And No. 24

Terminal

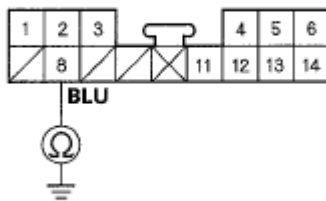
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the climate control unit and the audio unit.

9. Check for continuity between climate control unit connector B (14P) No. 8 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 133: Identifying Continuity Between Climate Control Unit Connector B (14P) No. 8 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the climate control unit and the audio unit.

NO - Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit. If the symptom/indication remains, substitute a known-good audio unit. If the symptom/indication goes away, replace the original audio unit.

REAR MODE CONTROL MOTOR CIRCUIT TROUBLESHOOTING

1. Check the No. 30(10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

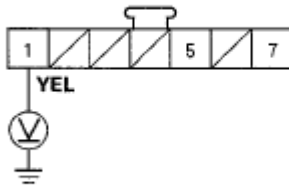
YES - Go to step 2.

NO - Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 30 (10 A) fuse circuit.

2. Disconnect the rear mode control motor 7P connector.
3. Turn the ignition switch to ON (II).

4. Measure the voltage between the rear mode control motor 7P connector No. 1 terminal and body ground.

REAR MODE CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

Fig. 134: Measuring Voltage Between Rear Mode Control Motor 7P Connector No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the rear mode control motor.

5. Turn the ignition switch to LOCK (0).
6. Test the rear mode control motor (see **REAR MODE CONTROL MOTOR TEST**).

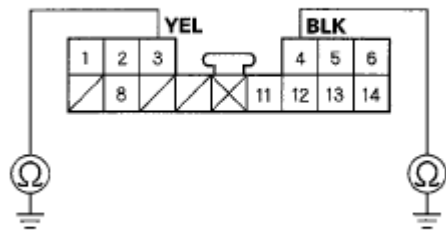
Is the rear mode control motor OK?

YES - Go to step 7.

NO - Replace the rear mode control motor (see **REAR MODE CONTROL MOTOR TEST**), or repair the rear mode control linkage or door.

7. Disconnect climate control unit connector B (14P).
8. Check for continuity between body ground and climate control unit connector B (14P) No. 3 and No. 4 terminals individually.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 135: Identifying Continuity Between Body Ground And Climate Control Unit Connector B (14P) No. 3 And No. 4 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

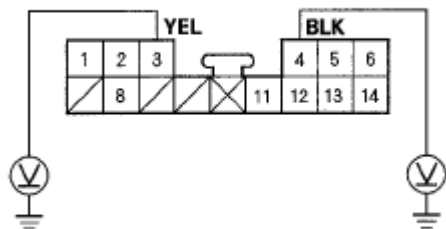
Is there continuity?

YES - Repair short to body ground in the wire(s) between the climate control unit and the rear mode control motor.

NO - Go to step 9.

9. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 136: Identifying Same Terminals For Voltage To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there any voltage?

YES - Repair short to power in the wire(s) between the climate control unit and the rear mode control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.

NO - Go to step 10.

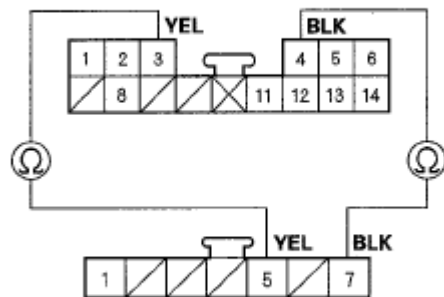
10. Turn the ignition switch to LOCK (0).
11. Check for continuity between the following terminals of climate control unit connector B (14P) and the

rear mode control motor 7P connector.

14P	7P
No. 3	No. 5
No. 4	No. 7

CLIMATE CONTROL UNIT CONNECTOR B (14P)

Wire side of female terminals



REAR MODE CONTROL MOTOR 7P CONNECTOR

Wire side of female terminals

Fig. 137: Identifying Continuity Between Climate Control Unit B (14P) And Rear Mode Control Motor 7P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at climate control unit connector B (14P) and at the rear mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/ indication goes away, replace the original climate control unit.

NO - Repair open in the wire(s) between the climate control unit and the rear mode control motor.

CLIMATE CONTROL UNIT TROUBLESHOOTING

1. Check the No. 30 (10 A) fuse in the under-dash fuse/ relay box.

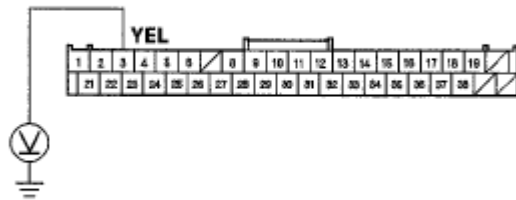
Is the fuse OK?

YES - Go to step 2.

NO - Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 30 (10 A) fuse circuit.

2. Turn the ignition switch to ON (II).
3. Measure the voltage between climate control unit connector A (40P) No. 3 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 138: Measuring Voltage Between Climate Control Unit Connector A (40P) No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

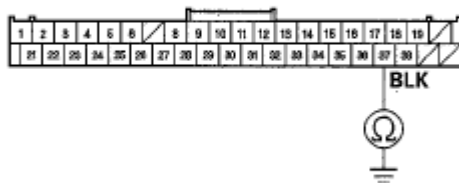
Is there battery voltage?

YES - Go to step 4.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the climate control unit.

4. Turn the ignition switch to LOCK (0).
5. Check for continuity between climate control unit connector A (40P) No. 37 terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 139: Identifying Continuity Between Climate Control Unit Connector A (40P) No. 37 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - Check for an open in the wire between the climate control unit and body ground. If the wire is OK, check for poor ground at G506 (see **GROUND TO COMPONENTS INDEX**).

6. Disconnect climate control unit connector A (40P).

7. Disconnect under-dash fuse/relay box connector X (39P).
8. Check for continuity between under-dash fuse/relay box connector X (39P) No. 27 terminal and climate control unit connector A (40P) No. 4 terminal.

UNDER-DASH FUSE/RELAY BOX CONNECTOR X (39P)
Wire side of female terminals

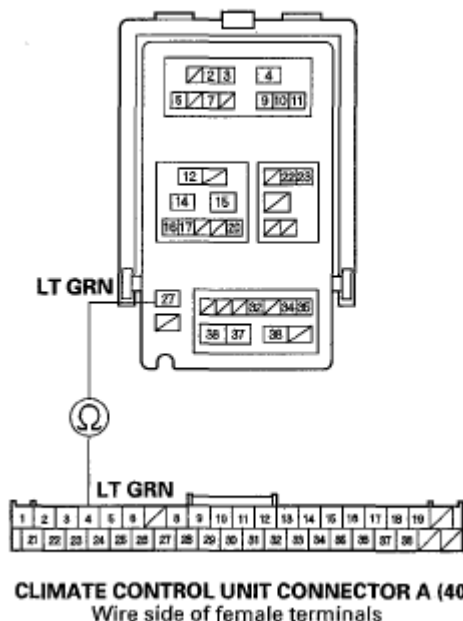


Fig. 140: Identifying Continuity Between Under-Dash Fuse/Relay Box Connector X (39P) No. 27 And No. 4 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires and poor connections at climate control unit connector A (40P). If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit.

NO - Repair open in the wire between the MICU and the climate control unit.

RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING

NOTE:

- Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.
- Before performing symptom troubleshooting, check for powertrain DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Check the No. 15 (30 A) fuse in the relay block, and the No. 30 (10 A) fuse in the under-dash fuse/relay

box.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 15 (30 A) and No. 30 (10 A) fuse(s) circuit.

2. Remove the A/C condenser fan relay from the relay block, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 3.

NO - Replace the A/C condenser fan relay.

3. Connect the HDS to the DLC.
4. Turn the ignition switch to ON (II).
5. Turn on the A/C.
6. Check the FAN LOW CTRL in the PGM-FI Data List with the HDS.

Is the FAN LOW CTRL on?

YES - Go to step 7.

NO - Substitute a known-good PCM (see **SUBSTITUTING THE PCM**), and retest. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

7. Measure the voltage between the A/C condenser fan relay 4P socket No. 1 terminal and body ground.

A/C CONDENSER FAN RELAY 4P SOCKET

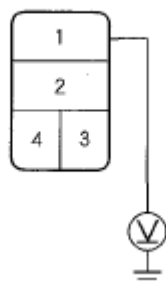


Fig. 141: Measuring Voltage Between A/C Condenser Fan Relay 4P Socket No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 8.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

8. Connect the A/C condenser fan relay 4P socket No. 1 and No. 2 terminals with a jumper wire.

A/C CONDENSER FAN RELAY 4P SOCKET

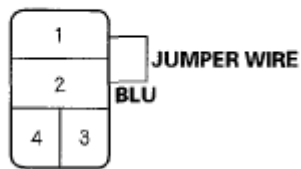


Fig. 142: Identifying A/C Condenser Fan Relay 4P Socket No. 1 And No. 2 Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do the A/C condenser and radiator fans run on low?

YES - Go to step 9.

NO - Go to step 18.

9. Disconnect the jumper wire.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between the A/C condenser fan relay 4P socket No. 4 terminal and body ground.

A/C CONDENSER FAN RELAY 4P SOCKET

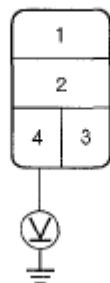


Fig. 143: Measuring Voltage Between A/C Condenser Fan Relay 4P Socket No. 4 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 12.

NO - Go to step 36.

12. Turn the ignition switch to LOCK (0).
13. Reinstall the A/C condenser fan relay.
14. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the powertrain control module (PCM) from damage.

15. Disconnect PCM connector A (49P).
16. Connect PCM connector A (49P) No. 4 terminal to body ground with a jumper wire.

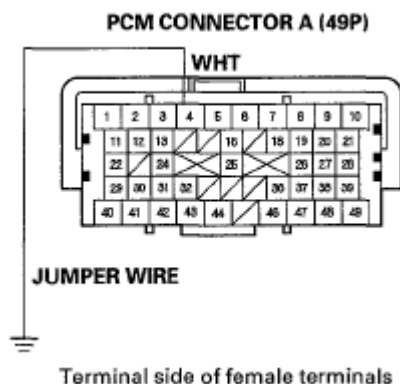


Fig. 144: Identifying PCM Connector A (49P) No. 4 Terminal To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Turn the ignition switch to ON (II).

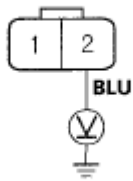
Do the A/C condenser and radiator fans run on low?

YES - Check for loose wires or poor connections at PCM connector A (49P) terminal No. 4. If the connections are good, substitute a known-good PCM, and recheck. If the symptom/indication goes away, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the A/C condenser fan relay and the PCM.

18. Disconnect the jumper wire.
19. Reinstall the A/C condenser fan relay.
20. Disconnect the A/C condenser fan 2P connector.
21. Turn the ignition switch to ON (II), then set the A/C button and fan control button ON.
22. Measure the voltage between the A/C condenser fan 2P connector No. 2 terminal and body ground.

A/C CONDENSER FAN 2P CONNECTOR



Wire side of female terminals

Fig. 145: Measuring Voltage Between A/C Condenser Fan 2P Connector No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

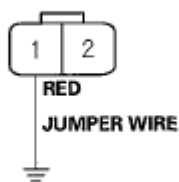
Is there battery voltage?

YES - Go to step 23.

NO - Repair open in the wire between the A/C condenser fan relay and the A/C condenser fan.

23. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0).
24. Reconnect the A/C condenser fan 2P connector.
25. Connect the A/C condenser fan 2P connector No. 1 terminal to body ground with a jumper wire.

A/C CONDENSER FAN 2P CONNECTOR



Wire side of female terminals

Fig. 146: Identifying A/C Condenser Fan 2P Connector No. 1 Terminal To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Turn the ignition switch to ON (II), then set the A/C button and fan control button ON.

Does the A/C condenser fan run at high speed?

YES - Go to step 27.

NO - Replace the A/C condenser fan motor (see **RADIATOR AND FAN REPLACEMENT**).

27. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0).
28. Disconnect the jumper wire.

29. Remove the fan control relay from the relay block, and test it (see **RELAY CONTROL MODULE TEST**).

Is the relay OK?

YES - Go to step 30.

NO - Replace the fan control relay.

30. Turn the ignition switch to ON (II), then set the A/C button and fan control button ON.
31. Measure the voltage between the fan control relay 5P socket No. 1 terminal and body ground.

FAN CONTROL RELAY 5P SOCKET

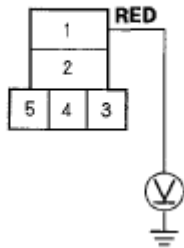


Fig. 147: Measuring Voltage Between Fan Control Relay 5P Socket No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

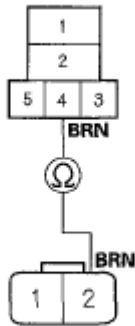
Is there battery voltage?

YES - Go to step 32.

NO - Repair open in the wire between the A/C condenser fan and the fan control relay.

32. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0).
33. Disconnect the radiator fan 2P connector.
34. Check for continuity between the fan control relay 5P socket No. 4 terminal and the radiator fan 2P connector No. 2 terminal.

FAN CONTROL RELAY 5P SOCKET



RADIATOR FAN 2P CONNECTOR
Wire side of female terminals

Fig. 148: Identifying Continuity Between Fan Control Relay 5P Socket No. 4 And No. 2 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

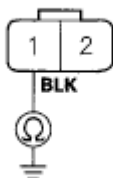
Is there continuity?

YES - Go to step 35.

NO - Repair open in the wire between the fan control relay and the radiator fan.

35. Check for continuity between the radiator fan 2P connector No. 1 terminal and body ground.

RADIATOR FAN 2P CONNECTOR



Wire side of female terminals

Fig. 149: Identifying Continuity Between Radiator Fan 2P Connector No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the radiator fan motor (see **RADIATOR AND FAN REPLACEMENT**).

NO - Check for an open in the wire between the radiator fan and body ground. If the wire is OK, check for poor ground at G301 (see **GROUND TO COMPONENTS INDEX**).

36. Turn the ignition switch to LOCK (0).
37. Remove A/C diode A from the relay block.

38. Using the diode setting on a DVOM, check for current flow in both directions between the A/C diode A No. 1 and No. 2 terminals.

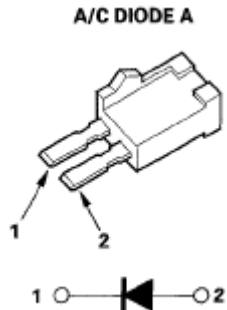


Fig. 150: Identifying Current Flow In Both Directions Between A/C Diode No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there current flow in only one direction?

YES - Go to step 39.

NO - Replace A/C diode A.

39. Turn the ignition switch to ON (II).
40. Measure the voltage between A/C diode A 2P socket No. 2 terminal and body ground.

A/C DIODE A 2P SOCKET

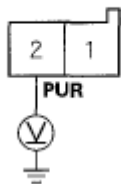


Fig. 151: Measuring Voltage Between A/C Diode 2P Socket No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and A/C diode A.

A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING

NOTE:

- Do not use this troubleshooting procedure if the radiator fan and/or the A/C compressor is inoperative. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.
- Before doing any symptom troubleshooting, check for powertrain DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Remove the fan control relay from the relay block, and test it (see **RELAY CONTROL MODULE TEST**).

Is the relay OK?

YES - Go to step 2.

NO - Replace the fan control relay.

2. Turn the ignition switch to ON (II).
3. Measure the voltage between the fan control relay 5P socket No. 5 terminal and body ground.

FAN CONTROL RELAY 5P SOCKET

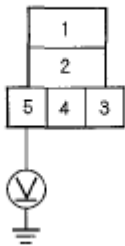


Fig. 152: Measuring Voltage Between Fan Control Relay 5P Socket No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 4.

NO - Replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

4. Turn the ignition switch to LOCK (0).
5. Check for continuity between the fan control relay 5P socket No. 2 terminal and body ground.

FAN CONTROL RELAY 5P SOCKET

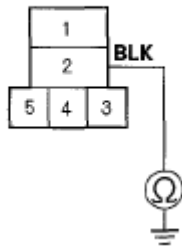


Fig. 153: Identifying Continuity Between Fan Control Relay 5P Socket No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - Check for an open in the wire between the fan control relay and body ground. If the wire is OK, check for poor ground at G202 (see **GROUND TO COMPONENTS INDEX**).

6. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the powertrain control module (PCM) from damage.

7. Disconnect PCM connector A (49P).
8. Check for continuity between the fan control relay 5P socket No. 3 terminal and PCM connector A (49P) No. 5 terminal.

FAN CONTROL RELAY 5P SOCKET

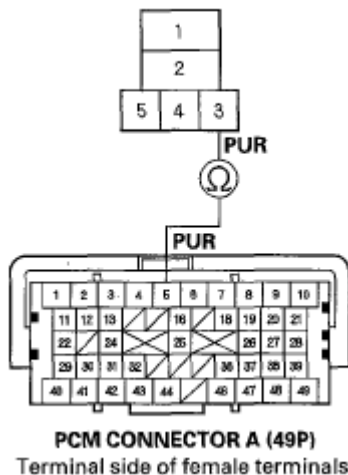


Fig. 154: Identifying Continuity Between Fan Control Relay 5P Socket No. 3 And No. 5 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose wires or poor connections at PCM connector A (49P) No. 5 terminal. If the connections are good, substitute a known-good PCM, and recheck. If the symptom/indication goes away, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the fan control relay and the PCM.

A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING

NOTE:

- It is normal for the A/C compressor to turn off under certain conditions, such as low idle, high engine coolant temperature, hard acceleration, or high/low pressure.
- Do not use this troubleshooting procedure if the fans are also inoperative with the A/C on. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.
- Before doing any symptom troubleshooting, check for powertrain DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Check the No. 17 (7.5 A) fuse in the relay block, and the No. 30 (10 A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse(s) and recheck. If the fuse(s) blow again, check for a short in the No. 17 (7.5 A) and No. 30 (10 A) fuse(s) circuit.

2. Connect the HDS to the DLC.
3. Start the engine.
4. Turn on the A/C.
5. Check the A/C CLUTCH in the PGM-FI Data List with the HDS.

Is the A/C CLUTCH on?

YES - Go to step 7.

NO - Go to step 6.

6. Using the HDS, confirm the following values in the PGM-FI Data List at idle.

A/C SWITCH REFERENCE CHART

A/C SWITCH	ON
A/C PRESSURE SENSOR	196-3, 138 kPa (2-32 kgf/cm ²) [28-455 psi]

Are all the values within specifications?

YES - Go to step 7.

NO - Troubleshoot the value that is not within the specifications.

7. Remove the A/C compressor clutch relay from the relay block, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES - Go to step 8.

NO - Replace the A/C compressor clutch relay.

8. Measure the voltage between the A/C compressor clutch relay 4P socket No. 1 terminal and body ground.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET

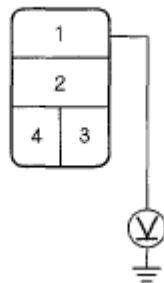


Fig. 155: Measuring Voltage Between A/C Compressor Clutch Relay 4P Socket No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Replace the relay block (see **REMOVAL AND INSTALLATION**).

9. Connect the A/C compressor clutch relay 4P socket No. 1 and No. 2 terminals with a jumper wire.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET

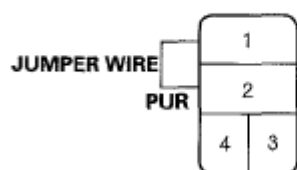


Fig. 156: Identifying A/C Compressor Clutch Relay 4P Socket No. 1 And No. 2 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the A/C compressor clutch click?

YES - Go to step 10.

NO - Go to step 19.

10. Disconnect the jumper wire.
11. Turn the ignition switch to ON (II).
12. Measure the voltage between the A/C compressor clutch relay 4P socket No. 4 terminal and body ground.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET

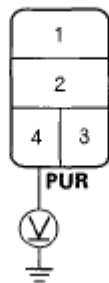


Fig. 157: Measuring Voltage Between A/C Compressor Clutch Relay 4P Socket No. 4 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Repair open in the wire between the No. 30 (10 A) fuse in the under-dash fuse/relay box and the A/C compressor clutch relay.

13. Turn the ignition switch to LOCK (0).
14. Reinstall the A/C compressor clutch relay.
15. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the powertrain control module (PCM) from damage.

16. Disconnect PCM connector A (49P).
17. Connect PCM connector A (49P) No. 13 terminal to body ground with a jumper wire.

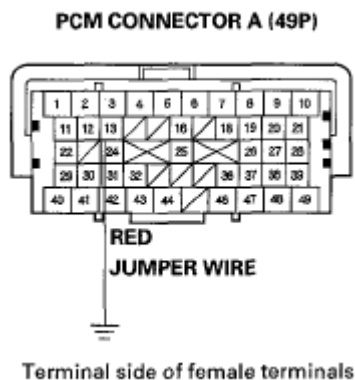


Fig. 158: Identifying PCM Connector A (49P) No. 13 Terminal To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Turn the ignition switch to ON (II).

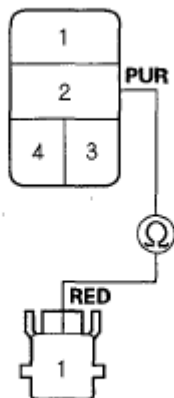
Does the A/C compressor click?

YES - Check for loose wires or poor connections at PCM connector A (49P). If the connections are good, check the PCM grounds. If the grounds are good, substitute a known-good PCM, and recheck. If the symptom/indication goes away, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the A/C compressor clutch relay and the PCM.

19. Disconnect the jumper wire.
20. Disconnect the A/C compressor clutch 1P connector.
21. Check for continuity between the A/C compressor clutch relay 4P socket No. 2 terminal and the A/C compressor clutch 1P connector No. 1 terminal.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET



A/C COMPRESSOR CLUTCH 1P CONNECTOR
 Wire side of female terminal

Fig. 159: Identifying Continuity Between A/C Compressor Clutch Relay 4P Socket No. 2 And No. 1

Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check the A/C compressor clutch clearance, and the compressor clutch field coil (see **A/C COMPRESSOR CLUTCH CHECK**). Repair as needed.

NO - Repair open in the wire between the A/C compressor clutch relay and the A/C compressor clutch.

HUMIDITY/IN-CAR TEMPERATURE SENSOR TEST

HUMIDITY SENSOR TEST

1. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
2. Connect the humidity/in-car temperature sensor 4P connector.
3. Turn the ignition switch to ON (II). Measure the voltage between the terminals with the (+) probe on the No. 2 terminal and the (-) probe on the No. 3 terminal with the connector connected.

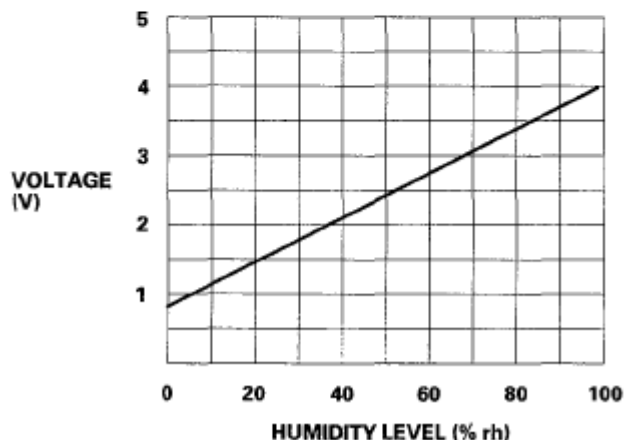
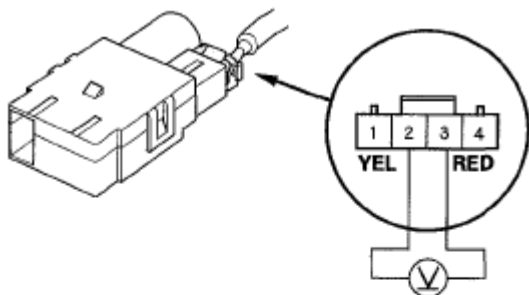


Fig. 160: Measuring Voltage Between Terminals With (+) Probe On No. 2 And (-) Probe On No. 3 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the voltage is not as specified, replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

IN-CAR TEMPERATURE SENSOR TEST

1. Remove the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
2. Connect the humidity/in-car temperature sensor 4P connector.
3. Test the humidity/in-car temperature sensor while holding it in front of the dashboard center vent.
 - Measure the resistance with the system set to Max Cool.
 - Measure the resistance with the system set to Max Hot.
4. Compare the resistance reading between the No. 4 and No. 3 terminals of the humidity/in-car temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

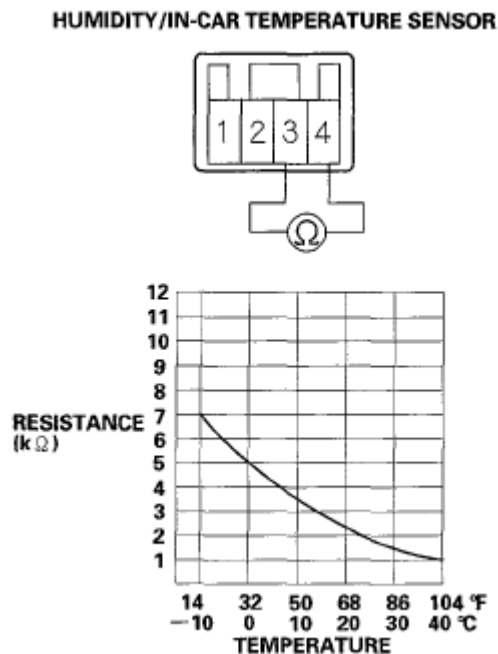


Fig. 161: Resistance To Temperature Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the resistance is not as specified, replace the humidity/in-car temperature sensor (see **HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT**).

HUMIDITY/IN-CAR TEMPERATURE SENSOR REPLACEMENT

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).

2. Remove the humidity/in-car temperature sensor (A) from the driver's dashboard lower cover (B).

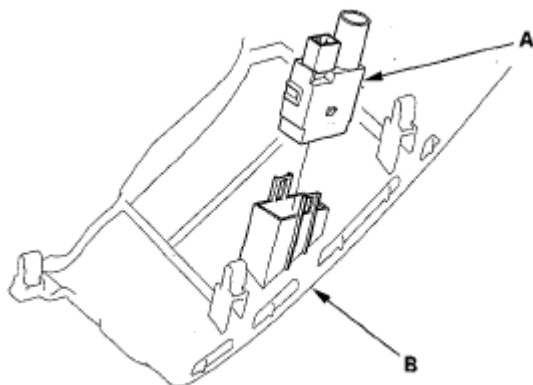


Fig. 162: Identifying Humidity/In-Car Temperature Sensor And Driver's Dashboard Lower Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the sensor in the reverse order of removal. Be sure to connect the air hose securely.

OUTSIDE AIR TEMPERATURE SENSOR TEST

1. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).
2. Dip the sensor in ice water, and measure the resistance. Then pour warm water on the sensor, and check for a change in resistance.
3. Compare the resistance reading between the No. 1 and No. 2 terminals of the outside air temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

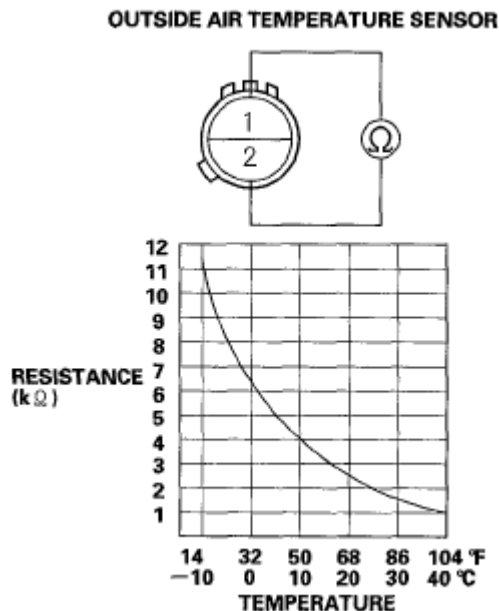


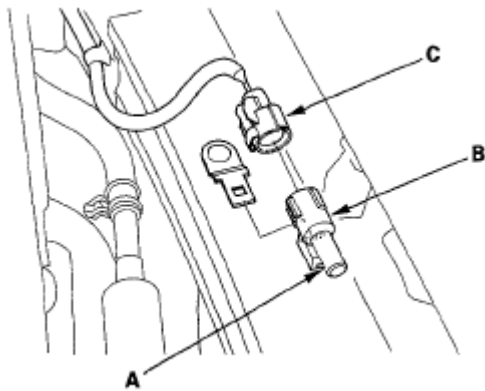
Fig. 163: Resistance To Temperature Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the resistance is not as specified, replace the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).

OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT

1. Remove the bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. Lift the tab (A) to release the lock, then remove the outside air temperature sensor (B) from the back of the front bumper. Disconnect the 2P connector (C) from the outside air temperature sensor.

**Fig. 164: Identifying Tab,Air Temperature Sensor And 2P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the sensor in the reverse order of removal.

SUNLIGHT SENSOR TEST

1. Remove the sunlight sensor from the dashboard (see **SUNLIGHT SENSOR REPLACEMENT**).
2. Connect the sunlight sensor 5P connector.
3. Turn the ignition switch to ON (II). Measure the voltage between the terminals with the (+) probe on the No. 4 terminal and the (-) probe on the No. 2 terminal with the connector connected.

NOTE: The voltage readings will not change under the light of a flashlight or a fluorescent lamp.

Voltage should be:

- 3.6-3.7 V or more with the sensor out of direct sunlight.
- 3.3-3.5 V or less with the sensor in direct sunlight.

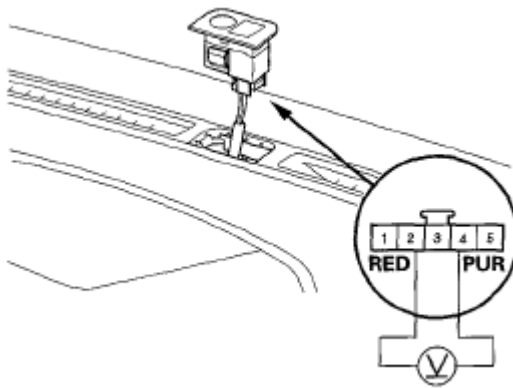


Fig. 165: Measuring Voltage Between Terminals With (+) Probe On No. 4 And (-) Probe On No. 2 Terminal With Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the voltage is not as specified, replace the sunlight sensor (see **SUNLIGHT SENSOR REPLACEMENT**).

SUNLIGHT SENSOR REPLACEMENT

1. Remove the sunlight sensor (A) from the dashboard, then disconnect the 5P connector (B). Be careful not to damage the sensor and the dashboard.

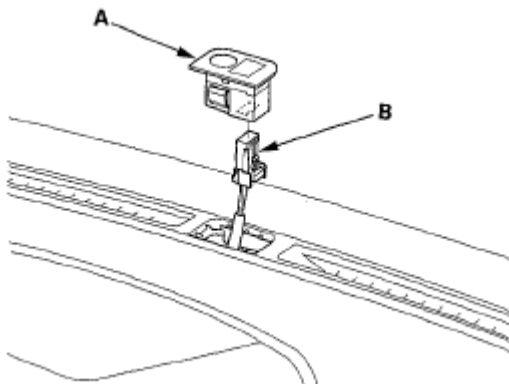


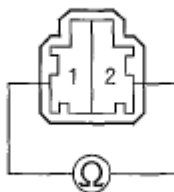
Fig. 166: Identifying Sunlight Sensor And 5P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the sensor in the reverse order of removal.

FRONT EVAPORATOR TEMPERATURE SENSOR TEST

1. Remove the evaporator front temperature sensor (see **FRONT EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).
2. Dip the sensor in ice water, and measure the resistance between its terminals.

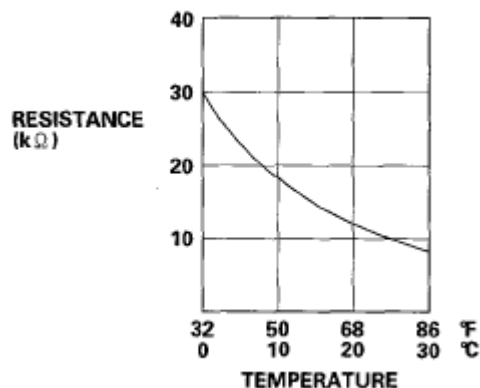
FRONT EVAPORATOR TEMPERATURE SENSOR

Terminal side of male terminals

Fig. 167: Measuring Resistance Between Evaporator Front Temperature Sensor Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Then pour warm water on the sensor, and check for a change in the resistance.
4. Compare the resistance readings with the specifications shown in the graph; the resistance should be within the specifications.

**Fig. 168: Resistance To Temperature Graph**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the resistance is not as specified, replace the front evaporator temperature sensor (see **FRONT EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

FRONT EVAPORATOR TEMPERATURE SENSOR REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Remove the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).
3. Disconnect the connector (A) from the front evaporator temperature sensor (B), then remove the connector clip (C). Remove the self-tapping screw and the front evaporator temperature sensor.

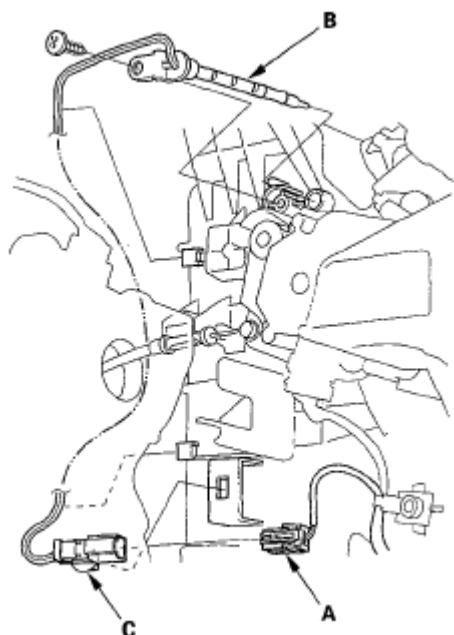


Fig. 169: Identifying Front Evaporator Temperature Sensor, Connector And Connector Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the sensor in the reverse order of removal.

FRONT POWER TRANSISTOR TEST

1. Remove the passenger's dashboard undercover (see PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION).
2. Disconnect the 4P connector from the front power transistor.
3. Measure the resistance between the No. 3 and No. 4 terminals of the front power transistor. It should be about 1.5 kohms.
 - If the resistance is within the specifications, go to step 4.
 - If the resistance is not within the specifications, replace the front power transistor.

NOTE: Also check the front blower motor. Front power transistor failure can be caused by a defective front blower motor.

FRONT POWER TRANSISTOR

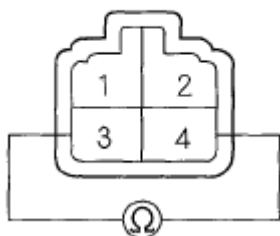


Fig. 170: Measuring Resistance Between No. 3 And No. 4 Terminals Of Front Power Transistor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Carefully release the lock tab on the No. 1 terminal (RED) (A) in the 4P connector, then remove the terminal and insulate it from body ground.

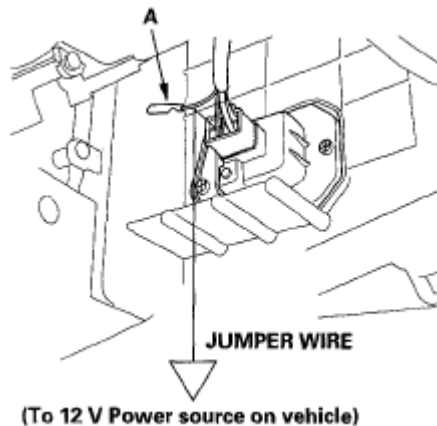


Fig. 171: Identifying 4P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reconnect the 4P connector to the front power transistor.
6. Make sure the RED wire is completely isolated, then supply 12 V to the No. 1 cavity with a jumper wire.
7. Turn the ignition switch to ON (II), and check that the front blower motor runs.
 - If the front blower motor does not run, replace the front power transistor.

NOTE: A faulty front blower motor can cause the front power transistor to fail. If the front power transistor is replaced, also check the front blower motor for binding, and replace it if necessary.

- If the front blower motor runs, the front power transistor is OK.

DRIVER'S AIR MIX CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the 7P connector from the driver's air mix control motor.

NOTE: Incorrectly applying power and ground to the driver's air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the driver's air mix control motor, and ground the No. 2

terminal; the driver's air mix control motor should run, and stop at Max Cool. If it doesn't, reverse the connections; the driver's air mix control motor should run, and stop at Max Hot. When the driver's air mix control motor stops running, disconnect battery power immediately.

DRIVER'S AIR MIX CONTROL MOTOR

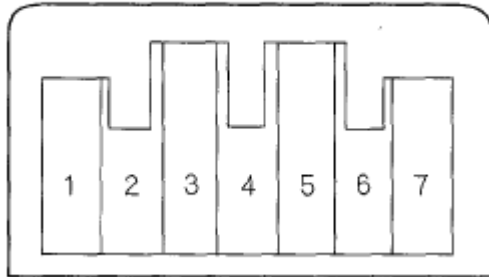


Fig. 172: Identifying Driver's Air Mix Control Motor Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the driver's air mix control motor did not run in step 2, remove it, then check the driver's air mix control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).
 - If the linkage or door sticks or binds, repair them as needed.
 - If the driver's air mix control motor runs smoothly, go to step 4.
4. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 to 7.8 kohms.
5. Reconnect the driver's air mix control motor 7P connector, then turn the ignition switch to ON (II).
6. Using the backprobe set, measure the voltage between the No. 3 and No. 5 terminals.

Max Cool: about 0.5 V

Max Hot: about 4.5 V

7. If either the resistance or voltage readings are not as specified, replace the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the driver's air mix control motor (B). Remove the self-tapping screws and the driver's air mix control motor from the heater unit.

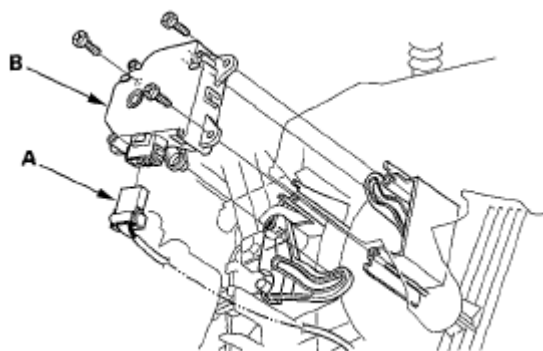


Fig. 173: Identifying Driver's Air Mix Control Motor And 7P Connector With Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

PASSENGER'S AIR MIX CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the 7P connector from the passenger's air mix control motor.

NOTE: Incorrectly applying power and ground to the passenger's air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the passenger's air mix control motor, and ground the No. 2 terminal; the passenger's air mix control motor should run, and stop at Max Cool. If it doesn't, reverse the connections; the passenger's air mix control motor should run, and stop at Max Hot. When the passenger's air mix control motor stops running, disconnect battery power immediately.

PASSENGER'S AIR MIX CONTROL MOTOR

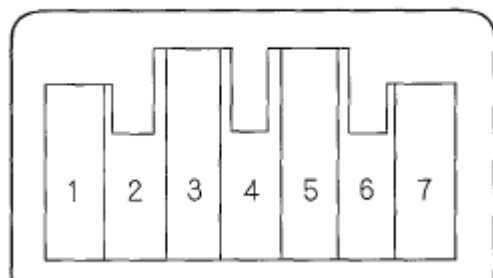


Fig. 174: Identifying Passenger's Air Mix Control Motor Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the passenger's air mix control motor did not run in step 2, remove it, then check the passenger's air mix

control linkage and door for smooth movement.

- If the linkage and door move smoothly, replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).
 - If the linkage or door sticks or binds, repair them as needed.
 - If the passenger's air mix control motor runs smoothly, go to step 4.
4. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 to 7.8 k ohms.
 5. Reconnect the passenger's air mix control motor 7P connector, then turn the ignition switch to ON (II).
 6. Using the backprobe set, measure the voltage between the No. 3 and No. 5 terminals.

Max Cool: about 1.5 V

Max Hot: about 4.5 V

7. If either the resistance or voltage readings are not as specified, replace the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT**).

PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the passenger's air mix control motor (B). Remove the self-tapping screws and the passenger's air mix control motor from the heater unit.

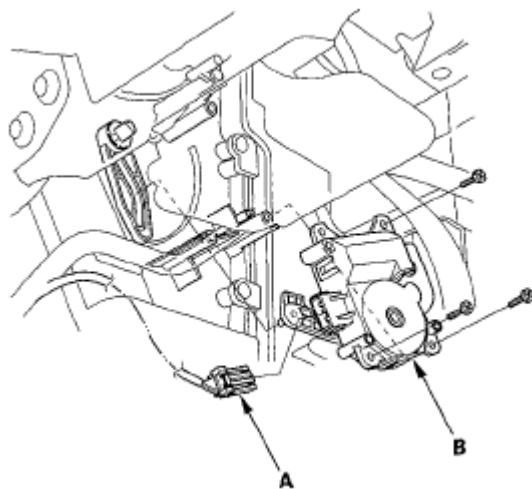


Fig. 175: Identifying Passenger's Air Mix Control Motor And 7P Connector With Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

FRONT MODE CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the 7P connector from the front mode control motor.

NOTE: Incorrectly applying power and ground to the front mode control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the front mode control motor, and ground the No. 2 terminal; the front mode control motor should run smoothly, and stop at Vent. If it doesn't, reverse the connections; the front mode control motor should run smoothly, and stop at Defrost. When the front mode control motor stops running, disconnect battery power immediately.

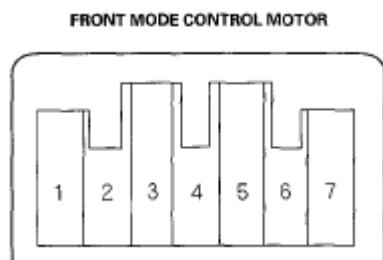


Fig. 176: Identifying Front Mode Control Motor Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the front mode control motor did not run in step 2, remove it, then check the front mode control linkage and doors for smooth movement.
 - If the linkage and doors move smoothly, replace the front mode control motor (see FRONT MODE CONTROL MOTOR REPLACEMENT).
 - If the linkage or doors stick or bind, repair them as needed.
 - If the front mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohms range. With the front mode control motor running as in step 2, check for continuity between the No. 3, 4, 5, and 6 terminals and the No. 7 terminal individually. There should be continuity for a moment at each terminal as the motor moves past the switch's terminal.
5. If there is no continuity for a moment at each terminal, replace the front mode control motor (see FRONT MODE CONTROL MOTOR REPLACEMENT).

FRONT MODE CONTROL MOTOR REPLACEMENT

1. Remove the glove box (see GLOVE BOX REMOVAL/INSTALLATION).
2. Disconnect the 7P connector (A) from the front mode control motor (B). Remove the self-tapping screws and the front mode control motor from the heater unit.

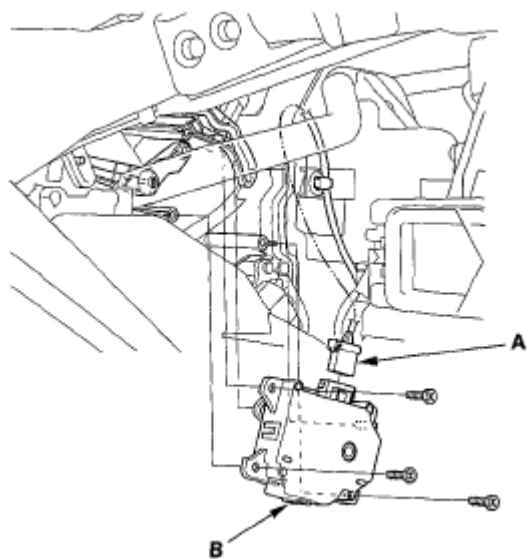


Fig. 177: Identifying Front Mode Control Motor And 7P Connector With Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

RECIRCULATION CONTROL MOTOR TEST

NOTE: Before testing, check for HVAC DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect the 7P connector from the recirculation control motor.

NOTE: Incorrectly applying power and ground to the recirculation control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the recirculation control motor, and ground the No. 2 terminal; the recirculation control motor should run smoothly, and stop at Fresh. If it doesn't, reverse the connections; the recirculation control motor should run smoothly, and stop at Recirculate. When the recirculation control motor stops running, disconnect battery power immediately.

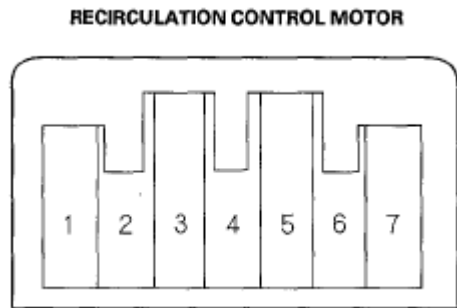


Fig. 178: Identifying Recirculation Control Motor Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the recirculation control motor did not run in step 2, remove it, then check the recirculation control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).
 - If the linkage or door stick or bind, repair them as needed.
 - If the recirculation control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohms range. With the recirculation control motor running as in step 2, check for continuity between the No. 3,4, and 5 terminals and the No. 7 terminal individually. There should be continuity for a moment at each terminal as the motor moves past the switch's terminal.
5. If there is no continuity for a moment at each terminal, replace the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).

RECIRCULATION CONTROL MOTOR REPLACEMENT

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the recirculation control motor (B). Remove the self-tapping screws and the recirculation control motor from the heater unit.

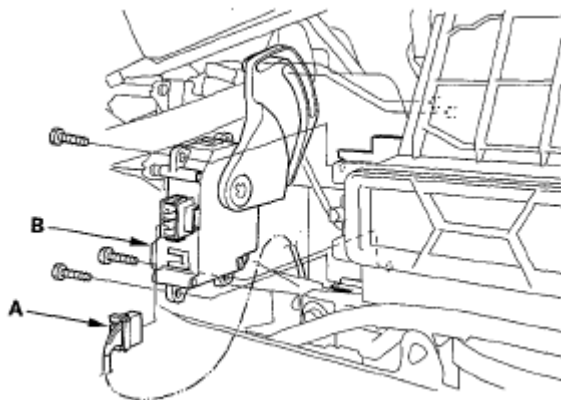


Fig. 179: Identifying Recirculation Control Motor And 7P Connector With Screws

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

CLIMATE CONTROL UNIT REMOVAL/ INSTALLATION

1. Remove the audio unit (see [AUDIO UNIT REMOVAL/INSTALLATION](#)).
2. Remove the self-tapping screws, bolts, brackets (A), and the climate control unit (B).

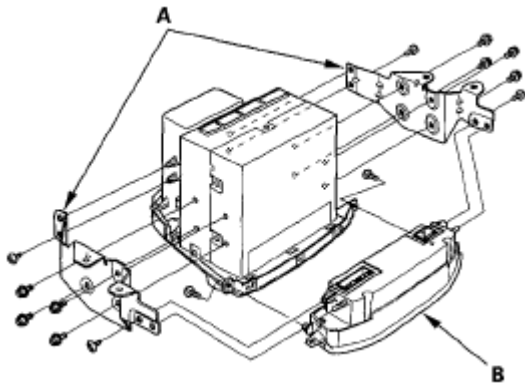


Fig. 180: Identifying Self-Tapping Screws, Bolts, Brackets And Climate Control Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the control unit in the reverse order of removal. After installation, operate the various functions to see whether works properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see [HOW TO USE THE SELF-DIAGNOSTIC FUNCTION WITHOUT THE HDS](#)).

DUST AND POLLEN FILTER REPLACEMENT

1. Open the glove box. Remove the glove box stop on right side, then let the glove box hang down (see [GLOVE BOX REMOVAL/INSTALLATION](#)).
2. Remove the dust and pollen filter assembly (A) from the blower unit.

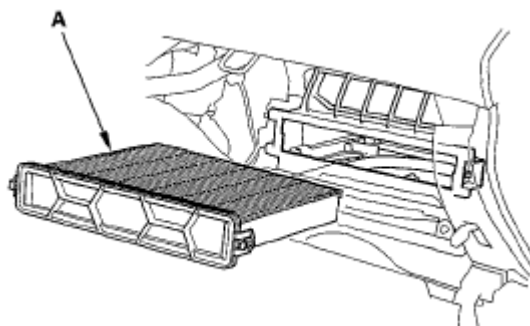


Fig. 181: Identifying Dust And Pollen Filter Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the filter (A) from the housing (B), and replace the filter.

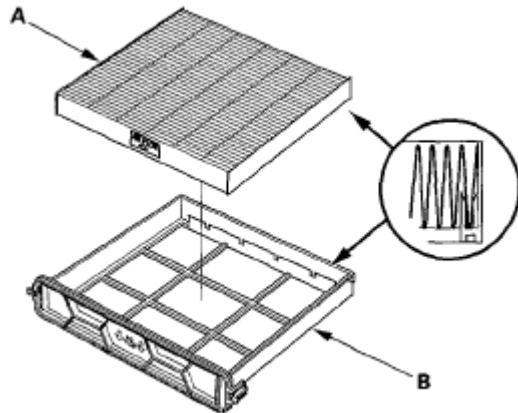


Fig. 182: Identifying Filter And Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the filter in the reverse order of removal. Make sure that there is no air leaking out of the blower unit.

BLOWER UNIT REMOVAL/INSTALLATION

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Remove the harness clips (A), the bolts, and the glove box frame (B).

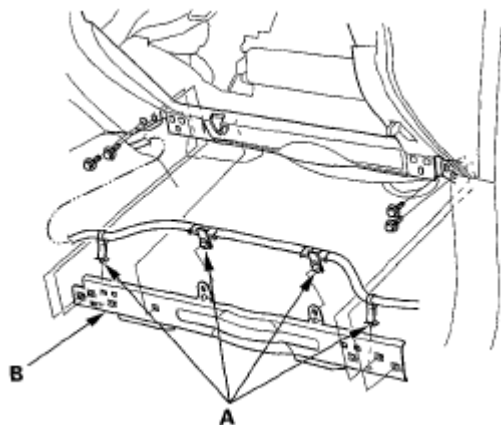


Fig. 183: Identifying Harness Clips And Glove Box Frame With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Cut the plastic cross brace (A) in the glove box opening with diagonal cutters in the area shown, and discard it.

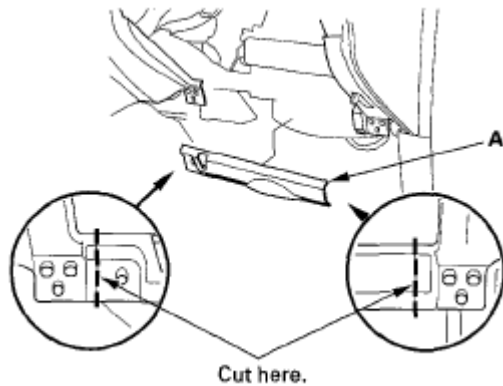


Fig. 184: Identifying Plastic Cross Brace Cutting Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the wire harness clips (A), the self-tapping screws, and the passenger's heater duct (B).

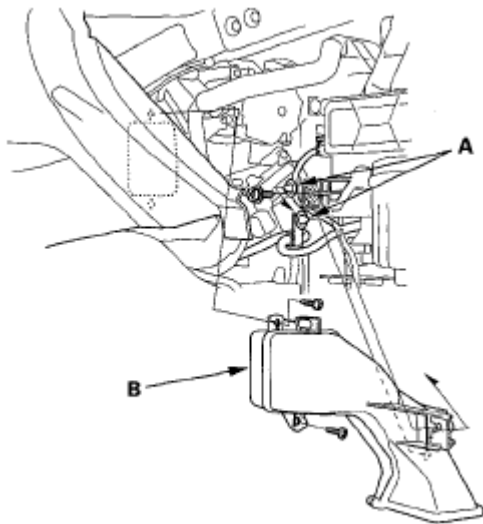


Fig. 185: Identifying Wire Harness Clips And Passenger's Heater Duct With Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the connector (A) from the front blower motor. Remove the wire harness clips (B).

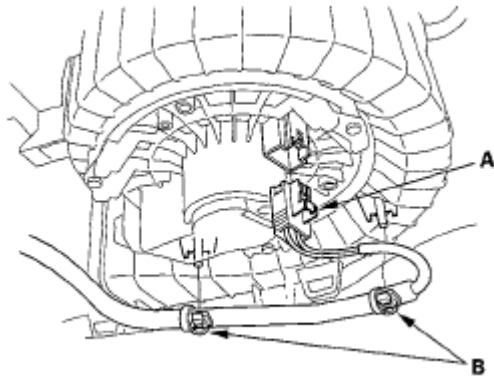


Fig. 186: Identifying Front Blower Motor Connector And Wire Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the connectors (A) from the recirculation control motor and adaptive front lighting control unit, then remove the harness clip (B). Remove the self-tapping screws, the mounting nuts, and the blower unit (C).

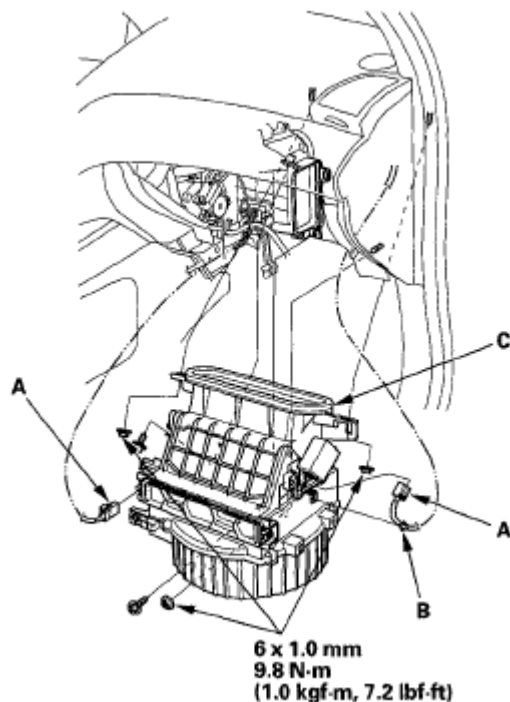


Fig. 187: Identifying Recirculation Control Motor Connector, Harness Clip And Blower Unit With Screws With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the unit in the reverse order of removal. Make sure that there is no air leakage.

BLOWER UNIT COMPONENT REPLACEMENT

Note these items when overhauling the blower unit:

- The recirculation control motor (A), front blower motor (B) and the dust and pollen filter (C) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and door move smoothly without binding.
- After reassembly, make sure the recirculation control motor runs smoothly (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).

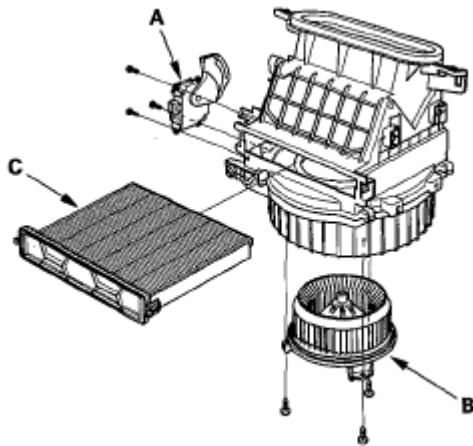


Fig. 188: Identifying Recirculation Control Motor, Front Blower Motor And Dust And Pollen Filter
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT EXPANSION VALVE REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/ charging station (see **REFRIGERANT RECOVERY**).
2. Remove the front evaporator core (see **FRONT EVAPORATOR CORE REPLACEMENT**).
3. Remove the bolts, then remove the front expansion valve (A) and O-rings (B).

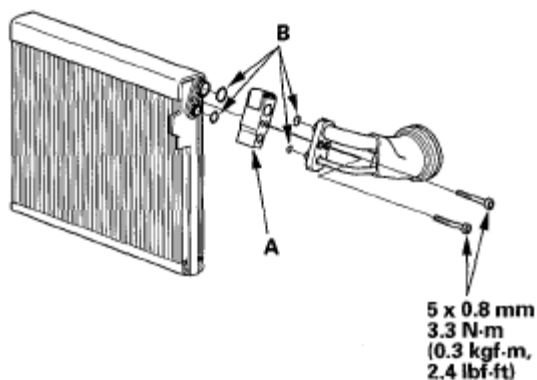


Fig. 189: Identifying Front Expansion Valve And O-Rings Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the front expansion valve in the reverse order of removal, and note these items:
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
 - Make sure that there is no air leakage.
 - Charge the system (see **SYSTEM CHARGING**).

FRONT EVAPORATOR CORE REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/ charging station (see **REFRIGERANT RECOVERY**).
2. Remove the bolts.

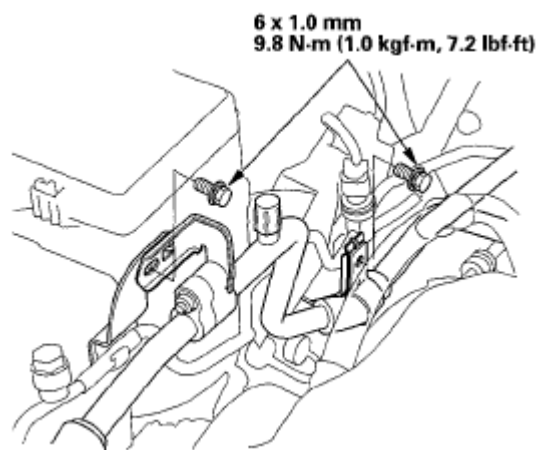


Fig. 190: Identifying Front Evaporator Core Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts, then disconnect the front receiver line (A) and the front suction line (B) from the front evaporator core.

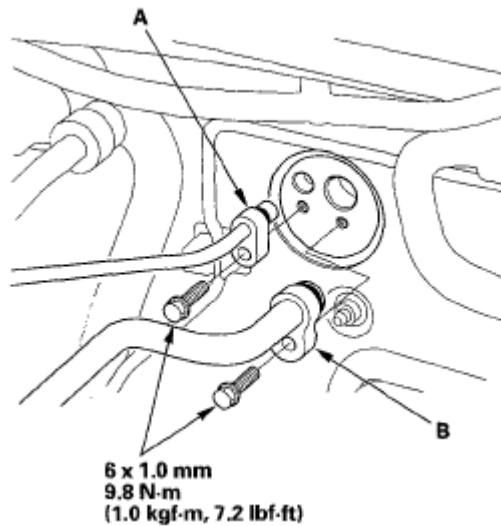


Fig. 191: Identifying Front Receiver Line And Front Suction Line Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the blower unit (see **BLOWER UNIT REMOVAL/INSTALLATION**).
5. Disconnect the connector (A) from the front power transistor, then remove the harness clip (B). Remove the self-tapping screws, the expansion valve cover (C), and the seal (D).

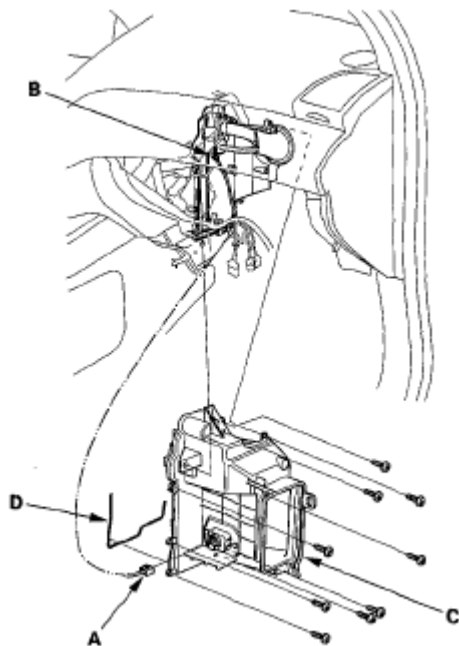


Fig. 192: Identifying Front Power Transistor Connector, Harness Clip, Expansion Valve Cover And Seal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts, the inlet and outlet pipes (A), and expansion valve (B). Carefully pull out the front

evaporator core (C), then remove the plate (D).

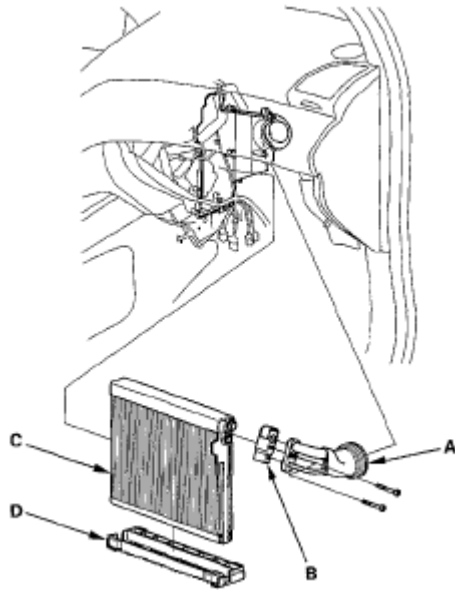


Fig. 193: Identifying Inlet And Outlet Pipes, Expansion Valve. Front Evaporator Core And Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the core in the reverse order of removal, and note these items:
 - If you're installing a new front evaporator core, add refrigerant oil (DENSO ND-OIL 8) (see **A/C SERVICE TIPS AND PRECAUTIONS**).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
 - Make sure that there is no air leakage.
 - Charge the system (see **SYSTEM CHARGING**).

HEATER UNIT/CORE REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Do the battery terminal disconnection procedure.(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Disconnect the front receiver line and front suction line from the front evaporator core (see **FRONT EVAPORATOR CORE REPLACEMENT**).

3. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C). Turn the heater valve arm to the fully opened position as shown.

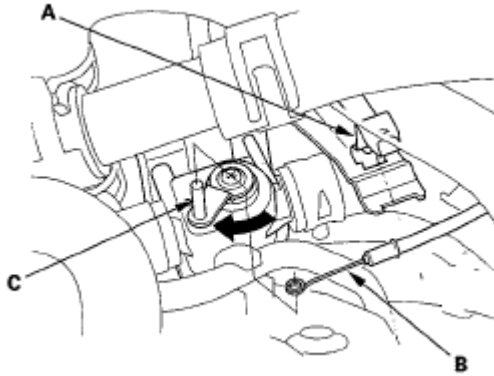


Fig. 194: Turning Heater Valve Arm

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When the engine is cool, drain the engine coolant from the radiator (see **COOLANT CHECK**).
5. Remove the clamp (A). Slide the hose clamps (B) back. Remove the nut and the water valve (C), then disconnect the inlet heater hose (D) and the outlet heater hose (E) from the heater unit. Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.

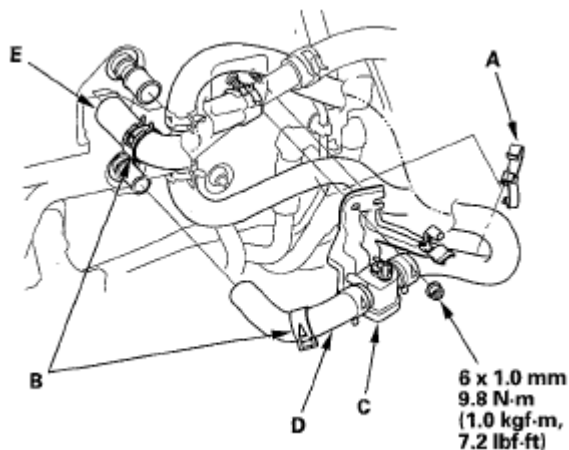


Fig. 195: Identifying Clamp, Slide Hose Clamps, Water Valve, Heater Hose And Outlet Heater Hose Nut With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the mounting nuts from the heater unit. Take care not to damage or bend the fuel lines or brake lines, etc.

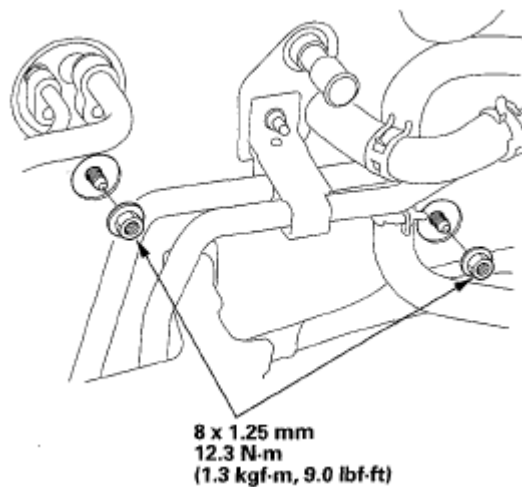


Fig. 196: Identifying Heater Unit Mounting Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the dashboard (see **DASHBOARD REPLACEMENT**).
8. Disconnect the connector (A) from the front blower motor. Remove the wire harness clips (B).

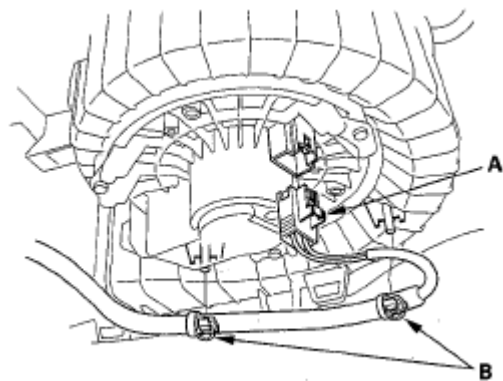


Fig. 197: Identifying Front Blower Motor Connector And Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the connector (A) from the adaptive front lighting control unit, then remove the harness clip (B).



Fig. 198: Identifying Adaptive Front Lighting Control Unit Connector And Harness Clip
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the connectors (A) from the front mode control motor, the passenger's air mix control motor, the recirculation control motor, and the front power transistor. Remove the wire harness clips (B).

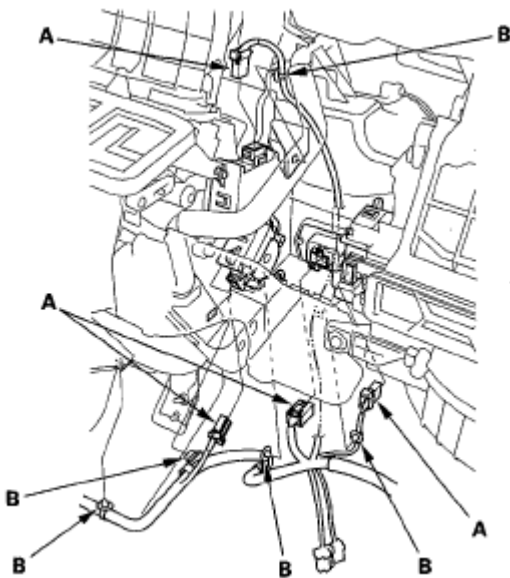


Fig. 199: Identifying Front Mode Control Motor Connector And Wire Harness Clip
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect the connectors (A) from the driver's air mix control motor and the front evaporator temperature sensor. Remove the wire harness clips (B) and the wire harness (C).

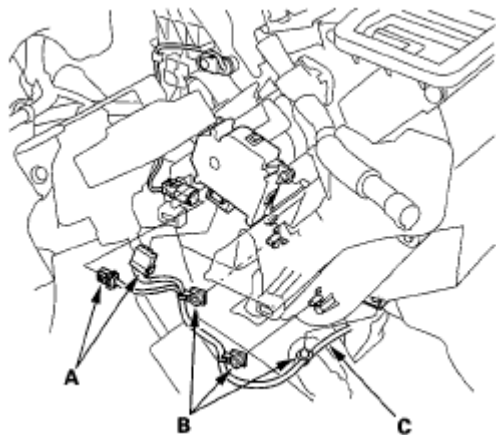


Fig. 200: Identifying Driver's Air Mix Control Motor Connector And Wire Harness Clips And Wire Harness

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn over the carpet. Remove the wire harness clips (A), the rear heater duct mounting clips (B), and the rear heater duct (C).

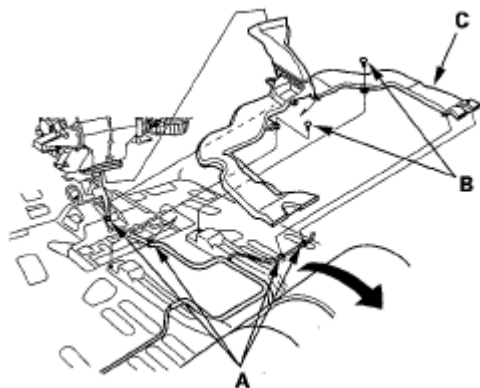


Fig. 201: Identifying Wire Harness Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the mounting nuts. Slide the blower-heater unit (A), then remove the drain hose (B) and blower-heater unit.

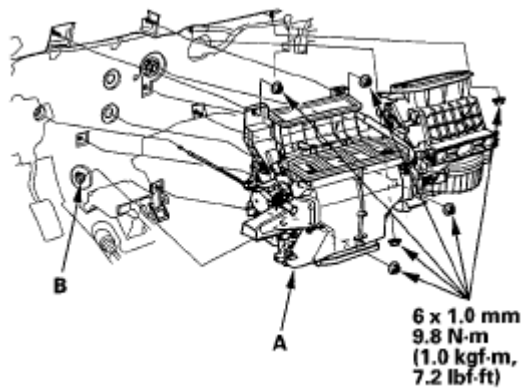


Fig. 202: Identifying Blower-Heater Unit And Drain Hose With Mounting Nuts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the self-tapping screws and the passenger's heater duct (A). Remove the self-tapping screws and the expansion valve cover (B). Remove the self-tapping screw and the front heater core cover (C). Remove the self-tapping screws, the heater pipe brackets (D), the grommets (E), and carefully pull out the front heater core (F).

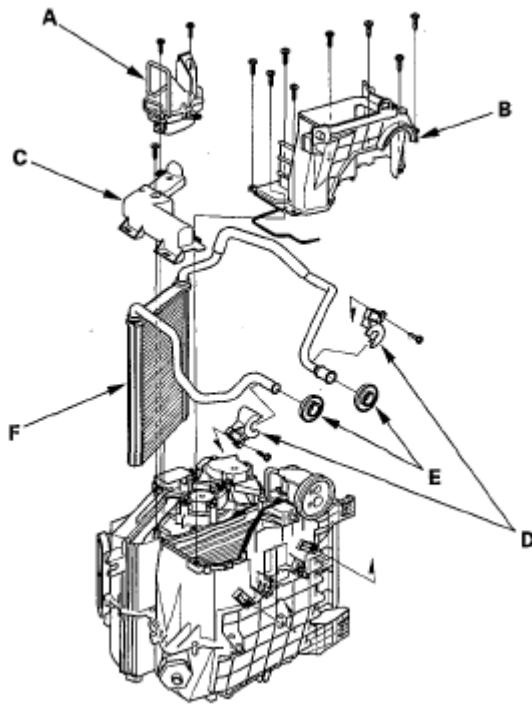


Fig. 203: Identifying Passenger's Heater Duct, Expansion Valve Cover, Front Heater Core Cover And Grommets

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the front heater core, and the front evaporator core in the reverse order of removal.
16. Install the heater unit in the reverse order of removal, and note these items:

- Do not interchange the inlet and outlet heater hoses, and install the hose clamps securely.
 - Refill the cooling system with engine coolant (see **COOLANT CHECK**).
 - Adjust the heater valve cable (see **HEATER VALVE CABLE ADJUSTMENT**).
 - Make sure that there is no coolant leakage.
 - Make sure that there is no air leakage.
 - Refer to the **FRONT EVAPORATOR CORE REPLACEMENT** .
17. Do the battery terminal reconnection procedure.(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).

HEATER VALVE CABLE ADJUSTMENT

1. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C).

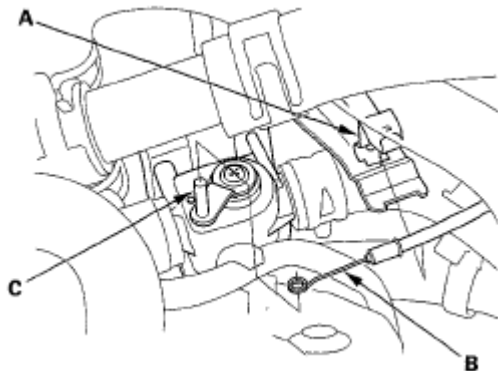


Fig. 204: Identifying Cable Clamp, Heater Valve Cable And Heater Valve Arm
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. From under the dash, disconnect the heater valve cable housing from the cable clamp (A), and disconnect the heater valve cable (B) from the driver's air mix control linkage (C).

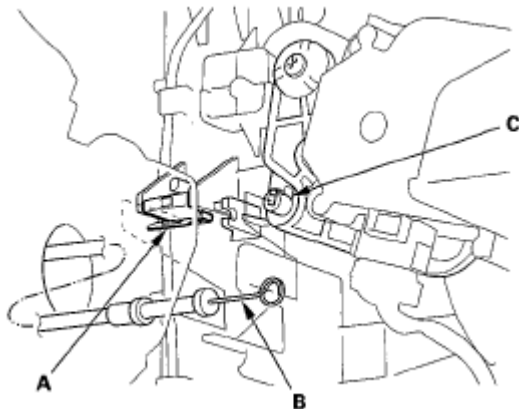


Fig. 205: Identifying Cable Clamp, Heater Valve Cable And Driver's Air Mix Control Linkage

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the temperature control dial to Max Cool (Lo) with the ignition switch to ON (II).
4. Attach the heater valve cable (B) to the driver's air mix control linkage (C) as shown step 2. Snap the heater valve cable housing into the cable clamp (A).

NOTE: Make sure the ring-end of the cable is pushed all the way to the base of the pin on driver's air mix control linkage.

5. From under the hood, turn the heater valve arm (A) to the fully closed position as shown, and hold it. Attach the heater valve cable (B) to the heater valve arm, and gently pull on the heater valve cable housing to take up any slack, then install the heater valve cable housing into the cable clamp (C).

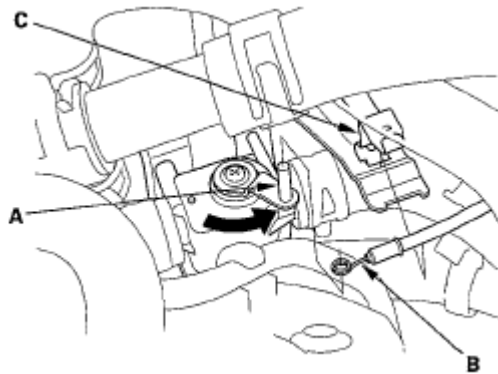


Fig. 206: Identifying Heater Valve Arm

Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C COMPRESSOR REPLACEMENT

NOTE: Do not install the A/C compressor into a system unless you are completely sure that the system is free of contamination. Installing the A/C compressor into a contaminated system can result in premature A/C compressor failure.

1. If the A/C compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Recover the refrigerant with a recovery/recycling/ charging station (see **REFRIGERANT RECOVERY**).
3. Remove the drive belt (see **DRIVE BELT INSPECTION**).
4. Remove the front splash shield (see **SPLASH SHIELD REPLACEMENT**).
5. Remove the front undercover (see **FRONT UNDERCOVER REPLACEMENT**).
6. Support the front subframe with the engine support. Remove the bolts and the front subframe stiffener (A).

NOTE: Install the new front subframe mounting bolt(B).

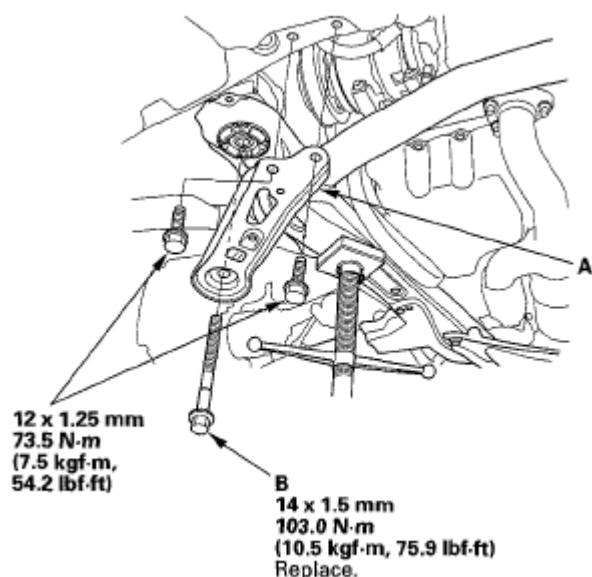


Fig. 207: Identifying Front Subframe Stiffener And Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the A/C compressor clutch connector (A). Remove the bolts and the nut, then disconnect the suction hose (B) and discharge hose (C) from the A/C compressor. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

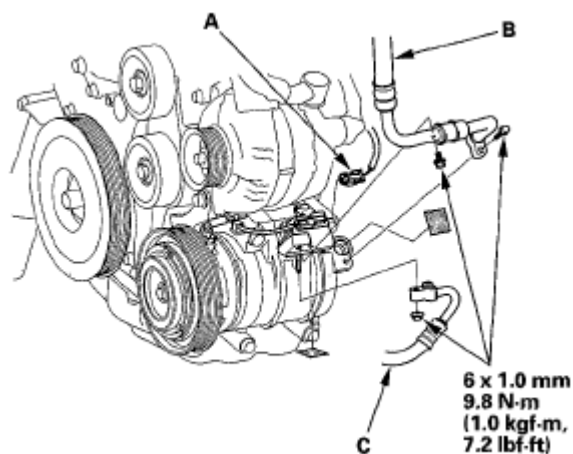


Fig. 208: Identifying A/C Compressor Clutch Connector, Suction Hose And Discharge Hose With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the mounting bolts and the A/C compressor (A). Be careful not to damage the radiator fins when removing the compressor.

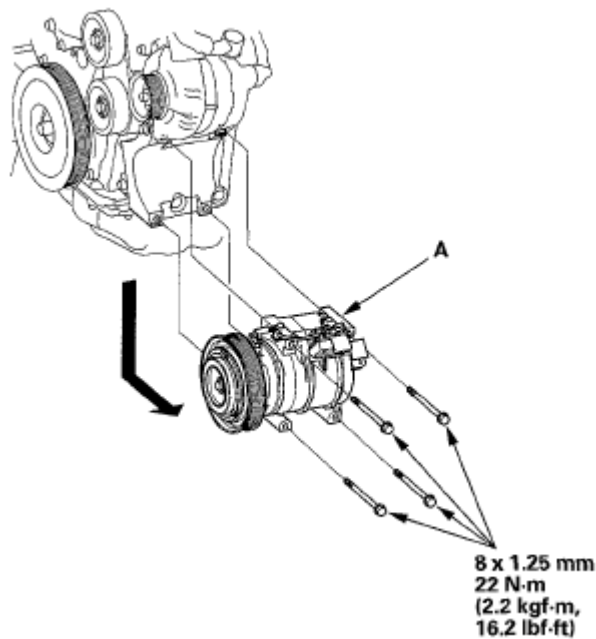


Fig. 209: Identifying Mounting Bolts And A/C Compressor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the A/C compressor in the reverse order of removal, and note these items:
- Inspect the A/C lines for any signs of contamination.
 - If you're installing a new A/C compressor, you must calculate the amount of refrigerant oil to be removed from it (see **A/C REFRIGERANT OIL REPLACEMENT**). A new A/C compressor comes with a full charge of oil.
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Use refrigerant oil (DENSO ND-OIL 8) for HFC-134a DENSO piston type A/C compressor only.
 - To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
 - Be careful not to damage the radiator fins when installing the compressor and the A/C condenser fan shroud.
 - Charge the system (see **SYSTEM CHARGING**).

A/C COMPRESSOR CLUTCH CHECK

1. Check the pressure plate for discoloration, peeling, or other damage. If there is damage, replace the clutch set (see **A/C COMPRESSOR CLUTCH OVERHAUL**).

2. Check the pulley bearing play and drag by rotating the pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag (see A/C COMPRESSOR CLUTCH OVERHAUL).



Fig. 210: Identifying Bearing Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between the pulley (A) and the pressure plate (B) all the way around. If the clearance is not within specified limits, remove the pressure plate (see A/C COMPRESSOR CLUTCH OVERHAUL) and add or remove shims as needed to increase or decrease clearance.

Clearance: 0.30-0.60 mm (0.012-0.024 in.)

NOTE: The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.

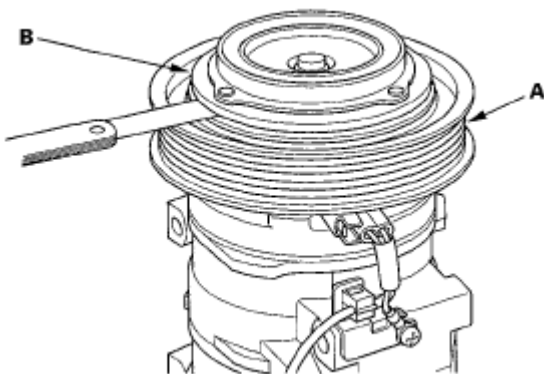


Fig. 211: Measuring Clearance Between Pulley And Pressure Plate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the resistance of the field coil. If the resistance is not within specifications, replace the field coil (see A/C COMPRESSOR CLUTCH OVERHAUL).

Field Coil Resistance: 3.9—4.3 Ω at
68° F (20 °C)

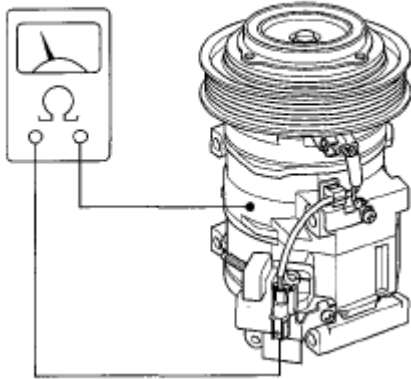


Fig. 212: Measuring Resistance Of Field Coil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

A/C COMPRESSOR CLUTCH OVERHAUL

Special Tools Required

A/C clutch holder, Robin air 10204 or Kent-Moore J37872, or Honda Tool and Equipment KMT-J33939, commercially available

1. Remove the center bolt while holding the pressure plate (A) with a commercially available A/C clutch holder (B).

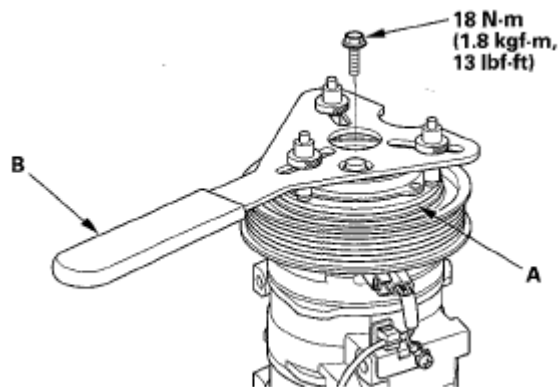


Fig. 213: Identifying Center Bolt While Holding Pressure Plate With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the pressure plate (A) and shim(s) (B), taking care not to lose the shim(s). If the clutch needs adjustment, increase or decrease the number and thickness of shims as necessary, then reinstall the pressure plate, and recheck its clearance (see **A/C COMPRESSOR CLUTCH CHECK**).

NOTE: The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.

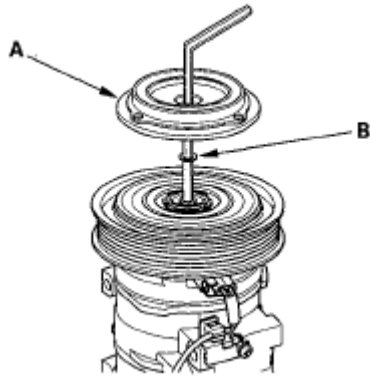


Fig. 214: Identifying Pressure Plate And Shim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If you are replacing the field coil, remove the snap ring (A) with snap ring pliers, then remove the pulley (B). Be careful not to damage the pulley or the A/C compressor.

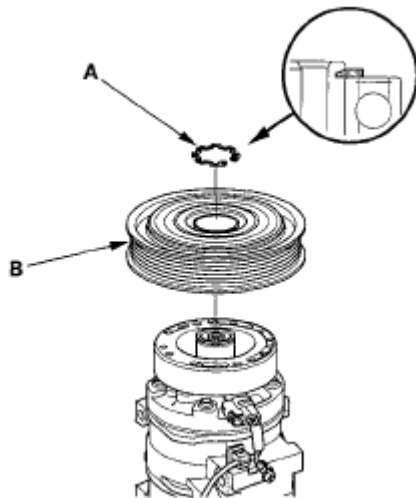


Fig. 215: Identifying Snap Ring And Pulley
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screw from the field coil ground terminal (A) and bracket (B). Disconnect the connector (C) from the field coil, then remove the wire harness clip (D). Remove the snap ring (E) with snap ring pliers, then remove the field coil (F). Be careful not to damage the field coil or the A/C compressor.

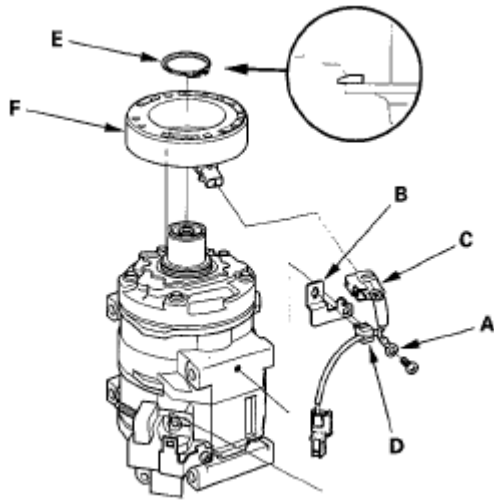


Fig. 216: Identifying Field Coil Ground Terminal, Bracket, Connector, Wire Harness Clip And Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reassemble the clutch in the reverse order of disassembly, and note these items:
 - Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the A/C compressor.
 - Clean the pulley and A/C compressor sliding surfaces with contact cleaner or other non-petroleum solvent.
 - Install new snap rings, note the installation direction, and make sure they are fully seated in the groove.
 - Make sure that the pulley turns smoothly after it's reassembled.
 - Route and clamp the wires properly or they can be damaged by the pulley.

A/C COMPRESSOR RELIEF VALVE REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/ charging station (see **REFRIGERANT RECOVERY**).
2. Remove the front splash shield (see **SPLASH SHIELD REPLACEMENT**).
3. Remove the front undercover (see **FRONT UNDERCOVER REPLACEMENT**).
4. Remove the relief valve (A) and the O-ring (B). Plug the opening to keep foreign matter from entering the system and the A/C compressor oil from running out.

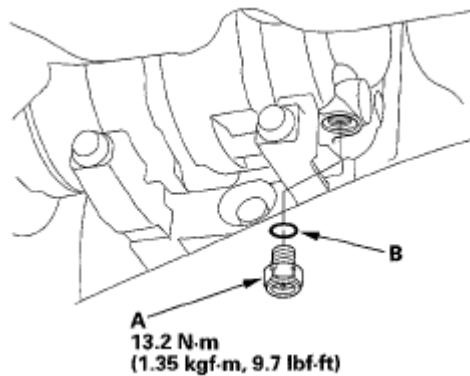


Fig. 217: Identifying Relief Valve And O-Ring With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Clean the mating surfaces.
6. Replace the O-ring with a new one at the relief valve, and apply a thin coat of refrigerant oil before installing it.
7. Remove the plug, and install and tighten the relief valve.
8. Charge the system (see **SYSTEM CHARGING**).

A/C CONDENSER REPLACEMENT

1. Recover the refrigerant with a recovery/recycling charging station (see **REFRIGERANT RECOVERY**).
2. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
3. Remove the bolt, then disconnect the discharge hose (A) from the A/C condenser.

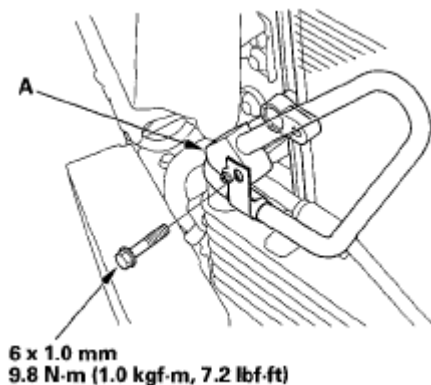


Fig. 218: Identifying A/C Condenser Discharge Hose Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolt, then disconnect the front receiver line (A) from the A/C condenser.

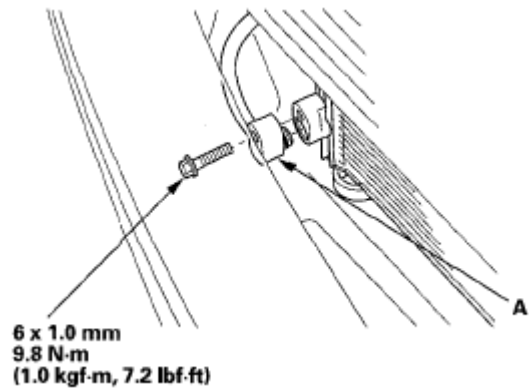


Fig. 219: Identifying A/C Condenser Front Receiver Line With Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the bolts, nut, and the ATF cooler bracket (A).

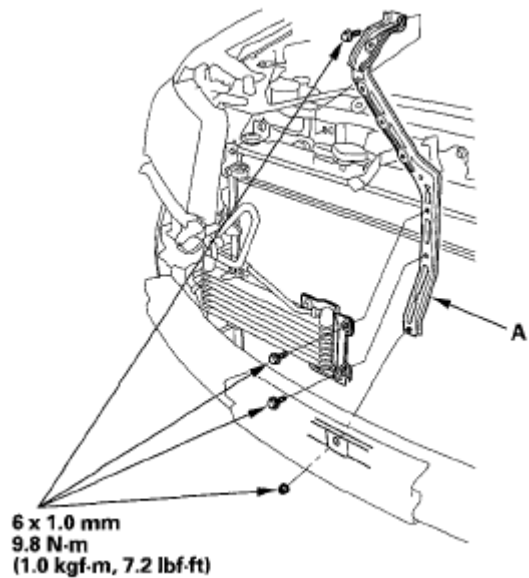


Fig. 220: Identifying ATF Cooler Bracket Nut And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Loosen the bolts, then remove the A/C condenser upper mount brackets (A).

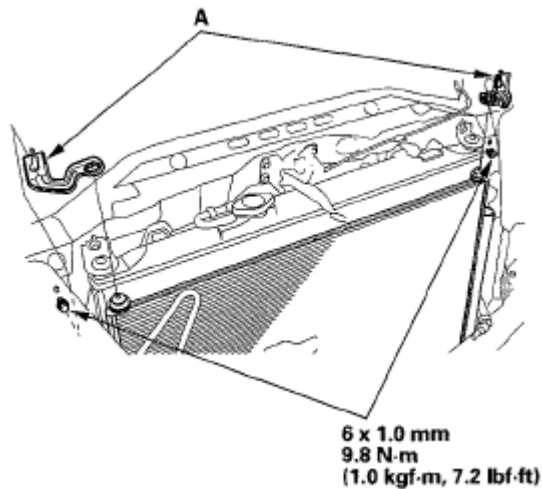


Fig. 221: Identifying A/C Condenser Upper Mount Brackets Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the hood latch (see **HOOD LATCH REPLACEMENT**).
8. Remove the A/C condenser (A) by lifting it up. Be careful not to damage the radiator and A/C condenser fins when removing the A/C condenser.

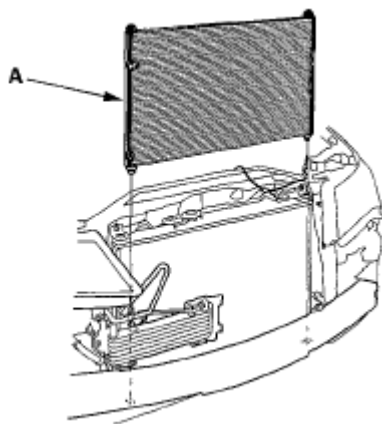


Fig. 222: Identifying A/C Condenser
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the A/C condenser in the reverse order of removal, and note these items:
 - If you're installing a new A/C condenser, add refrigerant oil (DENSO ND-OIL 8) (see **A/C REFRIGERANT OIL REPLACEMENT**).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts

the paint, wash it off immediately.

- Be careful not to damage the radiator or the A/C condenser fins when installing the A/C condenser.
- Charge the system (see **SYSTEM CHARGING**).
- Adjust the hood latch (see **HOOD ADJUSTMENT**).

RECEIVER/DRYER DESICCANT REPLACEMENT

NOTE: Install the receiver/dryer as quickly as possible to prevent the system from absorbing moisture from the air.

1. Remove the A/C condenser (see **A/C CONDENSER REPLACEMENT**).
2. Remove the cap (A) from the bottom of the A/C condenser. Remove the O-ring (B) and the desiccant (C).

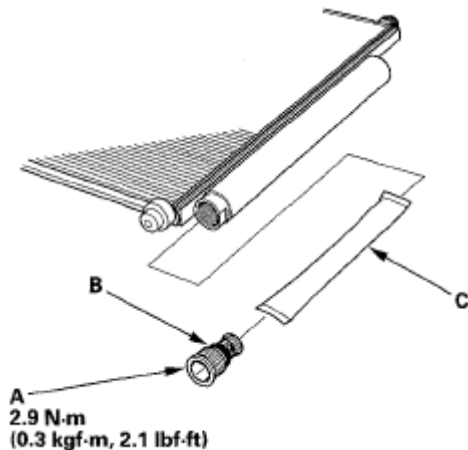


Fig. 223: Identifying A/C Condenser Cap, O-Ring And Desiccant With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the receiver/dryer in the reverse order of removal, and note these items:
 - Replace the O-rings with new ones, and apply a thin coat of refrigerant oil (DENSO ND-OIL 8) before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Install the cap to the specified torque. It is made of resin and can be easily stripped.

REFRIGERANT RECOVERY

- CAUTION:**
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
 - Be careful when connecting service equipment.
 - Do not breathe refrigerant or vapor.

NOTE: If accidental system discharge occurs, ventilate the work area before

resuming service.

- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/ charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

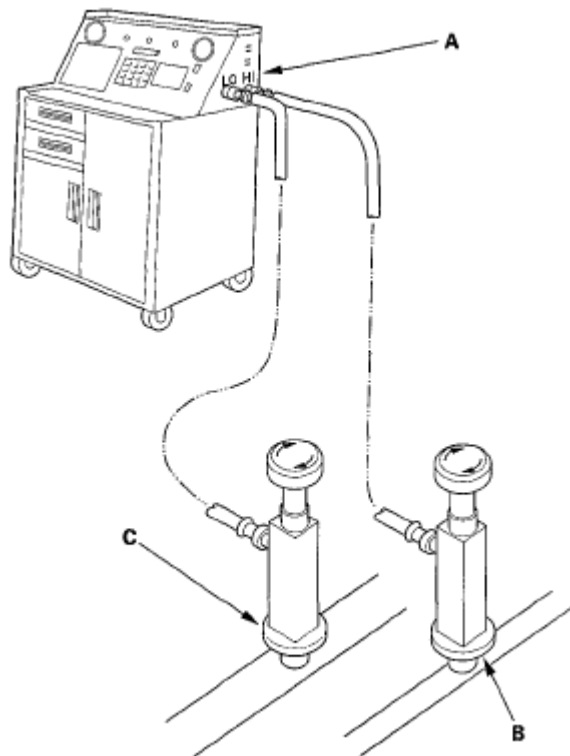


Fig. 224: Connecting R-134A Refrigerant Recovery/Recycling/ Charging Station To High And Low Pressure Service Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed. Be sure to put the same amount of new refrigerant oil back into the A/C system before charging.

SYSTEM EVACUATION

CAUTION:

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using an R-134a refrigerant recovery/recycling/charging station. If the system has been open for several days, the receiver/dryer should be replaced, and the system should be evacuated for several hours.
 2. Connect an R-134a refrigerant recovery/recycling/ charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions. Evacuate the system.

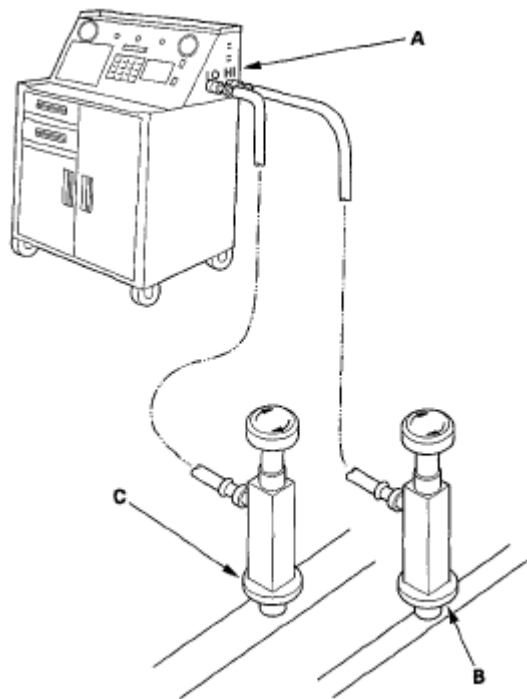


Fig. 225: Connecting R-134A Refrigerant Recovery/Recycling/ Charging Station To High And Low Pressure Service Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the low-pressure does not reach more than 93.3 kPa (700 mmHg, 27.6 in.Hg) in 15 minutes, there is probably a leak in the system. Partially charge the system, and check for leaks (see step 3 on **REFRIGERANT LEAK TEST**).

SYSTEM CHARGING

CAUTION:

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.

- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/ charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

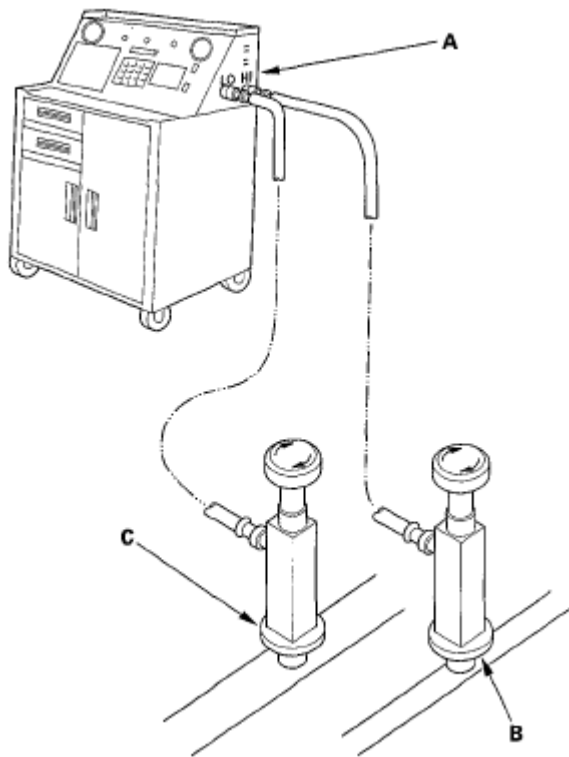


Fig. 226: Connecting R-134A Refrigerant Recovery/Recycling/ Charging Station To High And Low Pressure Service Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Evacuate the system (see **SYSTEM EVACUATION**).
3. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only DENSO ND-OIL 8 refrigerant oil.
4. Charge the system with the specified amount of R-134a refrigerant. Do not overcharge the system; the A/C compressor will be damaged.

Select the appropriate units of measure for your refrigerant charging station.

Refrigerant Capacity:**600 to 650 g****0.60 to 0.65 kg****1.32 to 1.43 lbs****21.2 to 22.9 oz**

5. Check for refrigerant leaks (see **REFRIGERANT LEAK TEST**).
6. Check the system performance (see **A/C SYSTEM TEST**).

REFRIGERANT LEAK TEST**SPECIAL TOOLS REQUIRED**

Leak detector, Honda Tool and Equipment YGK-H-10PM or commercially available

- CAUTION:**
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
 - Be careful when connecting service equipment.
 - Do not breathe refrigerant or vapor.

- NOTE:**
- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/ charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.

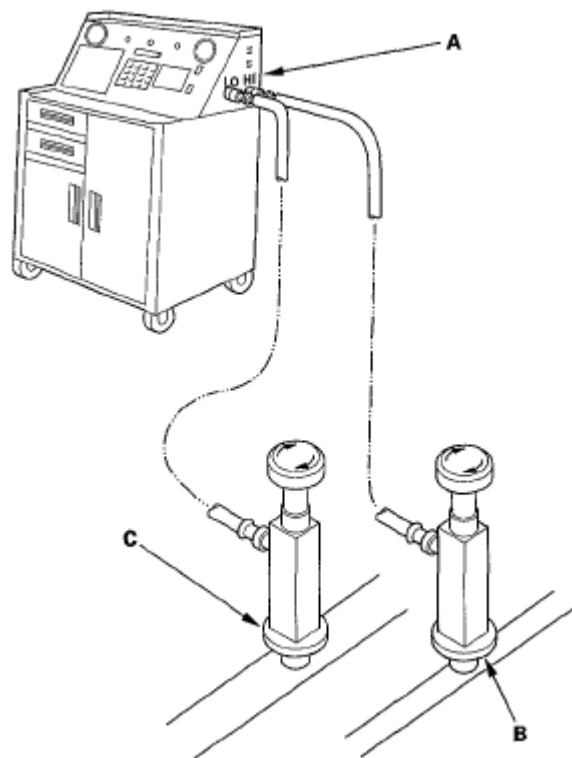


Fig. 227: Connecting R-134A Refrigerant Recovery/Recycling/ Charging Station To High And Low Pressure Service Port

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Open the high pressure valve to charge the system to the specified capacity, then close the supply valve, and disconnect the charging station fittings.

Select the appropriate units of measurement for your refrigerant charging station.

Refrigerant Capacity:

600 to 650 g

0.60 to 0.65 kg

1.32 to 1.43 lbs

21.2 to 22.9 oz

3. Check the system for leaks using an R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz) per year or better.
4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), do the refrigerant recovery.
5. After checking and repairing leaks, the system must be evacuated.

A/C SYSTEM TEST

PERFORMANCE TEST

CAUTION:

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

The performance test will help determine if the A/C system is operating within specifications.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/ charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
2. Determine the relative humidity and air temperature.
3. Open the glove box. Remove the glove box stop on right side, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION**).
4. Insert a thermometer (A) in the center vent.

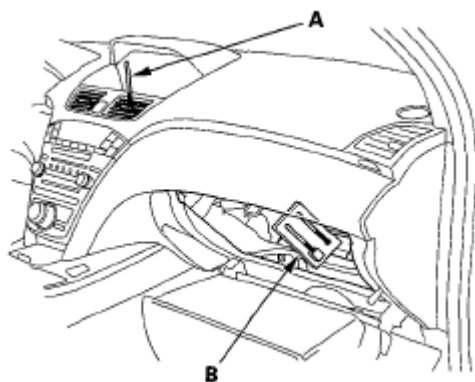


Fig. 228: Identifying Thermometer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Place a thermometer (B) near the blower unit's recirculation inlet duct.
6. Test conditions:
 - Avoid direct sunlight.
 - Open hood.
 - Open front doors.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

- Set the temperature control switch to Max Cool, the mode control switch to Vent, and the recirculation control switch to Recirculate.
 - Turn the A/C switch ON and the fan switch to Max.
 - Run the engine at 1,500 rpm.
 - No driver or passengers in vehicle.
7. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the center vent, the intake temperature near the blower unit, and the discharge (high) and suction (low) pressures on the A/C gauges.
8. To complete the vent (delivery)/ambient air (intake) temperature chart:
- Mark the vent (delivery) temperature on the vertical line.
 - Mark the ambient air (intake) temperature on the bottom line.
 - Draw a vertical line from the ambient air (intake) temperature mark.
 - Draw a horizontal line from the vent (delivery) temperature mark until it intersects the vertical line.

NOTE: The vent temperature and ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

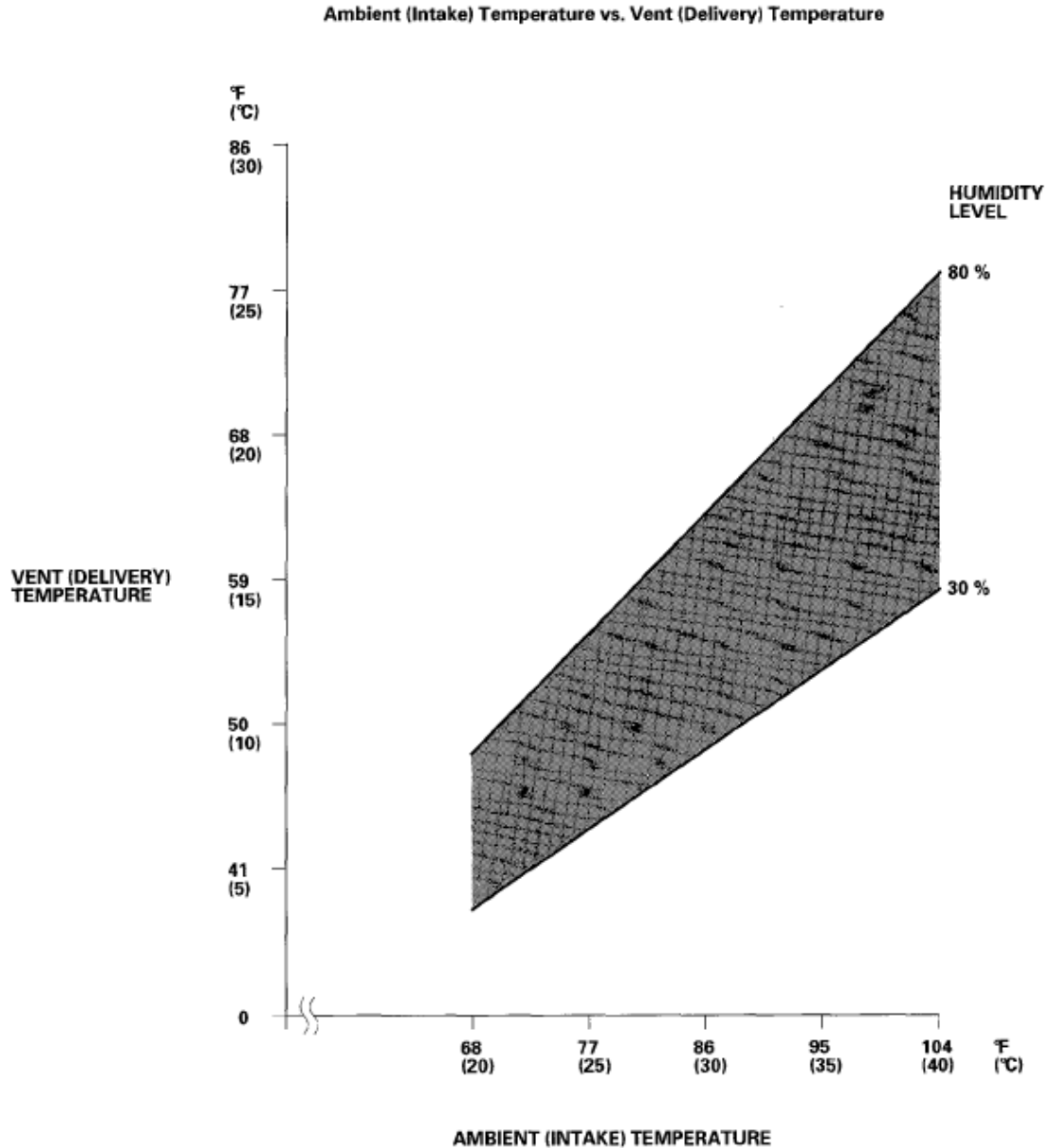


Fig. 229: Ambient (Intake) Temperature Vs Vent (Delivery) Temperature Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. To complete the high side (discharge) pressure/ambient air (intake) temperature chart:
 - Mark the high side (discharge) pressure on the vertical line.
 - Mark the ambient air (intake) temperature on the bottom line.
 - Draw a vertical line from the ambient air (intake) temperature mark.
 - Draw a horizontal line from the high side (discharge) pressure mark until it intersects the vertical line.

NOTE: The high side pressure and ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

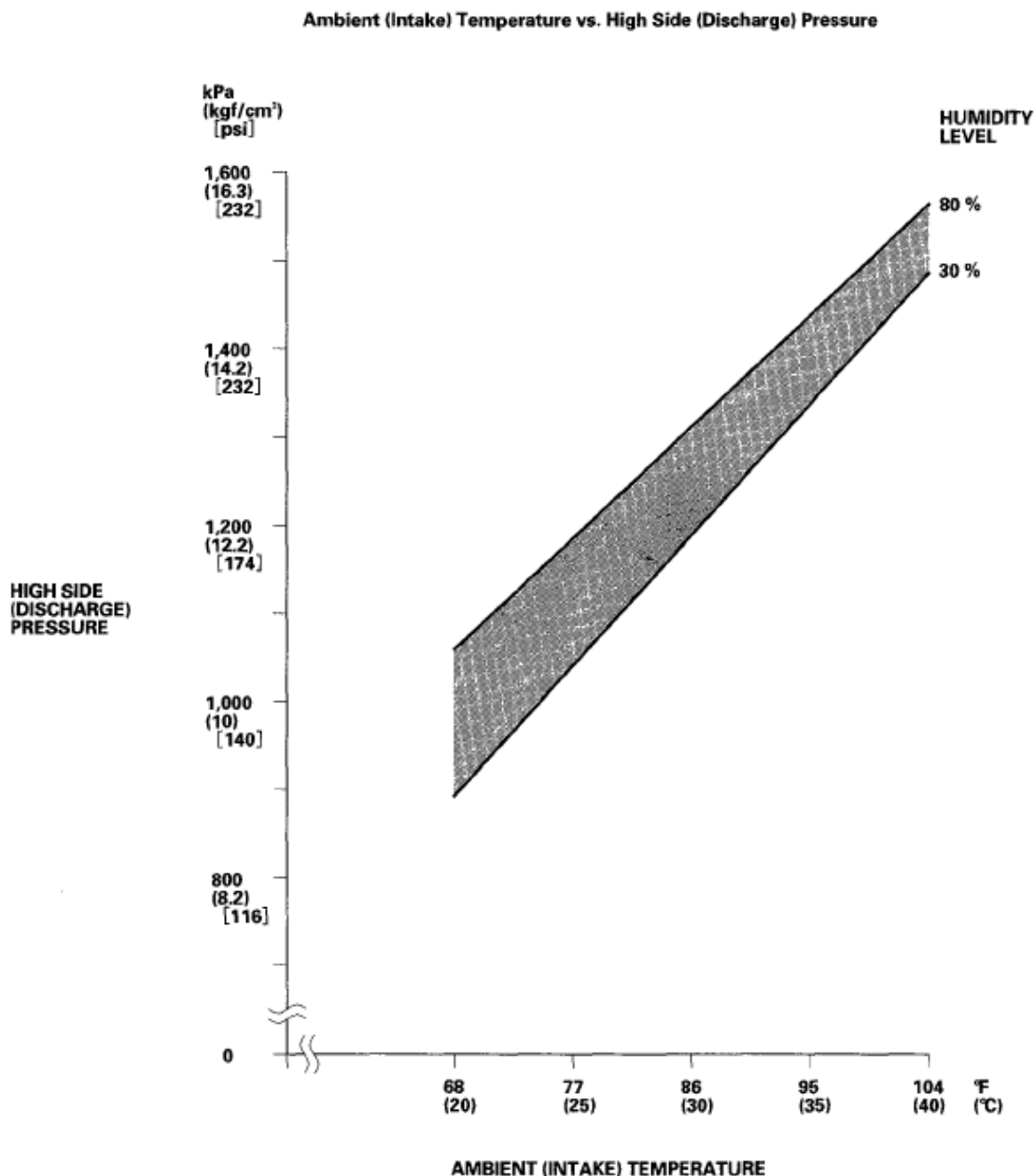


Fig. 230: Ambient (Intake) Temperature Vs High Side (Discharge) Pressure Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. To complete the low side (suction) pressure/ambient air (intake) temperature chart:

- Mark the low side (suction) pressure along the vertical line.
- Mark the ambient air (intake) temperature along the bottom line.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

- Draw a vertical line from the ambient air (intake) temperature mark.
- Draw a horizontal line from the low side (suction) pressure mark until it intersects the vertical line.

NOTE: The low side pressure and ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

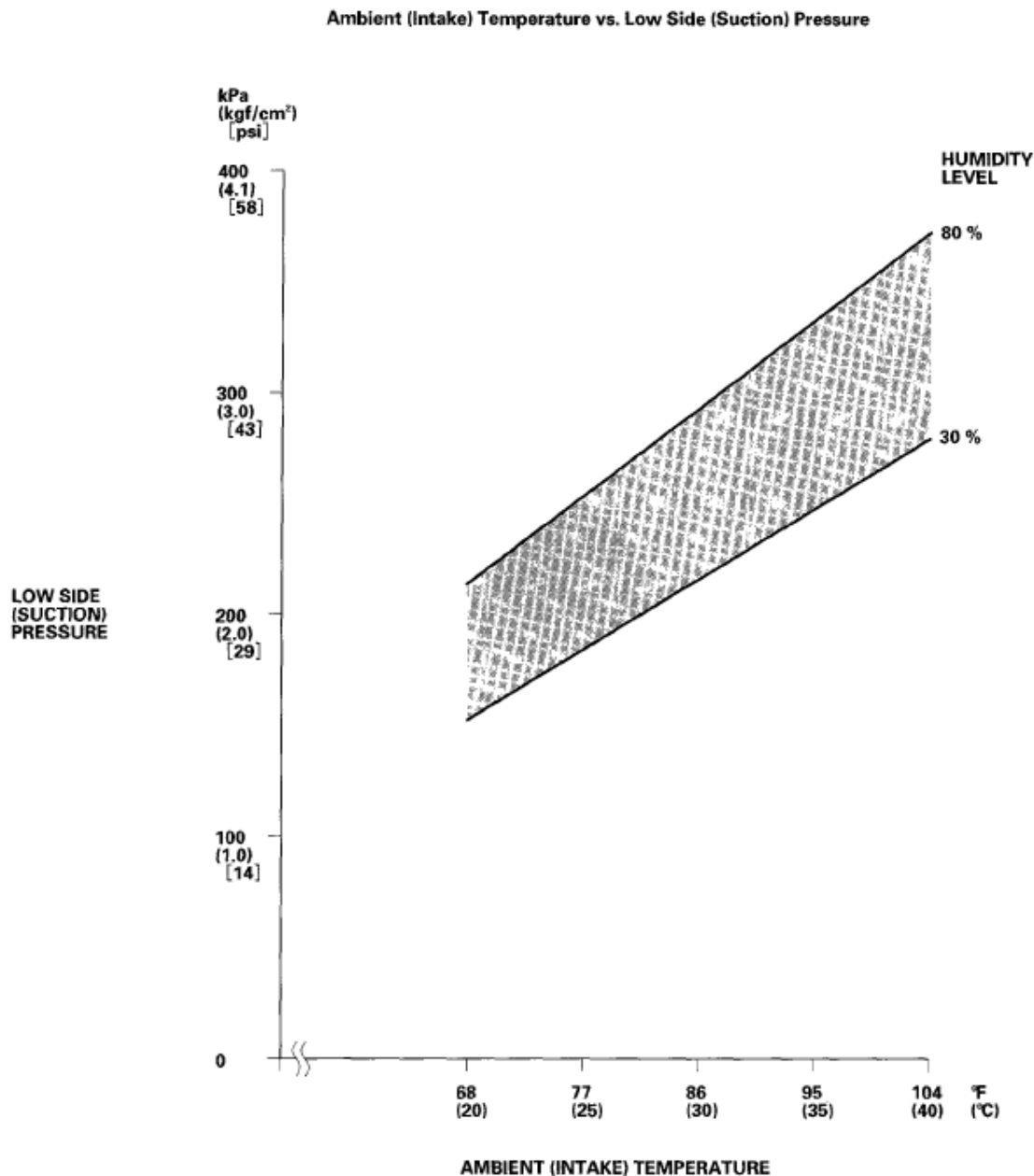


Fig. 231: Ambient (Intake) Temperature Vs Low Side (Suction) Pressure Graph
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

PRESSURE TEST

PRESSURE TEST REFERENCE CHART

Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping A/C compressor, pressure drops about 196 kPa (2.0 kgf/cm ² , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate (see <u>REFRIGERANT RECOVERY</u>), and recharge with specified amount (see <u>SYSTEM CHARGING</u>).
	Reduced or no airflow through A/C condenser.	• Clogged condenser or radiator fins • A/C condenser or radiator fan not working properly	• Clean. • Check voltage and fan rpm. • Check fan direction.
	Line to A/C condenser is excessively hot.	Restricted flow of refrigerant in system	Restricted lines.
Discharge pressure abnormally low	High and low-pressures are balanced soon after stopping A/C compressor. Low side is higher than normal.	• Faulty A/C compressor discharge valve • Faulty A/C compressor seal	Replace the A/C compressor.
	Outlet of expansion valve is not frosted, low-pressure gauge indicates vacuum.	• Faulty expansion valve • Moisture in system	• Replace. • Recover, evacuate, and recharge with specified amount.
Suction (low) pressure abnormally low	Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.	• Frozen expansion valve (Moisture in system) • Faulty expansion valve	• Recover, evacuate, and recharge with specified amount. • Replace the expansion valve.
	Discharge temperature is low, and the airflow from vents is restricted.	Frozen evaporator	Run the fan with A/C compressor off, then check evaporator temperature sensor.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
	Receiver/dryer outlet is cool, and inlet is warm (should be warm during operation).	Clogged receiver/dryer	Replace.
	Low-pressure hose and service port are cooler than	Expansion valve open	Repair or replace.

2008 Acura MDX

2007-09 HVAC Climate Control - MDX

	the temperature around evaporator.	too long	
	Suction pressure is lowered when A/C condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
Suction pressure abnormally high	High and low-pressures are equalized as soon as the A/C compressor is stopped, and both gauges fluctuate while running.	- Faulty gasket - Faulty high-pressure valve - Foreign particle stuck in high-pressure valve	Replace the A/C compressor.
Suction and discharge pressures abnormally high	Reduced airflow through A/C condenser.	- Clogged A/C condenser or radiator fins - A/C condenser or radiator fan not working properly	- Clean. - Check voltage and fan rpm. - Check fan direction.
Suction and discharge pressures abnormally low	Low-pressure hose and metal fittings are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high-pressure line	Repair or replace.
Refrigerant leaks	A/C compressor clutch is dirty.	A/C compressor shaft seal leaking	Replace the A/C compressor.
	A/C compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace A/C compressor.
	A/C compressor gasket is wet with oil.	Gasket leaking	Replace the A/C compressor.
	A/C fitting is dirty.	Leaking O-ring	Clean the A/C fitting and replace the O-ring.

2007-09 ACCESSORIES AND EQUIPMENT

Clock-MDX

COMPONENT LOCATION INDEX

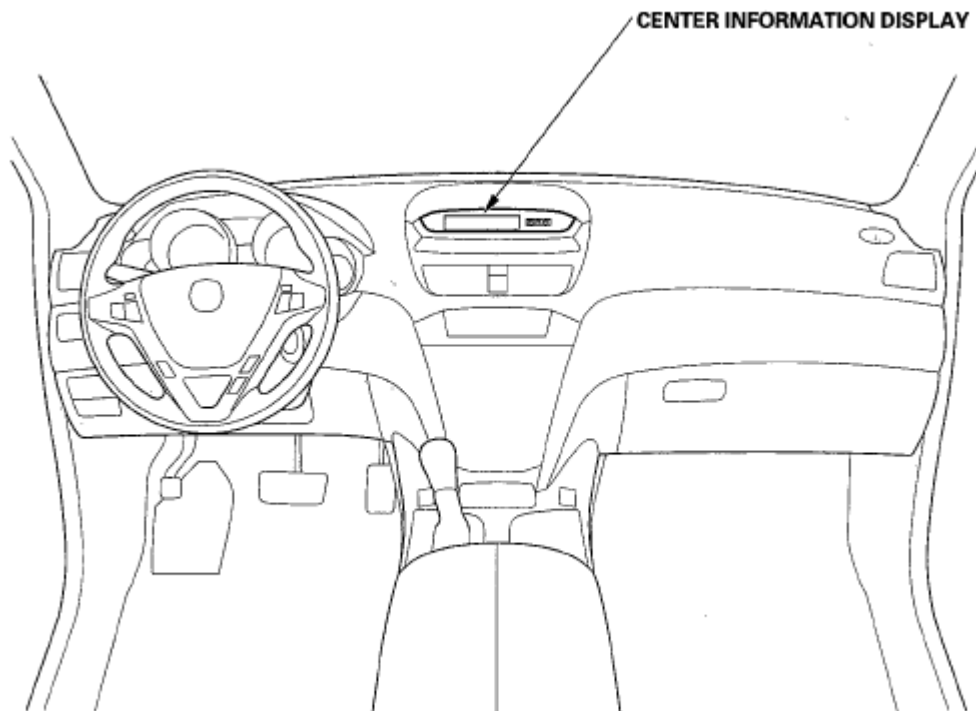


Fig. 1: Identifying Clock Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

CLOCK OPERATION

The clock shows day, date, and time information on the center information display. If the clock display does not appear normal, use the self-diagnosis function to test it.

Self-diagnosis function Mode 1 and Mode 2 force all possible segments on. If any of the segments do not appear as illustrated, the clock is faulty. Mode 3 forces all segments off. If there are any segments appearing, the clock is faulty.

If the clock is faulty, replace the center information display (see **CENTER INFORMATION DISPLAY INPUT TEST**).

Self-diagnosis Function

1. Press and hold the "SET" button, the arrow down button, and the arrow up button, then turn the ignition

switch to ON (II).

2. Release all buttons after one second.
3. Within 3 seconds, press and release the "SET" button, press and release the arrow down button, and finally press and release the arrow up button.
4. The self-diagnosis function begins with a blank display. Press and release the arrow up button to scroll through the three modes.



Fig. 2: Identifying Self-Diagnosis Function Code
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press the "SET" button to exit the self-diagnosis function.

CIRCUIT DIAGRAM

2007-09 ACCESSORIES AND EQUIPMENT Clock-MDX



2007-09 ACCESSORIES AND EQUIPMENT

Consoles - MDX

CENTER CONSOLE REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX) and the precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the front seat, dashboard, and related parts.

1. Do the battery terminal disconnection procedure, and wait at least 3 minutes before beginning work.
2. Remove these items:
 - Driver's inner dashboard trim (see DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION)
 - Passenger's dashboard trim (see PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION)
 - Console rear trim (see CENTER CONSOLE REAR TRIM REMOVAL/ INSTALLATION)
 - Front seats, both sides (see FRONT SEAT REMOVAL/INSTALLATION)
3. Detach the clips by pulling the console lower trim (A) back by hand, then remove it.

Fastener Locations

▷ : Clip, 2

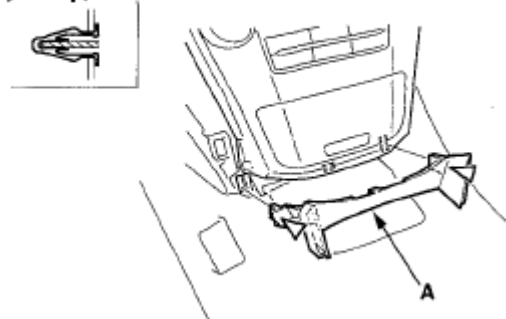


Fig. 1: Identifying Console Lower Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Detach the clips (A, B) by pulling the driver's center console trim (C), then remove it.

Fastener Locations

A ▷ : Clip, 8 B ▷ : Clip, 2

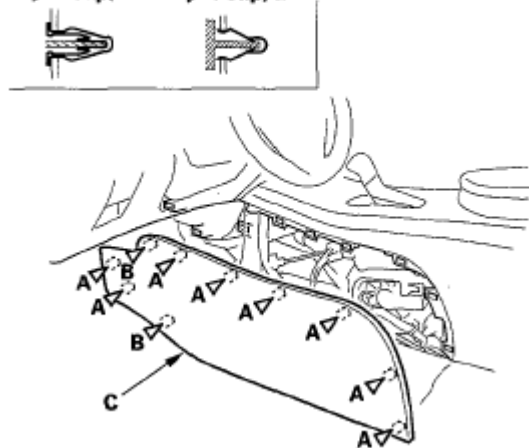


Fig. 2: Identifying Clips And Driver's Center Console Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the clips (A, B) by pulling the passenger's center console trim (C) out, and pull it forward to release its pin (D) from the center console, then remove it.

Fastener Locations

A ▷ : Clip, 5 B ▷ : Clip, 2

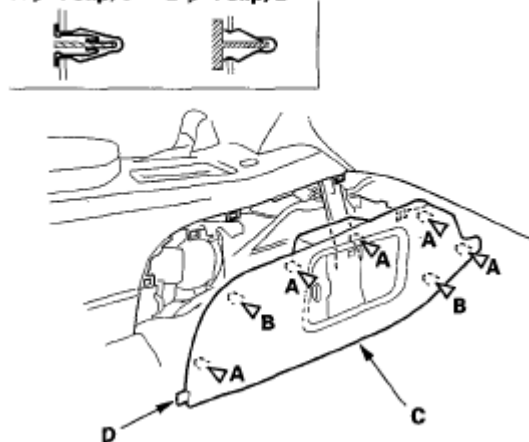


Fig. 3: Identifying Clips, Passenger's Center Console Trim And Pin

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From driver's side, disconnect the parking pin shift connector (A) and shift lock solenoid connector (B). Remove the rear blower motor relay mounting bolt (C), second row seat heater relay mounting bolt (D) (for some models), and ground bolt (E).

Fastener Locations

C ► : Bolt, 1 D ► : Bolt, 1 E ► : Bolt, 1

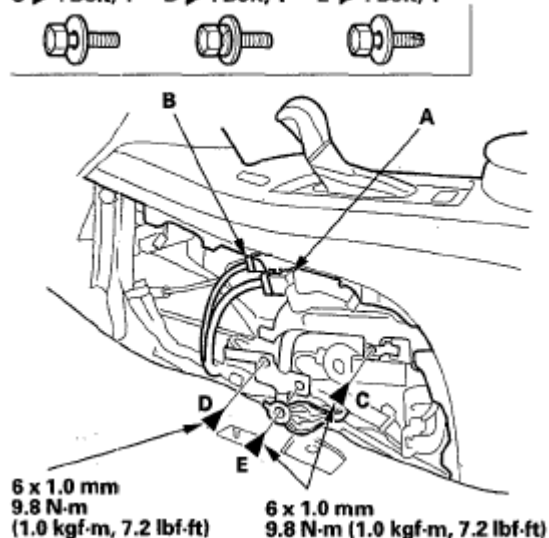


Fig. 4: Identifying Parking Pin Shift Connector, Shift Lock Solenoid Connector, Rear Blower Motor Relay Mounting Bolt And Ground Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. From passenger's side, disconnect the console subharness connector (A).

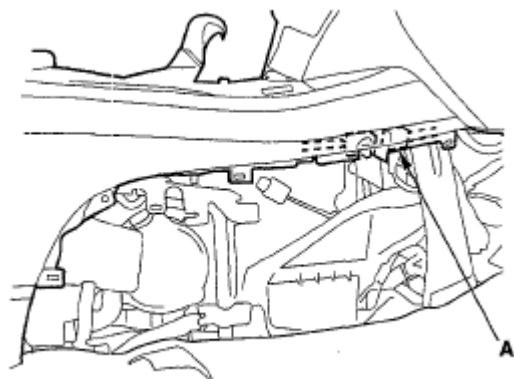


Fig. 5: Identifying Console Subharness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the HandsFreeLink control unit connector (A), and detach the harness clips (B).

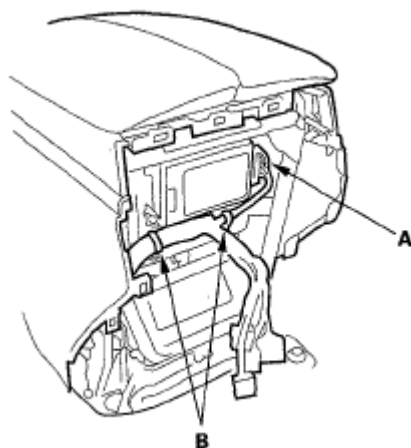


Fig. 6: Identifying Handsfreelink Control Unit Connector And Harness Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Open the beverage holder lid. Pull the beverage holder inner case (A) up by hand to detach the clips, then remove it.

Fastener Locations

▷ : Clip, 2

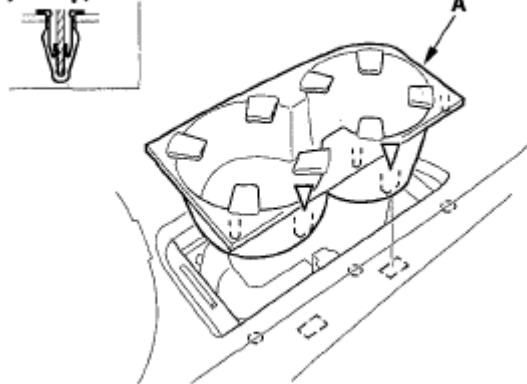


Fig. 7: Identifying Beverage Holder Inner Case
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Shift the shift lever into the R position, then disconnect the A/T shift cable (see step 5 on **SHIFT CABLE REPLACEMENT**).
11. Pull back the carpet (A) as needed, then remove the bolts (B, C) securing the center console (D).

Fastener Locations

B ▶ : Bolt, 2 C ▶ : Bolt, 2

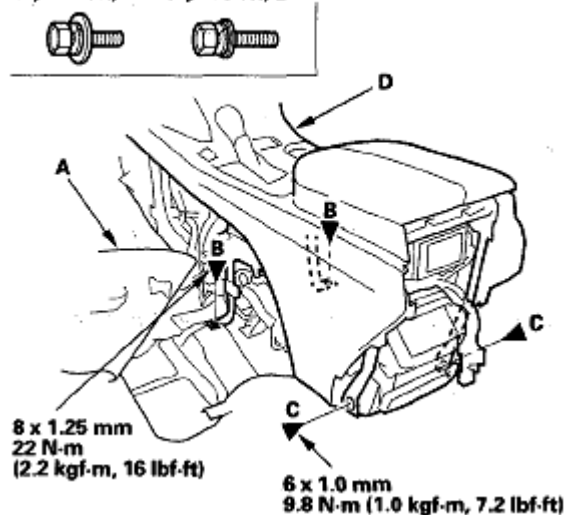


Fig. 8: Identifying Carpet, Bolts And Center Console With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Pull back the carpet (A) as needed. Slide the center console (B) backward to detach the clips and pins (C) from the dashboard, lift the console up, then carefully remove it.

Fastener Locations

▶ : Clip, 6

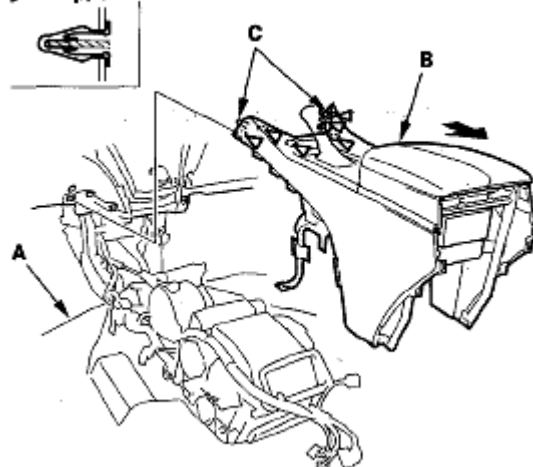


Fig. 9: Identifying Carpet, Center Console And Pins
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the console in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.
 - Before tightening the bolts, make sure the dashboard wire harness is not pinched.

- Make sure the connectors are plugged in properly.
- DO the battery terminal reconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**)
- Check for any DTCs that may have been set during repairs, and clear them.
- If necessary, adjust the shift cable (see **SHIFT CABLE ADJUSTMENT**).

CENTER CONSOLE REAR TRIM REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the center console and related parts.

1. Starting at the top, gently pull out the console rear trim (A) to detach the clips (B), then pullout the trim to detach the remaining clips (C), and to release the lower tabs (D), disconnect the connectors, then remove the trim:
 - Rear heater-A/C passenger's control panel-unit connector (E)
 - With second row seat heater: Second row seat heater switch connectors (F)
 - Without rear entertainment system: Accessory power socket connector (G)
 - With rear entertainment system: Auxiliary jack connector (G)

Fastener Locations

B, C ▷ : Clip, 7

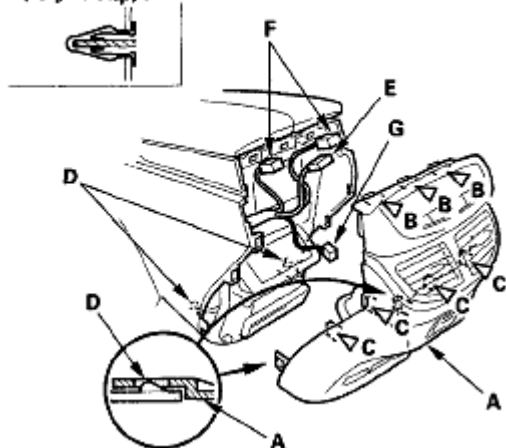


Fig. 10: Identifying Accessory Power Socket Connector, Clips And Lower Tabs
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trim in the reverse order of removal, and note these items:
 - Make sure all connectors are plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE REAR TRIM DISASSEMBLY/REASSEMBLY

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the trim.

1. Remove the center console rear trim (see CENTER CONSOLE REAR TRIM DISASSEMBLY/REASSEMBLY).
2. Remove the screws, then remove the center console duct (A).

Fastener Locations

► : Screw, 4

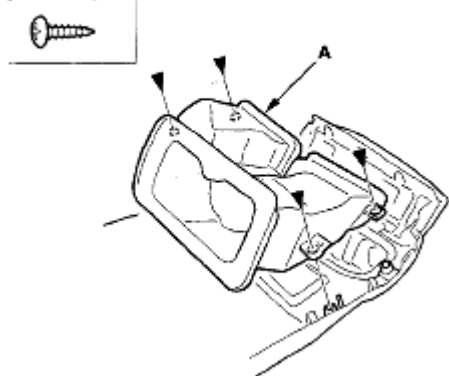


Fig. 11: Identifying Center Console Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws and release the hooks (A), then remove the HVAC trim (B).

Fastener Locations

► : Screw, 2

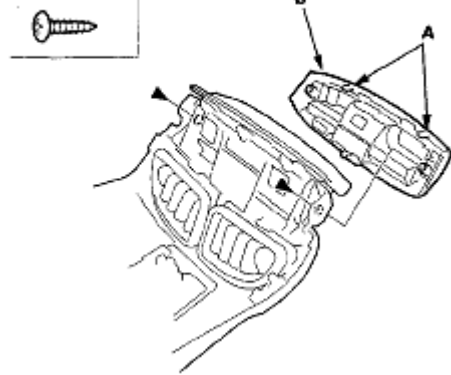


Fig. 12: Identifying Hooks And HVAC Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws, then remove the rear upper lid (A).

Fastener Locations

► : Screw, 2

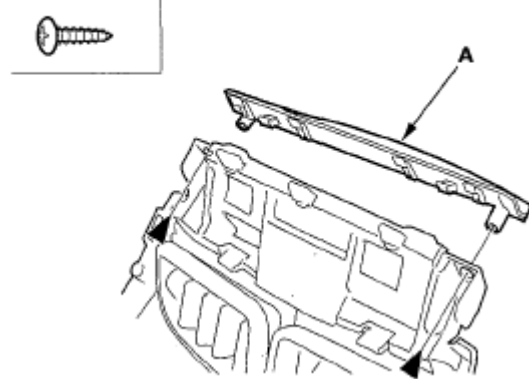


Fig. 13: Identifying Rear Upper Lid

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screws (A) and detach the clips (B, C), then remove the rear console vent/vent trim (D).

Fastener Locations

A ► : Screw, 2 B ▷ : Clip, 4 C ▷ : Clip, 1

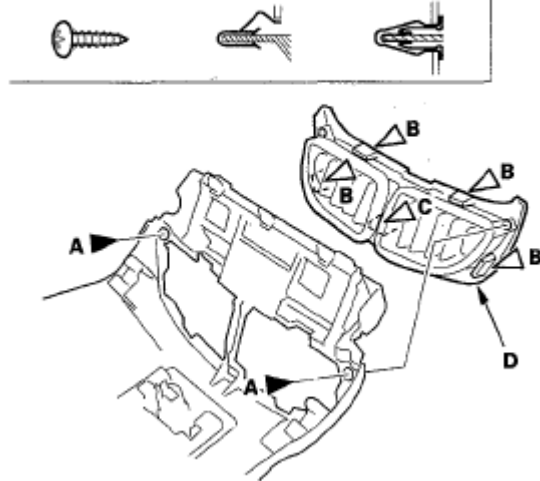


Fig. 14: Identifying Screws, Clips And Rear Console Vent/Vent Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the screws, then remove the rear console vent (A) from the rear console vent trim (B).

Fastener Locations

► : Screw, 3

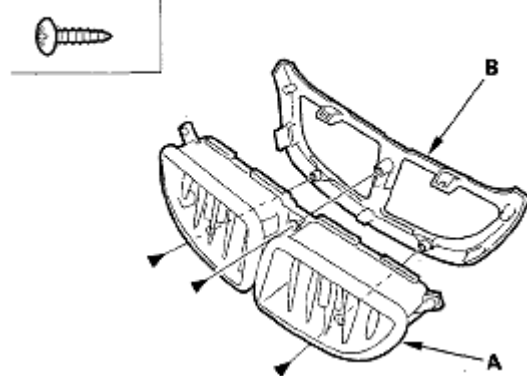


Fig. 15: Identifying Rear Console Vent And Rear Console Vent Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Without rear entertainment system: Remove the screws and release the hooks (A), then remove the accessory power socket panel (B).

Fastener Locations

► : Screw, 4

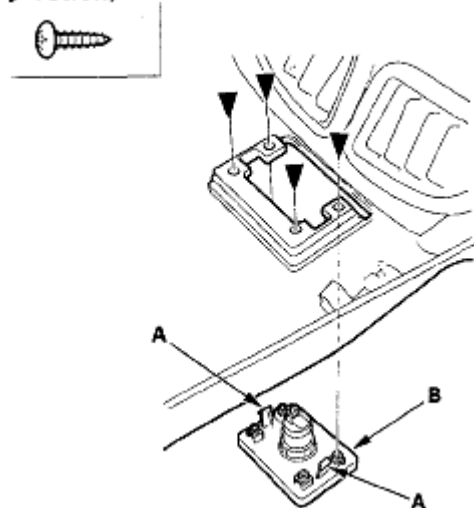


Fig. 16: Identifying Hooks And Accessory Power Socket Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reassemble the rear trim in the reverse order of disassembly, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

CONSOLE ARMREST REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the console.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center console rear trim (see **CENTER CONSOLE REAR TRIM DISASSEMBLY/REASSEMBLY**).
2. Starting at the rear, pull out the wood panel (A) to detach the clips, then remove it.

Fastener Locations

▷ : Clip, 4

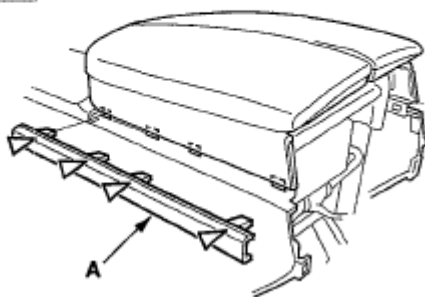


Fig. 17: Identifying Wood Panel Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws, then remove the armrest (A) from the space between the console frame (B) and the console latch trim (C).

Fastener Locations

▶ : Screw, 3

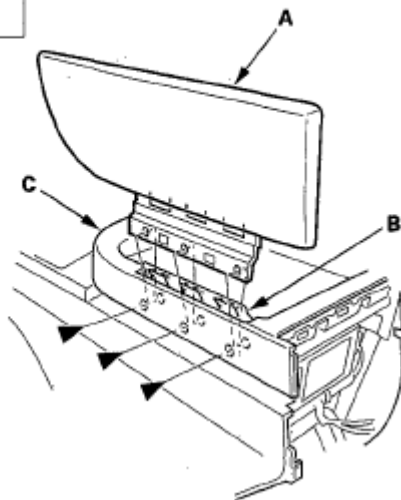
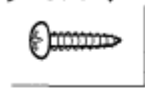


Fig. 18: Identifying Armrest, Console Frame And Console Latch Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the armrest in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the console.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center console armrests from both sides (see CONSOLE ARMREST REMOVAL/INSTALLATION).
2. Remove the screws (A), and starting at the rear, pull out the center console latch panel (B) to detach the clips (C), then remove it.

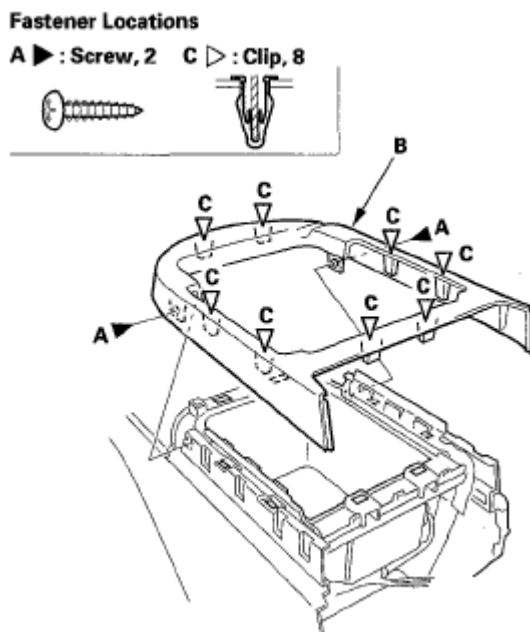


Fig. 19: Identifying Screws, Center Console Latch Panel And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the panel in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE PANEL REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the console.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center console (see CENTER CONSOLE REMOVAL/INSTALLATION).
2. Remove the center console latch panel (see CENTER CONSOLE LATCH PANEL REMOVAL/INSTALLATION).
3. Pull the center console panel (A) out to detach the clips (B, C). Disconnect the accessory power socket connector (D) and seat heater switch connectors (E), detach the harness clip (F), then remove the panel.

Fastener Locations

B ▷ : Clip, 2 C ▷ : Clip, 7

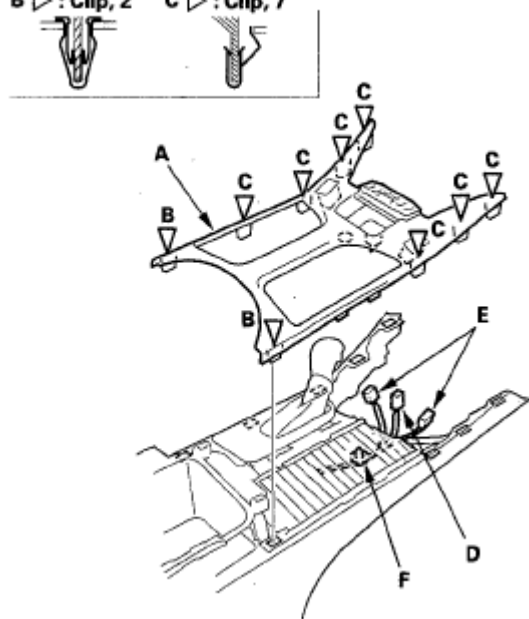


Fig. 20: Identifying Center Console Panel, Clips And Accessory Power Socket Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the panel in the reverse order of removal, and note these items:
 - Make sure each connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE PANEL POCKET REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the pocket.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center console (see CENTER CONSOLE REMOVAL/INSTALLATION).
2. Remove the center console panel (see CENTER CONSOLE PANEL REMOVAL/INSTALLATION).
3. Remove the screws, then remove the console pocket (A) from the console panel (B).

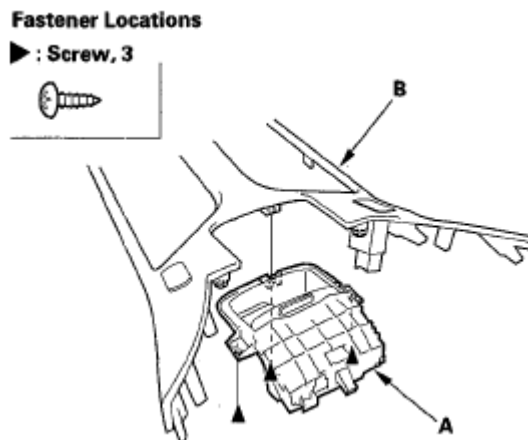


Fig. 21: Identifying Console Pocket And Console Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws and release the tabs (A), then remove the upper lid (B).

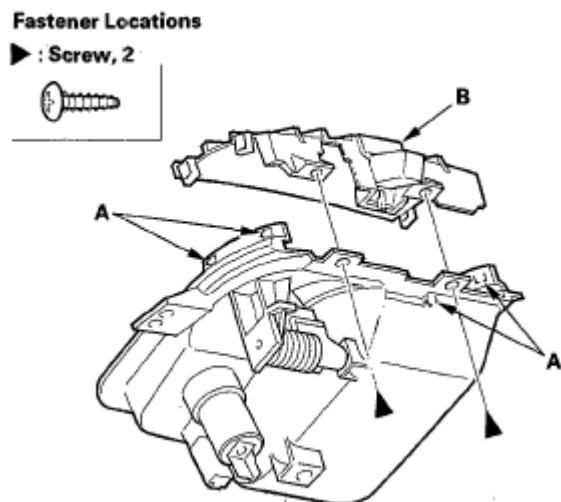


Fig. 22: Identifying Tabs And Upper Lid

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the arm (A) and the spring (B).

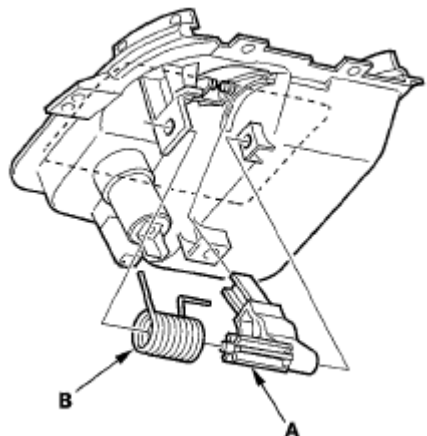


Fig. 23: Identifying Arm And Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the console pocket lid (A) from the console pocket (B).

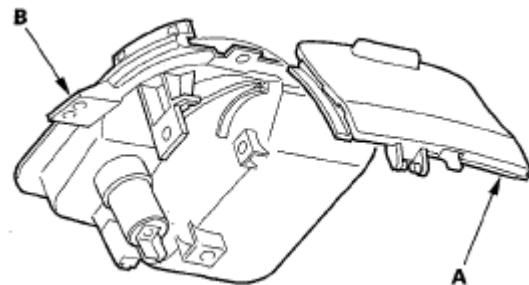


Fig. 24: Identifying Console Pocket Lid And Console Pocket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the pocket in the reverse order of removal, and apply oil to entire rail area of the arm.

CENTER CONSOLE BEVERAGE HOLDER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the console.

- Use the appropriate tool from the KTC trim toll set to avoid damage when removing components.

1. Remove the center console (see CENTER CONSOLE REMOVAL/INSTALLATION).
2. Remove the console panel (see CENTER CONSOLE PANEL REMOVAL/ INSTALLATION).
3. Remove the console beverage holder (A) and passenger's console panel (B) as an assembly:
 1. Detach the console subharness connector (C).
 2. Remove the screws (D) securing the console beverage holder to the A/T gear position indicator panel (E) and console frame (F).
 3. Remove the screws (G) securing the passenger's console panel to the console frame.
 4. Pull out the passenger's console panel to detach the clips (H).

Fastener Locations

D, G ► : Screw, 4 H ► : Clip, 2

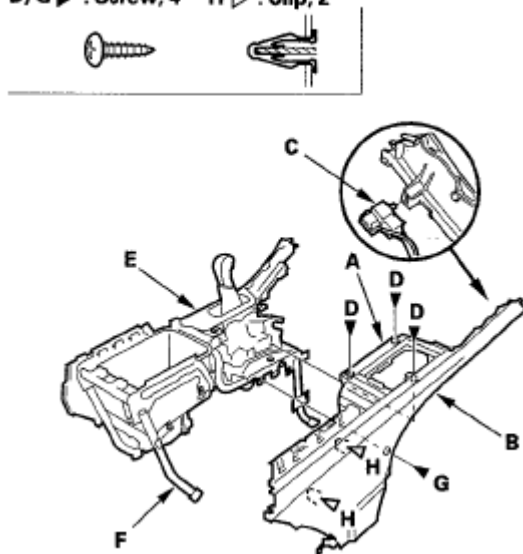


Fig. 25: Identifying Clips, Screws, A/T Gear Position Indicator Panel And Console Frame
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws, then remove the center console beverage holder (A).

Fastener Locations

► : Screw, 2

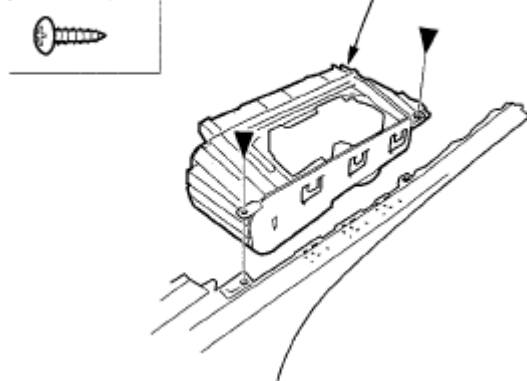


Fig. 26: Identifying Center Console Beverage Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If necessary, separate both rails (A) from the outer case (B), then remove the shutter (C).

Fastener Locations

► : Screw, 8

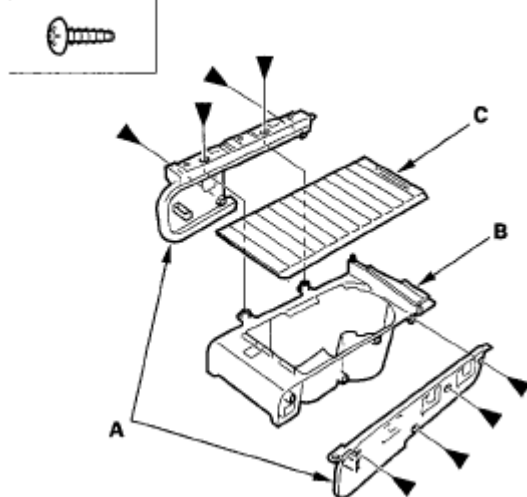


Fig. 27: Identifying Rails, Outer Case And Shutter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the beverage holder in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE BOX REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP20T4

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the center console.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center console (see CENTER CONSOLE REMOVAL/INSTALLATION).
2. Remove the beverage holder and passenger's console panel as an assembly (see CENTER CONSOLE BEVERAGE HOLDER REPLACEMENT).
3. Remove the screw (A), and detach the clips (B, C) by pulling the driver's console panel (D) back, then remove it from the console frame (E).

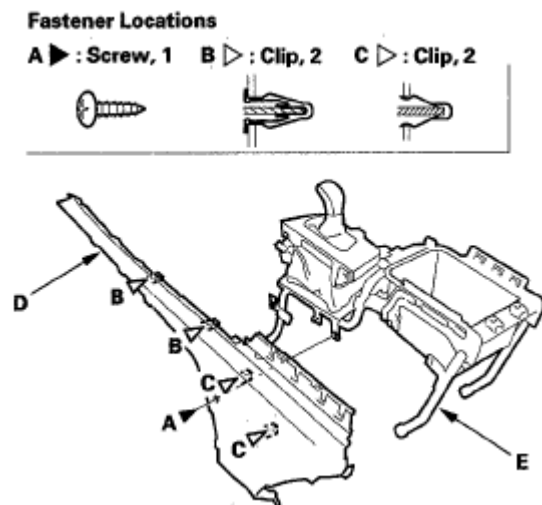


Fig. 28: Identifying Screw, Clips, Driver's Console Panel And Console Frame
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the HandsFreeLink control unit (see CONTROL UNIT INPUT TEST/REPLACEMENT).
5. Remove the screws, disconnect the auxiliary jack connector (without rear entertainment system) or the AC power outlet connector (with rear entertainment System) (A), then remove the center console box (B) from the console frame (C).

Fastener Locations

► : Screw, 4

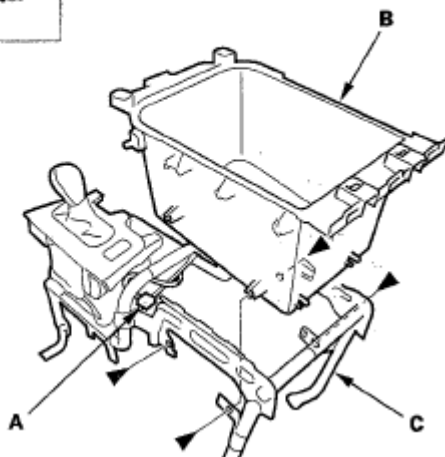


Fig. 29: Identifying AC Power Outlet Connector, Center Console Box And Console Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the box in the reverse order of removal, and note these items:
 - Make sure the auxiliary jack connector or the AC power outlet connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

CENTER CONSOLE SIDE POCKET REPLACEMENT

1. Remove the passenger's center console trim (see step 6 on **CENTER CONSOLE REMOVAL/INSTALLATION**).
2. Remove the screws, then remove the console side pocket (A) from the passenger's center console trim (B).

Fastener Locations

► : Screw, 7

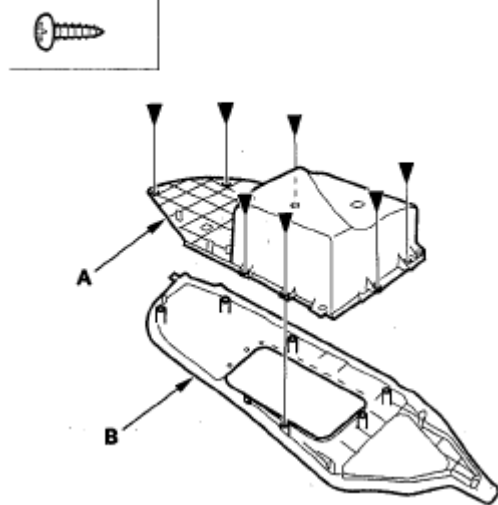


Fig. 30: Identifying Console Side Pocket And Passenger's Center Console Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Separate the box (A) and rail (B), then slide the console side lid (C) out.

Fastener Locations

► : Screw, 5

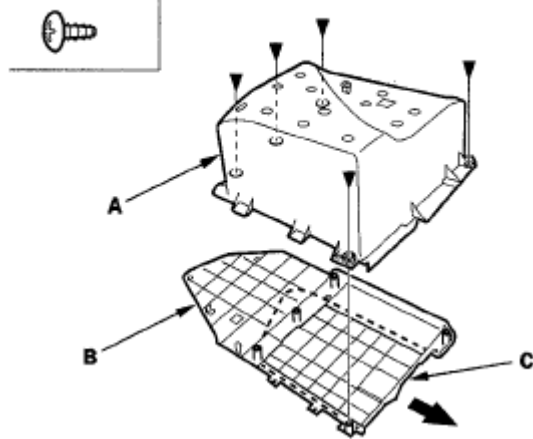


Fig. 31: Identifying Box, Rail And Console Side Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the pocket in the reverse order of removal.

2008 Acura MDX

2007-09 ENGINE Fan Controls - MDX

2007-09 ENGINE

Fan Controls - MDX

COMPONENT LOCATION INDEX

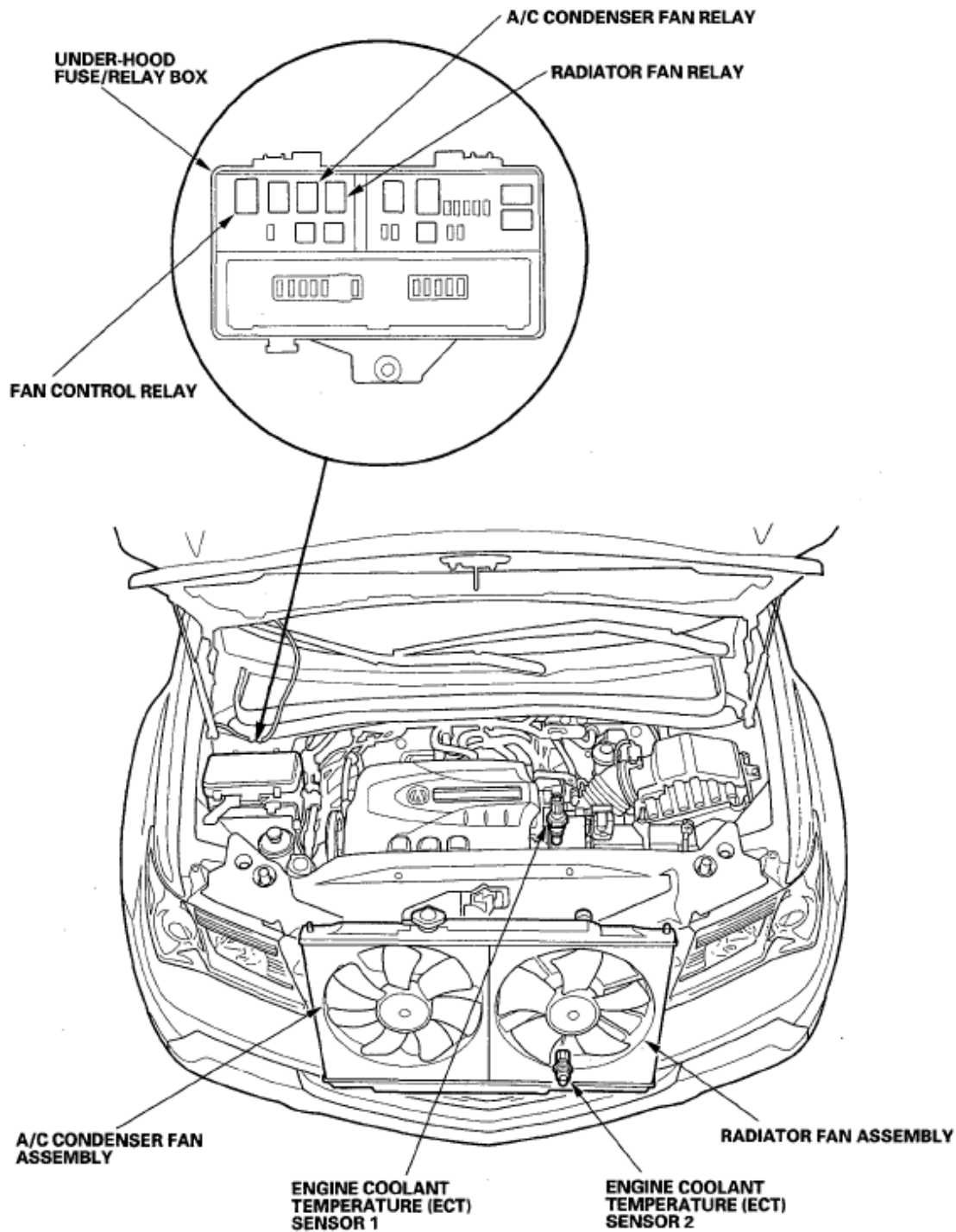


Fig. 1: Identifying Fan Controls Component Location
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic Procedure	Also check for
Engine overheats	1. Check the coolant level. 2. Check for engine coolant leaks (from gaskets, hoses, O-rings, etc.). 3. Check for dirt, leaves, or insects on the radiator and condenser. 4. Check for deteriorated coolant. 5. Check for a damaged or deformed fan shroud. 6. Inspect the fan motors (see FAN MOTOR TEST) or fan relays (see POWER RELAY TEST). 7. Check the radiator cap (see RADIATOR CAP TEST). 8. Check the thermostat (see FAN MOTOR TEST). 9. Inspect the water pump (see WATER PUMP INSPECTION). 10. Check for clogged or deteriorated radiator hoses. 11. Check for a clogged heater core or hoses. 12. Check for a damaged cylinder head gasket.	
The radiator fan runs at low speed, but it does not run at high speed when the engine coolant temperature is above 206°F (97°C)	Radiator fan high speed circuit troubleshooting (see RADIATOR FAN HIGH SPEED CIRCUIT TROUBLESHOOTING).	Cleanliness and tightness of all connectors
With the A/C off and the engine coolant temperature at 206°F (97°C) or below, the A/C condenser fan runs at high speed and the radiator fan does not run. When the engine coolant temperature is above 206°F (97°C), both fans run at high speed	Remove the fan control relay, and test. • If the relay is faulty, replace it. • If the relay is OK, check for a short in the wire between fan control relay 5P socket terminal No. 1 and condenser fan motor 2P connector terminal No. 1.	Cleanliness and tightness of all connectors
The radiator fan runs at high speed with the ignition switch ON (II), the A/C off,	Check for a short in the wire between radiator	Cleanliness and tightness

2008 Acura MDX

2007-09 ENGINE Fan Controls - MDX

and the engine coolant temperature below 204°F (95°C)	fan relay 4P socket terminal No. 3 and PCM connector terminal A5.	of all connectors
Both the radiator fan and the A/C condenser fan run at low speed with the ignition switch ON (II) and the A/C off	Check for a short in the wire between A/C condenser fan relay 4P socket terminal No. 3 and PCM connector terminal A4.	Cleanliness and tightness of all connectors
Both the radiator fan and the A/C condenser fan do not run at low speed with the A/C on	Radiator and A/C condenser fans low speed circuit troubleshooting (see <u>RADIATOR AND A/C CONDENSER FAN LOW SPEED CIRCUIT TROUBLESHOOTING</u>).	Cleanliness and tightness of all connectors
The A/C condenser fan does not run at all. The radiator fan does not run at low speed, but it runs at high speed	A/C condenser fans high speed circuit troubleshooting (see <u>A/C CONDENSER FAN HIGH SPEED CIRCUIT TROUBLESHOOTING</u>).	Cleanliness and tightness of all connectors
Both the radiator fan and the A/C condenser fan do not run at high speed when the engine coolant temperature is above 206°F (97°C)	Check for an open in the wire between radiator fan relay 4P socket terminal No. 3 and PCM connector terminal A5.	Cleanliness and tightness of all connectors

CIRCUIT DIAGRAM

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse(s) and recheck.

2. Remove the radiator fan relay from the under-hood fuse/relay box and test it (see **POWER RELAY TEST**).

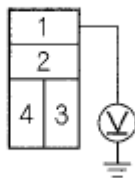
Is the relay OK?

YES - Go to step 3.

NO - Replace the radiator fan relay.

3. Measure the voltage between radiator fan relay 4P socket terminal No. 1 and body ground.

RADIATOR FAN RELAY 4P SOCKET



Terminal side of female terminals

Fig. 3: Identifying Voltage Between Radiator Fan Relay 4P Socket Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

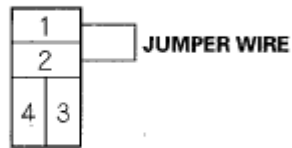
Is there battery voltage?

YES - Go to step 4.

NO - Repair open in the RED wire between radiator fan relay 4P socket terminal No. 1 and the No. 3 fuse in the main under-hood fuse box.

4. Connect radiator fan relay 4P socket terminals No. 1 and No. 2 with a jumper wire.

RADIATOR FAN RELAY 4P SOCKET



Terminal side of female terminals

Fig. 4: Identifying Radiator Fan Relay 4P Socket Terminals No.1 And No.2 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the radiator fan run at high speed?

YES - Go to step 5.

NO - Repair open in the BRN wire between radiator fan relay 4P socket terminal No. 2 and radiator fan motor 2P connector terminal No. 2.

5. Turn the ignition switch to ON (II).
6. Measure the voltage between radiator fan relay 4P socket terminal No. 4 and body ground.

RADIATOR FAN RELAY 4P SOCKET

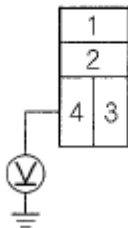


Fig. 5: Identifying Voltage Between Radiator Fan Relay 4P Socket Terminal No. 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair open in the PUR wire between radiator fan relay 4P socket terminal No. 3 and the powertrain control module (PCM) (A5).

NO - Repair open in the PUR wire between radiator fan relay 4P socket terminal No. 4 and the under-hood fuse/relay box.

2008 Acura MDX

2007-09 ENGINE Cooling System - MDX

2007-09 ENGINE

Cooling System - MDX

COMPONENT LOCATION INDEX

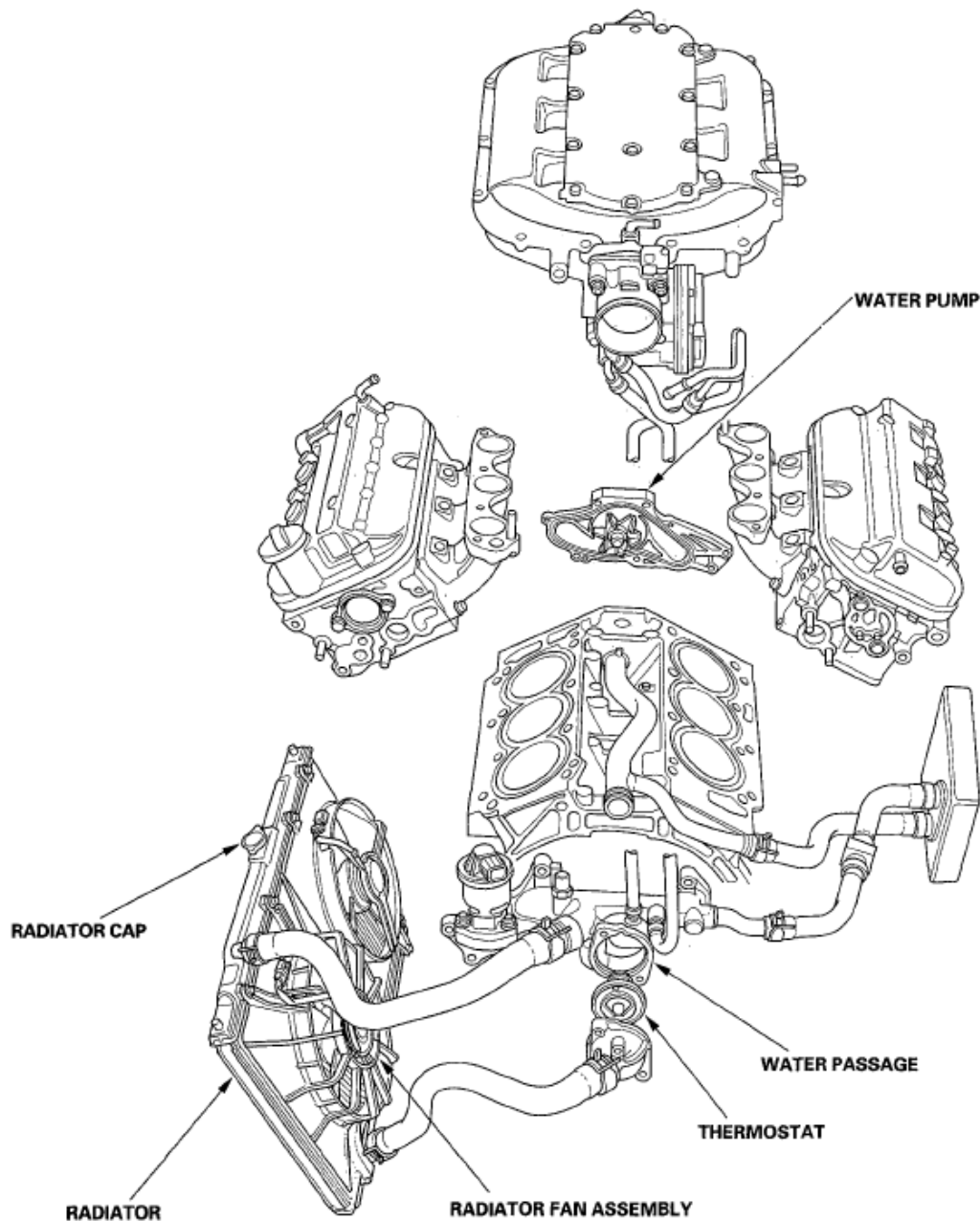


Fig. 1: Identifying Cooling System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RADIATOR CAP TEST

1. Remove the radiator cap (A). Wet its seal with engine coolant, then install it on a commercially available pressure tester (B).

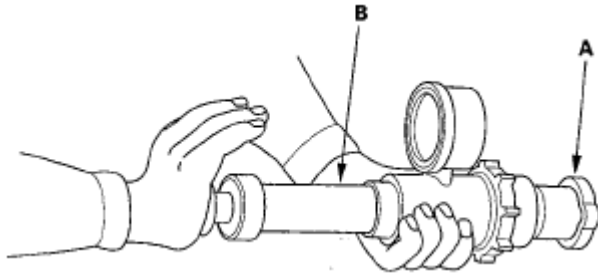


Fig. 2: Identifying Pressure Tester To Radiator Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply a pressure of 93-123 kPa (0.95-1.25 kgf/cm² , 14-18 psi).
3. Check for a drop in pressure.
4. If the pressure drops, replace the cap.

RADIATOR TEST

1. Wait until the engine is cool, then carefully remove the radiator cap, and fill the radiator with engine coolant to the top of the filler neck.
2. Attach a commercially available pressure tester (A) to the radiator, and apply a pressure of 93-123 kPa (0.95-1.25 kgf/cm² , 14-18 psi).

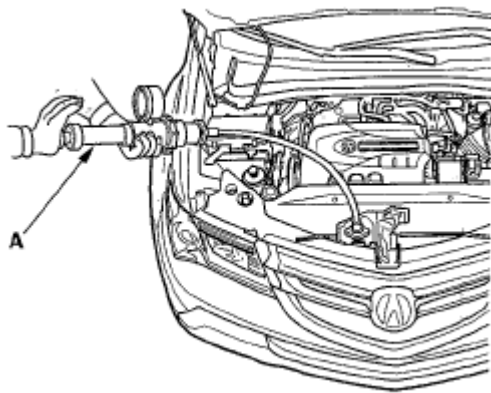


Fig. 3: Attaching Commercially Available Pressure Tester To Radiator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect for engine coolant leaks and a drop in pressure.
4. Remove the tester, then reinstall the radiator cap.

FAN MOTOR TEST

1. Disconnect the 2P connectors from the radiator fan motor (A) and condenser fan motor (B).

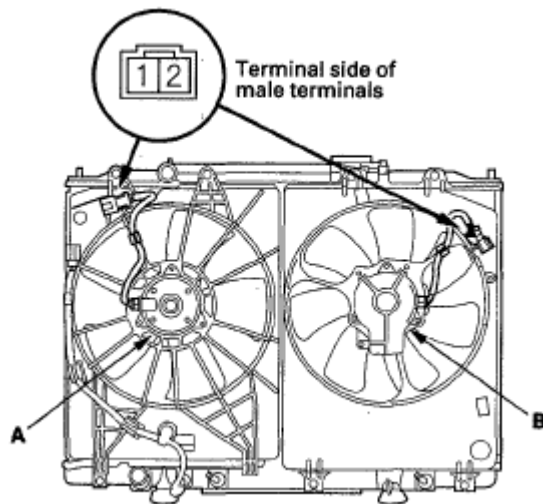


Fig. 4: Identifying Radiator Fan Motor And Condenser Fan Motor 2P Connectors Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Test each motor by connecting battery power to No. 2 terminal and ground to No. 1 terminal.
3. If either motor fails to run or does not run smoothly, replace it (see **RADIATOR AND FAN REPLACEMENT**).

THERMOSTAT TEST

Replace the thermostat if it is stuck open at room temperature.

To test a closed thermostat:

1. Suspend the thermostat (A) in a container of water. Do not let the thermometer (B) touch the bottom of the hot container.

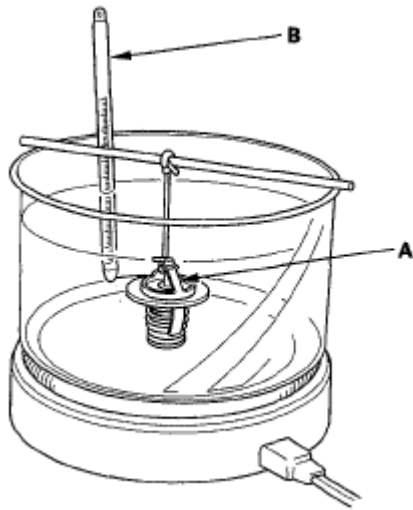


Fig. 5: Suspending Thermostat In Container Of Water
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Heat the water and check the temperature with a thermometer. Note the temperature when the thermostat first opens, then check the temperature when the thermostat is fully open.
3. Measure the lift height of the thermostat when it is fully open.

Standard Thermostat

Lift Height: Above 10.0 mm (0.39 in.)

Starts Opening: 169-176°F (76-80°C)

Fully Open: 194°F (90°C)

WATER PUMP INSPECTION

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Turn the water pump pulley counterclockwise, and make sure that it turns freely. If it doesn't, replace the water pump (see **WATER PUMP REPLACEMENT**).

NOTE: When you check the water pump, you may see a small amount of "weeping" from the bleed holes (A). This is normal.

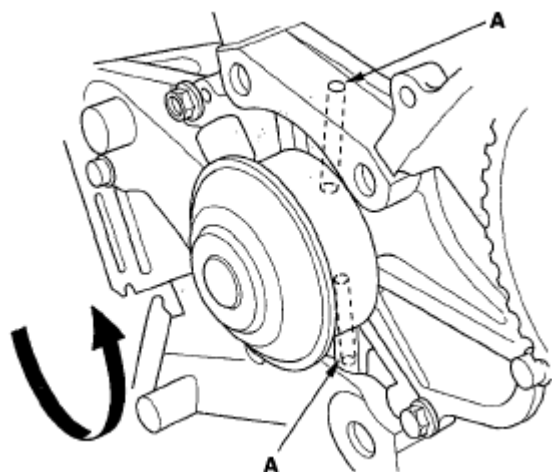


Fig. 6: Identifying Water Pump Pulley Counterclockwise
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the timing belt (see **TIMING BELT INSTALLATION**).

WATER PUMP REPLACEMENT

1. Drain the engine coolant (see **COOLANT REPLACEMENT**).
2. Remove the timing belt (see **TIMING BELT REMOVAL**).
3. Remove the timing belt adjuster (see **TIMING BELT ADJUSTER REPLACEMENT**).
4. Remove the water pump (A) by removing the five bolts.

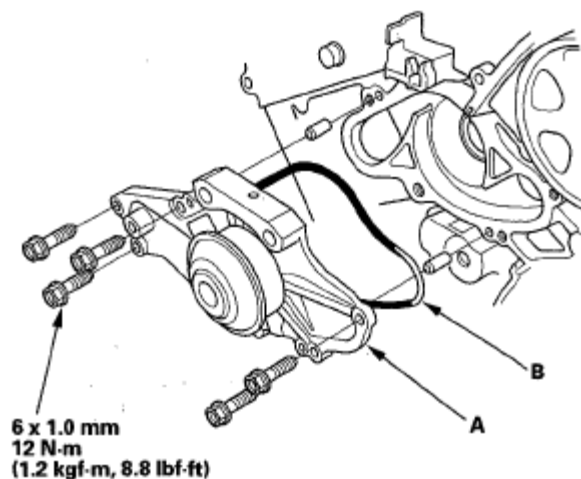


Fig. 7: Identifying Water Pump And O-Ring With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect and clean the O-ring groove and the mating surface of the engine block.
6. Install the water pump with a new O-ring (B) in the reverse order of removal.

7. Clean up any spilled engine coolant.
8. Install the timing belt adjuster (see **TIMING BELT ADJUSTER REPLACEMENT**).
9. Install the timing belt (see **TIMING BELT INSTALLATION**).
10. Refill the radiator with engine coolant, then bleed the air from the cooling system (see step 10 on **COOLANT REPLACEMENT**).

COOLANT CHECK

1. Look at the coolant level in the coolant reservoir. Make sure it is between the MAX mark (A) and MIN mark (B).

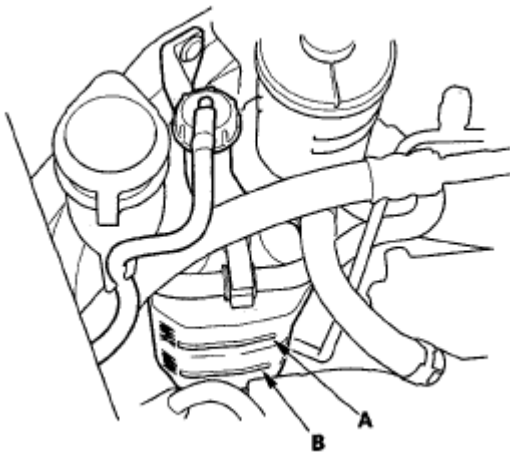


Fig. 8: Identifying Coolant Reservoir Level MAX Mark And MIN Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the coolant level in the coolant reservoir is at or below the MIN mark, add coolant to bring it between the MIN and MAX marks, then inspect the cooling system for leaks.

COOLANT REPLACEMENT

1. Start the engine. Set the heater temperature control dial to maximum heat, then turn off the ignition switch. Make sure the engine and radiator are cool to the touch.
2. Remove the radiator cap.
3. Remove the splash shield (see step 31 on **ENGINE REMOVAL**).
4. Loosen the drain plug (A) and drain the coolant.

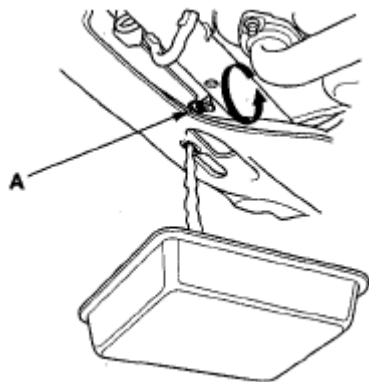


Fig. 9: Identifying Drain Plug

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install a rubber hose (A) on the drain bolt (B) located at the rear of the engine block, then loosen the drain bolt.

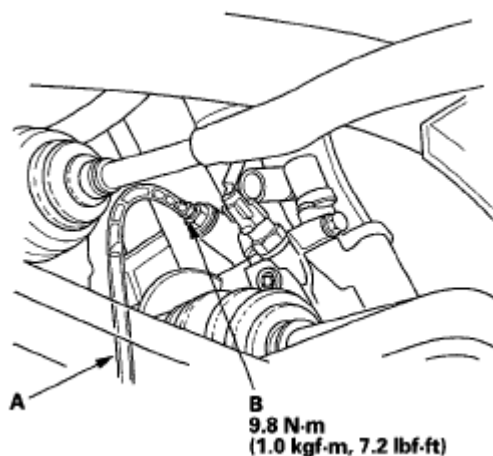


Fig. 10: Identifying Rubber Hose And Drain Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. When the coolant stops draining, tighten the drain bolt. Remove the rubber hose.
7. Tighten the radiator drain plug securely.
8. Install the splash shield (see step 39 on ENGINE INSTALLATION).
9. Remove, drain, and reinstall the coolant reservoir.
10. Fill the coolant reservoir to the MAX mark (A) with Acura Long Life Antifreeze/Coolant Type 2 (P/N OL999-9011 A).

NOTE:

- Always use Acura Long Life Antifreeze/Coolant Type 2 (P/N OL999-9011 A). Using a non-Acura coolant can result in corrosion, causing the cooling system to malfunction or fail.
- Acura Long Life Antifreeze/Coolant Type 2 is a mixture of 50%

antifreeze and 50% water. Do not add water.

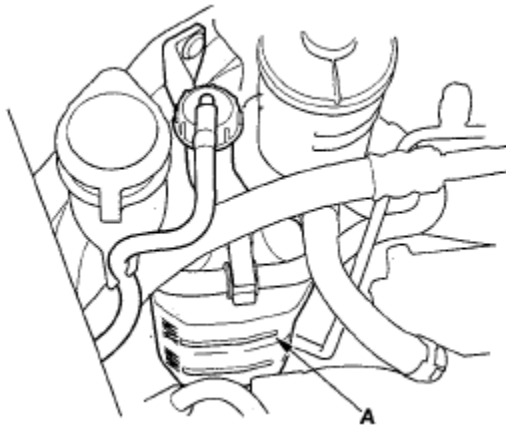


Fig. 11: Identifying MAX Mark On Coolant Reservoir
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Pour Acura Long Life Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck.

Engine Coolant Capacities (Including the coolant reservoir capacity of 0.7 L (0.19 US gal)):

At Coolant Change: 7.3 L (1.93 US gal)

After Engine Overhaul: 9.2 L (2.43 US gal)

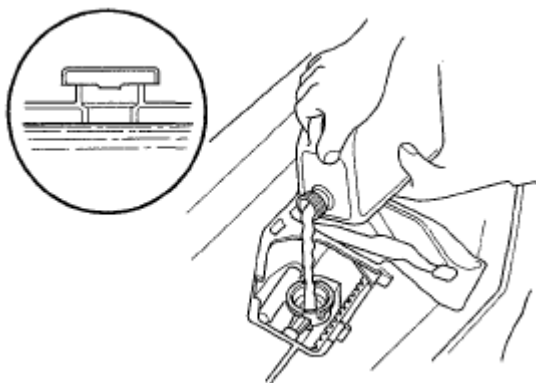


Fig. 12: Pouring Acura Long Life Antifreeze/Coolant Into Radiator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Start the engine. Hold the engine speed at 1,500 rpm until it warms up (the radiator fan comes on at least twice). Make sure the thermostat is open.
13. Turn off the engine. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.
14. Set the climate control or heater control panel to maximum cool. Start the engine. Hold the engine speed at 1,500 rpm for 5 minutes, then turn off the engine.

15. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.
16. Set the climate control or heater control panel to maximum heat. Start the engine. Hold the engine speed at 1,500 rpm for 5 minutes, then turn off the engine.
17. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.
18. Set the climate control or heater control panel to maximum cool. Start the engine. Hold the engine speed at 1,500 rpm for 3 minutes, then turn off the engine.
19. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.
20. Set the climate control or heater control panel to maximum heat. Start the engine. Hold the engine speed at 1,500 rpm for 3 minutes, then turn off the engine.
21. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.
22. Repeat steps 18 through 21 until the coolant level does not change in the radiator, then install the radiator cap loosely.
23. Set the climate control or heater control panel to maximum cool. Start the engine. Hold the engine speed at 2,500 rpm for 1 minute.
24. Set the climate control or heater control panel to maximum heat, and select high speed heat mode on the rear control panel. Measure the temperature of the air from the rear floor vent for 2 or 3 minutes. Make sure the temperature is above the standard line of the graph as shown. If the temperature is below the standard line, repeat steps 18 through 21 several more times. Then loosely install the radiator cap and recheck.

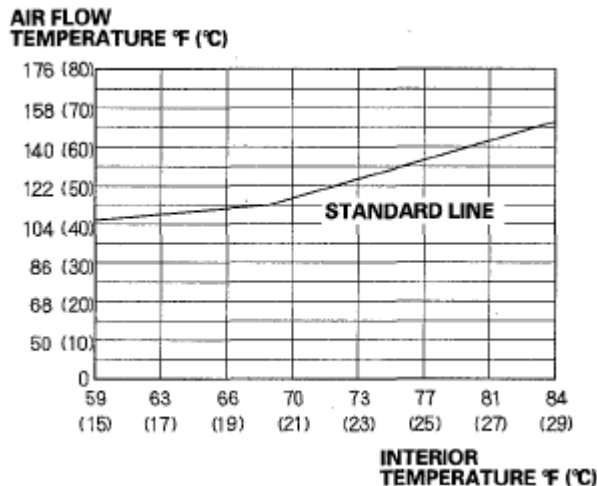


Fig. 13: Temperature Graph

Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. With the engine idling, make sure you do not hear the sound of water flowing near the rear heater unit. If you hear water flowing, repeat steps 18 through [21](#) several more times.
26. Install the radiator cap fully.
27. Fill the coolant reservoir with Acura Long Life Antifreeze/Coolant Type 2 up to the MAX mark on the coolant reservoir, then add an extra 0.4 L (0.11 US gal) coolant.
28. Clean up any spilled engine coolant.

2008 Acura MDX

2007-09 ENGINE Cooling System - MDX

29. If the maintenance minder required to replace the engine coolant, reset the maintenance minder (see **RESETTING THE MAINTENANCE INFORMATION DISPLAY**), and this procedure is complete. If the maintenance minder did not require to replace the engine coolant, go to step 30.
30. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
31. Turn the ignition switch ON (II).
32. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
33. Select BODY ELECTRICAL with the HDS.
34. Select ADJUSTMENT in the GAUGES MENU with the HDS.
35. Select RESET in the MAINTENANCE MINDER with the HDS.
36. Select MAINTENANCE SUB ITEM 5 RESET with the HDS.
37. Turn off the engine. Check the level in the radiator, and add Acura Long Life Antifreeze/Coolant Type 2, if needed.

NOTE: **Removing the radiator cap while the engine is hot can cause the coolant to spray out. Always let the engine and radiator cool before removing the cap.**

THERMOSTAT REPLACEMENT

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** . Remove the battery (See **REMOVAL** .
2. Remove the air intake duct (see step 8 on **REMOVAL**).
3. Drain the engine coolant (see **COOLANT CHECK**).
4. Remove the thermostat cover, then remove the thermostat.

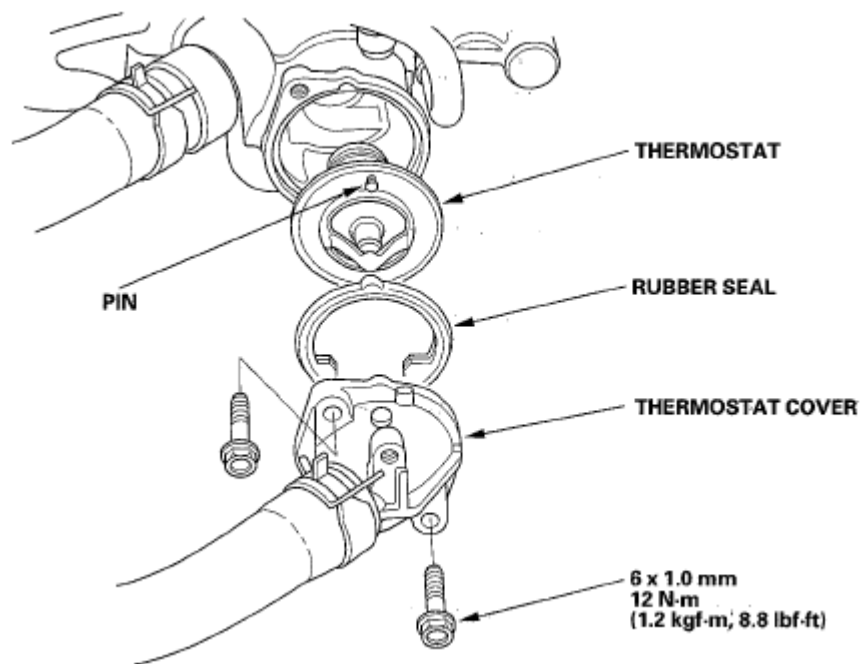


Fig. 14: Identifying Thermostat Components With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new thermostat with a new rubber seal and with the pin on the top side.
6. Install the battery(See **INSTALLATION** . Do the battery terminal reconnection procedure(See **RECONNECTION** .
7. Refill the radiator with engine coolant, then bleed air from the cooling system (see step 10 on **COOLANT REPLACEMENT**).
8. Clean up any spilled engine coolant.

WATER PASSAGE REPLACEMENT

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** . Remove the battery (See **REMOVAL** .
2. Remove the air intake duct (see step 8 on **ENGINE REMOVAL**).
3. Drain the engine coolant (see **COOLANT CHECK**).
4. Remove the upper radiator hose, lower radiator hose, heater hoses, and water bypass hoses from the water passage. Disconnect the engine coolant temperature (ECT) sensor 1 connector and the exhaust gas recirculation (EGR) valve connector.
5. Remove the water passage.

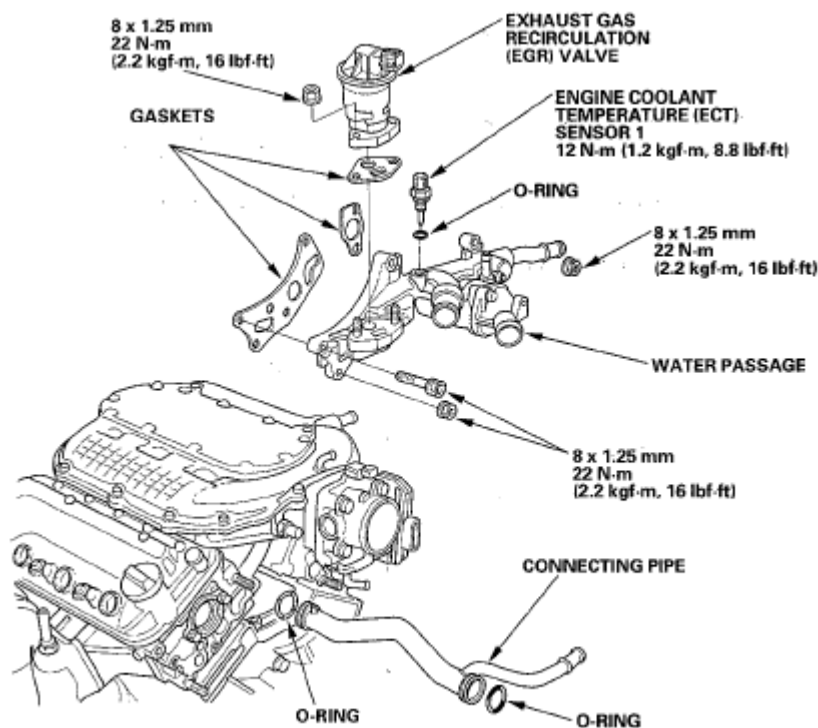


Fig. 15: Identifying Water Passage Components With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the water passage in the reverse order of removal.
7. Install the battery(See **INSTALLATION**).Do the battery terminal reconnection procedure(See **RECONNECTION**).
8. Refill the radiator with engine coolant, then bleed air from the cooling system (see step 10 on **COOLANT REPLACEMENT**).
9. Clean up any spilled engine coolant.

RADIATOR AND FAN REPLACEMENT

NOTE:

- Use fender covers to avoid damaging painted surfaces.
- To avoid damaging the wire and terminals, unplug the wiring connectors carefully while holding the connector portion.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact any other wiring or hoses, or interfere with any other parts.

1. Do the battery terminal disconnection procedure(See **DISCONNECTION**).
2. Remove the battery (See **REMOVAL** and battery base (see step 11 on **ENGINE REMOVAL**).
3. Remove the air cleaner assembly (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**).

4. Remove the front grille cover, then remove the front grille.

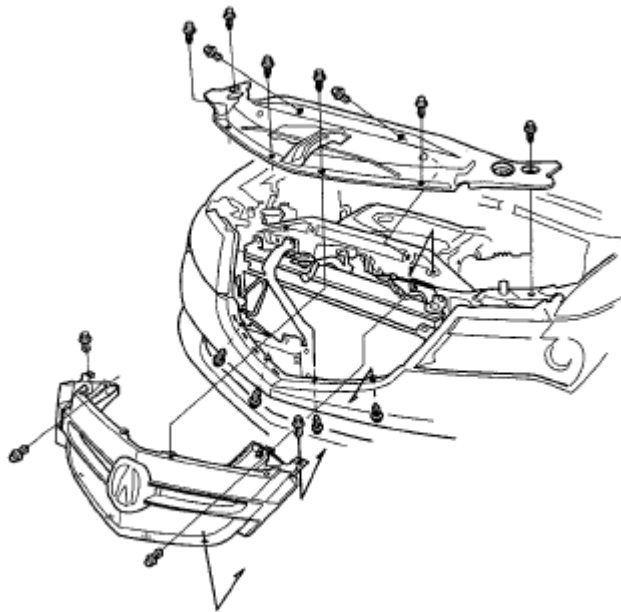


Fig. 16: Identifying Front Grille Cover With Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the fan motor connectors (A), harness clamp (B), engine coolant temperature (ECT) sensor 2 subharness connector (C) and coolant reservoir hose (D).

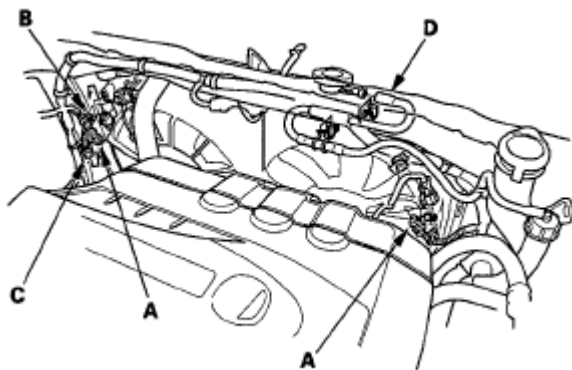


Fig. 17: Identifying Fan Motor Connectors, Harness Clamp, ECT Sensor Subharness Connector And Coolant Reservoir Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Drain the engine coolant (see **COOLANT CHECK**).
7. Remove the upper radiator hose.



Fig. 18: Identifying Upper Radiator Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Unclamp the hose clamps (A) and remove the ATF cooler hoses (B), then plug the line and hoses.

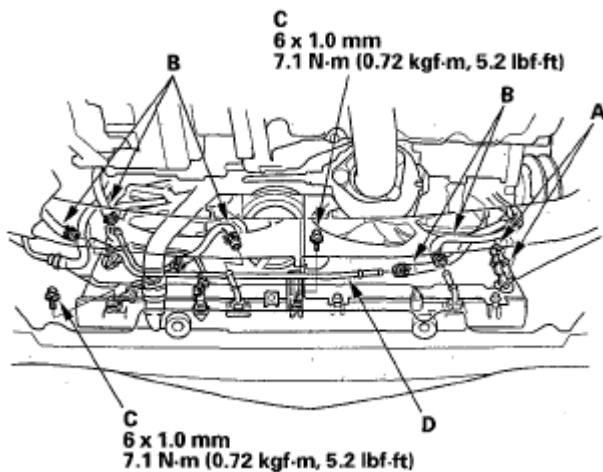


Fig. 19: Identifying Hose Clamps, ATF Cooler Hoses, ATF Cooler Pipe Mount Bolts And ATF Cooler Pipe With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the ATF cooler pipe mount bolts (C), then remove the ATF cooler pipe (D).
10. Remove the lower radiator hose (A) and disconnect the ECT sensor 2 connector (B) and loosen the two bolts (C).

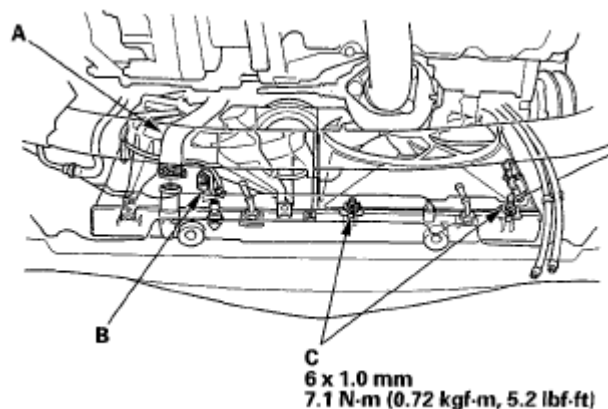


Fig. 20: Identifying Lower Radiator Hose, ECT Sensor Connector And Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect the hood latch switch connector (A), clamps (B), then remove the hood latch (C).

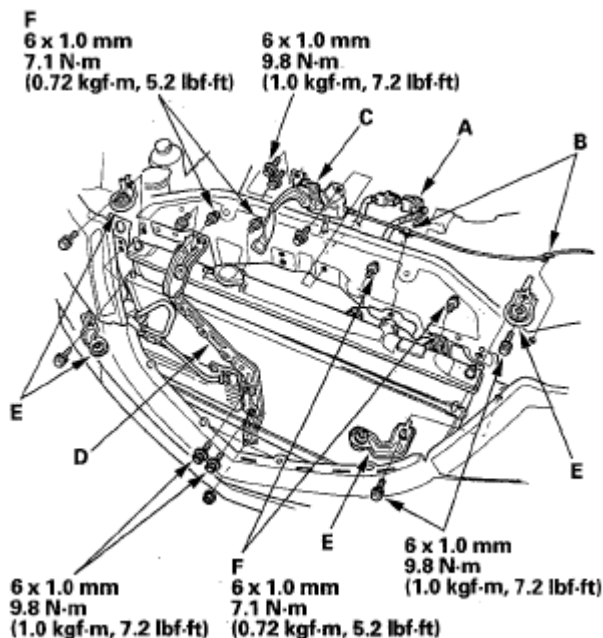


Fig. 21: Identifying Hood Latch Switch Connector, Clamps And Hood Latch With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the bulkhead bracket (D), and radiator and A/C condenser mount upper bracket/cushion (E), then remove the fan shroud mount bolts (F).
13. Move the fan shroud assemblies toward the engine, then pull up the radiator assembly (A).

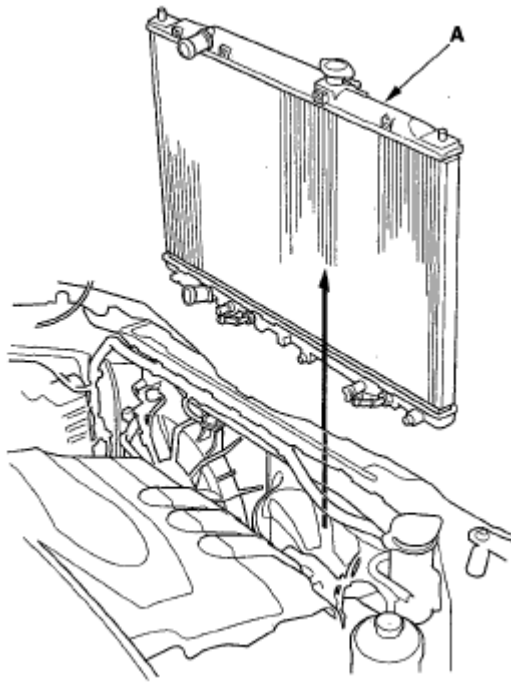


Fig. 22: Identifying Radiator Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the fan shroud assemblies.
15. Install the radiator and fans in the reverse order of removal.
16. Install the bulkhead bracket in the reverse order of removal. Apply body paint to the bulkhead bracket mounting bolts.
17. Set the upper and lower cushions securely.
18. Fill the transmission with ATF (see **ATF REPLACEMENT**).
19. Install the battery(See **INSTALLATION** .Do the battery terminal reconnection procedure(See **RECONNECTION**).
20. Fill the radiator with engine coolant and bleed the air from the system (see step 10 on **COOLANT REPLACEMENT**).
21. Adjust the engine hood latch (see **HOOD ADJUSTMENT**).

2007-09 ACCESSORIES AND EQUIPMENT

Cruise Control - MDX

COMPONENT LOCATION INDEX

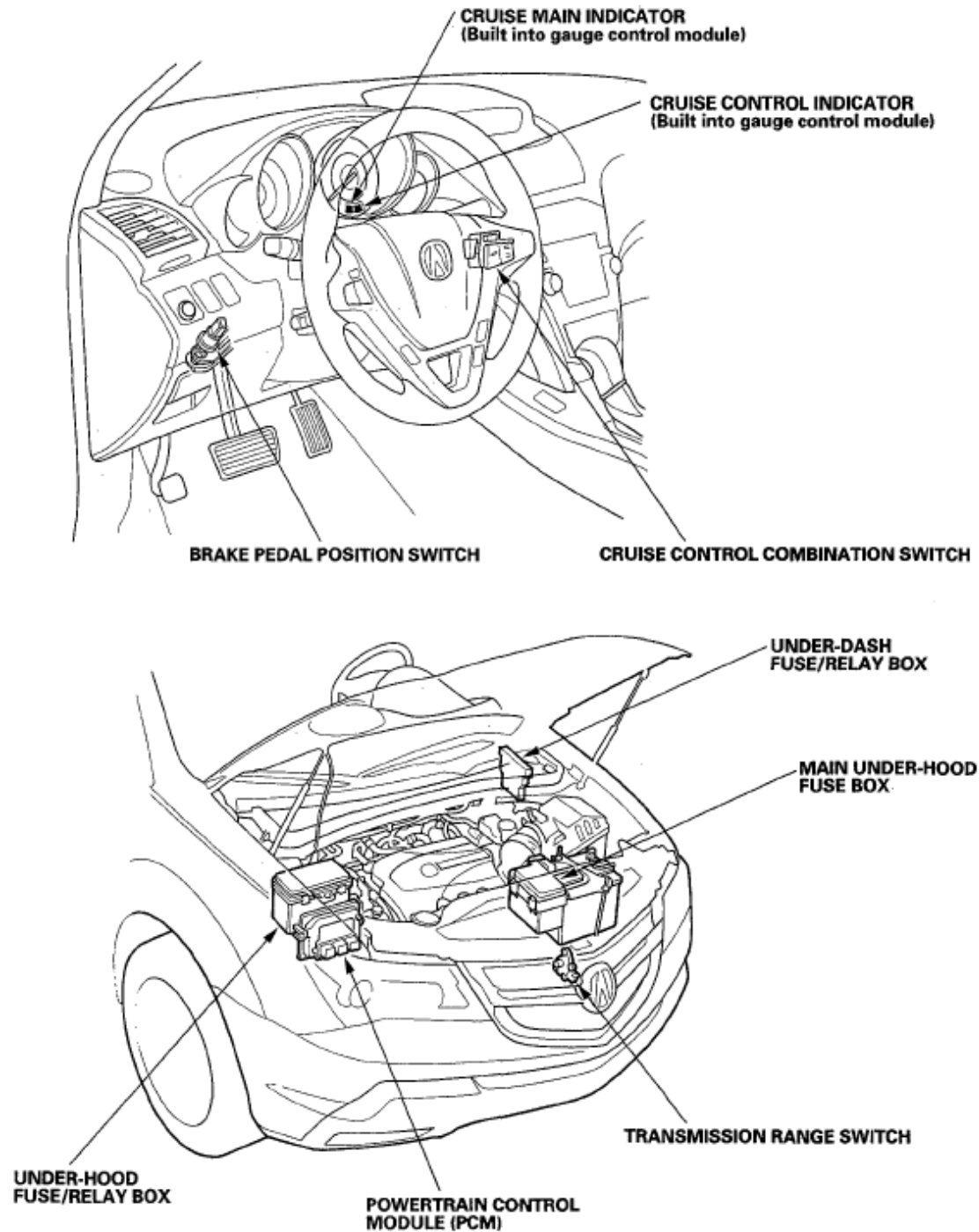


Fig. 1: Identifying Cruise Control Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX**TROUBLESHOOTING CHART**

Symptom	Diagnostic procedure	Also check for
Cruise control cannot be set	1. Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). 2. Check the No. 11 (15 A) fuse in the main under-dash fuse/relay box, and the No. 18 (10 A) fuse in the under-dash fuse/relay box. 3. Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). 4. Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	
Cruise control can be set, but the cruise main indicator does not come on	1. Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). 2. Do the gauge control module self-diagnostic function procedure (see <u>SELF-DIAGNOSTIC FUNCTION</u>). 3. Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control main switch signal input.	Faulty gauge control module
Cruise control can be set, but the cruise control indicator does not come on	1. Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). 2. Do the gauge control module self-diagnostic function (see <u>SELF-DIAGNOSTIC FUNCTION</u>). 3. Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control indicator signal input.	Faulty gauge control module
	1. Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>).	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Cruise Control - MDX

Vehicle does not decelerate or accelerate accordingly when the set/ decel or resume/accel switch is pressed	- Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control set/decel, resume/accel switch signal input. - Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	Open circuit, loose or disconnected terminals: YEL/RED, GRY or LT GRN/BLK, YEL
Set speed does not cancel when the brake pedal is pressed	- Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). - Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the brake pedal position switch signal input. - Do the brake pedal position switch test (see <u>BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT</u>).	- Short to power on the BRN wire - Faulty brake pedal position switch
Set speed does not cancel when the cruise control main switch is turned off	- Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). - Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control main switch signal input. - Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	Short to power on the PNK, LT GRN wire
Set speed does not cancel when the cancel switch is pressed	- Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>). - Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control cancel switch signal input. - Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	Open circuit, loose or disconnected terminals: YEL/RED, GRY or LT GRN/BLK, YEL
	Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>).	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Cruise Control - MDX

Set speed will not resume when the resume/accel switch is pressed (with the cruise control main switch turned on, and set speed temporarily canceled by pressing the brake pedal)	2. Check the brake pedal position switch adjustment (see <u>BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT</u>). 3. Do the cruise control input test (see <u>CRUISE CONTROL INPUT TEST</u>). Test the cruise control resume/accel switch signal input. Test the brake pedal position switch signal input. 4. Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	• Faulty brake pedal position switch • Open circuit, loose or disconnected terminals: LTGRN/BLK, YEL
With the ignition switch ON (II), and the lighting switch turned on, the cruise control combination switch illumination does not come on	Do the cruise control combination switch test (see <u>CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT</u>).	

CIRCUIT DIAGRAM

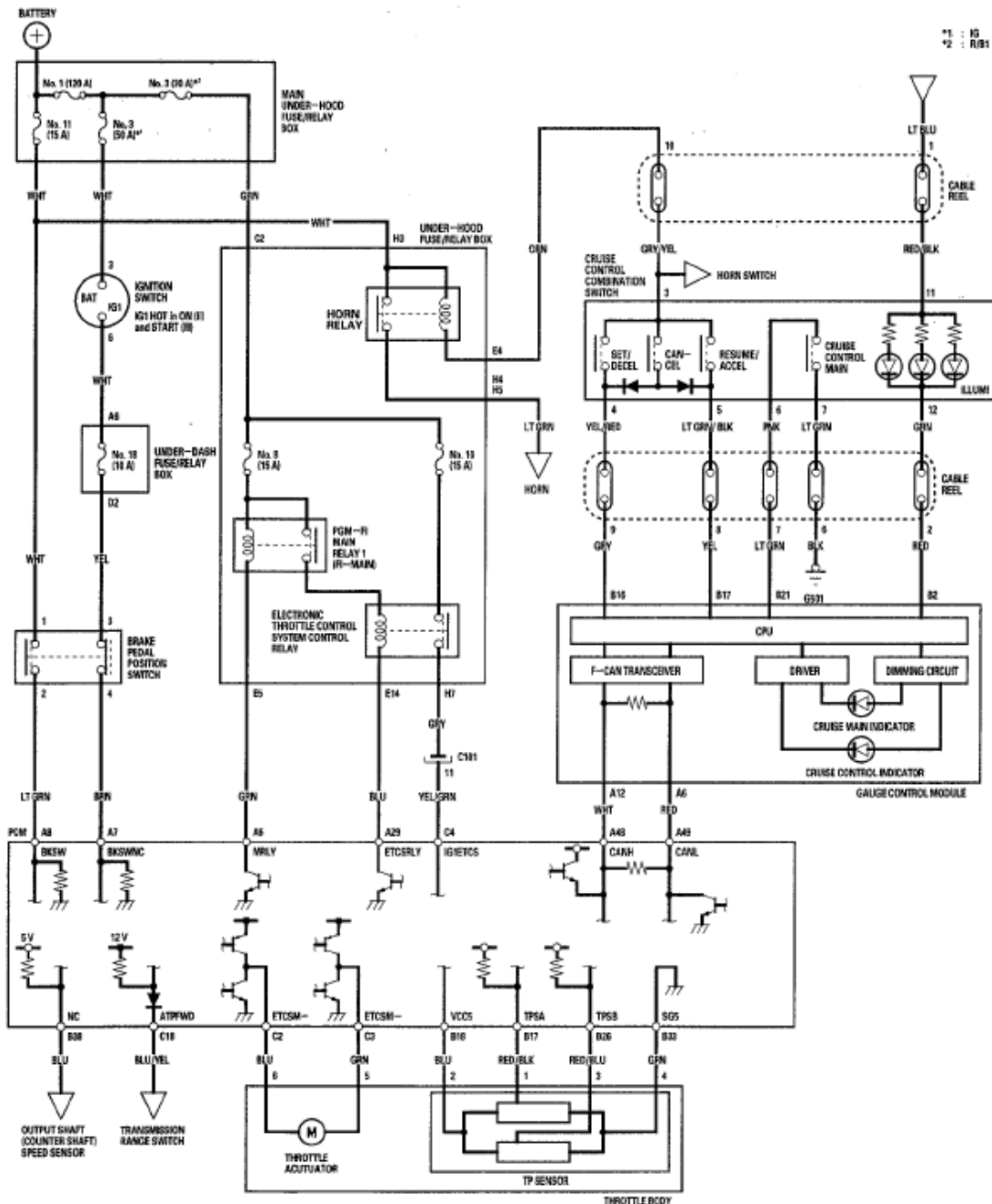


Fig. 2: Cruise Control - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRUISE CONTROL INPUT TEST

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch ON (II).

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Cruise Control - MDX**

3. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Go to **PGM-FI** , and check for DTCs.
5. Do the following tests while monitoring parameters in the PGM-FI DATA LIST with the HDS.

NOTE: Intermittent failures are often caused by loose circuit connections. While monitoring cruise control inputs, flex their circuits, and note if any of the test results change.

TEST RESULTS CHART

Signal to be tested	Test condition	Parameter: Desired result	Possible cause if result is not obtained
Brake switch signal	Brake pedal pressed, then released	CRUISE BRAKE SW should indicate OFF when the brake pedal is pressed and ON when the brake pedal is released.	• Faulty brake pedal position switch • Blown No. 18 (10 A) fuse in the under-dash fuse/relay box • An open in the wire between the powertrain control module (PCM) and the brake pedal position switch • A wire shorted to ground between the PCM and the brake pedal position switch
Transmission range switch signal	Shift lever in D and D3	SHIFT/CLUTCH SW should indicate OFF in P, R and N and ON in D and D3.	• Faulty transmission range switch • An open in the wire between the PCM and the transmission range switch • A wire shorted to ground between the PCM and the transmission range switch • Poor ground G101
		CRUISE CONTROL MAIN SW	• Faulty cruise control combination switch • An open in the wire between the gauge

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Cruise Control - MDX

Cruise control main switch signal	Cruise control main switch ON and OFF	should indicate ON when the cruise control main switch is turned ON and OFF when the cruise control main switch is turned OFF.	control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Set switch signal	Set/decel switch pressed and released	CRUISE CONTROL SET SW should indicate ON when the set/decel switch is pressed and OFF when the set/decel switch is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Resume switch signal	Resume/accel switch pressed and released	CRUISE CONTROL RESUME SW should indicate ON when the resume/accel switch is pressed and OFF when the resume/accel switch is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Cancel switch signal	Cancel switch pressed and released	CRUISE CONTROL CANCEL SW should indicate ON when the cancel switch is pressed and OFF when the cancel switch is released.	Faulty cruise control combination switch
Cruise control indicator signal	Start the engine, turn the cruise control main switch on, and drive the vehicle above 25 mph (40 km/h). Set and cancel the cruise control.	CRUISE INDICATOR should indicate ON when the cruise control is set and OFF when the cruise control is canceled.	Faulty gauge control module

CRUISE CONTROL COMBINATION SWITCH TEST/REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) in the SRS before doing repairs or service.

1. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
3. Remove the six screws, then remove the cruise control combination switch.

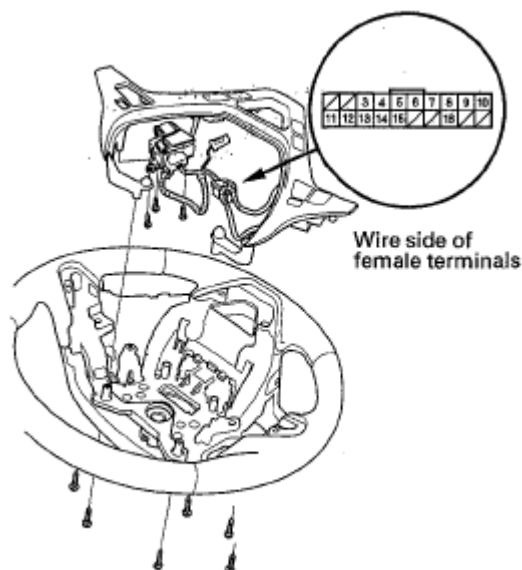


Fig. 3: Identifying Cruise Control Combination Switch Connector Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the terminals in each switch position according to **Fig. 4**.
 - If there is continuity, and it matches the table, but-switch failure occurred on the cruise control input test, check and repair the wire harness on the switch circuit.
 - If there is no continuity in one or both positions, replace the switch.

Terminal	3	4	5	6	7
Position					
Cruise control main switch (ON)				○—○	
Cruise control main switch (OFF)					
Set/decel (PRESSED)	○—○				
Resume/accel (PRESSED)	○—○		○		
Cancel (PRESSED)	○—○	○			

Fig. 4: Checking For Continuity Between Terminals In Each Switch Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between the terminals in according to **Fig. 5**.
- If there is continuity, and it matches the table, check and repair the wire harness on the switch circuit.
 - If there is no continuity in one or more positions, replace the switch.

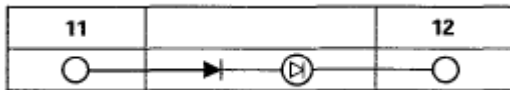


Fig. 5: Checking For Continuity Between Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE Cylinder Head - MDX

2007-09 ENGINE

Cylinder Head - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAJ-PNAA101	Air Pressure Regulator	1
②	07GAF-SD40330	Camshaft Oil Seal Driver	1
③	07HAH-PJ7A100	Valve Guide Reamer, 5.5 mm	1
④	07JAA-001020A	Socket, 19 mm	1
⑤	07JAB-001020B	Holder Handle	1
⑥	07MAB-PY3010A	Holder Attachment, 50 mm, Offset	1
⑦	07PAD-0010000	Stem Seal Driver	1
⑧	07VAJ-P8A010A	VTEC Air Adapter	1
⑨	070AJ-0030100	VTEC Air Stopper	1
⑩	07742-0010100	Valve Guide Driver, 5.5 mm	1
⑪	07757-PJ1010A	Valve Spring Compressor Attachment	1

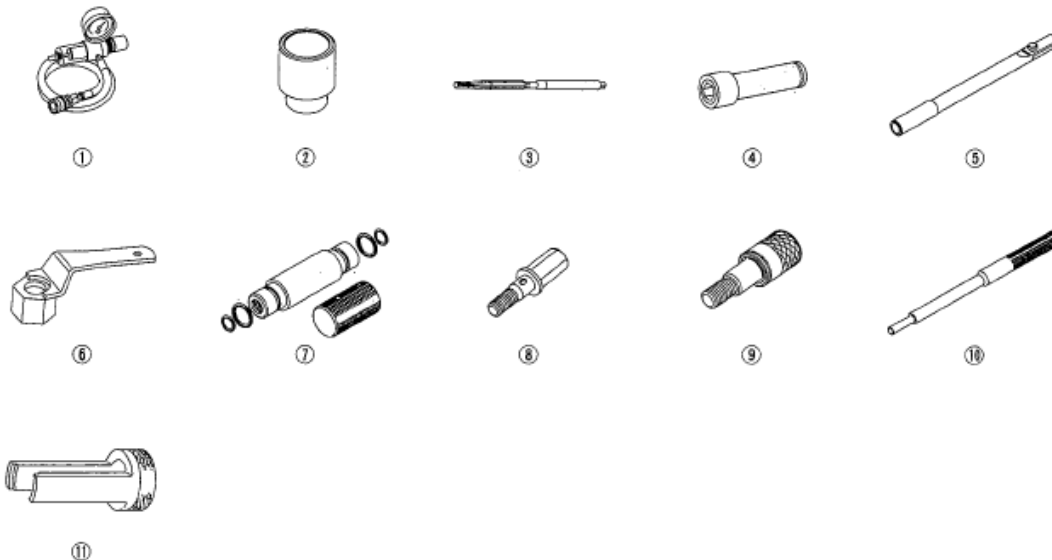


Fig. 1: Identifying Cylinder Head Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 ENGINE Cylinder Head - MDX

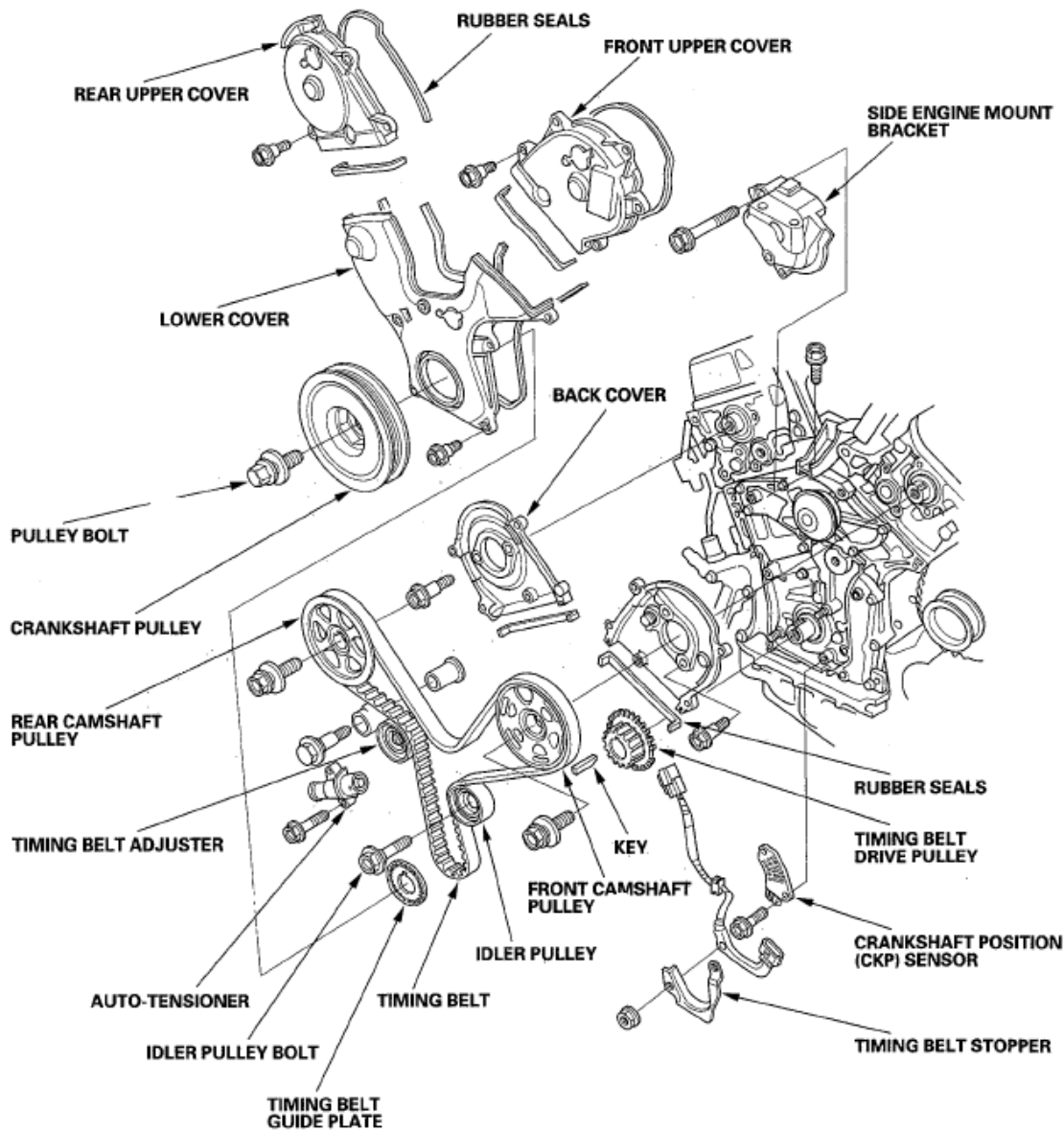


Fig. 2: Identifying Cylinder Head Component Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE Cylinder Head - MDX

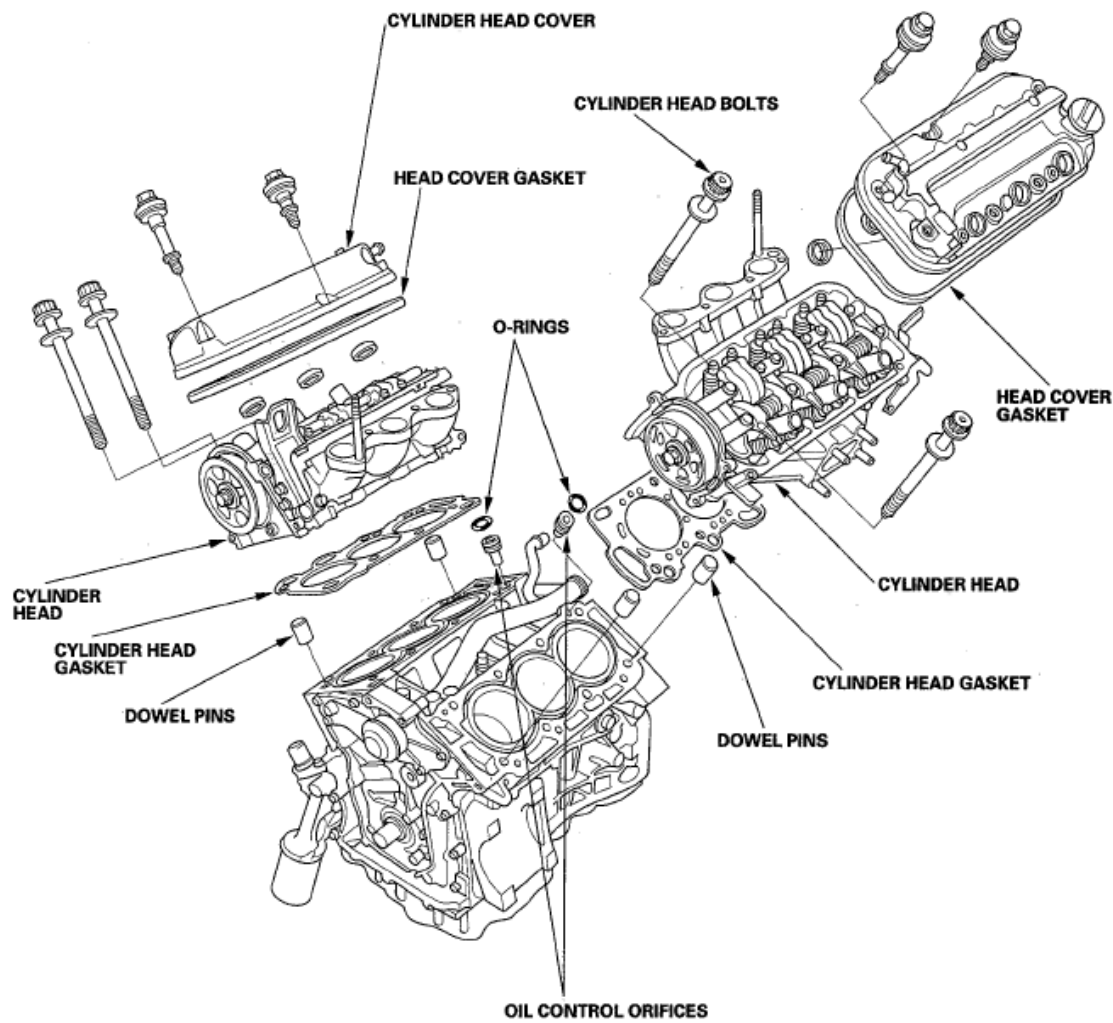


Fig. 3: Identifying Cylinder Head Component Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

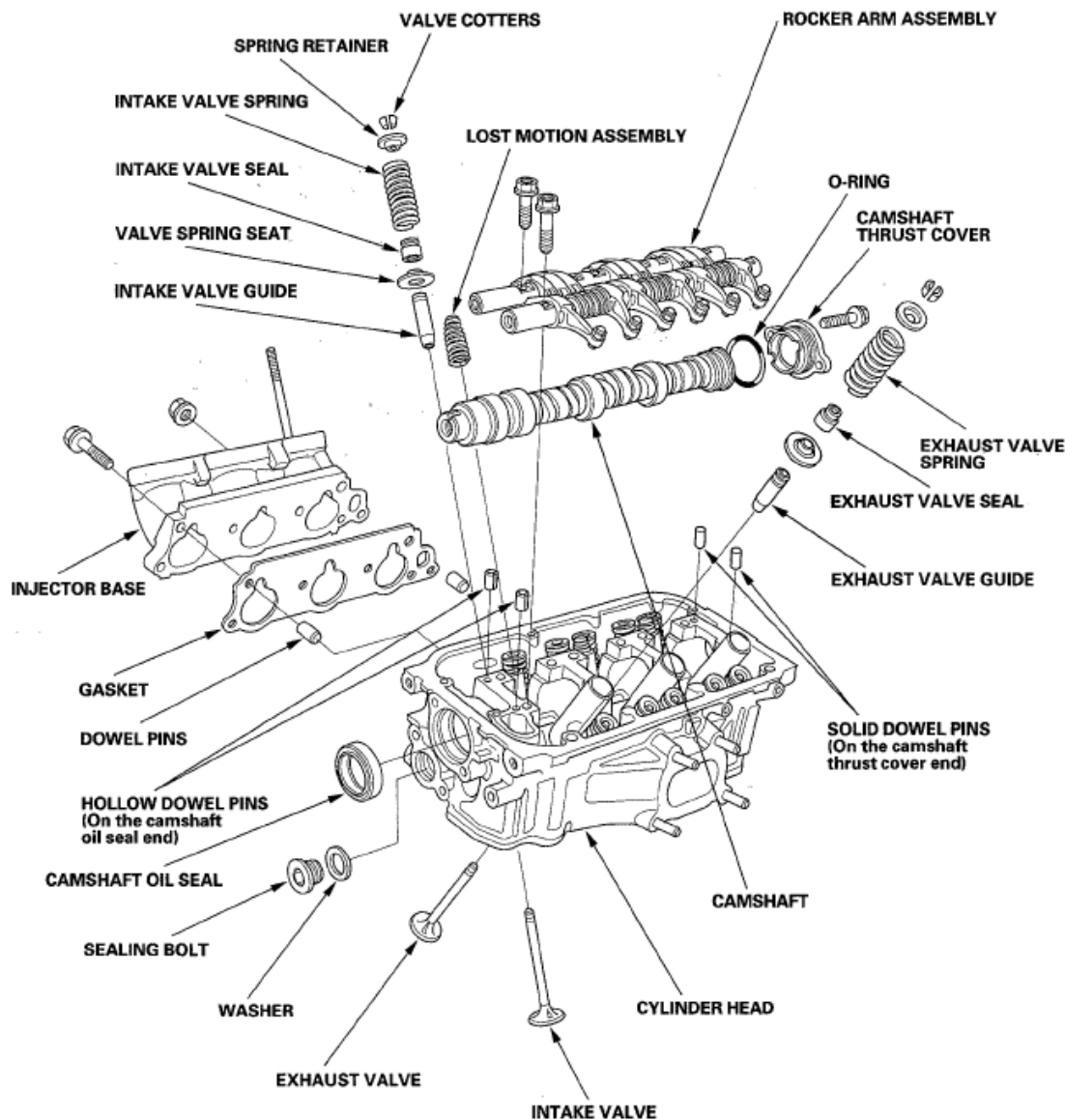


Fig. 4: Identifying Cylinder Head Component Location (3 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE COMPRESSION INSPECTION

NOTE: After the inspection, you must reset the powertrain control module (PCM). Otherwise, the PCM will continue to stop the fuel injectors from functioning.

1. Warm up the engine to normal operating temperature (cooling fan comes on).
2. Turn the ignition switch OFF.
3. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 **GENERAL TROUBLESHOOTING INFORMATION**).

4. Turn the ignition switch ON (II).
5. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
6. Select PGM-FI, INSPECTION, then ALL INJECTORS OFF function on the HDS.
7. Turn the ignition switch OFF.
8. Remove the six ignition coils (see **IGNITION COIL REMOVAL/INSTALLATION**).
9. Remove the six spark plugs.
10. Attach the compression gauge to a spark plug hole.

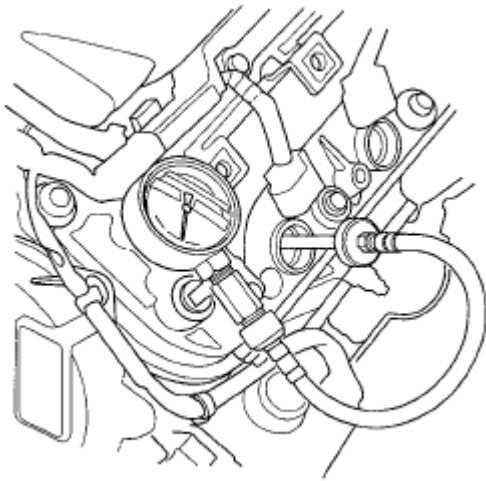


Fig. 5: Identifying Compression Gauge To Spark Plug Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Open the throttle fully, crank the engine with the starter motor and measure the compression.

Compression Pressure: Above 930 kPa (9.5 kgf/cm² , 135 psi)

12. Measure the compression on the remaining cylinders.

Maximum Variation: Within 200 kPa (2.0 kgf/cm² , 28 psi)

13. If the compression is not within specifications, check the following items, then remeasure the compression.
 - Damaged or worn valves and seats
 - Damaged cylinder head gasket
 - Damaged or worn piston rings
 - Damaged or worn piston and cylinder bore
14. Select PCM reset (see **PCM RESET**) to cancel the ALL INJECTORS OFF function on the HDS.

VTEC ROCKER ARM TEST

Special Tools Required

- VTEC air adapter 07VAJ-P8A010A
- VTEC air stopper 070AJ-0030100
- Air pressure regulator 07AAJ-PNAA101

1. Start the engine and let it run for 5 minutes, then turn the ignition switch OFF.
2. Remove the intake manifold (see **REMOVAL**).
3. Remove the cylinder head covers (see **CYLINDER HEAD COVER REMOVAL**).
4. Set the No. 1 piston at top dead center (TDC) (see step 3 on).
5. Push on the intake mid rocker arm (A) for the No. 1 cylinder. The mid rocker arm should move independently of the primary rocker arm (B) and secondary rocker arm (C).
 - If the mid rocker arm moves freely, go to step 6.
 - If the intake mid rocker arm does not move, remove the mid, primary, and secondary intake rocker arms as an assembly, then check that the rocker arm pistons in the mid and primary rocker arms move smoothly. If any rocker arm needs replacing, replace the mid, primary, and secondary rocker arms as an assembly, and retest.

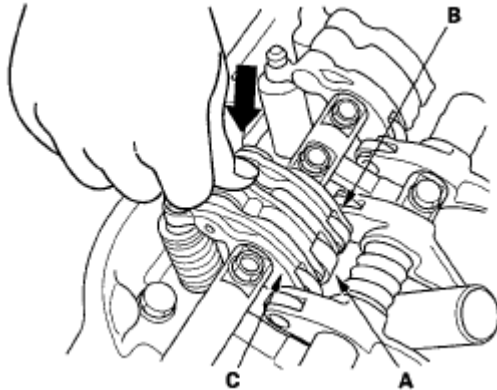


Fig. 6: Identifying Intake Mid Rocker Arm

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Repeat step 5 on the remaining intake mid rocker arms with each piston at TDC. When all the mid rocker arms pass the test, go to step 7.
7. Check that the air pressure on the shop air compressor gauge indicates over 690 kPa (7.0 kgf/cm² , 100 psi).
8. Inspect the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
9. Remove the No. 1 and No. 6 intake rocker shaft mounting bolts, then install the VTEC air adapter and VTEC air stopper, and connect the air pressure regulator as shown.

FRONT:

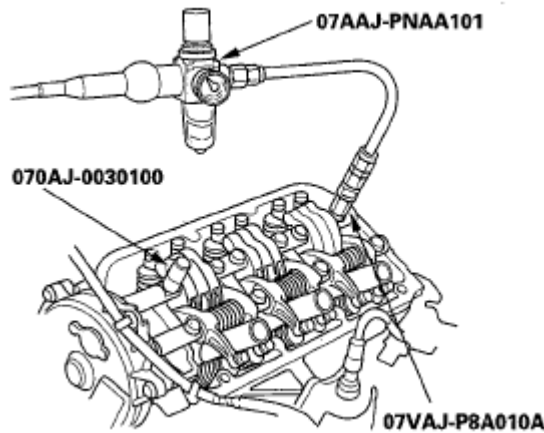


Fig. 7: Identifying Air Pressure Regulator - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

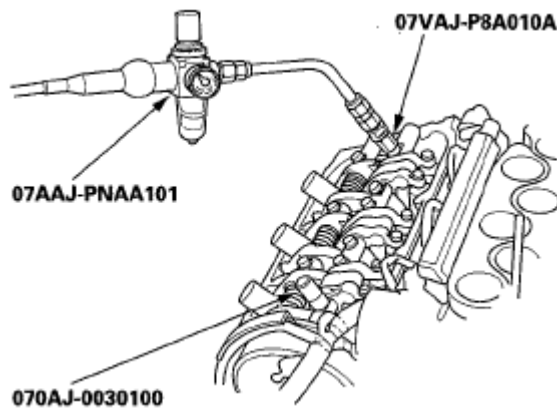


Fig. 8: Identifying Air Pressure Regulator - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Loosen the valve on the regulator, and apply the specified air pressure.

Specified Air Pressure: 440-540 kPa (4.5-5.5 kgf/cm² , 64-78 psi)

NOTE: If the rocker arm pistons do not move after applying air pressure; move the primary or secondary rocker arm up and down manually.

11. Make sure that the intake primary rocker arm (A) and intake secondary rocker arm (B) are mechanically connected by the piston and that the mid rocker arm (C) does not move when pushed manually. If any intake mid rocker arm moves independently of the primary and secondary rocker arms, replace the rocker arms as a set.

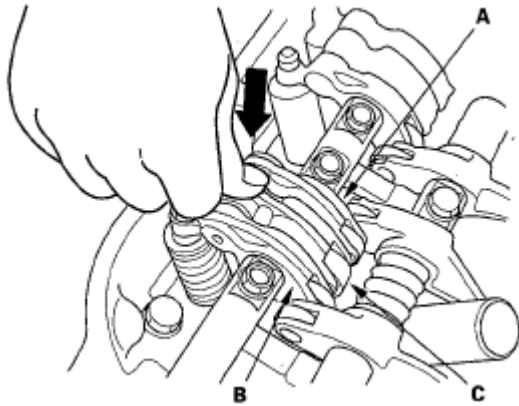


Fig. 9: Identifying Intake Primary Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the air pressure regulator, VTEC air adapter, and VTEC air stopper.
13. Tighten the rocker shaft bolts to 24 N.m (2.4 kgf.m, 17 lbf.ft).
14. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).
15. Install the intake manifold (see **INSTALLATION**).

VALVE CLEARANCE ADJUSTMENT

NOTE: **Adjust the valves only when the cylinder head temperature is less than 100°F (38°C).**

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the cylinder head covers (see **CYLINDER HEAD COVER REMOVAL**).
3. Set the No. 1 piston at top dead center (TDC). Align the pointer (A) on the front upper cover with the No. 1 piston TDC mark (B) on the front camshaft pulley.

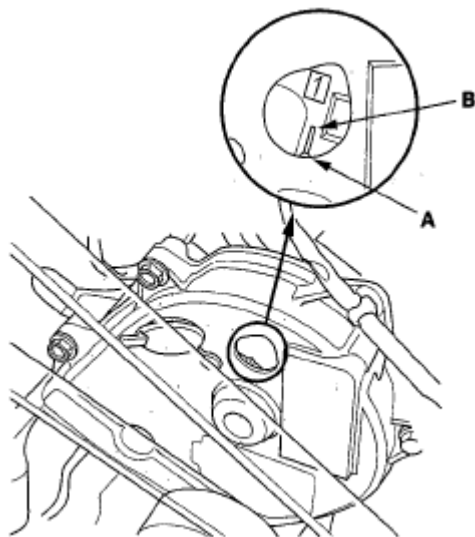


Fig. 10: Identifying Pointer On Front Upper Cover With No. 1 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Select the correct thickness feeler gauge for the valves you're going to check.

Valve Clearance

Intake: 0.20-0.24 mm (0.008-0.009 in.)

Exhaust: 0.28-0.32 mm (0.011-0.013 in.)

REAR:

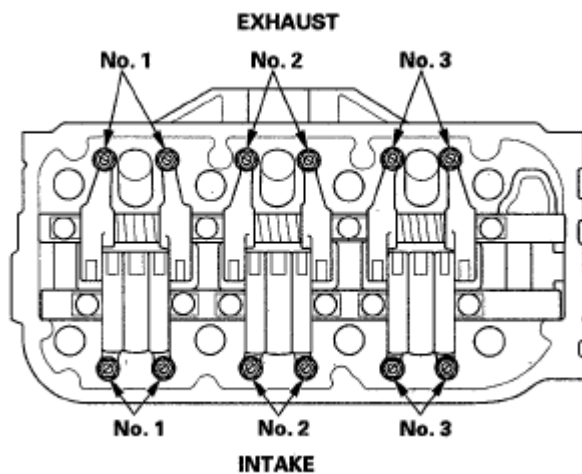


Fig. 11: Identifying Intake And Exhaust Valves - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT:

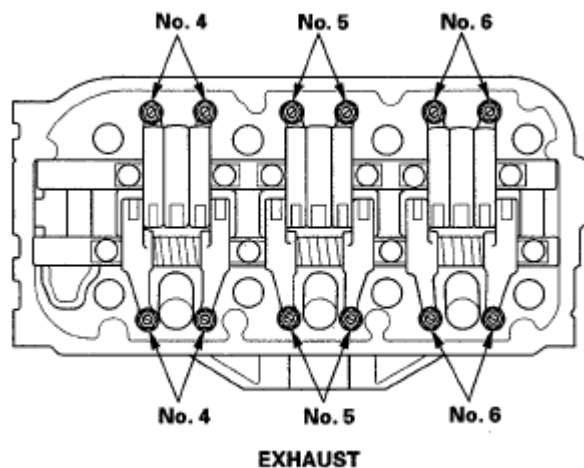


Fig. 12: Identifying Intake And Exhaust Valves - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Insert the feeler gauge (A) between the adjusting screw and the end of the valve stem on No. 1 cylinder and slide it back and forth; you should feel a slight amount of drag.

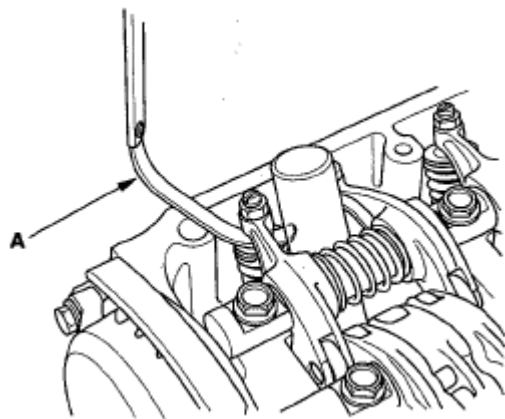


Fig. 13: Inserting Feeler Gauge Between Adjusting Screw And End Of Valve Stem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If you feel too much or too little drag, loosen the locknut (A), and turn the adjusting screw (B) until the drag on the feeler gauge is correct.

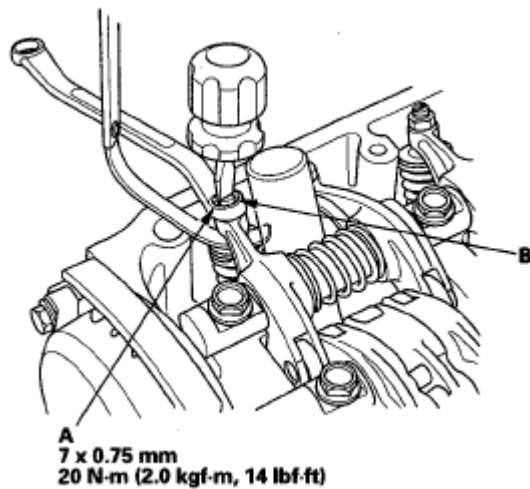


Fig. 14: Identifying Locknut And Adjusting Screw With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Tighten the locknut and recheck the clearance. Repeat the adjustment, if necessary.
8. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 4 piston TDC mark (B) on the front camshaft pulley.

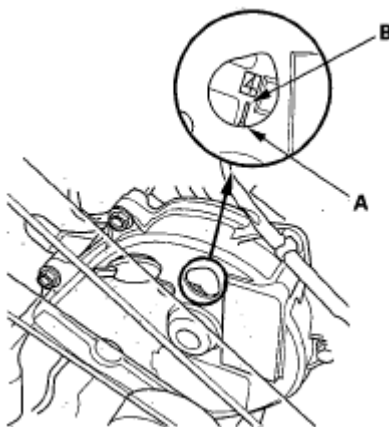


Fig. 15: Aligning Front Upper Cover Pointer With No. 4 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check and, if necessary, adjust the valve clearance on No. 4 cylinder.
10. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 2 piston TDC mark (B) on the front camshaft pulley.

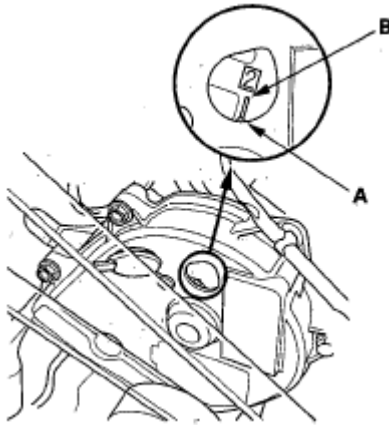


Fig. 16: Aligning Front Upper Cover Pointer With No. 2 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check and, if necessary, adjust the valve clearance on No. 2 cylinder.
12. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 5 piston TDC mark (B) on the front camshaft pulley.

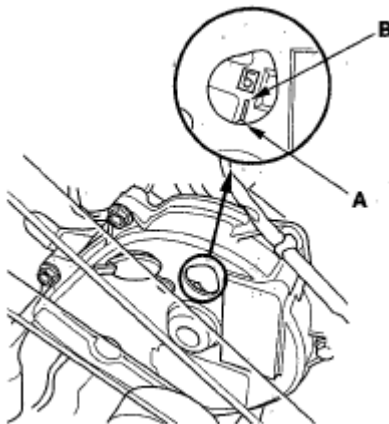


Fig. 17: Aligning Front Upper Cover Pointer With No. 5 Piston TDC Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check and, if necessary, adjust the valve clearance on No. 5 cylinder.
14. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 3 piston TDC mark (B) on the front camshaft pulley.

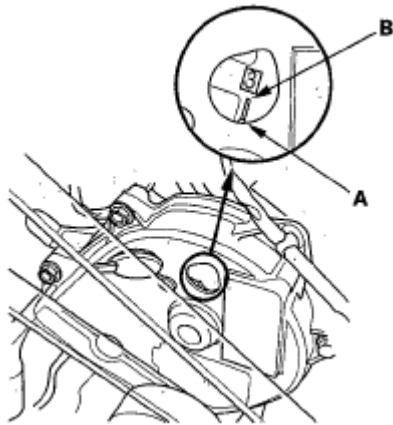


Fig. 18: Aligning Front Upper Cover Pointer With No. 3 Piston TDC Mark
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Check and, if necessary, adjust the valve clearance on No. 3 cylinder.
16. Rotate the crankshaft clockwise. Align the pointer (A) on the front upper cover with the No. 6 piston TDC mark (B) on the front camshaft pulley.

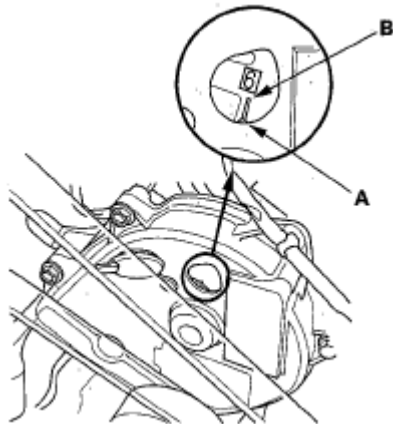


Fig. 19: Aligning Front Upper Cover Pointer With No. 6 Piston TDC Mark
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check and, if necessary, adjust the valve clearance on No. 6 cylinder.
18. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).
19. Install the intake manifold (see **INSTALLATION**).

CRANKSHAFT PULLEY REMOVAL AND INSTALLATION

Special Tools Required

- Holder handle 07JAB-001020B:
- Holder attachment, 50 mm, offset 07MAB-PY3010A

- Socket, 19 mm 07JAA-001020A, or a commercially available 19 mm socket

REMOVAL

1. Remove the right front wheel.
2. Remove the splash shield.

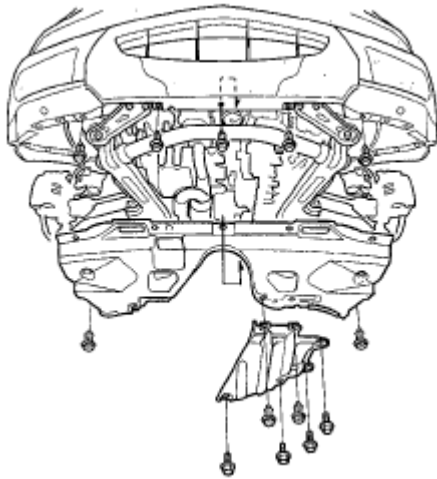


Fig. 20: Identifying Splash Shield Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drive belt (see **DRIVE BELT INSPECTION**).
4. Hold the pulley with the holder handle (A) and holder attachment (B).

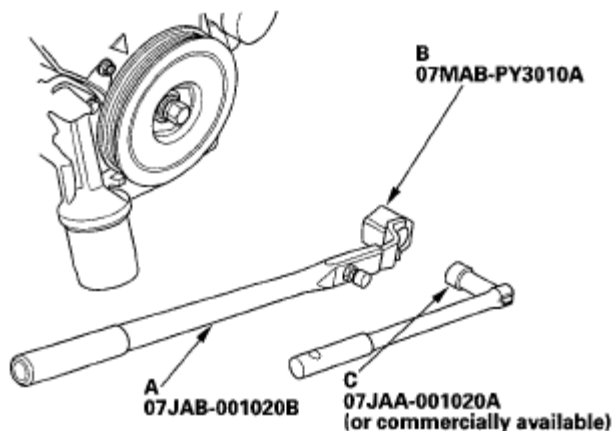


Fig. 21: Identifying Holder Handle And Holder Attachment

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the bolt with a heavy duty 19 mm socket (C) and breaker bar, then remove the crankshaft pulley.

INSTALLATION

1. Remove any oil and clean the pulleys (A), crankshaft (B), bolt (C), and washer (D). Lubricate with new engine oil as shown.

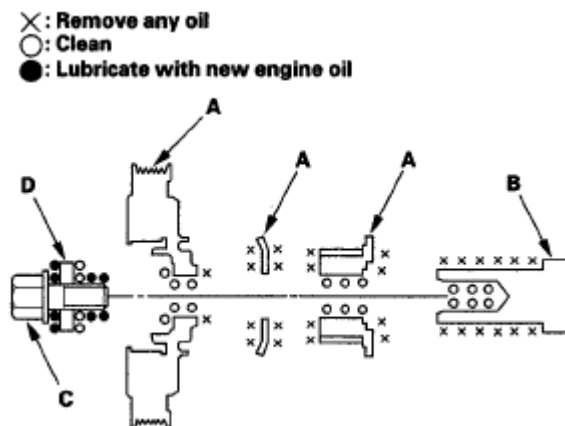


Fig. 22: Identifying Engine Oil Application Area
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the crankshaft pulley, and tighten the bolt. Do not use an impact wrench.
 1. Hold the pulley with the holder handle (A) and holder attachment (B). Torque the bolt to 64 N.m (6.5 kgf.m, 47 lbf.ft) with a torque wrench and heavy duty 19 mm socket (C).
 2. Mark the bolt head (D) and crankshaft pulley (E) as shown, then tighten the bolt an additional 60° (The mark on the bolt head lines up with the mark on the crankshaft pulley).

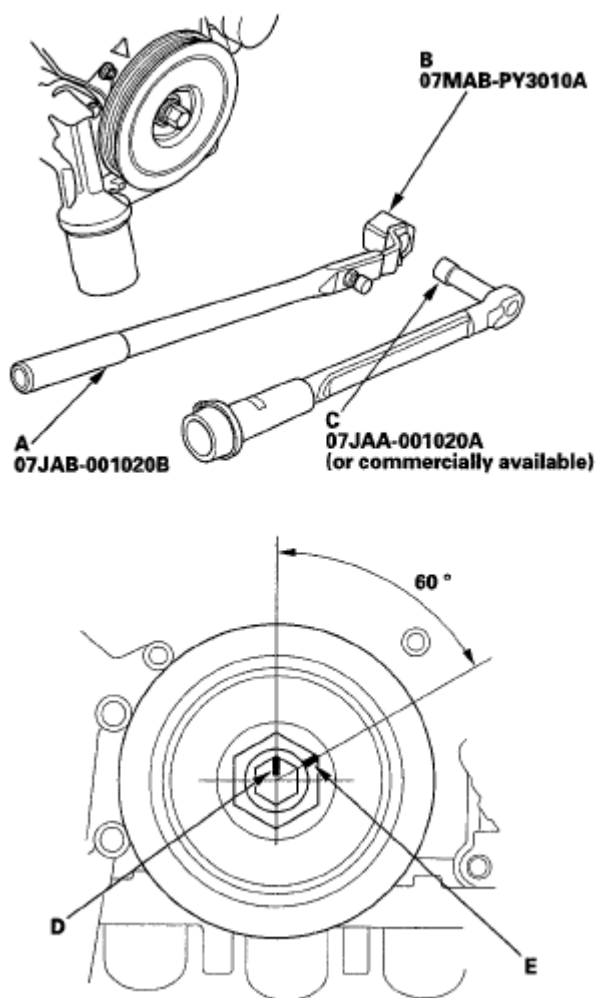


Fig. 23: Identifying Holder Handle And Holder Attachment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
4. Install the splash shield.
5. Install the right front wheel.

TIMING BELT INSPECTION

1. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
2. Remove the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
3. Remove the front upper cover.

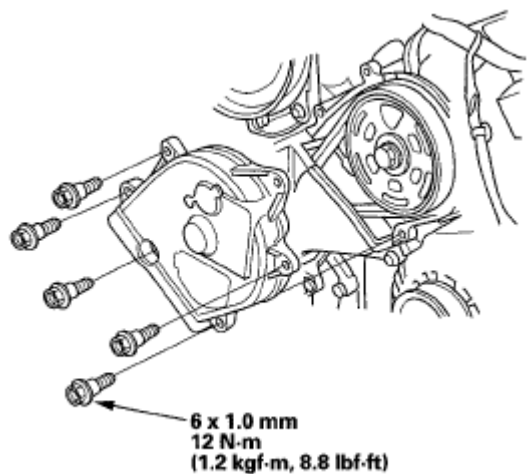


Fig. 24: Identifying Front Upper Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the timing belt for cracks and oil or coolant contamination. Replace the belt if it is cracked, or is contaminated with oil or coolant. Wipe off any oil or solvent that gets on the belt.

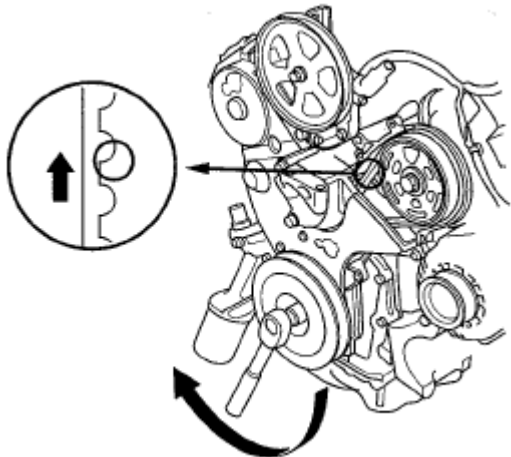


Fig. 25: Identifying Timing Belt For Cracks And Oil Or Coolant Contamination
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT REMOVAL

1. Turn the crankshaft so its white mark (A) lines up with the pointer (B).

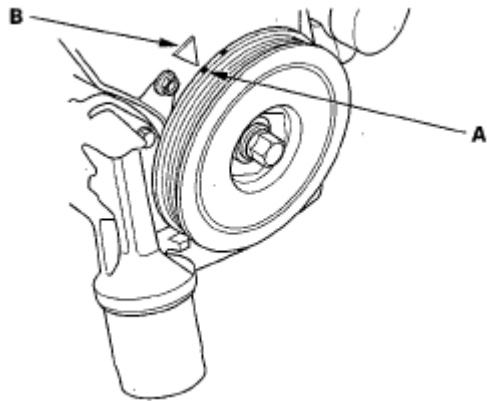


Fig. 26: Aligning Crankshaft With Pointer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check that the No. 1 piston top dead center (TDC) mark (A) on the front camshaft pulley and the pointer (B) on the front upper cover are aligned.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark.

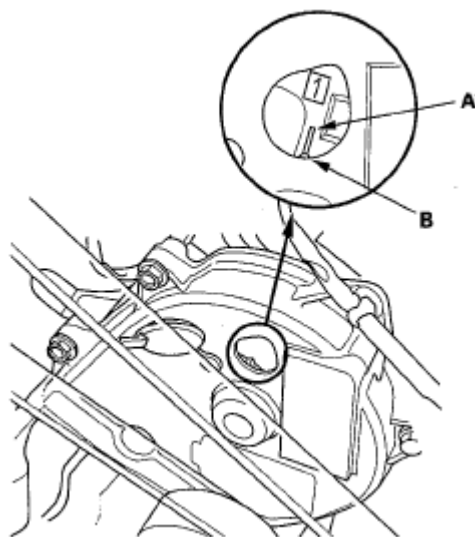


Fig. 27: Aligning Front Upper Cover With No. 1 Piston Top Dead Center (TDC)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Raise the vehicle on the lift, then remove the right front wheel.
4. Remove the splash shield.

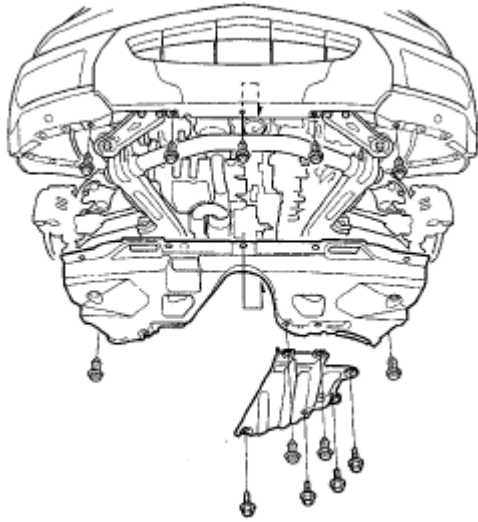


Fig. 28: Identifying Splash Shield Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Lower the vehicle on the lift.
6. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
7. Remove the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
8. For ease of removing the side engine mount, support the engine with a jack and wood block under the oil pan.
9. Remove the ground cable (A), then remove the upper half of the side engine mount bracket (B).

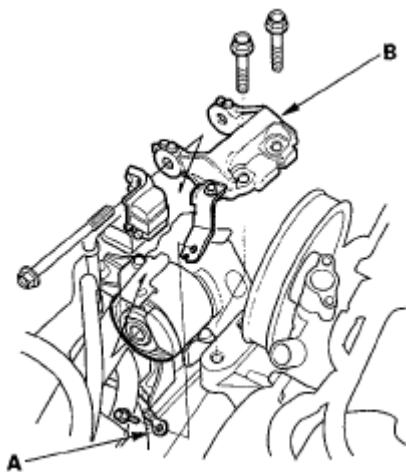


Fig. 29: Identifying Ground Cable And Upper Half Of Side Engine Mount Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the front upper cover (A) and rear upper cover (B).

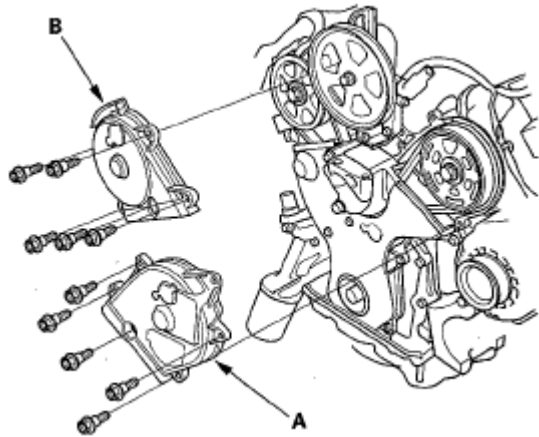


Fig. 30: Identifying Front Upper Cover And Rear Upper Cover Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the crankshaft pulley (see CRANKSHAFT PULLEY REMOVAL AND INSTALLATION).
12. Remove the lower cover.

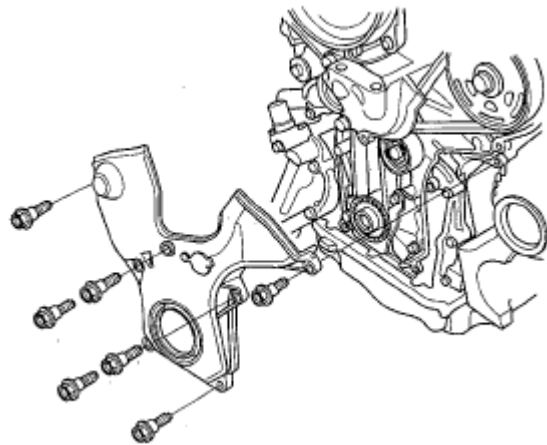


Fig. 31: Identifying Lower Cover Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove one of the battery clamp bolts from the battery tray, and grind the end of it as shown.

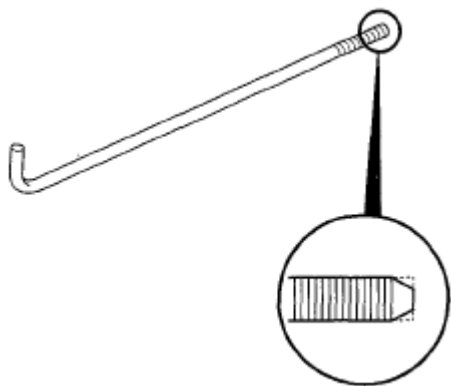


Fig. 32: Identifying Battery Clamp Bolts Threads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Thread in the battery clamp bolt as shown to hold the timing belt adjuster in its current position. Tighten it by hand; do not use a wrench.

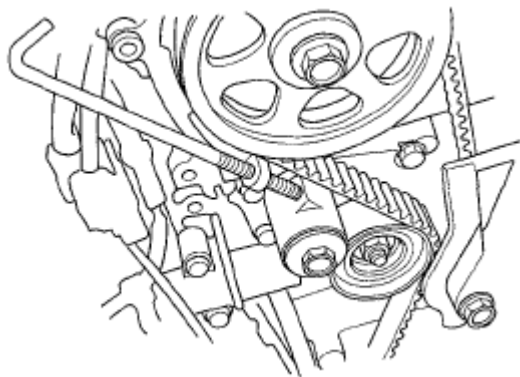


Fig. 33: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the timing belt guide plate (A).

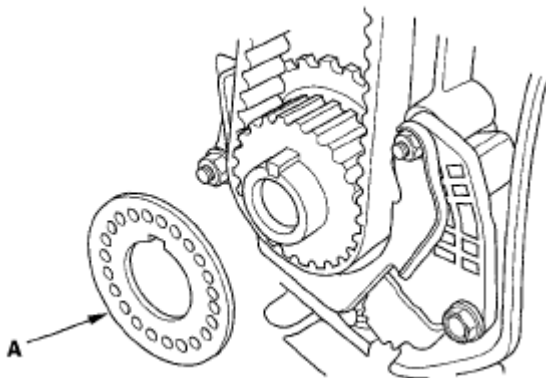


Fig. 34: Identifying Timing Belt Guide Plate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the lower half of the side engine mount bracket.

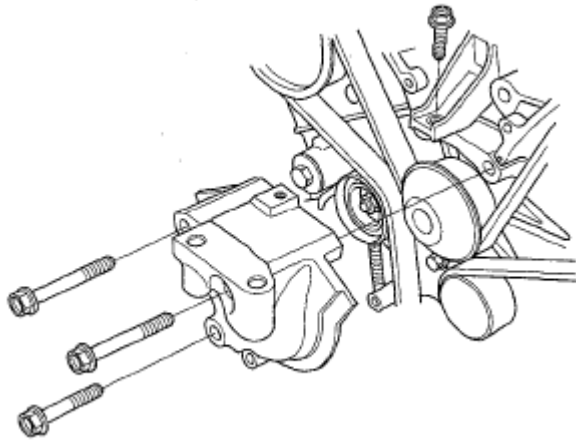


Fig. 35: Identifying Side Engine Mount Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the idler pulley bolt (A) and idler pulley (B), then remove the timing belt. Discard the idler pulley bolt.

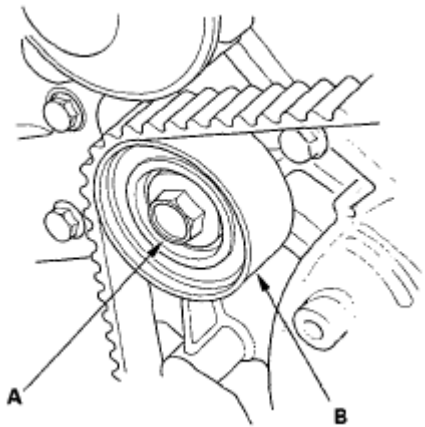


Fig. 36: Identifying Idler Pulley Bolt And Idler Pulley
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIMING BELT INSTALLATION

NOTE: The following is the installation procedure for a used timing belt. If you are installing a new belt, refer to the **TIMING BELT REPLACEMENT** .

1. Clean the timing belt pulleys, timing belt guide plate, and the upper and lower covers.
2. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of

the timing belt drive pulley with the pointer (B) on the oil pump.

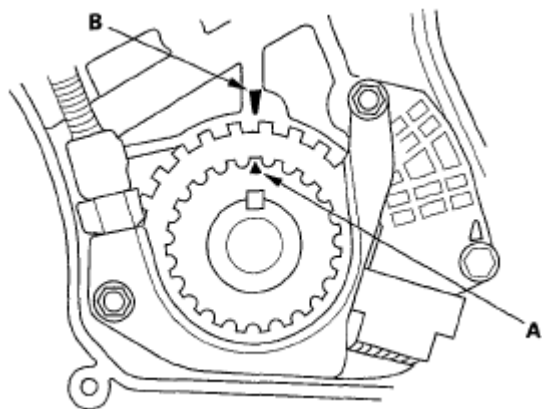


Fig. 37: Aligning TDC Mark With Oil Pump Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT:

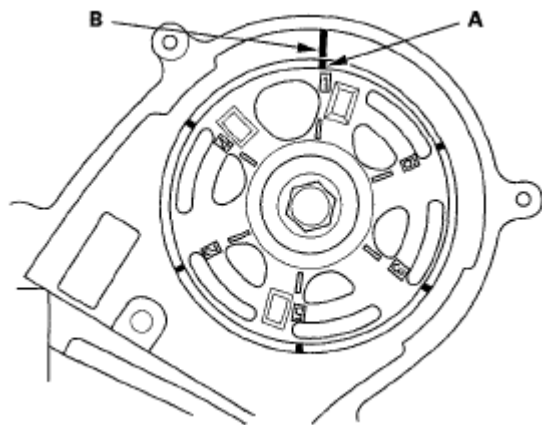


Fig. 38: Identifying TDC Marks On Camshaft Pulleys With Pointers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

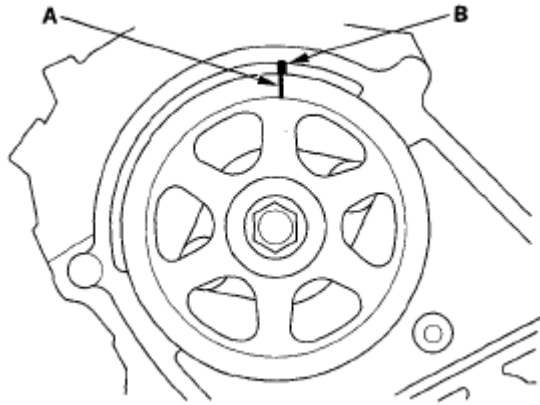


Fig. 39: Identifying TDC Marks On Camshaft Pulleys With Pointers - Rear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
5. If the auto-tensioner has extended and the timing belt cannot be installed, do the timing belt replacement procedure (see **TIMING BELT REPLACEMENT**).
6. Install the timing belt in a counterclockwise sequence starting with the drive pulley. Take care not to damage the timing belt when installing it.

- 1 Drive pulley (A)
- 2 Idler pulley (B)
- 3 Front camshaft pulley (C)
- 4 Water pump pulley (D)
- 5 Rear camshaft pulley (E)
- 6 Adjusting pulley (F)

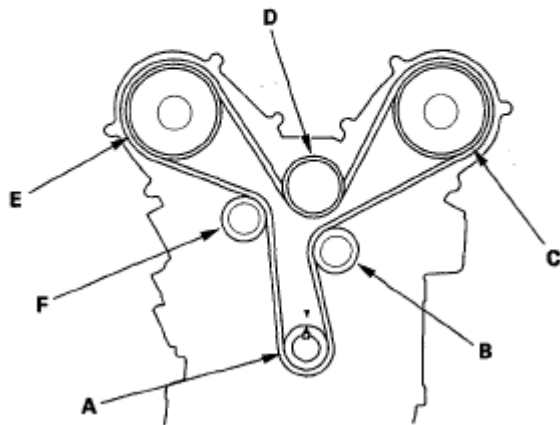


Fig. 40: Installing Timing Belt Counterclockwise Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Tighten the idler pulley bolt.

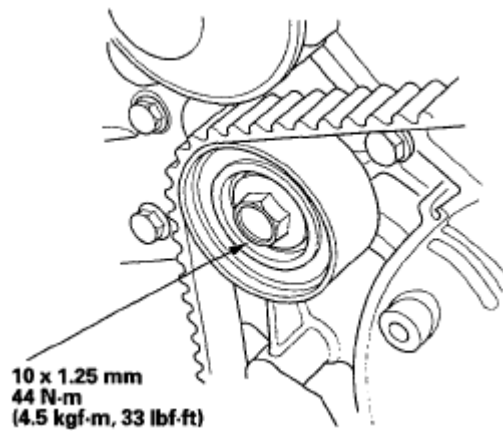


Fig. 41: Identifying Idler Pulley Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the battery clamp bolt from the back cover.

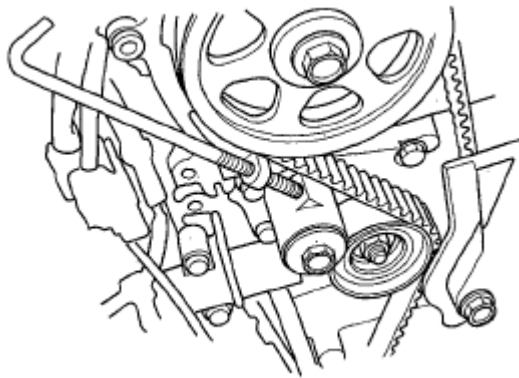


Fig. 42: Identifying Battery Clamp Bolt From Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lower half of the side engine mount bracket.

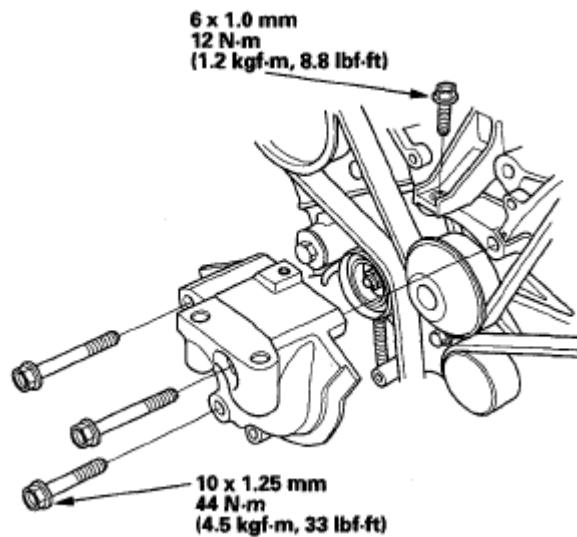


Fig. 43: Identifying Side Engine Mount Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the timing belt guide plate as shown.

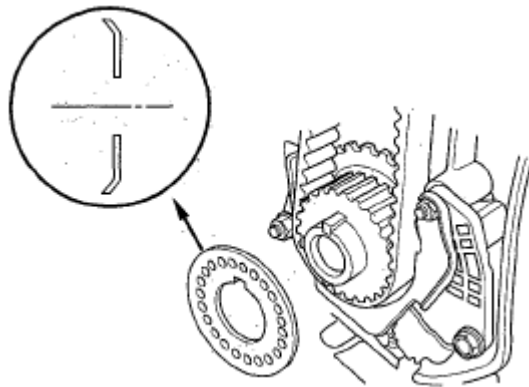


Fig. 44: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the lower cover.

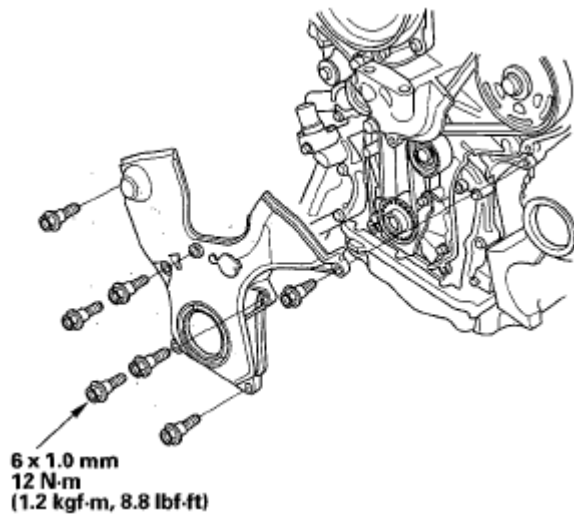


Fig. 45: Identifying Lower Cover Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the front upper cover (A) and rear upper cover (B).

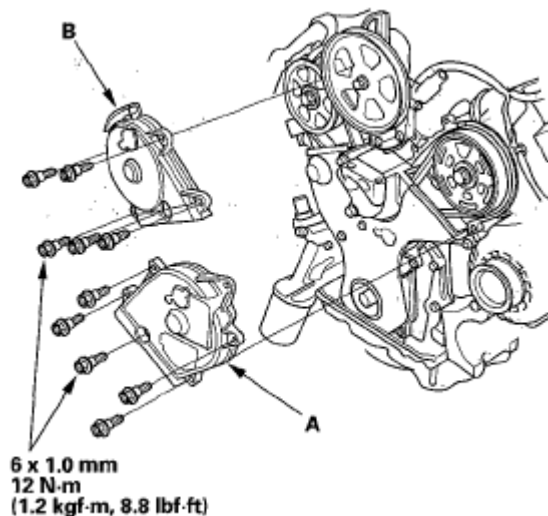


Fig. 46: Identifying Front Upper Cover And Rear Upper Cover Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the crankshaft pulley (see **INSTALLATION**).
14. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
15. Turn the crankshaft pulley so the white mark (A) lines up with the pointer (B).

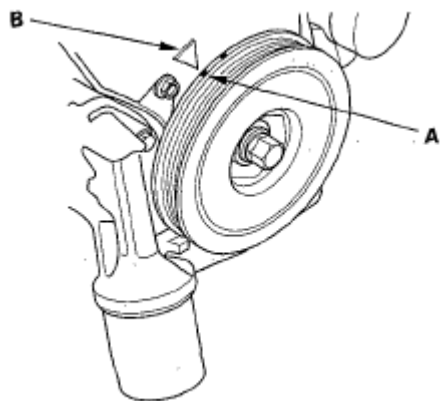


Fig. 47: Aligning Crankshaft Pulley White Mark With Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark.

- If the camshaft pulley marks are at TDC, go to step 17.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 2 through 16.

FRONT:

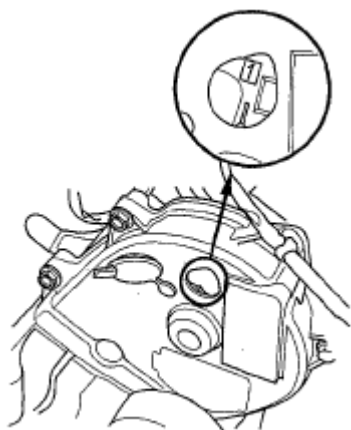


Fig. 48: Identifying Camshaft Pulley Marks - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

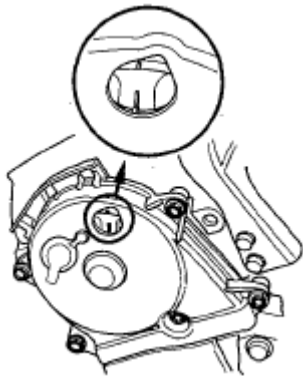


Fig. 49: Identifying Camshaft Pulley Marks - Rear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the upper half of the side engine mount bracket, and tighten the new mounting bolts (A), then tighten the mass damper mounting bolt (B).

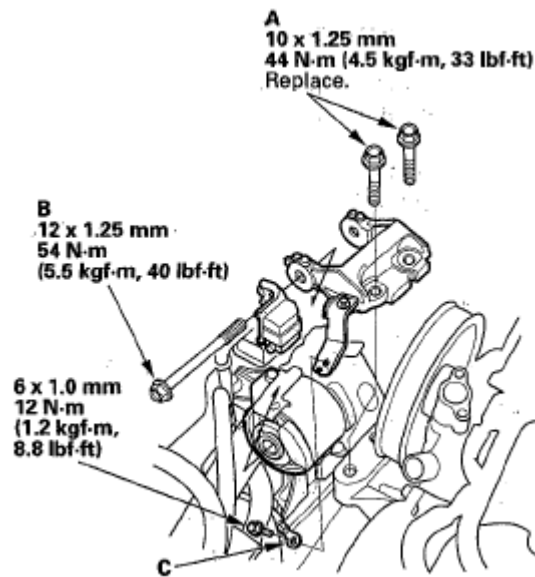


Fig. 50: Identifying Side Engine Mount Bracket Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the ground cable (C).
19. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
20. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
21. Install the splash shield.

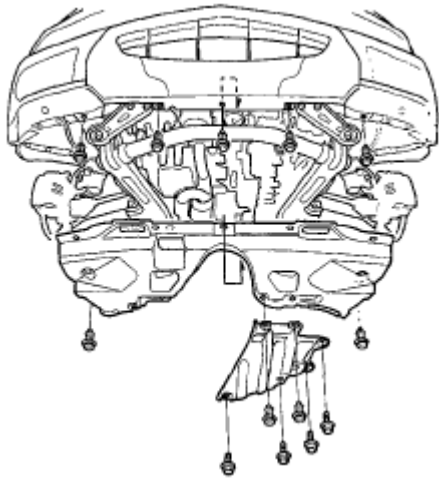


Fig. 51: Identifying Splash Shield Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the right front wheel.
23. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

TIMING BELT REPLACEMENT

NOTE: The following procedure is for the installation of a new timing belt. If you are installing a used belt, refer to the **TIMING BELT INSTALLATION** procedure .

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Clean the timing belt pulleys, timing belt guide plate, and the upper and lower covers.
3. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

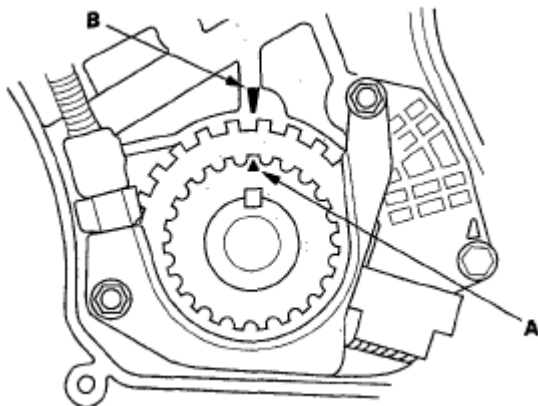


Fig. 52: Aligning TDC Mark With Pointer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT:

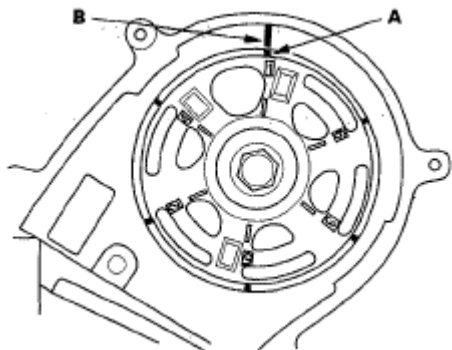


Fig. 53: Identifying TDC Marks On Camshaft Pulleys With Pointers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

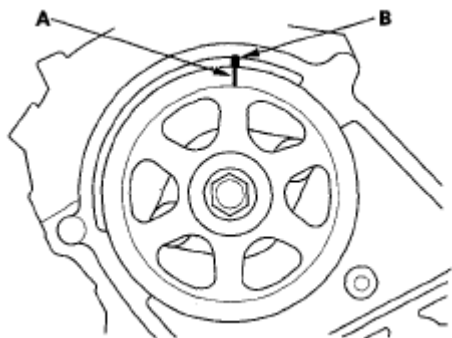


Fig. 54: Identifying TDC Marks On Camshaft Pulleys With Pointers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the battery clamp bolt from the back cover.
6. Remove the auto-tensioner.

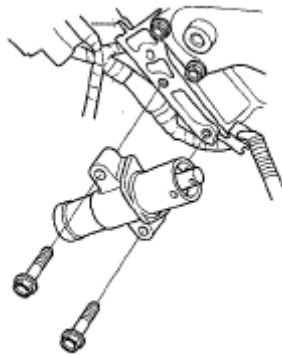


Fig. 55: Identifying Auto-Tensioner

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Align the holes on the rod and housing of the auto-tensioner.

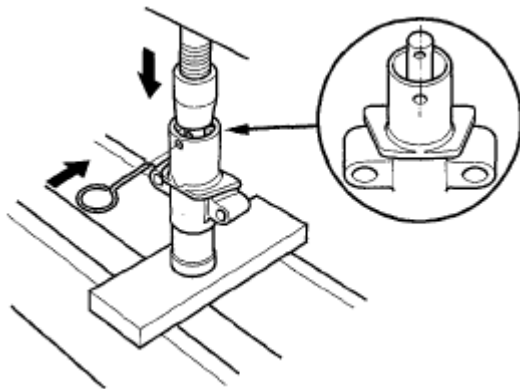


Fig. 56: Identifying Holes On Rod And Housing Of Auto-Tensioner

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Use a hydraulic press to slowly compress the auto-tensioner. Insert a 2.0 mm (0.08 in.) pin through the housing and the rod.

NOTE: The compression pressure should not exceed 9,800 N (1,000 kgf, 2,200 lbf).

9. Install the auto-tensioner.

NOTE: Make sure the pin stays in place.

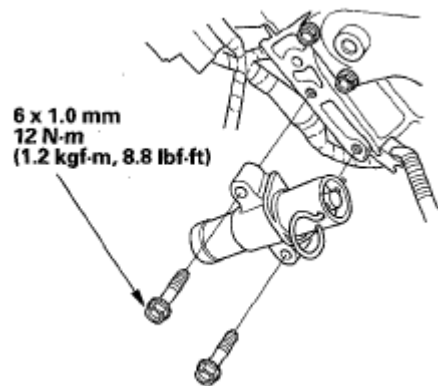


Fig. 57: Identifying Auto-Tensioner With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Thread in the battery clamp bolts as shown to hold the timing belt adjuster. Tighten it by hand; do not use a wrench.

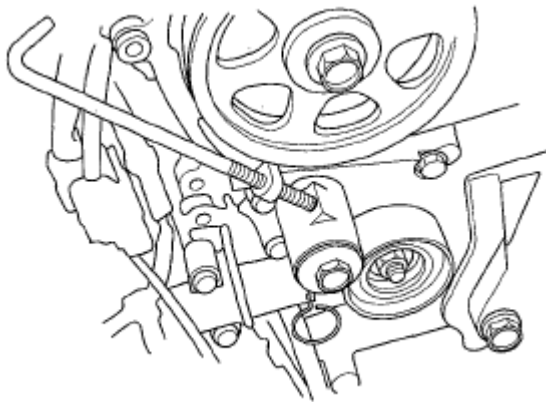


Fig. 58: Identifying Battery Clamp Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Loosely install the idler pulley with a new idler pulley bolt so the pulley can move but does not come off.
12. Install the timing belt in a counterclockwise sequence starting with the drive pulley.

- 1 Drive pulley (A)
- 2 Idler pulley (B)
- 3 Front camshaft pulley (C)
- 4 Water pump pulley (D)
- 5 Rear camshaft pulley (E)
- 6. Adjusting pulley (F)

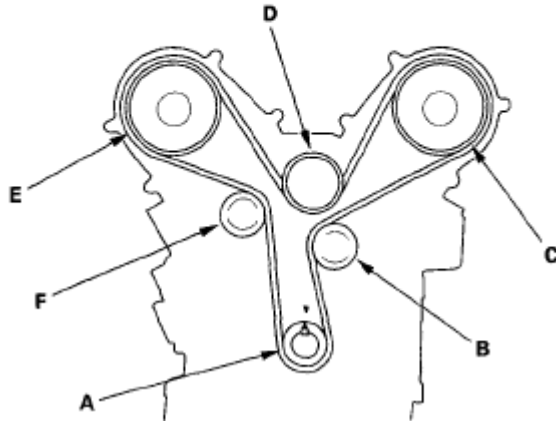


Fig. 59: Installing Timing Belt Counterclockwise Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the idler pulley bolt.

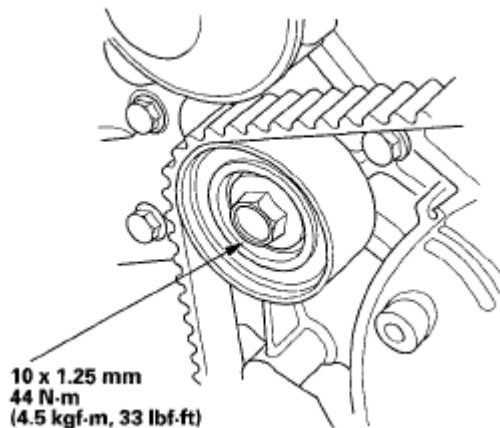


Fig. 60: Identifying Idler Pulley Bolt With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the pin from the auto-tensioner.

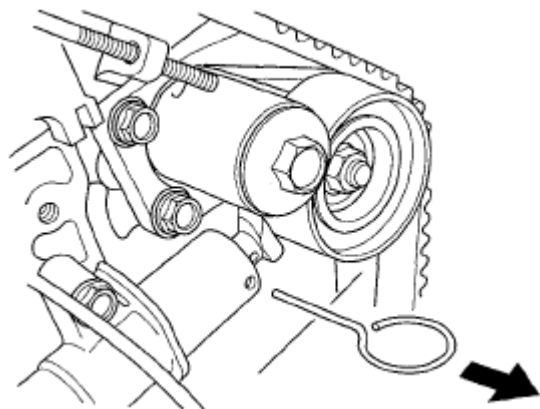


Fig. 61: Identifying Pin From Auto-Tensioner
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the battery clamp bolt from the back cover.
16. Install the lower half of the side engine mount bracket.

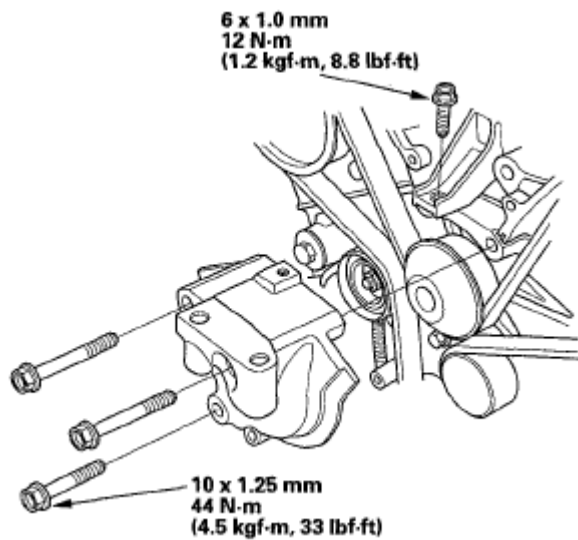


Fig. 62: Identifying Lower Half Of Side Engine Mount Bracket Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Install the timing belt guide plate as shown.

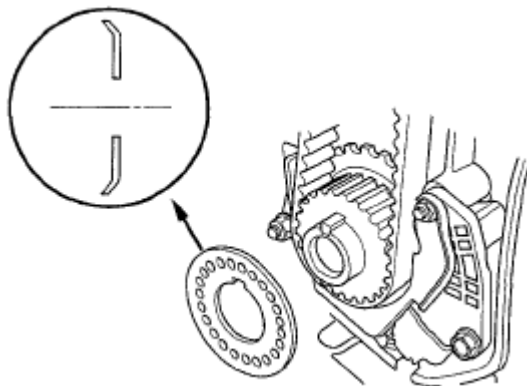


Fig. 63: Identifying Timing Belt Guide Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the lower cover.

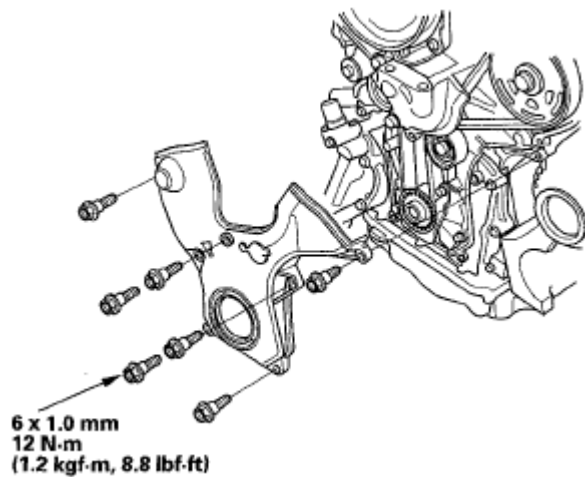


Fig. 64: Identifying Lower Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the front upper cover (A) and rear upper cover (B).

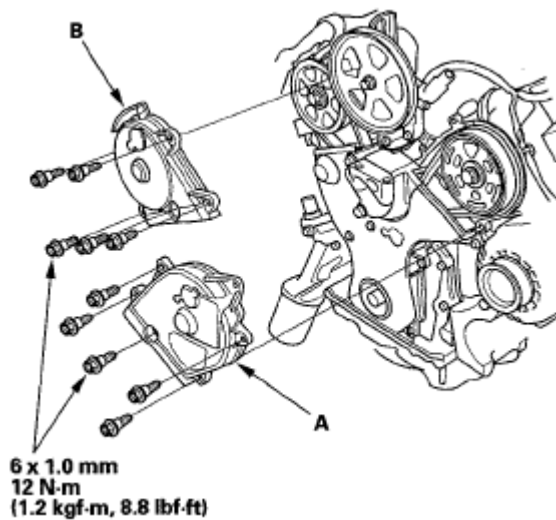


Fig. 65: Identifying Front Upper Cover And Rear Upper Cover Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the crankshaft pulley (see **INSTALLATION**).
21. Rotate the crankshaft pulley about six turns clockwise so the timing belt positions itself on the pulleys.
22. Turn the crankshaft pulley so the white mark (A) lines up with the pointer (B).

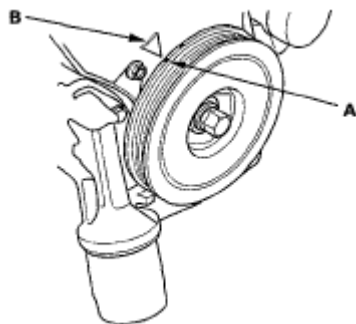


Fig. 66: Aligning Crankshaft Pulley White Mark With Pointer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Check the camshaft pulley marks.

NOTE: If the marks are not aligned, rotate the crankshaft 360 degrees, and recheck the camshaft pulley mark.

- If the camshaft pulley marks are at TDC, go to step 24.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 3 through 22.

FRONT:

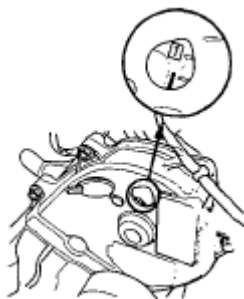


Fig. 67: Identifying Camshaft Pulley Marks - Front
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

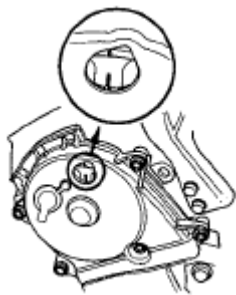


Fig. 68: Identifying Camshaft Pulley Marks - Rear
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the upper half of the side engine mount bracket, and tighten the new mounting bolts (A), then tighten the mass damper mounting bolt (B).

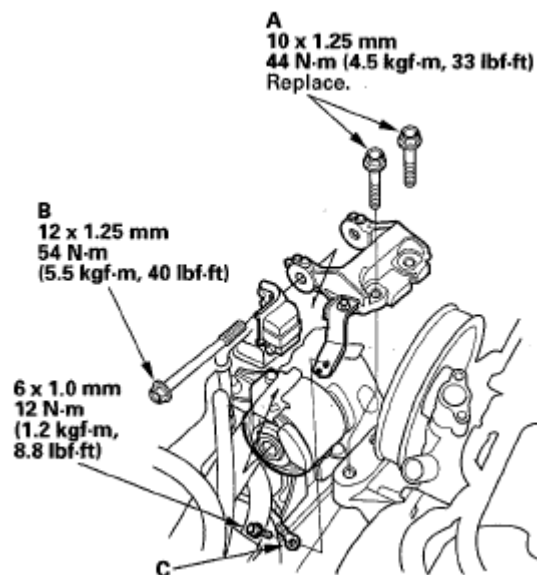


Fig. 69: Identifying Mass Damper Mounting Bolt With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the ground cable (C).
26. Install the drive belt auto-tensioner (see **DRIVE BELT AUTO-TENSIONER REPLACEMENT**).
27. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
28. Install the splash shield.

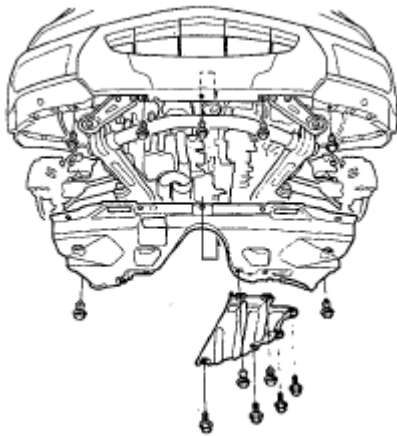


Fig. 70: Identifying Splash Shield Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the right front wheel.
30. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

TIMING BELT ADJUSTER REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the battery clamp bolt from the back cover.
3. Remove the auto-tensioner.
4. Remove the bolt (A), then remove the timing belt adjuster (B) and collar (C).

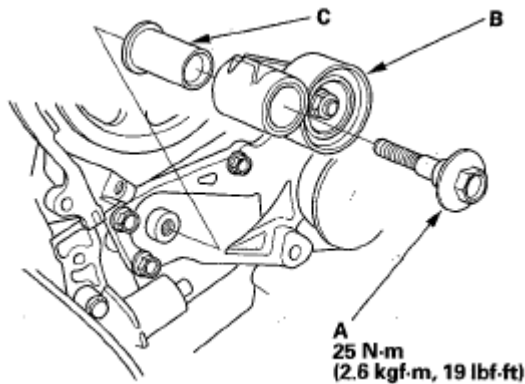


Fig. 71: Identifying Timing Belt Adjuster And Collar With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Replace the timing belt auto-tensioner and timing belt (see **TIMING BELT REPLACEMENT**).

TIMING BELT DRIVE PULLEY REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the crankshaft position (CKP) sensor (see **CKP SENSOR REPLACEMENT**).
3. Remove the timing belt drive pulley (A) and key (B).

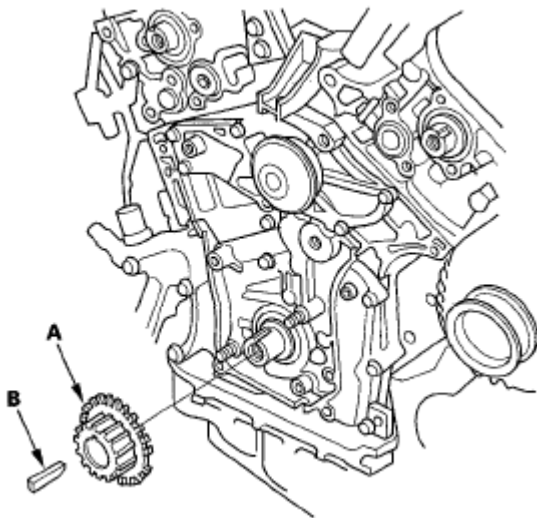


Fig. 72: Identifying Timing Belt Drive Pulley And Key
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the timing belt drive pulley and key for damage. If it is cracked or damaged, replace the timing belt drive pulley.
5. Install the new timing belt drive pulley.
6. Install the CKP sensor (see **CKP SENSOR REPLACEMENT**).

7. Install the timing belt (see **TIMING BELT INSTALLATION**).
8. Do the CKP pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

CYLINDER HEAD COVER REMOVAL

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the six ignition coils (see **IGNITION COIL REMOVAL/INSTALLATION**).
3. Remove the dipstick.
4. Remove the two bolts (A) securing the harness holder, and disconnect the front air fuel ratio (A/F) sensor connector (B), front secondary heated oxygen sensor (secondary HO2S) connector (C), exhaust gas recirculation (EGR) valve connector (D) and engine coolant temperature (ECT) sensor 1 connector (E).

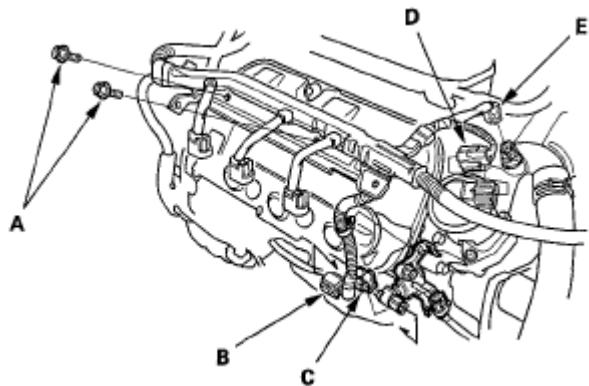


Fig. 73: Identifying Front Air Fuel Ratio (A/F) Sensor Connector And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the three injector connectors from the injectors on the rear side cylinder head.
6. Remove the power steering hose bracket mounting bolt (A), the harness holder mounting bolts (B), and the engine ground cable bolt (C).

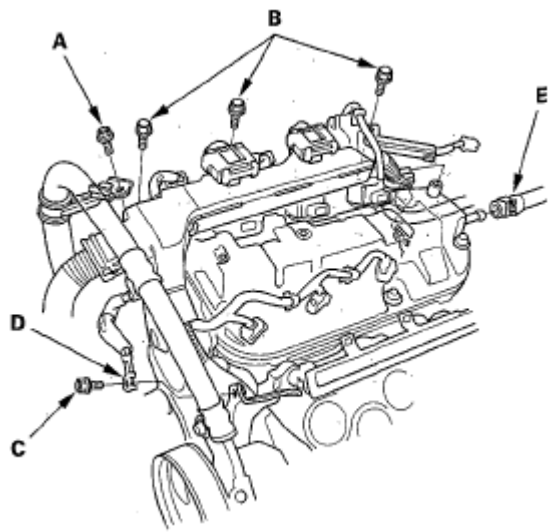


Fig. 74: Identifying Power Steering Hose Bracket Mounting Bolt And Engine Ground Cable Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the engine ground cable (D) and disconnect the breather hose (E).
8. Remove the cylinder head covers.

FRONT:

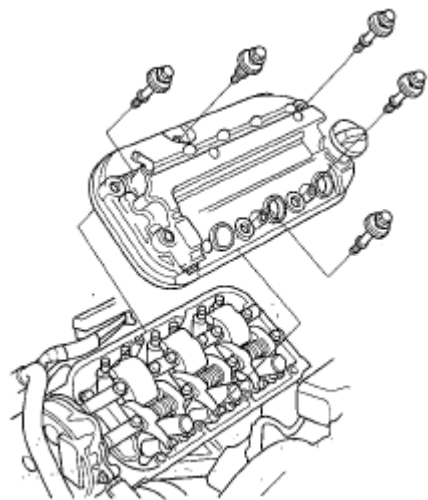


Fig. 75: Identifying Cylinder Head Covers Bolts - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

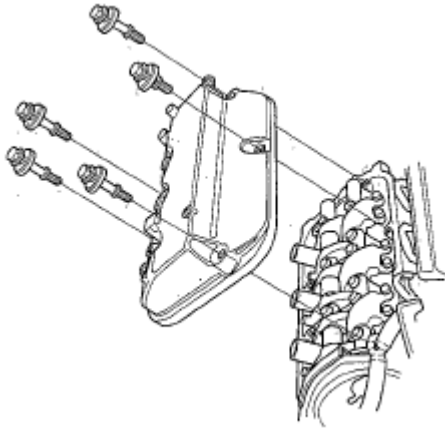


Fig. 76: Identifying Cylinder Head Covers Bolts - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CYLINDER HEAD COVER INSTALLATION

1. Check the spark plug seals and head cover gasket for damage and deterioration. If any seal or gasket is damaged, replace it.
2. Thoroughly clean the head cover gasket and the groove of the cylinder cover.
3. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

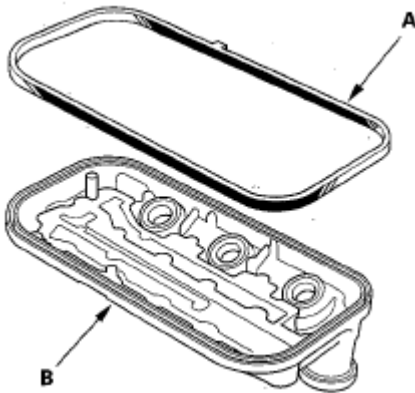


Fig. 77: Identifying Head Cover Gasket And Cylinder Head Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Clean the head cover contacting surfaces with a shop towel.
5. Set the spark plug seals (A) on the spark plug tubes, and install the cylinder head covers (B).

FRONT:

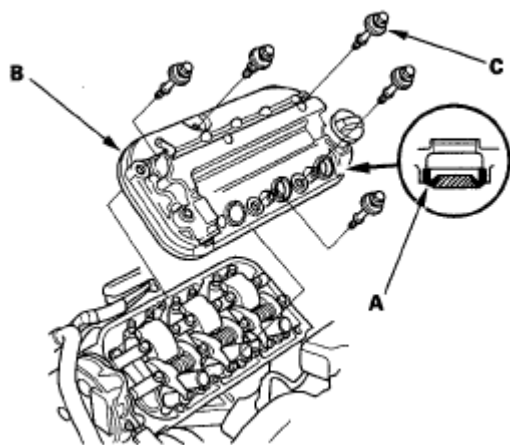


Fig. 78: Identifying Spark Plug Seals And Cylinder Head Covers Bolts - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

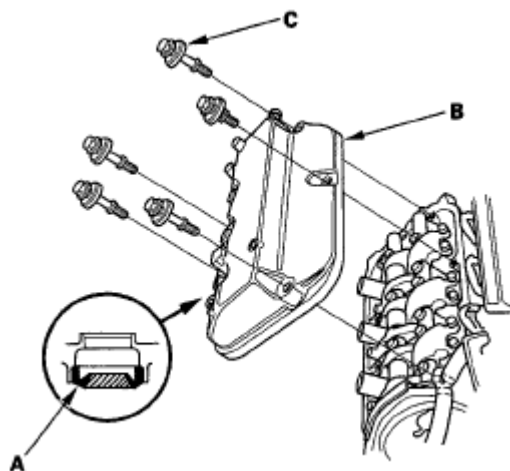


Fig. 79: Identifying Spark Plug Seals And Cylinder Head Covers Bolts - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Inspect the cover washers (C). Replace any washer that is damaged or deteriorated.
7. Tighten the bolts in three steps. In the final step tighten all bolts, in sequence, 12 N.m (1.2 kgf.m, 8.8 lbf.ft).

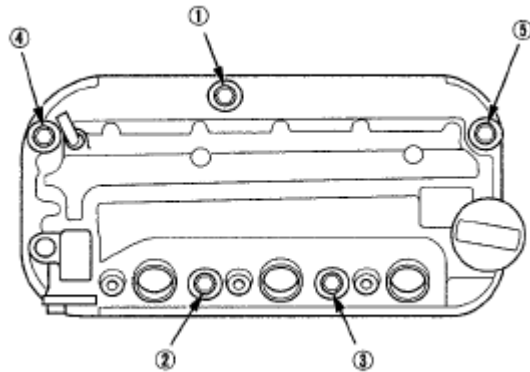


Fig. 80: Identifying Cylinder Head Cover Bolts Tightening Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Tighten the harness holder mounting bolts (A) and the power steering hose bracket mounting bolt (B).

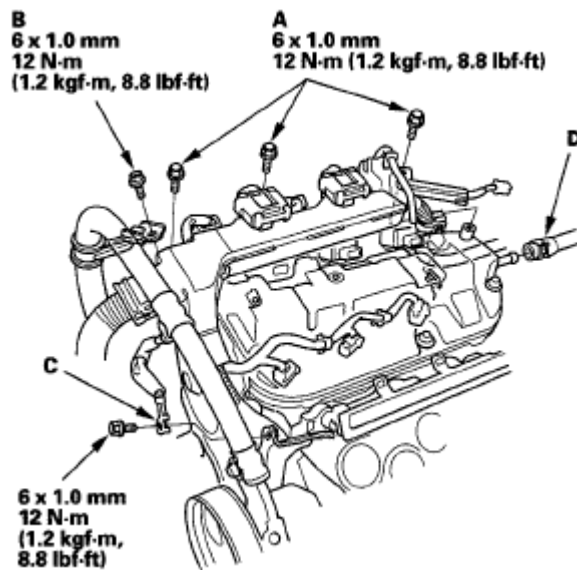


Fig. 81: Identifying Harness Holder Mounting Bolts And Power Steering Hose Bracket Mounting Bolt With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the engine ground cable (C) and breather hose (D).
10. Connect the three injector connectors.
11. Tighten the two bolts (A) securing the harness holder, and connect the engine coolant temperature (ECT) sensor 1 connector (B), exhaust gas recirculation (EGR) valve connector (C), front secondary heated oxygen sensor (secondary HO2S) connector (D) and front air fuel ratio (A/F) sensor connector (E).

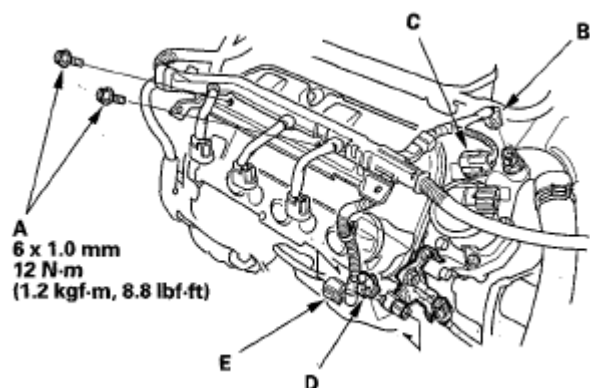


Fig. 82: Identifying Harness Holder, Bolts And Engine Coolant Temperature (ECT) Sensor With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the dipstick.
13. Install the six ignition coils (see **IGNITION COIL REMOVAL/INSTALLATION**).
14. Install the intake manifold (see **INSTALLATION**).

CYLINDER HEAD REMOVAL

NOTE:

- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.
- To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 100°F (38°C) before loosening the cylinder head bolts.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses, or interfere with other parts.

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Do the battery terminal disconnection procedure(See **DISCONNECTION**).
3. Drain the engine coolant (see **COOLANT REPLACEMENT**).
4. Remove the drive belt (see **DRIVE BELT REPLACEMENT**).
5. Remove the power steering (P/S) pump (A), and P/S hose clamp (B).

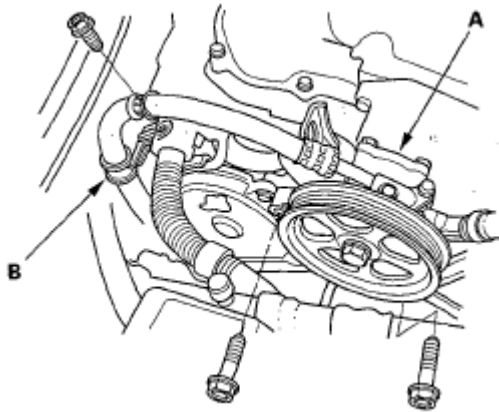


Fig. 83: Identifying Power Steering (P/S) Pump, And P/S Hose Clamp
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the alternator (see ALTERNATOR REMOVAL AND INSTALLATION).
7. Remove the timing belt (see TIMING BELT REMOVAL).
8. Remove the intake manifold (see REMOVAL).
9. Remove the six ignition coils (see IGNITION COIL REMOVAL/INSTALLATION).
10. Disconnect the upper radiator hose (A) and lower radiator hose (B).



Fig. 84: Identifying Upper Radiator Hose And Lower Radiator Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see FUEL LINE/QUICK-CONNECT FITTING REMOVAL).

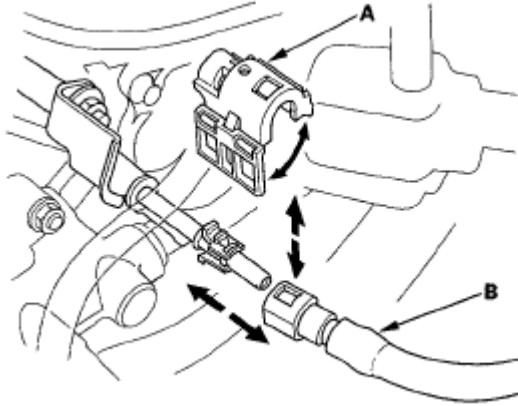


Fig. 85: Identifying Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the purge joint.

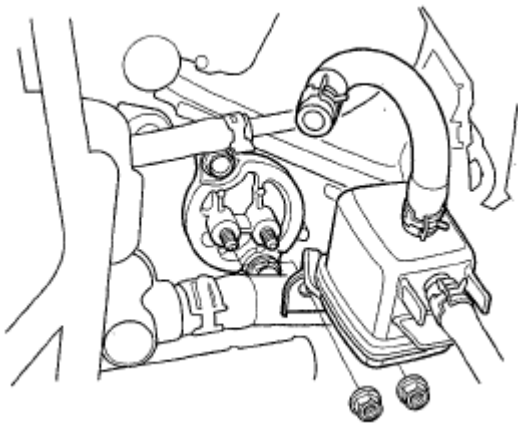


Fig. 86: Identifying Purge Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the engine wire harness connectors and wire harness clamps from the cylinder head.
 - Six injector connectors
 - Engine coolant temperature (ECT) sensor 1 connector
 - Crankshaft position (CKP) sensor connector
 - Exhaust gas recirculation (EGR) valve connector
 - Rocker arm oil control solenoid connector
 - Rocker arm oil pressure switch connector
 - Oil pressure switch connector
 - Two air fuel ratio (A/F) sensor connectors
 - Two secondary heated oxygen sensor (secondary HO2S) connectors
14. Remove the front warm up three way catalytic converter (front WU-TWC) (see **FRONT**) and rear warm

up three way catalytic converter (rear WU-TWC) (see **REAR**).

15. Remove the connector bracket from the front cylinder head.

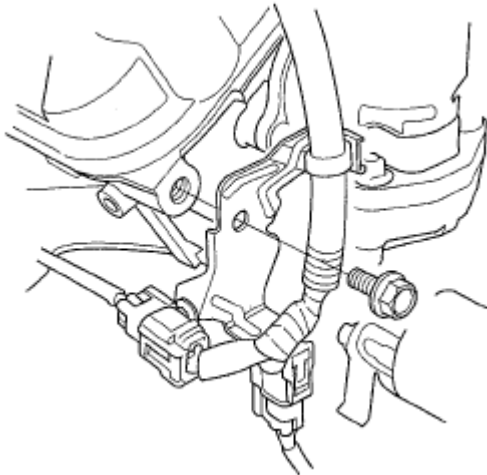


Fig. 87: Identifying Front Cylinder Head Bracket Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the bracket (A) from the rear cylinder head.

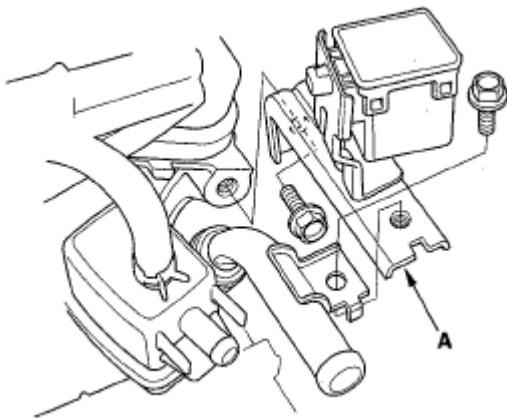


Fig. 88: Identifying Rear Cylinder Head Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the fuel rails (see **INJECTOR REPLACEMENT**).
18. Remove the water passage (see **WATER PASSAGE REPLACEMENT**).
19. Remove the front and rear camshaft pulleys (A) and back covers (B).

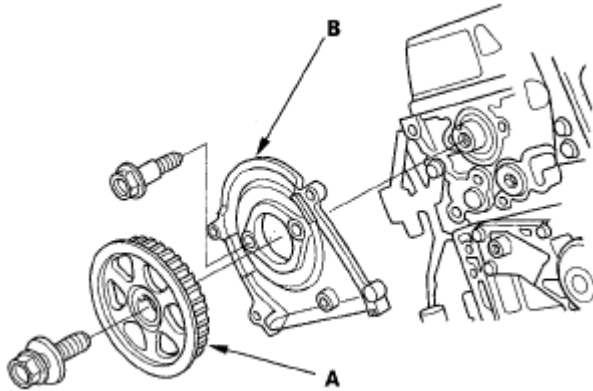


Fig. 89: Identifying Front And Rear Camshaft Pulleys And Back Covers
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Remove the cylinder head cover (see **CYLINDER HEAD COVER REMOVAL**).
21. Remove the cylinder head bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all the bolts are loosened.

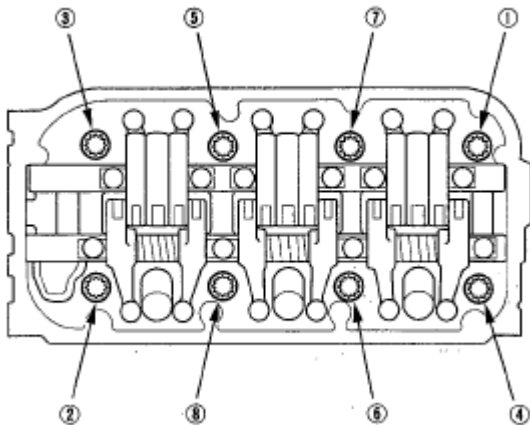


Fig. 90: Identifying Cylinder Head Bolts In Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Remove the cylinder head.

CAMSHAFT REPLACEMENT

FRONT

1. Do the battery terminal disconnection procedure(See **DISCONNECTION**).
2. Remove the battery and battery box.
3. Drain the engine coolant (see **COOLANT REPLACEMENT**).
4. Disconnect the upper radiator hose.

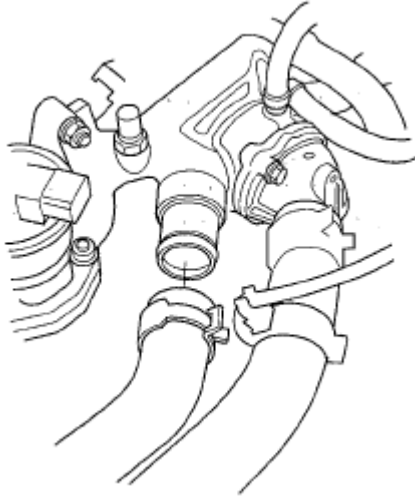


Fig. 91: Identifying Upper Radiator Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the exhaust gas recirculation (EGR) valve (see **EGR VALVE REPLACEMENT**).

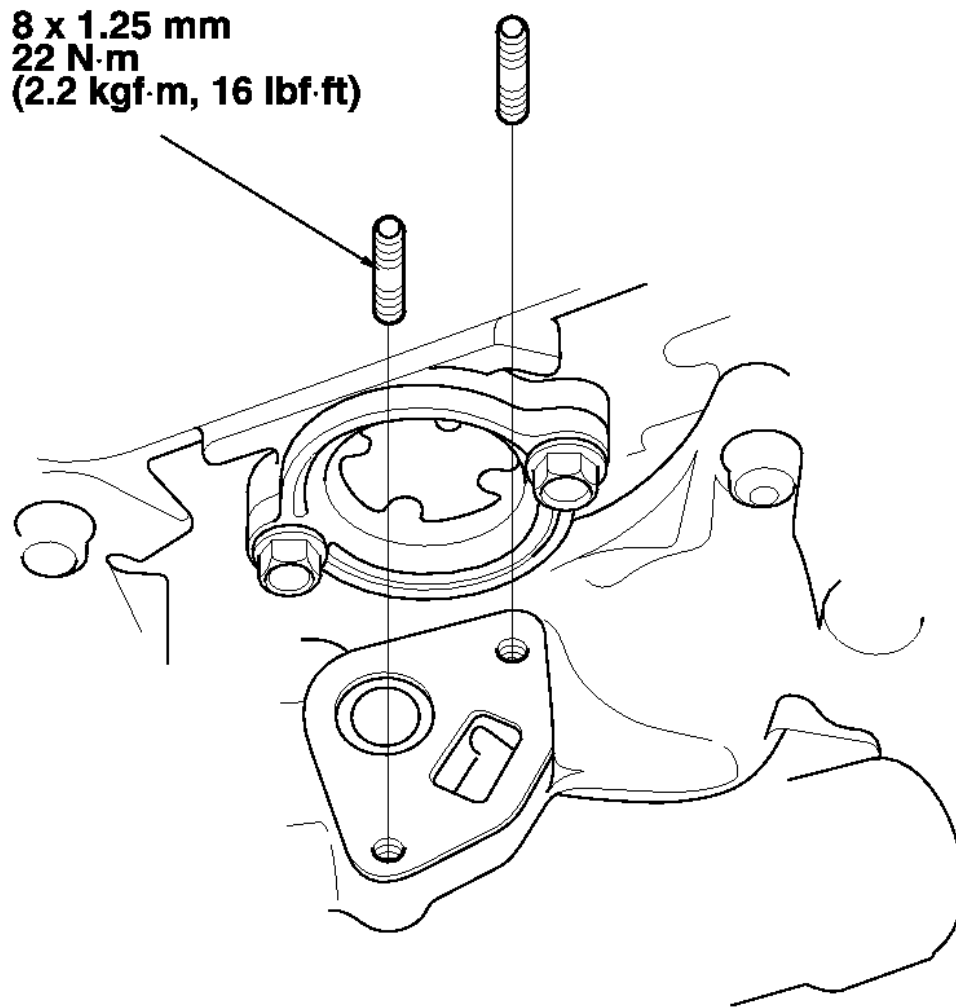


Fig. 92: Identifying Exhaust Gas Recirculation Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the timing belt (see **TIMING BELT REMOVAL**).
7. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
8. Remove the front camshaft pulley.
9. Remove the thrust cover (A), then remove the camshaft (B).

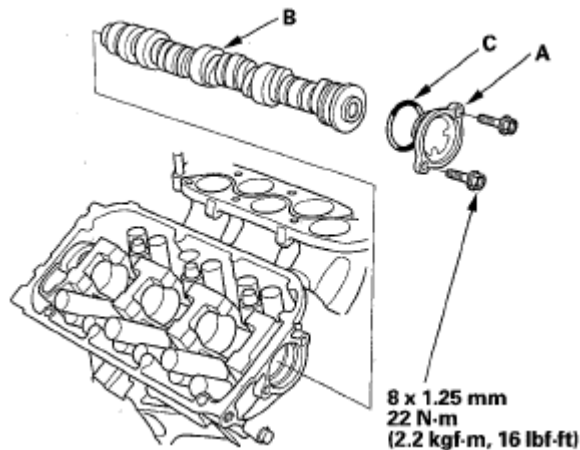


Fig. 93: Identifying Thrust Cover, Camshaft And Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine oil to the journals and cam lobes.
11. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the front camshaft pulley (see step 11 on **Camshaft, Rocker Arm Assembly, Camshaft Seal, and Pulley Installation**).
12. Install the rocker arm assembly, then tighten the mounting bolts (see step 9 on **Camshaft, Rocker Arm Assembly, Camshaft Seal, and Pulley Installation**).
13. Install the timing belt (see **TIMING BELT INSTALLATION**).
14. Adjust the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
15. Install the upper radiator hose.
16. Install the battery and battery box. Do the battery terminal reconnection procedure(See **RECONNECTION**).
17. Fill the radiator with engine coolant and bleed the air out from the system (see step 10 **COOLANT REPLACEMENT**).
18. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

REAR

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the purge joint.

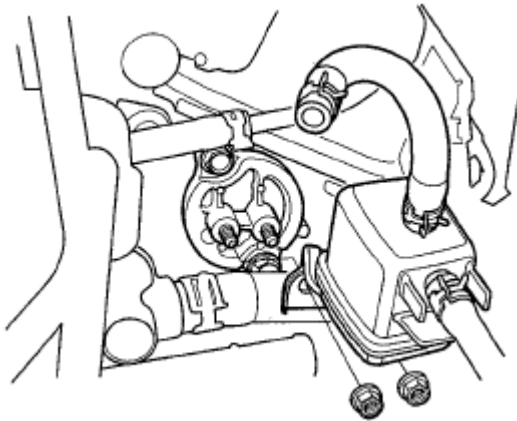


Fig. 94: Identifying Purge Joint

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the brake lines from the master cylinder (see **MASTER CYLINDER REPLACEMENT**).
4. Remove the timing belt (see **TIMING BELT REMOVAL**).
5. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
6. Remove the rear camshaft pulley.
7. Remove the thrust cover (A), then remove the camshaft (B).

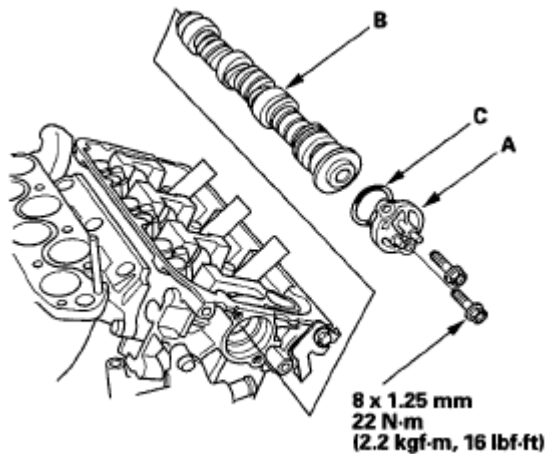


Fig. 95: Identifying Thrust Cover And Camshaft Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the camshaft in the reverse order of removal. Always use a new O-ring (C). Apply new engine oil to the journals and cam lobes.
9. Apply new engine oil to the threads of the camshaft pulley mounting bolt, then install the rear camshaft pulley (see step 11 on **Camshaft, Rocker Arm Assembly, Camshaft Seal, and Pulley Installation**).
10. Install the rocker arm assembly, then tighten the mounting bolts (see step 9 on **Camshaft, Rocker Arm Assembly, Camshaft Seal, and Pulley Installation**).
11. Install the timing belt (see **TIMING BELT INSTALLATION**).

12. Adjust the valve clearance (see VALVE CLEARANCE ADJUSTMENT).
13. Install the brake lines (see MASTER CYLINDER REPLACEMENT) and do the brake system bleeding procedure (see BRAKE SYSTEM BLEEDING).
14. Do the CKP pattern clear/CKP pattern learn procedure (see CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN).

CYLINDER HEAD INSPECTION FOR WARPAGE

1. Remove the cylinder head (see CYLINDER HEAD REMOVAL).
2. Inspect the camshaft (see CAMSHAFT INSPECTION).
3. Check the cylinder head for warpage. Measure along the edges, and three ways across the center.
 - If warpage is less than 0.05 mm (0.002 in.), cylinder head resurfacing is not required.
 - If warpage is between 0.05 mm (0.002 in.) and 0.2 mm (0.008 in.), resurface the cylinder head.
 - Maximum resurface limit is 0.2 mm (0.008 in.) based on a height of 121 mm (4.76 in.).

Cylinder Head Height Standard (New): 120.95-121.05 mm

(4.7618-4.7657 in.)

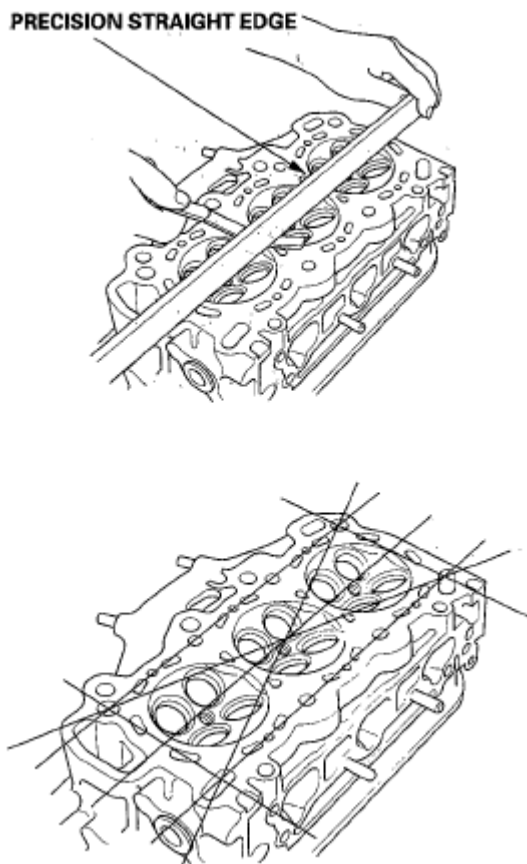


Fig. 96: Identifying Cylinder Head Warpage

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM ASSEMBLY REMOVAL

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the cylinder head cover (see **CYLINDER HEAD COVER REMOVAL**).
3. Loosen the locknuts and adjusting screws (A).

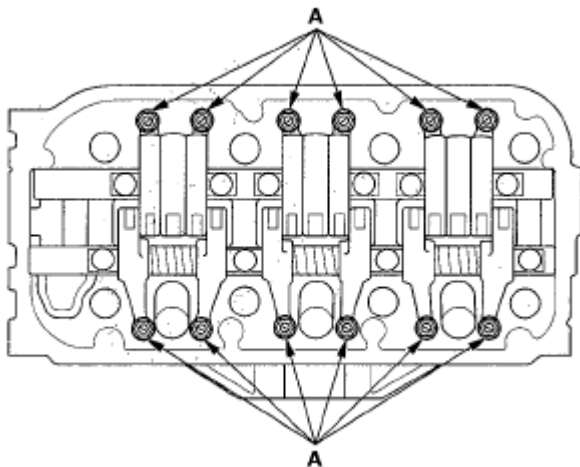


Fig. 97: Identifying Locknuts And Adjusting Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts and the rocker arm assembly.
 1. Loosen the rocker shaft mounting bolts two turns at a time, to prevent damaging the valves or rocker arm assembly.
 2. When removing the rocker arm assembly, do not remove the rocker shaft mounting bolts. The bolts will keep the springs and the rocker arms on the shafts.

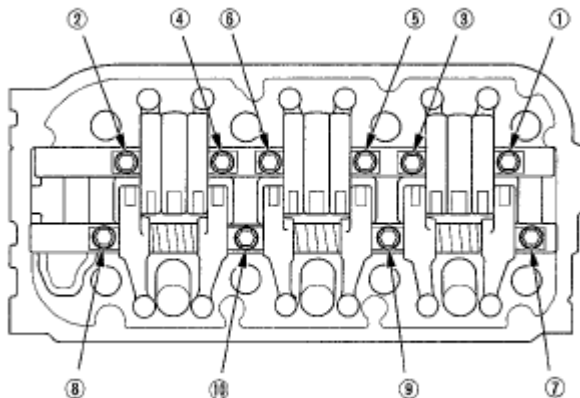


Fig. 98: Identifying Rocker Shaft Mounting Bolts In Sequence
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY

NOTE:

- Identify parts as they are removed so they can be reinstalled in their original locations.
- Inspect the rocker shafts and rocker arms (see ROCKER ARM AND SHAFT INSPECTION).
- If reused, the rocker arms, must be installed in their original locations.
- When removing or installing the rocker arm assembly, do not remove the rocker shaft mounting bolts. The bolts will keep the springs and rocker arms on the shaft.
- Bundle the intake rocker arms with rubber bands to keep them together as a set.
- Prior to reassembling, clean all the parts in solvent, dry them and apply new engine oil to any contact points.
- When replacing the intake rocker arm assembly, remove the fastening hardware from the new intake rocker arm assembly.

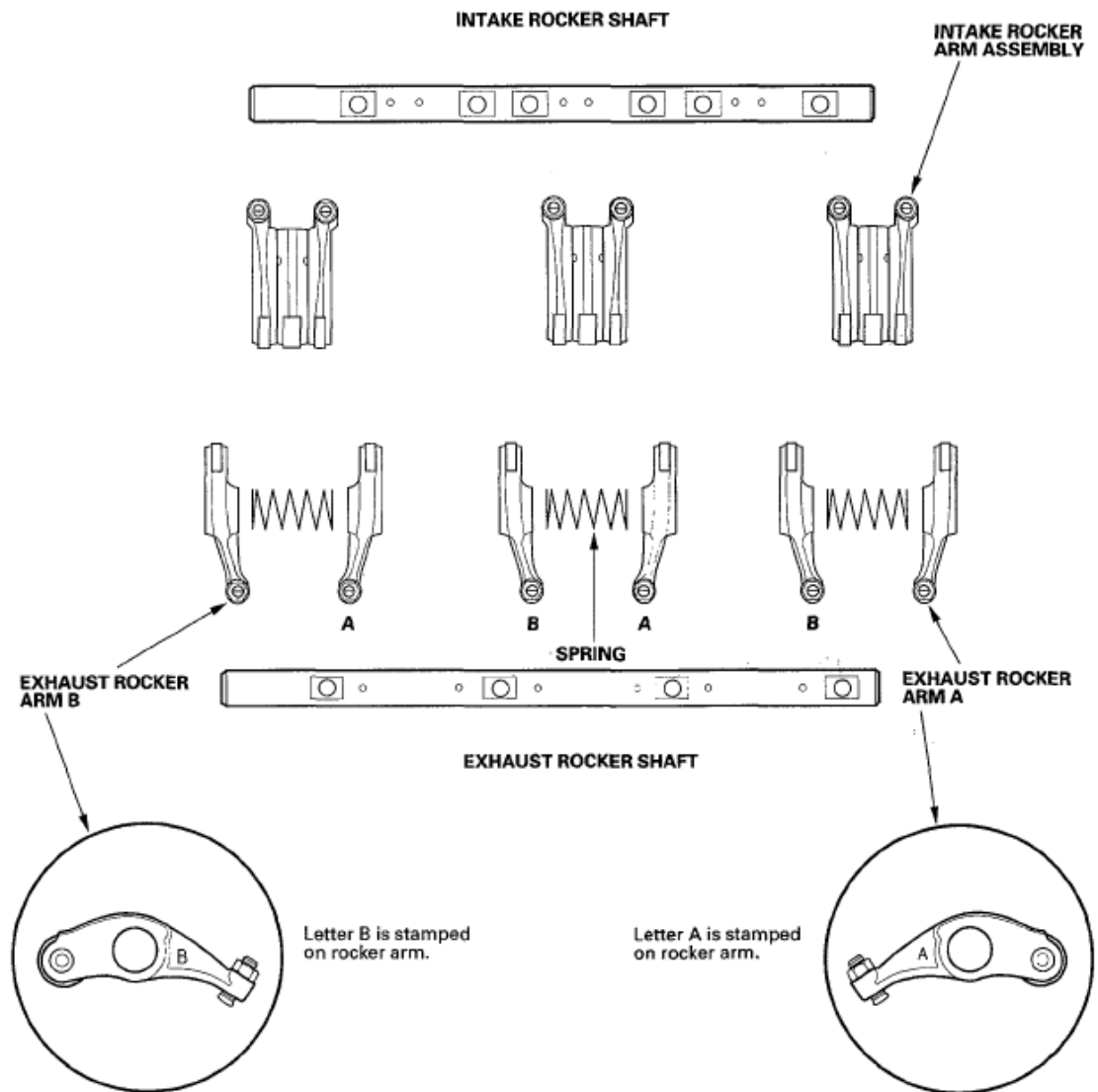


Fig. 99: Identifying View Of Rocker Arm And Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM AND SHAFT INSPECTION

1. Remove the rocker arm assembly (see **ROCKER ARM ASSEMBLY REMOVAL**).
2. Disassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
3. Measure the diameter of the shaft at the first rocker location.

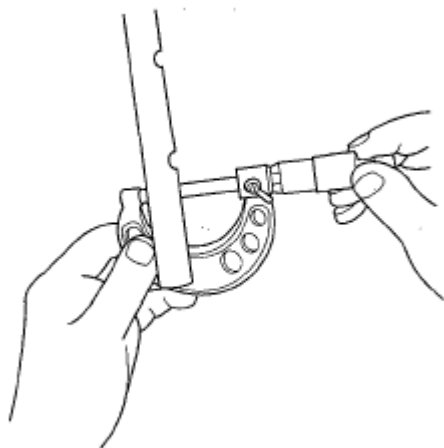


Fig. 100: Measuring Diameter Of Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Zero the gauge (A) to the shaft diameter.

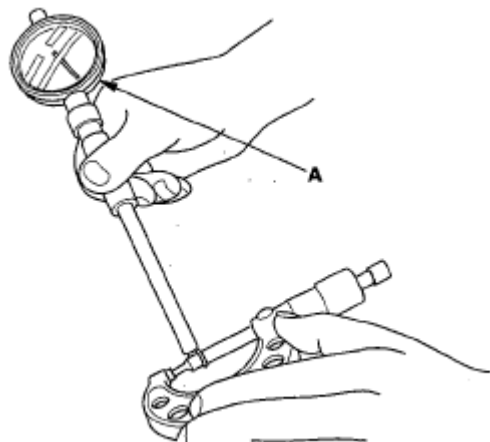


Fig. 101: Identifying Setting Dial Gauge To Zero
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the inside diameter of the rocker arm, and check it for an out-of-round condition.

Intake Rocker Arm-to-Shaft Clearance

Standard (New): 0.026-0.067 mm (0.0010-0.0026 in.)

Service Limit: 0.067 mm (0.0026 in.)

Exhaust Rocker Arm-to-Shaft Clearance

Standard (New): 0.026-0.077 mm (0.0010-0.0030 in.)

Service Limit: 0.077 mm (0.0030 in.)

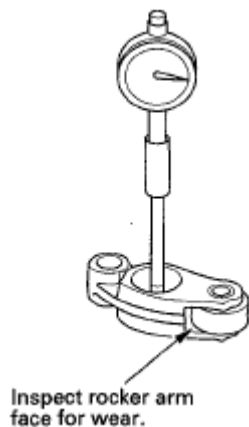


Fig. 102: Identifying Inside Diameter Of Rocker Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Repeat for all rockers and both shafts. If the clearance is beyond the service limit, replace the rocker shaft and all rocker arms that are beyond the service limit. If any intake rocker arm needs replacement, replace all three rocker arms in that set (primary, mid, and secondary).
7. Inspect the rocker arm synchronizing pistons (A). Push them manually. If they do not move smoothly, replace the rocker arm set.

NOTE:

- Apply new engine oil to the pistons when reassembling.
- When reassembling the primary rocker arm (B), carefully apply air pressure to the oil passage of the rocker arm.

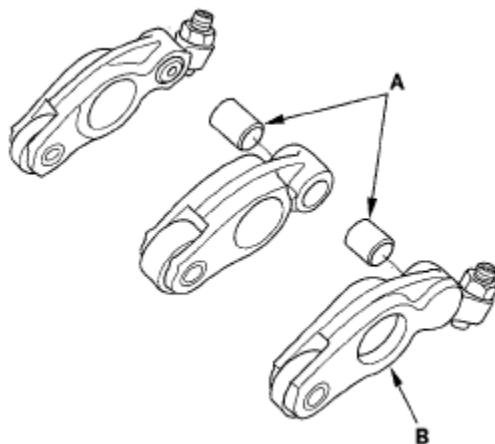


Fig. 103: Identifying Rocker Arm Synchronizing Pistons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Reassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
9. Install the rocker arm assembly (see **CAMSHAFT, ROCKER ARM ASSEMBLY, CAMSHAFT**

SEAL, AND PULLEY INSTALLATION).**CAMSHAFT INSPECTION**

1. Remove the cylinder head (see **CYLINDER HEAD REMOVAL**).
2. Remove the rocker arms (see **ROCKER ARM ASSEMBLY REMOVAL**).
3. Put the rocker shafts on the cylinder head, then tighten the bolts to the specified torque.

NOTE: Apply new engine oil to the threads and flange of the exhaust rocker shaft mounting bolts.

Specified Torque

8 x 1.25 mm: 24 N.m (2.4 kgf.m, 17 lbf.ft)

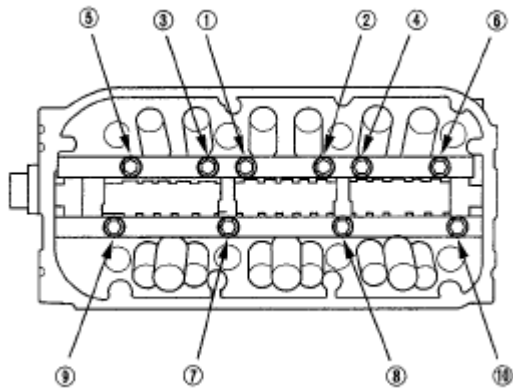


Fig. 104: Tightening Exhaust Rocker Shaft Mounting Bolts In Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Seat the camshaft by pushing it toward the rear of the cylinder head.
5. Zero the dial indicator against the end of the camshaft. Push the camshaft back and forth and read the end play. If the end play is beyond the service limit, replace the thrust cover and recheck. If it is still beyond the service limit, replace the camshaft.

Camshaft End Play

Standard (New): 0.05-0.20 mm

(0.002-0.008 in.)

Service Limit: 0.20 mm (0.008 in.)

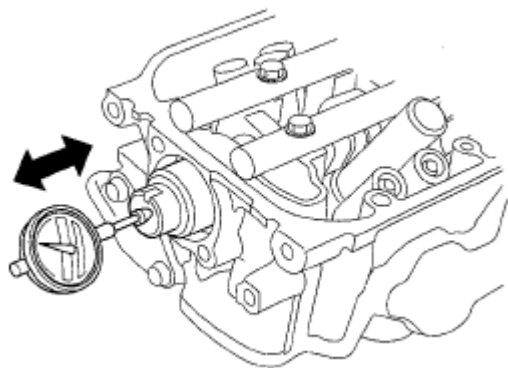


Fig. 105: Identifying Camshaft End Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the camshaft thrust cover (A), then pull out the camshaft (B).

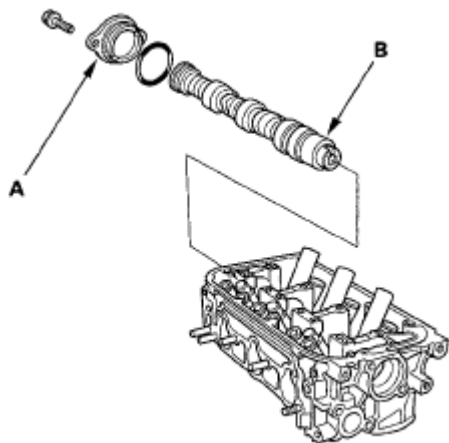


Fig. 106: Identifying Camshaft Thrust Cover And Camshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Wipe the camshaft clean, then inspect the lift ramps. Replace the camshaft if any lobes are pitted, scored, or excessively worn.
8. Measure the diameter of each camshaft journal.

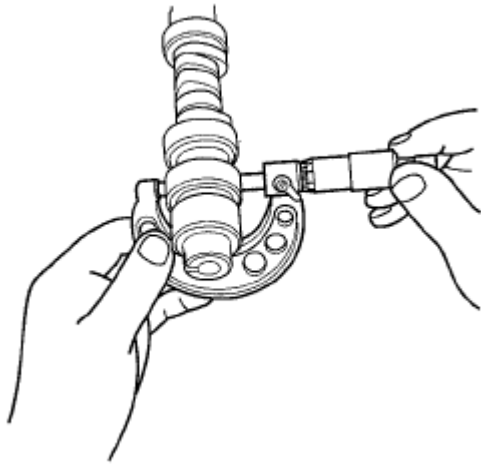


Fig. 107: Identifying Diameter Of Camshaft Journal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Zero the gauge to the journal diameter.

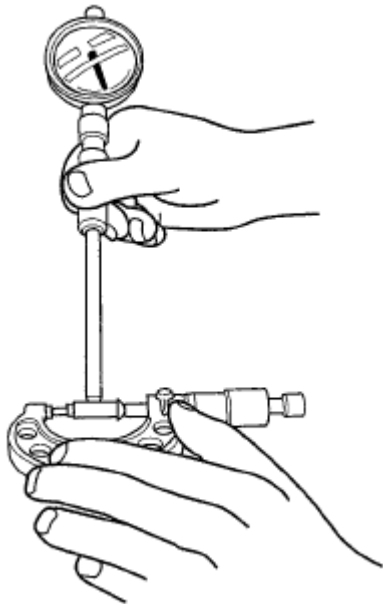


Fig. 108: Identifying Setting Dial Gauge To Zero
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Clean the camshaft bearing surfaces in the cylinder head. Measure the inside diameter of each camshaft bearing surface, and check for an out-of-round condition.
- If the camshaft-to-holder clearance is within the service limit, go to step 12.
 - If the camshaft-to-holder clearance is beyond the service limit and the camshaft has been replaced, replace the cylinder head.
 - If the camshaft-to-holder clearance is beyond the service limit and the camshaft has not been

replaced, go to step 11.

Camshaft-to-Holder Oil Clearance

Standard (New): 0.050-0.089 mm (0.0020-0.0035 in.)

Service Limit: 0.15 mm (0.006 in.)

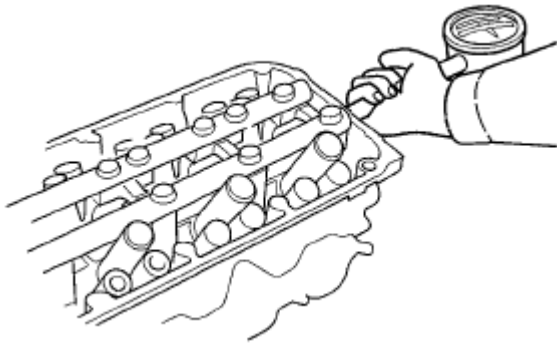


Fig. 109: Identifying Camshaft-To-Holder Oil Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check the total runout with the camshaft supported on V-blocks.
 - If the total runout of the camshaft is within the service limit, replace the cylinder head.
 - If the total runout is beyond the service limit, replace the camshaft and recheck the oil clearance. If the oil clearance is still out of tolerance, replace the cylinder head.

Camshaft Total Runout

Standard (New): 0.03 mm (0.001 in.) max.

Service Limit: 0.04 mm (0.002 in.)

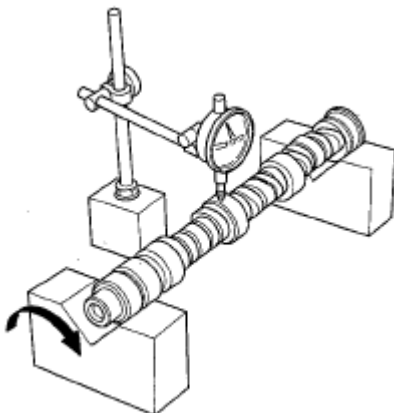


Fig. 110: Identifying Camshaft Runout

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Measure the cam lobe height.

Cam Lobe Height Standard (New):

CAM LOBE HEIGHT SPECIFICATION

	INTAKE	EXHAUST
PRI	35.112 mm (1.3824 in.)	
MID	36.394 mm (1.4328 in.)	36.389 mm (1.4326 in.)
SEC	35.112 mm (1.3824 in.)	
PRI: Primary IN: Intake	MID: Mid EX: Exhaust	SEC: Secondary T/B: Timing Belt

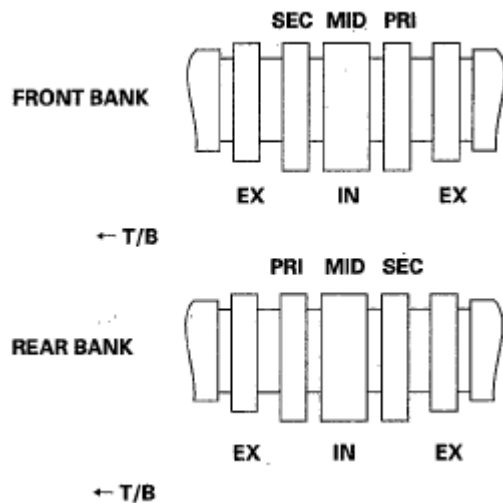


Fig. 111: Identifying Cam Lobe Height

Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE, SPRING, AND VALVE SEAL REMOVAL

Special Tools Required

Valve spring compressor attachment 07757-PJ1010A

Identify the valves and valve springs as they are removed so that each item can be reinstalled in its original position.

1. Remove the cylinder head (see **CYLINDER HEAD REMOVAL**).
2. Using an appropriate-sized socket (A) and plastic mallet (B), lightly tap the valve retainer to loosen the valve cotters.

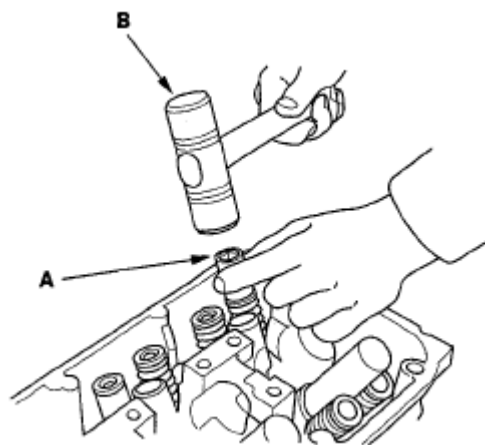


Fig. 112: Tapping Valve Retainer

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the valve spring compressor attachment and valve spring compressor. Compress the spring and remove the valve cotters.

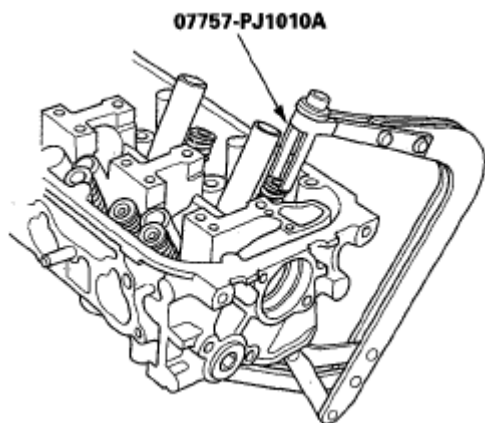


Fig. 113: Identifying Spring And Valve Cotters

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the valve spring compressor, valve spring compressor attachment, spring retainer, and spring.
5. Install the valve guide seal remover (A).

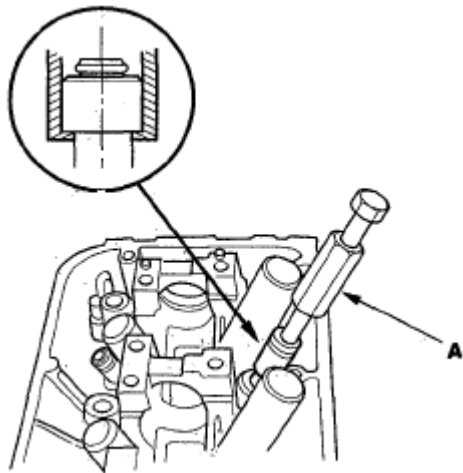


Fig. 114: Identifying Valve Guide Seal Remover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the valve seal.

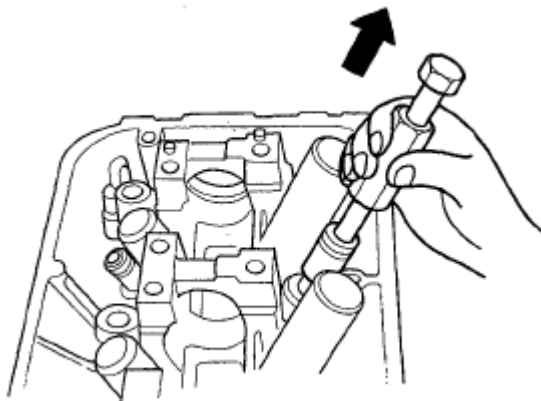


Fig. 115: Identifying Valve Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve spring seat and valve.

VALVE INSPECTION

1. Remove the valves (see **VALVE, SPRING, AND VALVE SEAL REMOVAL**).
2. Measure the valve in these areas.

Intake Valve Dimensions

A Standard (New): 35.90-36.10 mm (1.413-1.421 in.)

B Standard (New): 116.55-117.15 mm (4.589-4.612 in.)

C Standard (New): 5.485-5.495 mm (0.2159-0.2163 in.)

C Service Limit: 5.455 mm (0.2148 in.)

Exhaust Valve Dimensions

A Standard (New): 29.90-30.10 mm (1.177-1.185 in.)

B Standard (New): 113.90-114.50 mm (4.484-4.508 in.)

C Standard (New): 5.450-5.460 mm (0.2146-0.2150 in.)

C Service Limit: 5.420 mm (0.2134 in.)

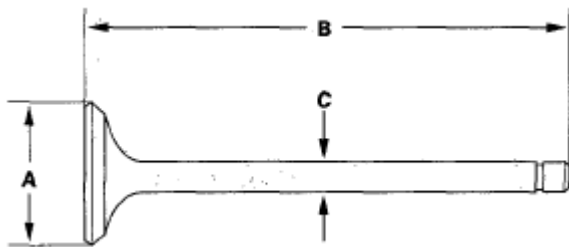


Fig. 116: Identifying Valve Length Dimension

Courtesy of AMERICAN HONDA MOTOR CO., INC.

VALVE STEM-TO-GUIDE CLEARANCE INSPECTION

1. Remove the valves (see VALVE, SPRING, AND VALVE SEAL REMOVAL).
2. Slide the valve out of its guide about 10 mm (0.39 in.), then measure the guide-to-stem clearance with a dial indicator while rocking the stem in the direction of normal thrust (wobble method).
 - If the measurement exceeds the service limit, recheck it using a new valve.
 - If the measurement is now within the service limit, reassemble using a new valve.
 - If the measurement with a new valve still exceeds the service limit, go to step 3.

Intake Valve Stem-to-Guide Clearance

Standard (New): 0.04-0.09 mm (0.002-0.004 in.)

Service Limit: 0.16 mm (0.006 in.)

Exhaust Valve Stem-to-Guide Clearance

Standard (New): 0.11-0.16 mm (0.004-0.006 in.)

Service Limit: 0.22 mm (0.009 in.)

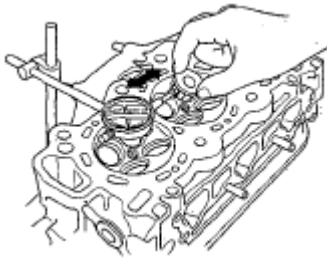


Fig. 117: Identifying Valve Stem-To-Guide Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Subtract the valve stem O.D. (measured with a micrometer) from the valve guide I.D. (measured with an inside micrometer or ball gauge). Take the measurements in three places along the valve stem and three places inside the valve guide. The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

Intake Valve Stem-to-Guide Clearance

Standard (New): 0.020-0.045 mm (0.0008-0.0018 in.)

Service Limit: 0.08 mm (0.003 in.)

Exhaust Valve Stem-to-Guide Clearance

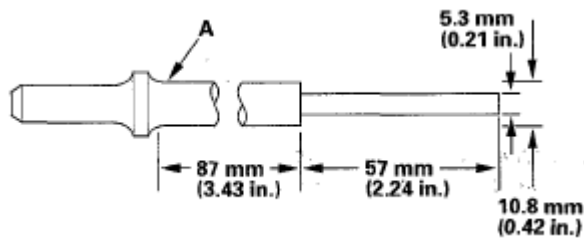
Standard (New): 0.055-0.080 mm (0.0022-0.0031 in.)

Service Limit: 0.11 mm (0.004 in.)

VALVE GUIDE REPLACEMENT

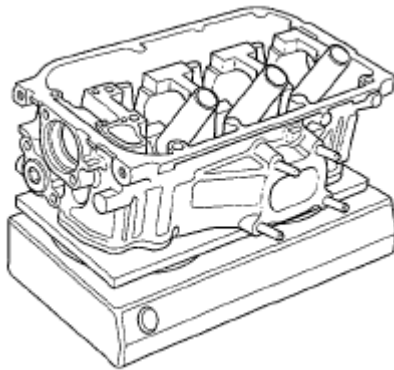
Special Tools Required

- Valve guide driver, 5.5 mm 07742-0010100
 - Valve guide reamer, 5.5 mm 07HAH-PJ7A100
1. Inspect valve stem-to-guide clearance (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**).
 2. As illustrated, use a commercially available air-impact valve guide driver (A) modified to fit the diameter of the valve guides. In most cases, the same procedure can be done using the special tool and a conventional hammer.

**Fig. 118: Identifying Valve Guide Driver Dimension**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Select the proper replacement guides, and chill them in the freezer section of a refrigerator for about an hour.
4. Use a hot plate or oven to evenly heat the cylinder head to 300°F (150°C). Monitor the temperature with a cooking thermometer. Do not get the head hotter than 300°F (150°C); excessive heat may loosen the valve seats.

**Fig. 119: Identifying Cylinder Head**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Working from the camshaft side, use the driver and an air hammer to drive the guide about 2 mm (0.1 in.) towards the combustion chamber. This will knock off some of the carbon and make removal easier. Hold the air hammer directly in line with the valve guide to prevent damaging the driver. Wear safety goggles or a face shield.
6. Turn the head over, and drive the guide out toward the camshaft side of the head.

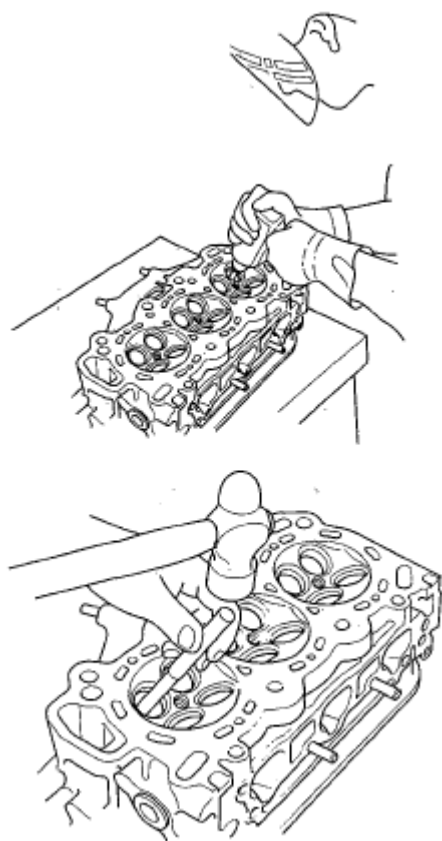


Fig. 120: Identifying Driving Guide Out Toward Camshaft Side Of Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. If a valve guide still won't move, drill it out with a 8 mm (5/16 in.) bit, then try again.

NOTE: **Drill guides only in extreme cases; you could damage the cylinder head if the guide breaks.**

8. Take out the new guide(s) from the freezer, one at a time, as you need them.
9. Apply a thin coat of new engine oil to the outside of the new valve guide. Install the guide from the camshaft side of the head; use the valve guide driver to drive the guide to the specified installed height (A) of the guide (B). If you have all 12 guides to do, you may have to reheat the head.

Valve Guide Installed Height

Intake: 21.20-22.20 mm (0.835-0.874 in.)

Exhaust: 20.60-21.60 mm (0.811-0.850 in.)

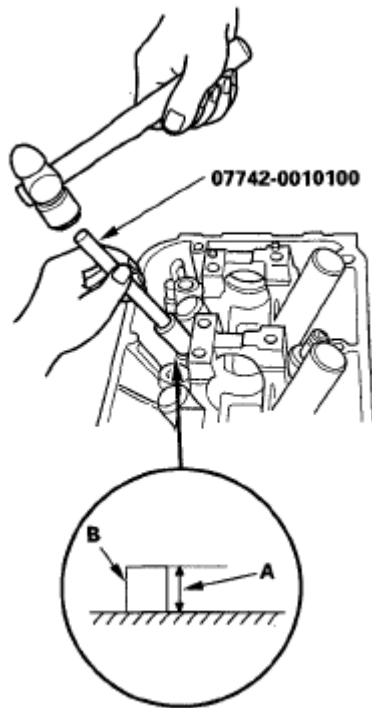


Fig. 121: Identifying Valve Guide

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Coat both the reamer and the valve guide with cutting oil.
11. Rotate the reamer clockwise the full length of the valve guide bore.

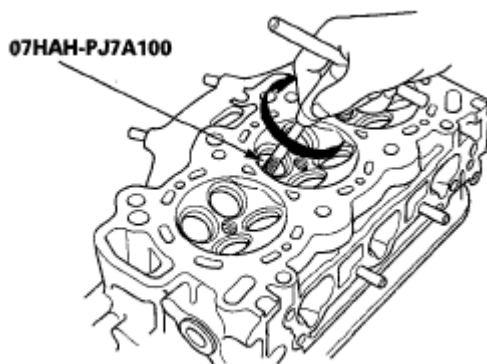


Fig. 122: Rotating Reamer Clockwise

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Continue to rotate the reamer clockwise while drawing it from the bore.
13. Thoroughly wash the guide in detergent and water to remove any cutting residue.
14. Check the clearance with a valve (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**). Verify that a valve slides in the intake and exhaust valve guides without sticking.
15. Inspect the valve seat. If necessary renew the valve seat using a valve seat cutter (see **VALVE SEAT**

RECONDITIONING).**VALVE SEAT RECONDITIONING**

1. Inspect valve stem-to-guide clearance (see **VALVE STEM-TO-GUIDE CLEARANCE INSPECTION**). If the valve guides are worn, replace them (see **VALVE GUIDE REPLACEMENT**) before cutting the valve seats.
2. Renew the valve seats in the cylinder head using a valve seat cutter.

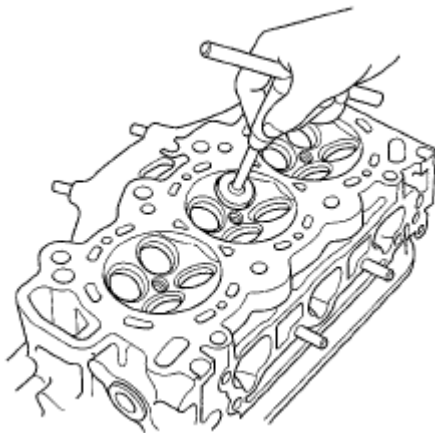


Fig. 123: Identifying Valve Seats In Cylinder Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully cut a 45° seat, removing only enough material to ensure a smooth and concentric seat.
4. Bevel the upper edge of the seat with the 30° cutter and the lower edge of the seat with the 67.5° cutter (intake seat) or the 60° cutter (exhaust seat). Check the width of the seat and adjust accordingly.

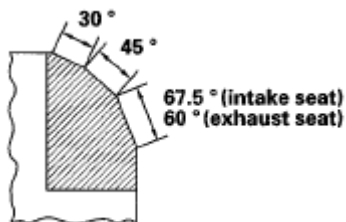


Fig. 124: Identifying Valve Seat Angle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Make one more very light pass with the 45° cutter to remove any possible burrs caused by the other cutters.

Valve Seat Width

Standard (New): 1.25-1.55 mm (0.049-0.061 in.)

Service Limit: 2.00 mm (0.079 in.)

6. After resurfacing the seat, inspect it for even valve seating. Apply Prussian Blue compound (A) to the valve face. Insert the valve in its original location in the head, then lift it and snap it closed against the seat several times.

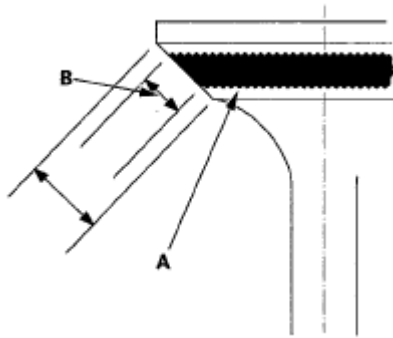


Fig. 125: Applying Prussian Blue Compound To Valve Face
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. The actual valve seating surface (B), as shown by the blue compound, should be centered on the seat.
 - If it is too high (closer to the valve stem), you must make a second cut with the 67.5° cutter (intake seat) or the 60° cutter (exhaust seat) to move it down, then one more cut with the 45° cutter to restore seat width.
 - If it is too low (closer to the valve edge), you must make a second cut with the 30° cutter to move it up, then one more cut with the 45° cutter to restore seat width.

NOTE: The final cut should always be made with the 45° cutter.

8. Insert the intake and exhaust valves in the head, and measure the valve stem installed height (A).

Intake Valve Stem Installed Height

Standard (New): 46.75-47.55 mm (1.841-1.872 in.)

Service Limit: 47.80 mm (1.882 in.)

Exhaust Valve Stem Installed Height

Standard (New): 46.68-47.48 mm (1.838-1.869 in.)

Service Limit: 47.73 mm (1.879 in.)

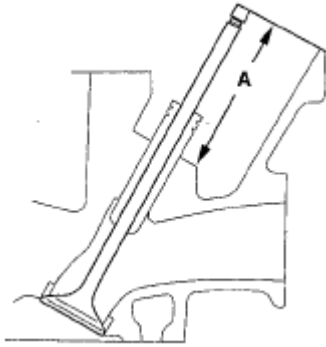


Fig. 126: Identifying Valve Stem Height

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the valve stem installed height is beyond the service limit, replace the valve and recheck. If it is still beyond the service limit, replace the cylinder head; the valve seat in the head is too deep.

VALVE, SPRING, AND VALVE SEAL INSTALLATION

Special Tools Required

- Stem seal driver 07PAD-0010000
 - Valve spring compressor attachment 07757-PJ1010A
1. Coat the valve stems with new engine oil. Install the valves in the valve guides.
 2. Check that the valves move up and down smoothly.
 3. Install the spring seats on the cylinder head.
 4. Install the new valve seals (A) using the stem seal driver (B).

NOTE: Exhaust valve seals (C) have a black spring (D) and intake valve seals (E) have a white spring (F); they are not interchangeable.

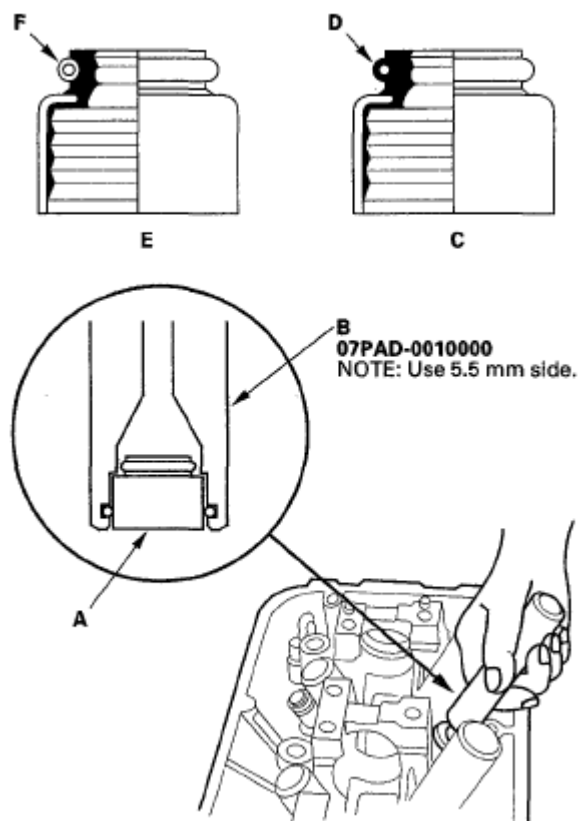


Fig. 127: Identifying Valve Seals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the valve spring and valve retainer. Place the end of the valve spring with closely wound coils toward the cylinder head.
6. Install the valve spring compressor attachment and valve spring compressor. Compress the spring and install the valve cotters.

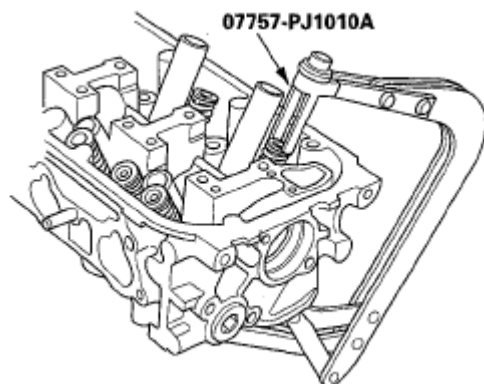


Fig. 128: Identifying Valve Spring Compressor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the valve spring compressor and valve spring compressor attachment.
8. Lightly tap the end of each valve stem two or three times with a plastic mallet (A) to ensure proper seating of the valve and valve cotters. Tap the valve stem only along its axis so you do not bend the stem.



Fig. 129: Tapping Valve Stem

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CAMSHAFT, ROCKER ARM ASSEMBLY, CAMSHAFT SEAL, AND PULLEY INSTALLATION

1. Apply a light coat of new engine oil around the camshaft oil seal.
2. Gently tap the new camshaft oil seal (A) into the cylinder head.
 1. Tap the camshaft oil seal in squarely.
 2. Install the oil seal about 0.5-1.5 mm (0.02-0.06 in.) below the surface of the cylinder head.

FRONT:

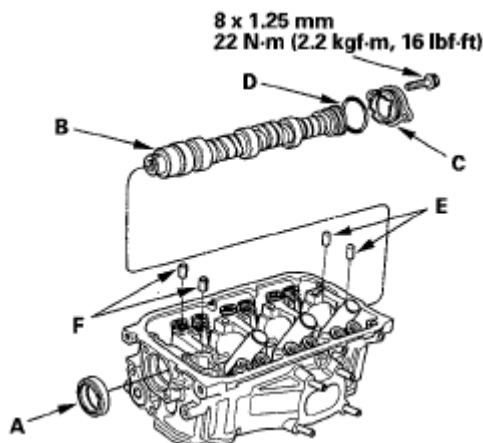


Fig. 130: Identifying Camshaft Oil Seal With Torque Specification - Front

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

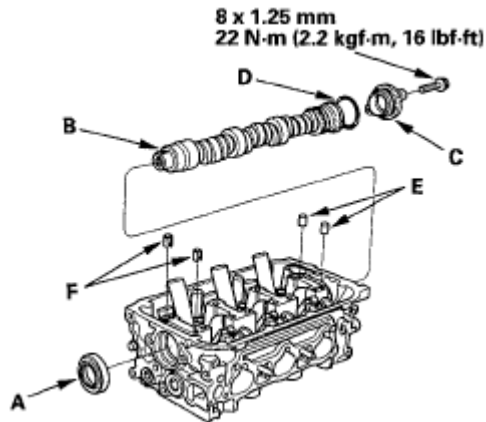


Fig. 131: Identifying Camshaft Oil Seal With Torque Specification - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Insert the camshaft (B) into the cylinder head, then install the camshaft thrust cover (C). Always use a new O-ring (D).
4. Check that the oil seal lips are not distorted.
5. Install the solid dowel pins (E) and the hollow dowel pins (F).
6. Loosen the valve adjusting screws.
7. If the rocker arm assembly is disassembled, reassemble the rocker arm assembly (see **ROCKER ARM AND SHAFT DISASSEMBLY/REASSEMBLY**).
8. Set the rocker arm assembly in place, and loosely install the bolts. Make sure that the rocker arms are properly positioned on the valve stems.
9. Tighten each bolt two turns at a time in the sequence as shown to ensure that the rockers do not bind on the valves.

NOTE: Apply new engine oil to the threads and flange of the exhaust rocker shaft mounting bolts.

Specified Torque

8 x 1.25 mm: 24 N.m (2.4 kgf.m, 17 lbf.ft)

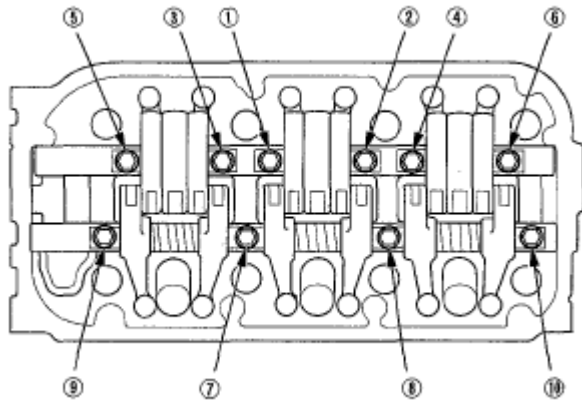


Fig. 132: Tightening Rocker Shaft Bolts In Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the front injector base and rear injector base. Always use a new gasket (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
11. Apply new engine oil to the threads of the camshaft pulley mounting bolt (A). Install the back cover (B), then install the camshaft pulley (C).

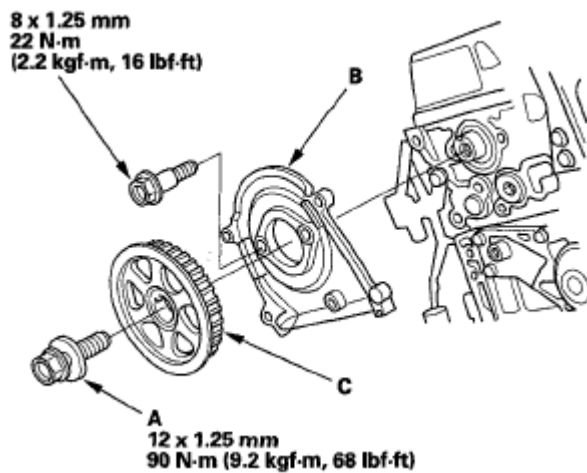


Fig. 133: Identifying Camshaft Pulley Mounting Bolt And Back Cover With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CYLINDER HEAD INSTALLATION

1. Clean the cylinder head and engine block surface.
2. Clean and install the oil control orifices (A) with new O-rings(B).

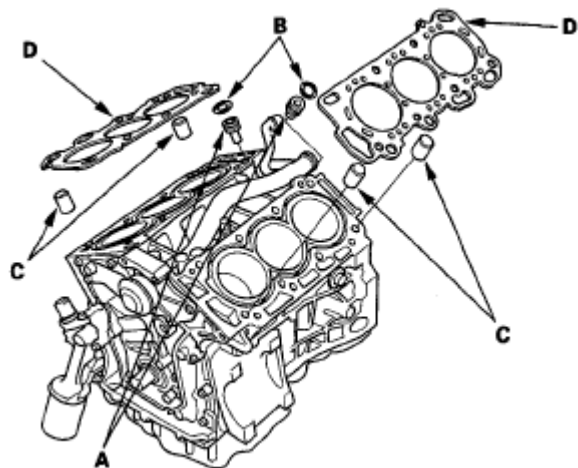


Fig. 134: Identifying Oil Control Orifices With O-Rings
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. install the dowel pins (C) and new cylinder head gaskets (D).
4. Clean the timing belt pulleys, timing belt guide plate, and the upper and lower covers.
5. Set the timing belt drive pulley to top dead center (TDC) by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

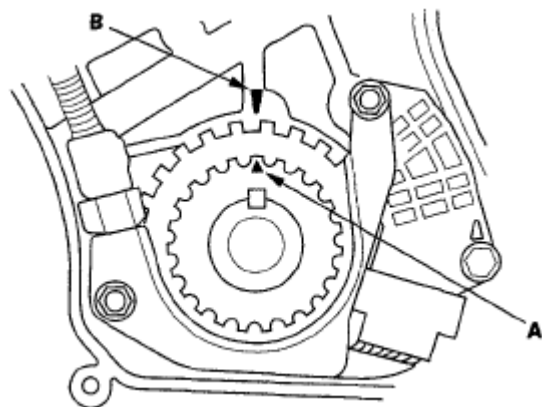


Fig. 135: Identifying TDC Mark On Tooth Of Timing Belt Drive Pulley With Pointer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT:

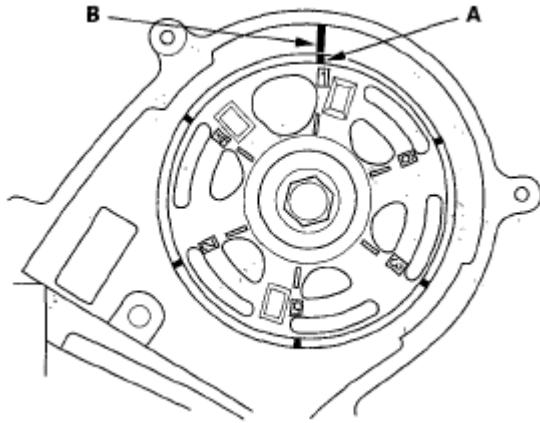


Fig. 136: Identifying TDC Marks On Camshaft Pulleys With Pointers - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

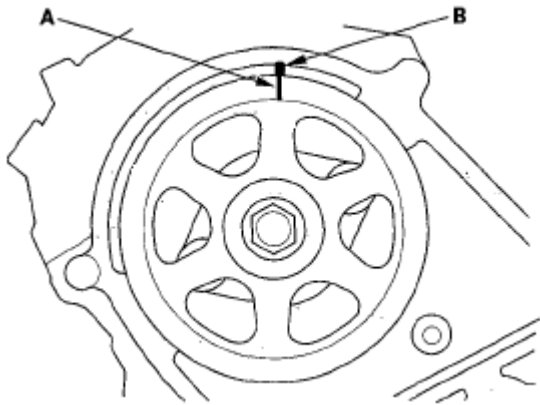


Fig. 137: Identifying TDC Marks On Camshaft Pulleys With Pointers - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Put the cylinder head onto the engine block.
8. Measure the diameter of each cylinder head bolt at point A and point B.

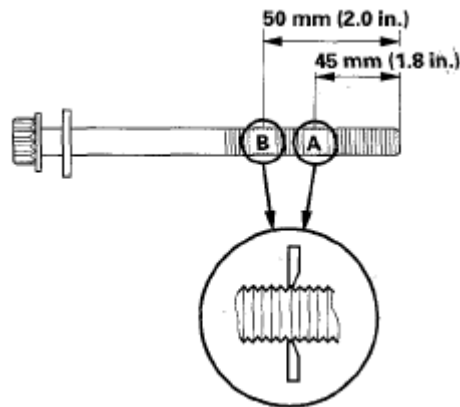


Fig. 138: Identifying Diameter Of Cylinder Head Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If either diameter is less than 11.3 mm (0.44 in.), replace the cylinder head bolt.
10. Apply new engine oil to the threads and under the bolt heads of all cylinder head bolts.
11. Tighten the cylinder head bolts in sequence to 29 N.m (3.0 kgf.m, 22 lbf.ft). Use a beam-type torque wrench. When using a preset-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.

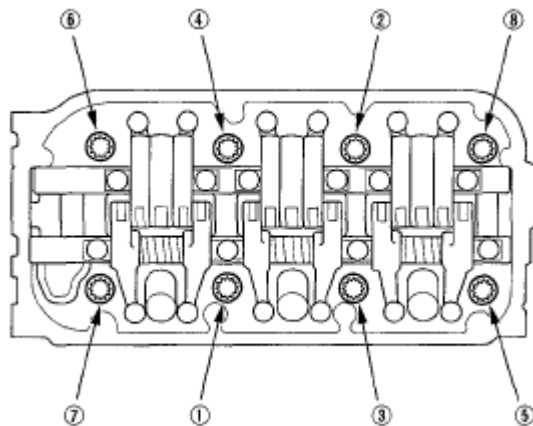


Fig. 139: Tightening Cylinder Head Bolts In Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. After torquing, tighten all cylinder head bolts in two steps (90° per step). If you are using a new cylinder head bolt, tighten the bolt an extra 90°.

NOTE: Remove the cylinder head bolt if you tightened it beyond the specified angle, and go back to step 8 of the procedure. Do not loosen it back to the specified angle.

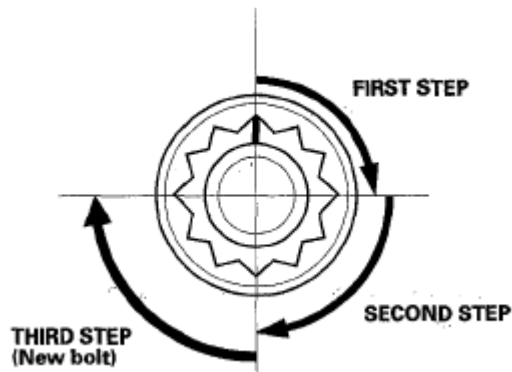


Fig. 140: Identifying Cylinder Head Bolt Tightening Angle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the timing belt (see **TIMING BELT INSTALLATION**).
14. Adjust the valve clearance (see **VALVE CLEARANCE ADJUSTMENT**).
15. Install the cylinder head covers (see **CYLINDER HEAD COVER INSTALLATION**).
16. Install the water passage (see **WATER PASSAGE REPLACEMENT**).
17. Install the front warm up three way catalytic converter (front WU-TWC) (see **FRONT**) and rear warm up three way catalytic converter (rear WU-TWC) (see **REAR**).
18. Install the fuel rails (see step 8 **INJECTOR REPLACEMENT**).
19. Install the connector bracket to the front cylinder head.

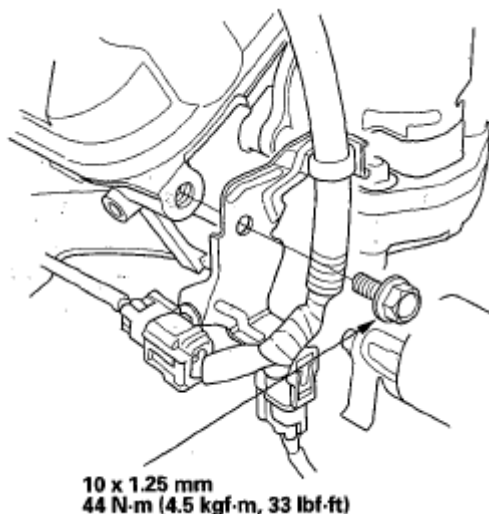


Fig. 141: Identifying Front Cylinder Head Connector Bracket Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the bracket (A) to the rear cylinder head.

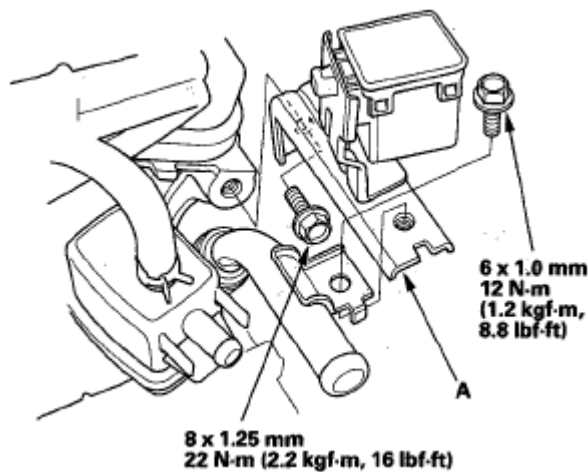


Fig. 142: Identifying Rear Cylinder Head Connector Bracket Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the purge joint.

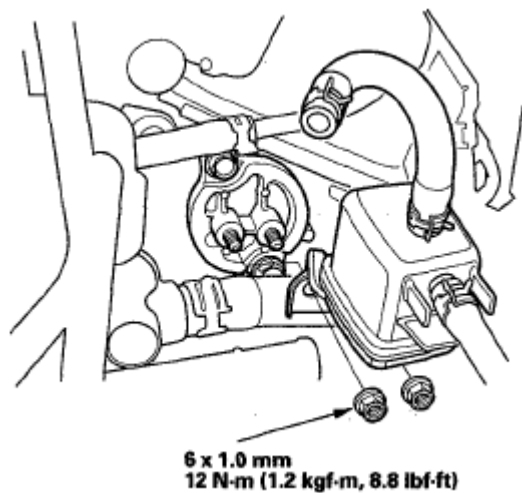


Fig. 143: Identifying Purge Joint Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Connect the fuel feed hose (A) (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**), then install the quick-connect fitting cover (B).

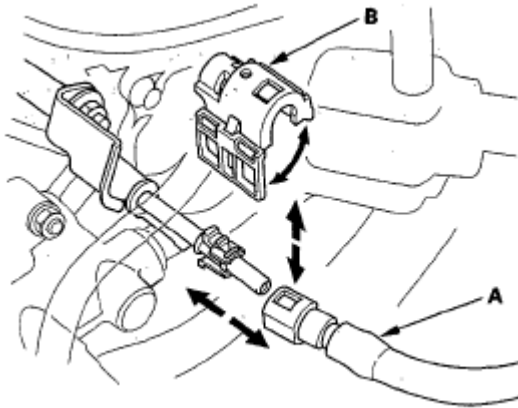


Fig. 144: Identifying Fuel Feed Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Connect the engine wire harness connectors, and install the wire harness clamps to the cylinder head.
 - Six injector connectors
 - Engine coolant temperature (ECT) sensor 1 connector
 - Crankshaft position (CKP) sensor connector
 - Exhaust gas recirculation (EGR) valve connector
 - Rocker arm oil control solenoid connector
 - Rocker arm oil pressure switch connector
 - Oil pressure switch connector
 - Two air fuel ratio (A/F) sensor connectors
 - Two secondary heated oxygen sensor (secondary HO2S) connectors
24. Install the upper radiator hose (A) and lower radiator hose (B).



Fig. 145: Identifying Upper Radiator Hose And Lower Radiator Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the intake manifold (see **INSTALLATION**).
26. Install the alternator (see **INSTALLATION**).
27. Install the power steering (P/S) pump (A) and P/S hose bracket (B).

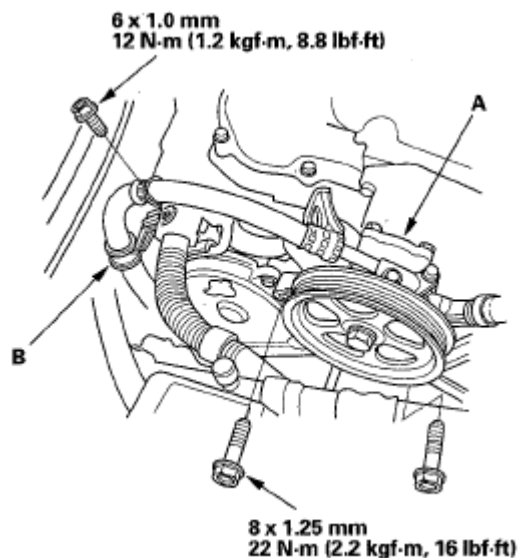


Fig. 146: Identifying Power Steering (P/S) Pump And P/S Hose Bracket Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the drive belt (see **DRIVE BELT REPLACEMENT**).
29. Do the battery terminal reconnection procedure (See **RECONNECTION**).
30. After installation, check that all tubes, hoses and connectors are installed correctly.
31. Check for fuel leaks. Turn the ignition switch ON (II) (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leaks at any point in the fuel line.
32. Refill the radiator with engine coolant, and bleed air from the cooling system with the heater valve open (see step 10 **COOLANT REPLACEMENT**).
33. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
34. Inspect the idle speed (see **IDLE SPEED INSPECTION**).
35. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).
36. Do the steering column position memorization (see **STEERING COLUMN POSITION MEMORIZATION**).
37. Enter the anti-theft codes for the audio system and navigation system (if equipped).
38. Set the clock (on vehicles without navigation).

CAMSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

Camshaft oil seal driver 07GAF-SD40330

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the camshaft pulley and back cover (see step 19 on **Cylinder Head Removal**).
3. Remove the camshaft oil seal.
4. Dry the camshaft oil seal housing.
5. Apply a light coat of multipurpose grease to the lip of the camshaft oil seal.
6. Using the camshaft oil seal driver (A), washer (B), and a 12 x 75 x 1.25 mm bolt (C), press in the camshaft oil seal (D) about 0.5-1.5 mm (0.02-0.06 in.) below the surface of the cylinder head.

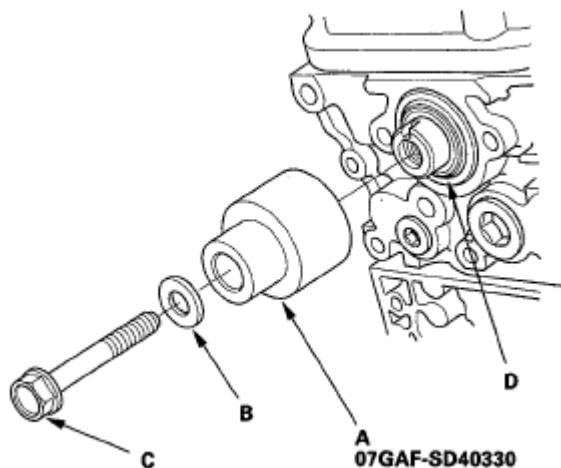


Fig. 147: Identifying Camshaft Oil Seal Driver, Washer And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Apply new engine oil to the threads of the camshaft pulley mounting bolt. Install the back cover, then install the camshaft pulley (see step 11 on **Camshaft, Rocker Arm Assembly, Camshaft Seal, and Pulley Installation**).
8. Install the timing belt (see **TIMING BELT INSTALLATION**).

SEALING BOLT INSTALLATION

NOTE: When installing the sealing bolt (A), always use a new washer (B).

FRONT:

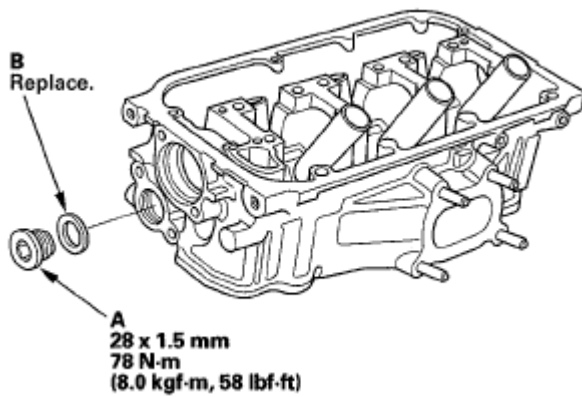


Fig. 148: Identifying Sealing Bolt With Torque Specification - Front
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR:

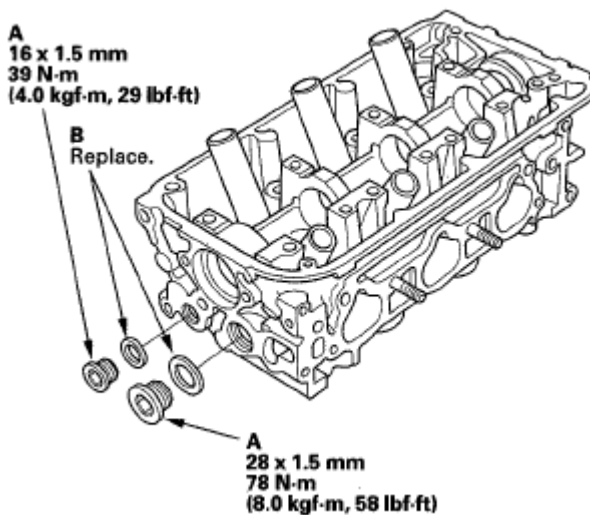


Fig. 149: Identifying Sealing Bolt With Torque Specifications - Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Dashboard - MDX

DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the dashboard and its related parts.

1. Open the front door, and remove the driver's dashboard side cover (A).
 1. Pull out the front door opening seal (B), as needed.
 2. Gently pull out the front edge of the side cover, and pry the rear edge with a trim tool to release the hooks (C), then remove the side cover.

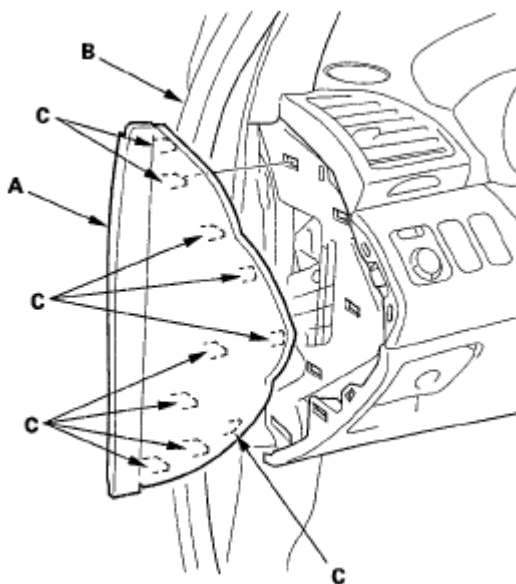


Fig. 1: Identifying Driver's Dashboard Side Cover, Front Door Opening Seal And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Gently pull out the driver's outer dashboard trim (A) to detach the clips.

Fastener Locations

▷ : Clip, 4

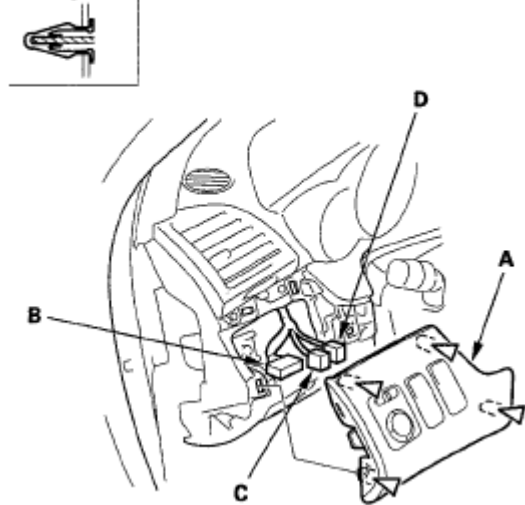


Fig. 2: Identifying Driver's Outer Dashboard Trim, Power Mirror Switch Connector And VSA Off Switch Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the power mirror switch connector (B), VSA OFF switch connector (C), and if equipped, headlight washer switch connector (D), then remove the panel.
4. Install the trim in the reverse order of removal, and note these items:
 - Make sure each connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the driver's inner dashboard trim (A).
 1. Gently pull out along the edge beside the audio unit by hand to release the lower hooks (B) and the clip (C).
 2. Detach the upper clips (D).

Fastener Locations

C, D ▷ : Clip, 5

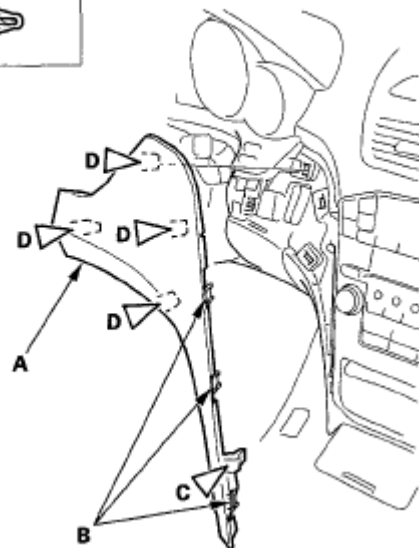


Fig. 3: Identifying Lower Hooks, Upper Clips And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Position the hooks first on installation, then move the clips into place.
 - Push the clips and hooks into place securely.

INSTRUMENT FASCIA REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Tilt the steering column down, and telescope it out.
2. Remove these items.
 - Driver's outer dashboard trim (see **DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION**)
 - Driver's inner dashboard trim (see **DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION**)

3. Remove the instrument fascia (A).
 1. Gently pull out the bottom to release the clips
 2. Disconnect the select/reset switch connector (B).

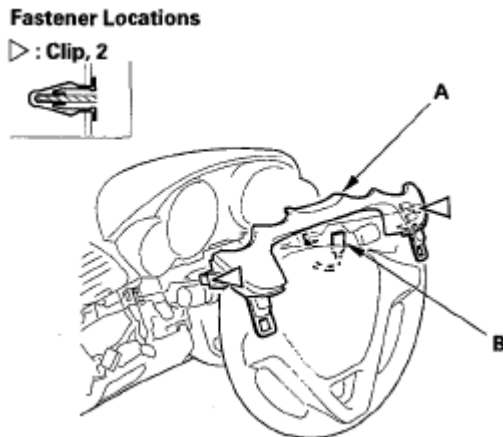


Fig. 4: Identifying Instrument Fascia And Select/Reset Switch Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the instrument fascia in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Make sure the connector is plugged in properly.
 - Push the clips into place securely.

DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Adjust the steering column upward.
2. Remove these items:
 - Driver's outer dashboard trim (see **DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION**)
 - Driver's inner dashboard trim (see **DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION**)

3. Remove the driver's dashboard lower cover (A).
 1. Remove the screw (B).
 2. Pull out the bottom of the driver's dashboard lower cover to release the clips (C).
 3. Disconnect the humidity/in-car temperature sensor connector (D) and the air hose (E).

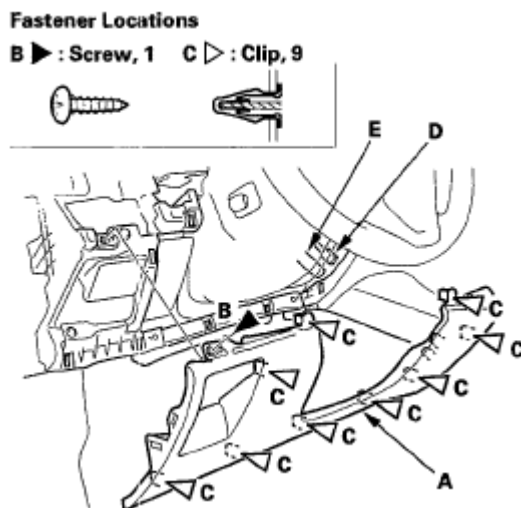


Fig. 5: Identifying Humidity/In-Car Temperature Sensor Connector And Air Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the cover in the reverse order of removal, and note these items:
 - Make sure the humidity/in-car temperature sensor connector is plugged in properly, and the air hose is connected properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the dashboard and its related parts.

1. Remove the driver's dashboard undercover (A).
 1. Turn the lock knob (B) 90°.

2. Gently pull down the rear edge to detach the clip.
3. Disconnect the footwell light connector (C) and ambient light connector (D), then detach the harness clip (E).
4. Pull the undercover away to release the pins (F) from the holders (G).

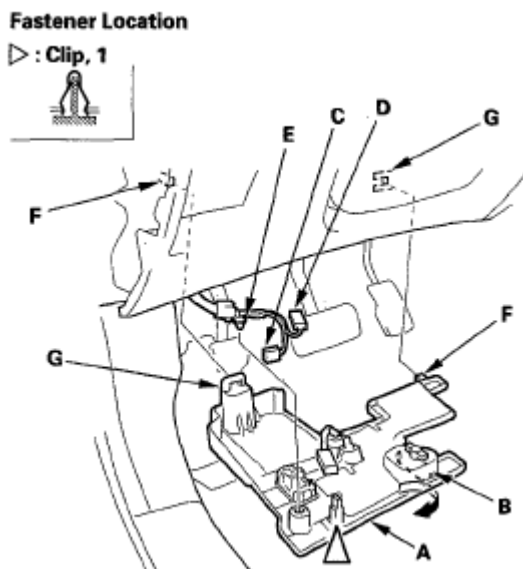


Fig. 6: Identifying Footwell Light Connector, Ambient Light Connector And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
 - Replace the clip if it's damaged.
 - Push the clip into place securely.
 - Make sure that each connector is plugged in properly.
 - Make sure the pins on of the cover are securely seated.

CENTER UPPER PANEL REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Hold the middle of the center upper panel (A), and pull the panel towards the rear of the vehicle to detach

all of the clips from the dashboard, to release the hooks (B) and pins (C) from the dashboard, and to release the hooks (D) from the center panel (E) and/or the display unit (F) (with navigation system).

Without navigation system

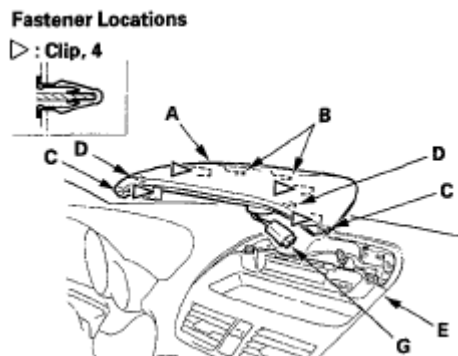


Fig. 7: Identifying Center Upper Panel, Hooks, Pins And Center Panel - Without Navigation System

Courtesy of AMERICAN HONDA MOTOR CO., INC.

With navigation system

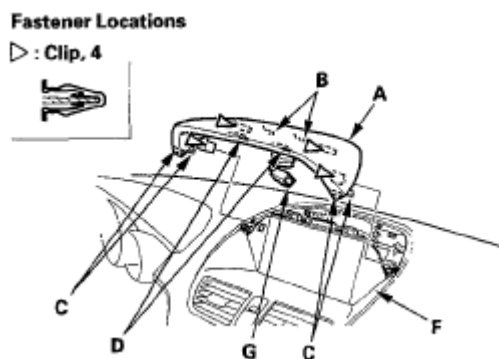


Fig. 8: Identifying Center Upper Panel, Hooks, Pins And Center Panel - With Navigation System

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the center speaker connector (G), then remove the center upper panel.
3. Install the cover in the reverse order removal, and note these items:
 - Make sure the center speaker connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

DASHBOARD CENTER PANEL REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center upper panel (see CENTER UPPER PANEL REMOVAL/ INSTALLATION).
2. Pull out the dashboard center panel (A) to detach the clips (B, C, D) and to release the hooks (E) (with navigation system), then remove the panel.

With navigation system

Fastener Locations

B ▷ : Clip, 4 C ▷ : Clip, 2 D ▷ : Clip, 2

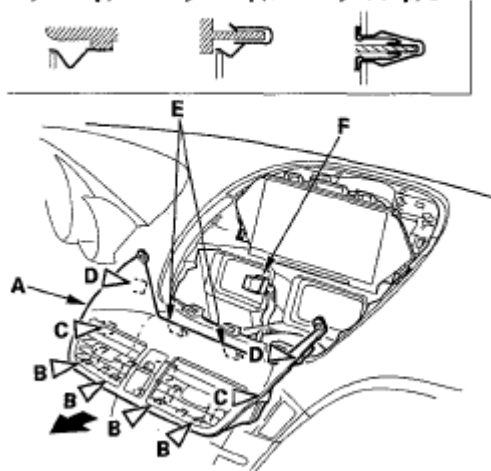


Fig. 9: Identifying Dashboard Center Panel, Clips And Hooks - With Navigation System
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Without navigation system

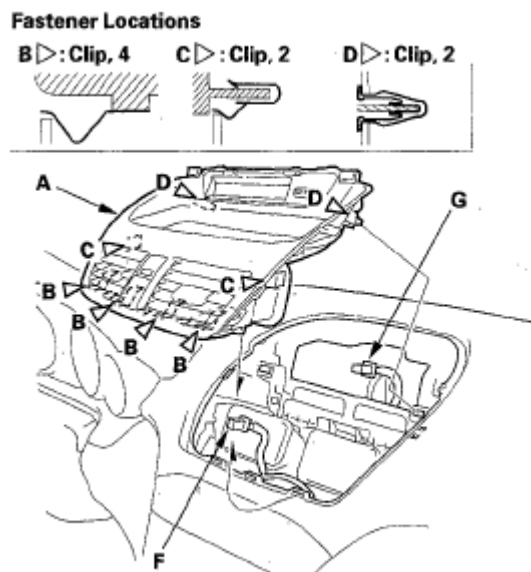


Fig. 10: Identifying Dashboard Center Panel, Clips And Hooks - Without Navigation System
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the hazard warning switch/passenger's airbag off indicator connector (F), and on the models without navigation system, center information display connector (G).

Without navigation system

4. Remove the center information display from the dashboard center panel (see **CENTER INFORMATION DISPLAY INPUT TEST**).
5. If necessary, peel three pieces of adhesive tapes (A, B), then remove the tray mat (C), from the center tray (D).

Adhesive tape A: Thickness 0.5 mm (0.02 in.) Width 15 mm (0.59 in.) Length 50 mm (2.0 in.)

Adhesive tape B: Thickness 0.5 mm (0.02 in.) Width 15 mm (0.59 in.) Length 220 mm (8.66 in.)

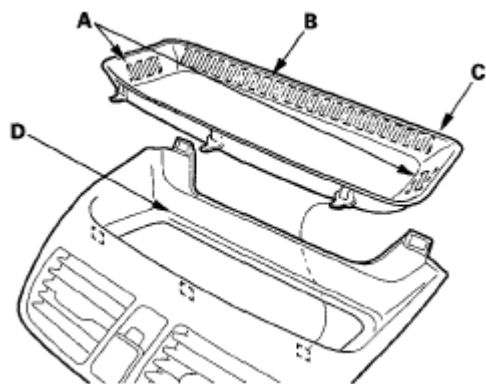


Fig. 11: Identifying Adhesive Tapes, Tray Mat And Center Tray

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If necessary, remove the screws (A) securing the center tray (B), then separate it from the dashboard center panel (C) by detaching the clips (D).

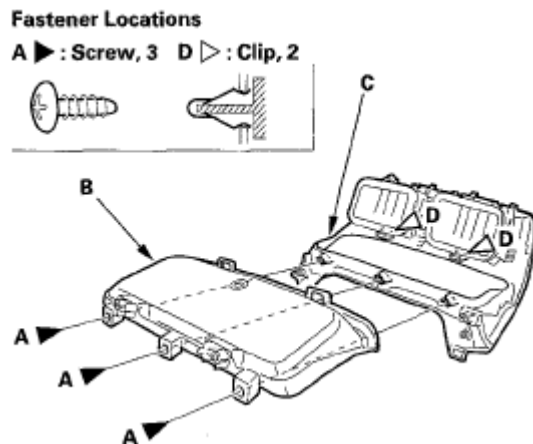


Fig. 12: Identifying Screws, Center Tray, Dashboard Center Panel And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the panel in the reverse order of removal, and note these items:
 - If the removed tray mat is to be reinstalled, remove all of old adhesive tape from the mat, and clean the back of the mat with isopropyl alcohol where the three pieces of new adhesive tape are to be attached. Attach the tray mat to the center tray with commercially available adhesive tape.
 - Make sure all connectors are plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Make sure the tabs located between the bottom clips line up with the slots in the dashboard correctly.
 - Push the clips and hooks into place securely.

CENTER POCKET REMOVAL/INSTALLATION

1. Remove the audio unit (see AUDIO UNIT REMOVAL/INSTALLATION).
2. Remove the bolts (A) and screws (B), then remove the radio brackets (C) from both sides of the audio unit (D).

Fastener Locations

A ► : Bolt, 8 B ► : Screw, 2

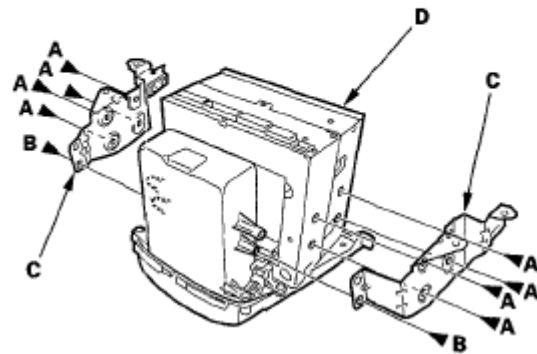


Fig. 13: Identifying Bolts, Screws, Radio Brackets And Audio Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws, then remove the center pocket (A).

Fastener Locations

► : Screw, 4

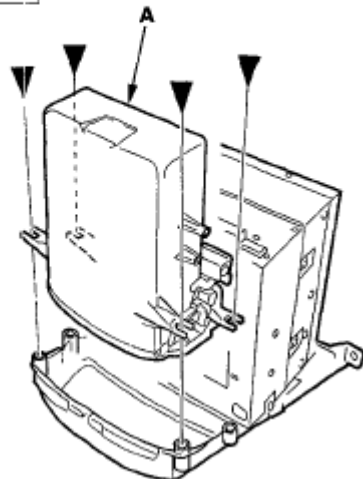
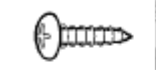


Fig. 14: Identifying Center Pocket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the center pocket in the reverse order of removal.

PASSENGER'S DASHBOARD TRIM REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Open the front door, and remove the passenger's dashboard side cover (A).
 1. Pull out the front door opening seal (B), as needed.
 2. Gently pull out the front edge of the side cover, and pry the rear edge with a trim tool to release the hooks (C), then remove the side cover.

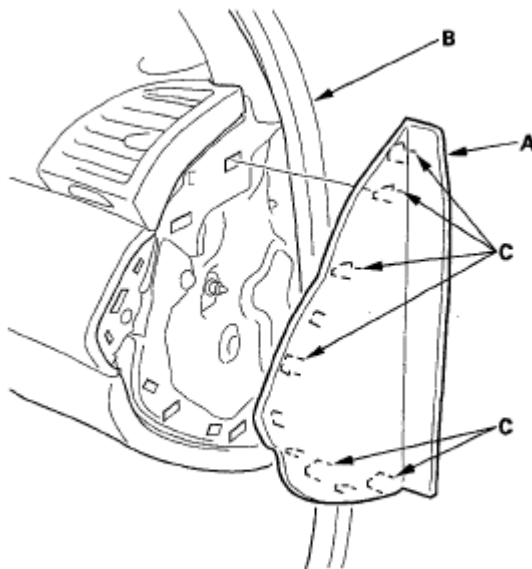


Fig. 15: Identifying Passenger'S Dashboard Side Cover, Front Door Opening Seal And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Open the glove box.
3. Remove the passenger's dashboard trim (A).
 1. Remove the screw (B).
 2. Gently pull out the lower edge and the outside edge of the trim by hand to detach all of the clips (C) and hooks (D).

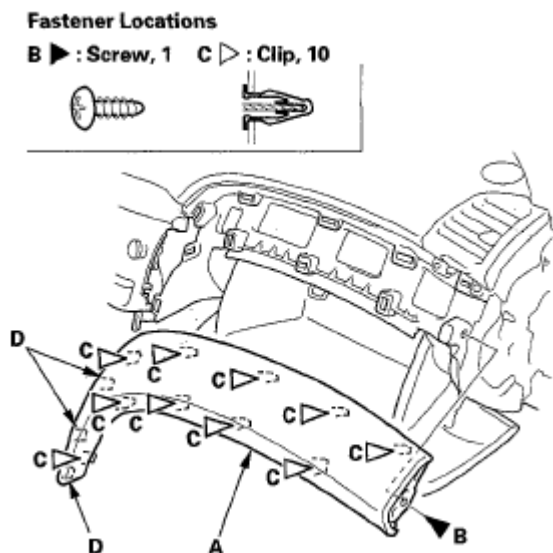


Fig. 16: Identifying Screw, Clips And Hooks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Position the hooks first on installation, then move the clips into place.
 - Push the clips and hooks into place securely.

GLOVE BOX LOCK CYLINDER REPLACEMENT

NOTE: Take care not to scratch the glove box.

1. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Lift the glove box handle (A), and use a hook-shaped tool to pull one end of the retainer (B) out of its slot.

NOTE: Do not remove the retainer entirely. Leave one end of the retainer in its original position when removing the lock cylinder.

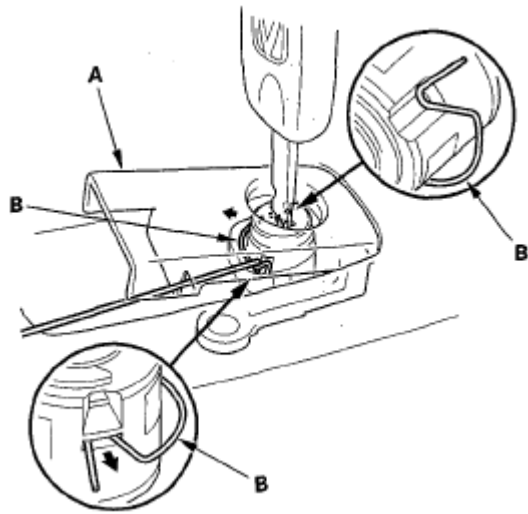


Fig. 17: Identifying Glove Box Handle And Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the glove box lock cylinder (A).

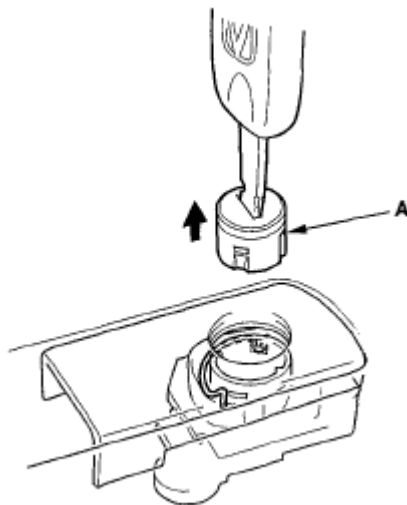


Fig. 18: Identifying Glove Box Lock Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reinstall the end of the retainer (A) in its slot, then reinstall the lock cylinder (B). Push the cylinder into place securely until the retainer snaps into place.

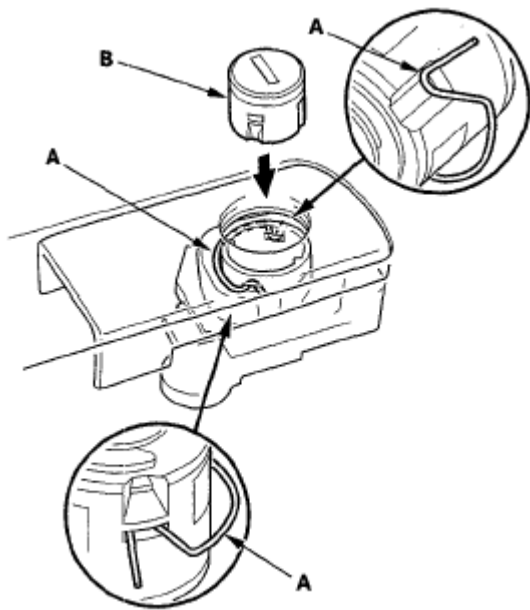


Fig. 19: Identifying End Of Retainer And Lock Cylinder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GLOVE BOX REMOVAL/INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE: Take care not to scratch the dashboard and its related parts.

1. Remove the passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
2. Open the glove box.
3. Remove the cap (A), then disconnect the glove box damper (B) from the pivot (C) on the glove box.

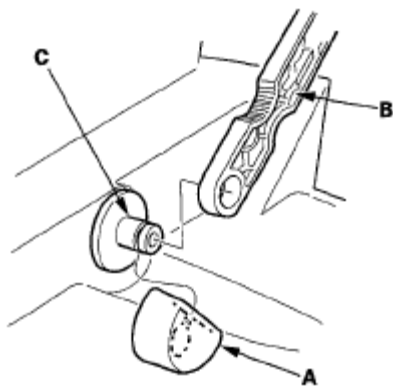


Fig. 20: Identifying Cap, Glove Box Damper And Pivot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Close the glove box.
5. Remove the bolts.

Fastener Locations

► : Bolt, 2

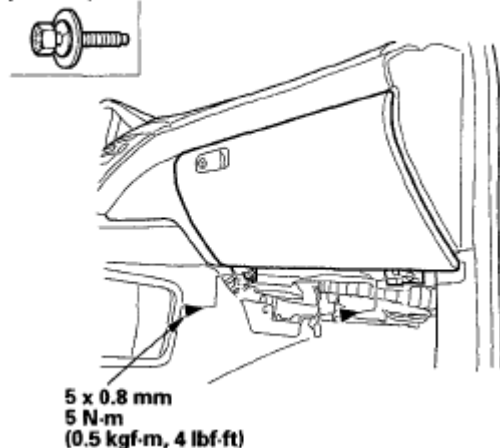


Fig. 21: Identifying Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While holding the glove box (A), release the glove box stop (B) on each side from the dashboard by pushing them in, then remove the glove box.

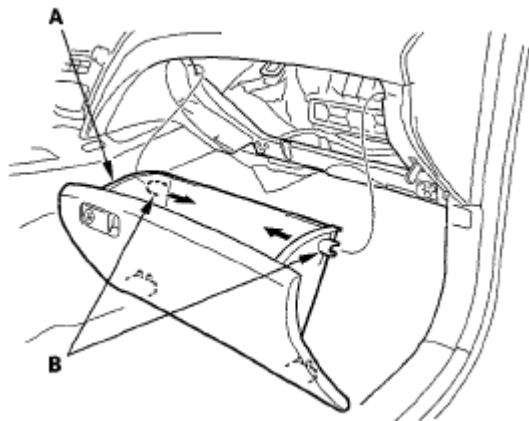


Fig. 22: Identifying Glove Box And Glove Box Stop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolt, then remove the glove box damper (A).

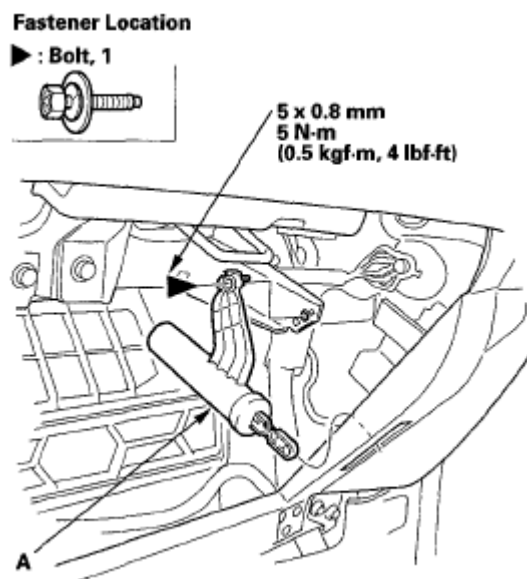


Fig. 23: Identifying Glove Box Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the glove box in the reverse order of removal.

GLOVE BOX STRIKER REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX) and the precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or service.

NOTE: Take care not to scratch the dashboard and its related parts.

1. Remove the glove box (see GLOVE BOX REMOVAL/INSTALLATION).
2. Remove the bolt (A) and screws (B), disconnect the glove box light bulb socket (C), and detach the harness clip (D), then remove the glove box striker (E).

Fastener Locations

A ► : Bolt, 1 B ► : Screw, 3

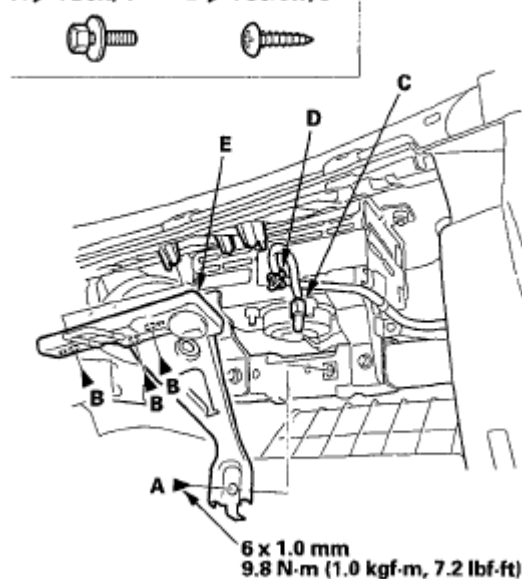


Fig. 24: Identifying Bolt, Screws, Glove Box Light Bulb Socket And Harness Clip With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the striker in the reverse order of removal. Make sure the glove box light bulb socket is connected securely.

PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION

NOTE: Take care not to scratch the dashboard and its related parts.

1. Remove the Passenger's dashboard undercover (A).
 1. Gently pull down the rear edge to detach the clips.
 2. Disconnect the footwell light connector (B) and ambient light connector (C).
 3. Pull the undercover away to release the pins (D) from the holders.(E).

Fastener Locations

▷ : Clip, 3

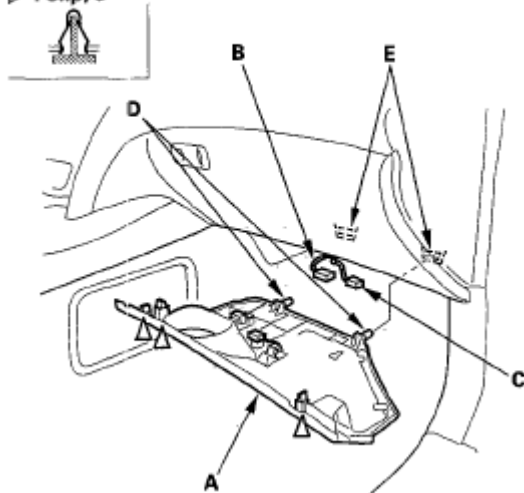


Fig. 25: Identifying Passenger'S Dashboard Undercover, Footwell Light Connector And Ambient Light Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
 - Replace any damaged clips.
 - Push the clips into place securely.
 - Make sure that each connector is plugged in properly.
 - Make sure the pins of the undercover are installed securely to the holders.

DASHBOARD SIDE VENT REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- The driver's side vent is shown; the passenger's side vent is similar.

1. Remove these items:

- A-pillar trim (see TRIM REMOVAL/INSTALLATION - PILLAR AREAS)
- Driver's side: Driver's dashboard outer trim (see DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION)

- Passenger's side: Passenger's dashboard trim (see **CENTER POCKET REMOVAL/INSTALLATION**)

2. Remove the screws (A).

Fastener Locations

A ► : Screw, 3

C ▷ : Clip, 2

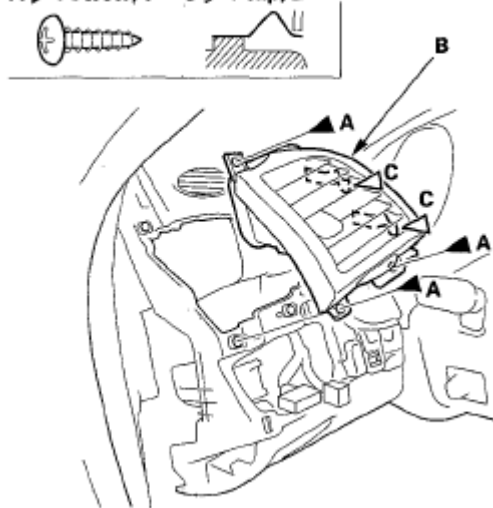


Fig. 26: Identifying Screws, Side Vent And Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull out the side vent (B) to release the clips (C), then remove the vent.
4. Install the side vent in the reverse order of removal, and push the clips into place securely.

SIDE DEFOGGER VENT TRIM REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- The driver's side defogger vent trim is shown; the passenger's side defogger vent trim is similar.

1. Insert the trim tool into a gap between the side defogger vent trim (A) and the dashboard (B), and release the hooks (C).

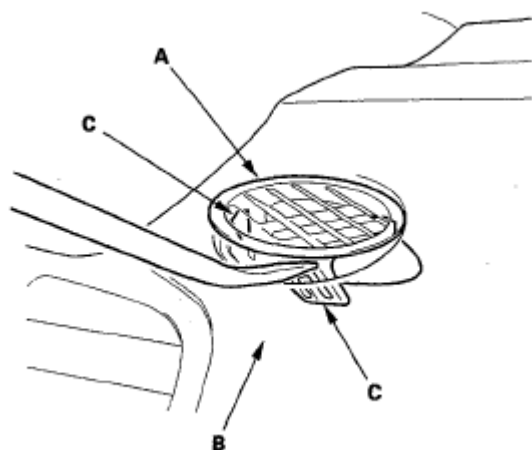


Fig. 27: Identifying Side Defogger Vent Trim, Dashboard And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the side defogger vent trim in the reverse order of removal, and push the hooks into place securely.

FRONT DEFOGGER VENT TRIM REMOVAL/ INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the dashboard and its related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the sunlight sensor (see **SUNLIGHT SENSOR TEST**).
2. Insert the trim tool into a gap between the front defogger vent trim (A) and the dashboard (B), and release all of the hooks (C).

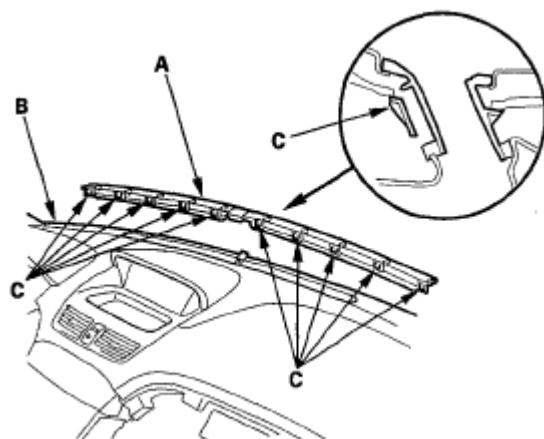


Fig. 28: Identifying Front Defogger Vent Trim, Dashboard And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the front defogger vent trim in the reverse order of removal, and push the hooks into place securely.

COLUMN COVER REMOVAL/INSTALLATION

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the column covers.
- Do not pry the cover surface with any tools.

1. Adjust the steering column to full tilt down position and to the full telescopic pull position.
2. Remove the cover (A).

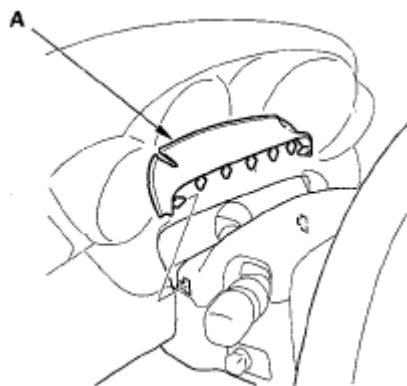


Fig. 29: Identifying Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the tab (A) locating on the right side of the upper column cover (B) with your finger.

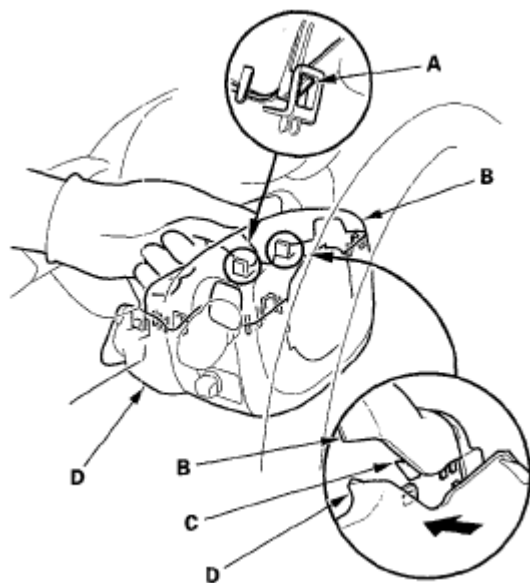


Fig. 30: Identifying Tab And Upper Column Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the left tab (C) of the upper column cover while pushing the lower column cover (D) from the right side.
5. With the right side of the upper column cover (A) slightly apart from the lower column cover (B), release the tab (C) located on the left side of the upper column cover with your finger.

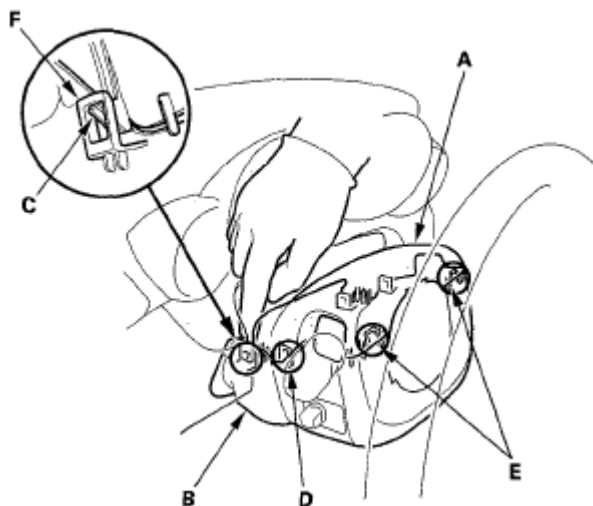


Fig. 31: Identifying Upper Column Cover, Lower Column Cover And Tab
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the cover by lightly pulling it up by releasing the left side tab (D) and the front tabs (E) of the upper column cover.

NOTE: Carefully release the tabs, and note the hooks (F) may break when the upper column cover is pulled up too hard.

7. Remove the three screws (A, B) and disconnect the tilt/telescopic switch connector (C), then remove the lower column cover (D).

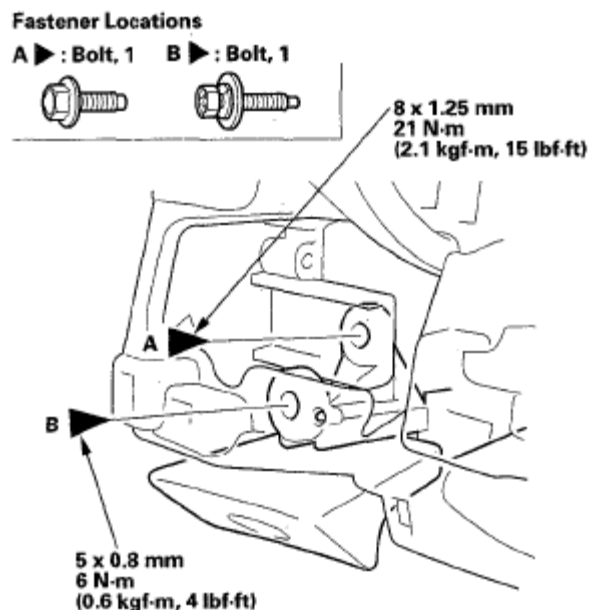


Fig. 32: Identifying Screws, Tilt/Telescopic Switch Connector And Lower Column Cover With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the upper and lower column cover in the reverse order of removal, and note these items:
 - Make sure the tilt/telescopic switch connector is plugged in properly.
 - Push the hooks into place securely.

DASHBOARD REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP20H *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE: • Put on gloves to protect your hands.

- Take care not to scratch the dashboard, body, and other related parts.
- Take care not to bend the brackets.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** .
2. Remove these items from the dashboard:
 - Driver's outer dashboard trim (see **DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION**)
 - Driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**)
 - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
 - Passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
 - Glove box and damper (see **GLOVE BOX REMOVAL/INSTALLATION**)
 - Glove box striker (see **GLOVE BOX STRIKER REPLACEMENT**)
 - Center upper panel (see **CENTER UPPER PANEL REMOVAL/ INSTALLATION**)
 - Center panel (see **DASHBOARD CENTER PANEL REMOVAL/ INSTALLATION**)
 - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
 - A-pillar trim, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
 - Tweeter, both sides (see **TWEETER**)
 - Instrument fascia (see **DRIVER'S INNER DASHBOARD TRIM REMOVAL/INSTALLATION**)
 - Gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**)
 - Sunlight sensor (see **SUNLIGHT SENSOR TEST**)
 - Display unit, with navigation system (see **DISPLAY UNIT REMOVAL/INSTALLATION**)
 - GPS antenna (see **GPS ANTENNA REMOVAL/INSTALLATION**)
3. Adjust the steering column to full tilt down position and to the full telescopic pull position.
4. Remove the screws (A, B), then remove the driver's dashboard lower bracket (C) and the dashboard lower bracket (D).

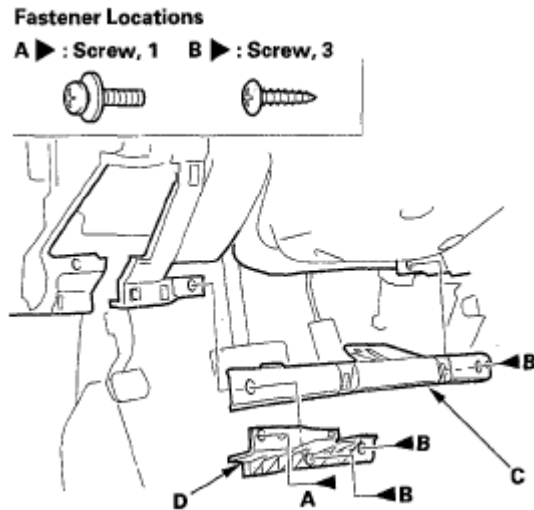


Fig. 33: Identifying Screws, Driver's Dashboard Lower Bracket And Dashboard Lower Bracket
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the parking brake lever mounting bolts (A, B), then lower the lever.

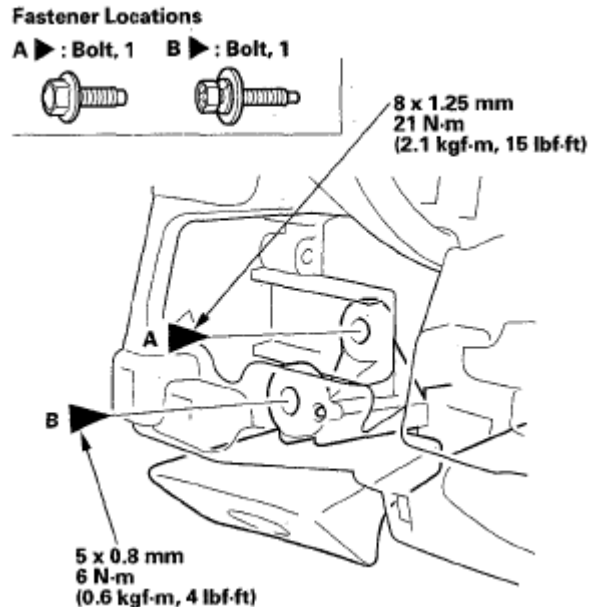


Fig. 34: Identifying Parking Brake Lever Mounting Bolts With torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From the front of the dashboard, detach the harness clip (A).

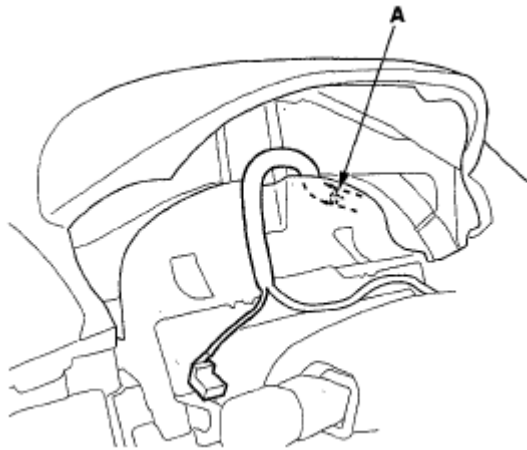


Fig. 35: Identifying Harness Clip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Detach the connectors (A) from the dashboard duct in the center upper panel opening. Pull the sunlight sensor connector (B) out through the hole (C) in the dashboard.

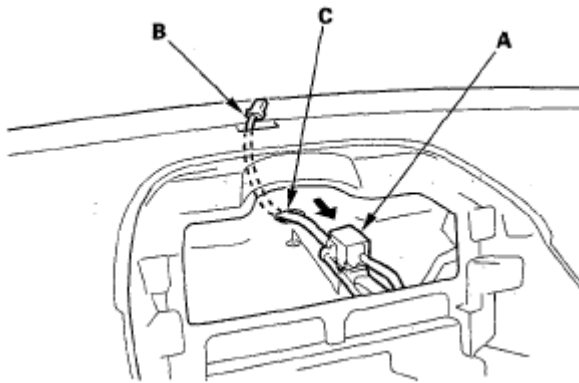


Fig. 36: Identifying Connectors, Sunlight Sensor Connector And Hole

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect and detach the passenger's airbag connector (A) from the steering hanger beam, and detach the dashboard wire harness clip (B). Remove the passenger's airbag mounting bolts.

Fastener Locations

► : Bolt, 2

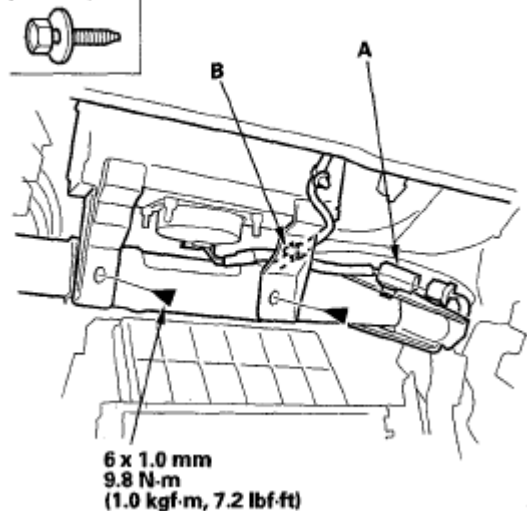


Fig. 37: Identifying Passenger'S Airbag Connector And Dashboard Wire Harness Clip With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. From the front of the dashboard, remove the screws securing the dashboard (A).

Fastener Locations

► : Screw, 9

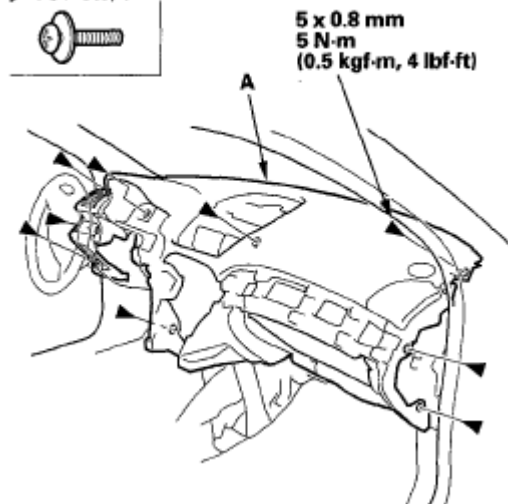


Fig. 38: Identifying Screws With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Wrap the steering wheel with a shop towel to prevent damage.
11. Lift up on the dashboard (A). With an assistant holding the dashboard up, detach the dashboard wire harness clips (B) from both sides of the dashboard duct.

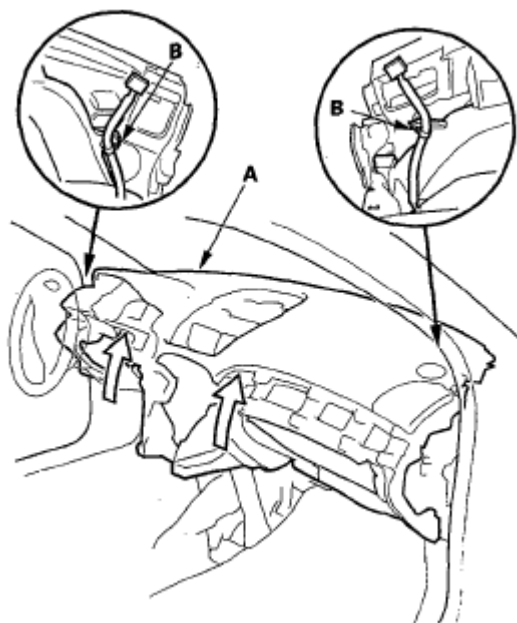


Fig. 39: Identifying Dashboard And Dashboard Wire Harness Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. With the help of an assistant, remove the dashboard (A).
 1. Lift up on the dashboard to release it from the guide pins (B).
 2. Lift up on the dashboard until the driver's outside portion will be higher than the steering column.
 3. While carefully moving the driver's outside portion of the dashboard over the steering column, rotate the dashboard toward the front passenger's door opening, and lower the passenger's side.
 4. Remove the dashboard through the passenger's door opening.

NOTE: Lay the dashboard on its front or back. Do not rest it on the lower console opening or you may damage it.

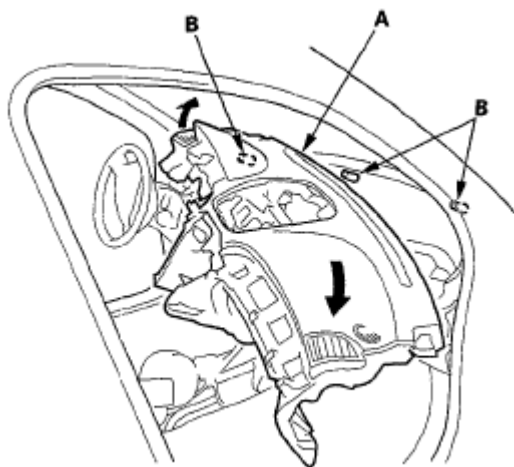


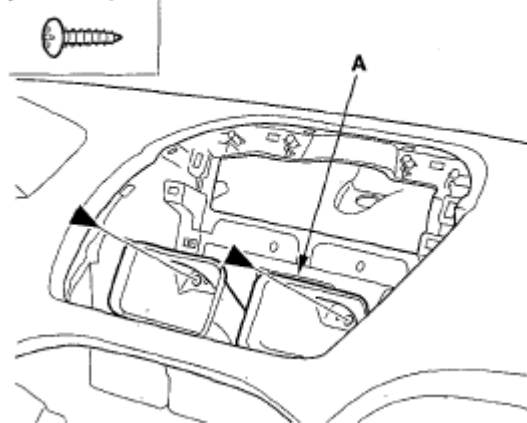
Fig. 40: Identifying Dashboard And Guide Pins

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. From the front of the dashboard, remove the screws securing the dashboard duct (A).

Fastener Locations

► : Screw, 2

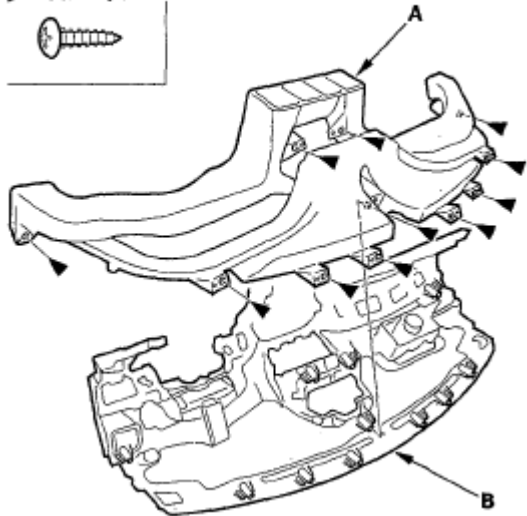
**Fig. 41: Identifying Screws Securing Dashboard Duct**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. From the back of the dashboard, remove the dashboard duct (A) from the dashboard (B).

Fastener Locations

► : Screw, 11

**Fig. 42: Identifying Dashboard Duct And Dashboard**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the dashboard in the reverse order of removal, and note these items:
- Before tightening the bolts, make sure the dashboard wire harness is not pinched.

- Make sure the dashboard fits onto the guide pins correctly.
- Replace the passenger's airbag mounting bolts with new ones.
- Make sure the connectors are plugged in properly.
- Do the battery terminal reconnection procedure (See **RECONNECTION**).
- Check for any DTCs that may have been set during repairs, and clear them.

DASHBOARD/STEERING HANGER BEAM REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- **Put on gloves to protect your hands.**
- **Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.**
- **Have an assistant help you when removing and installing the dashboard.**
- **Take care not to scratch the dashboard, body and other related parts.**

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** , and wait at least 3 minutes before beginning work.
2. Remove these items:
 - Driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**)
 - Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
 - Passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
 - Center console (see **CENTER CONSOLE REMOVAL/INSTALLATION**)
 - Glove box (see **GLOVE BOX REMOVAL/INSTALLATION**)
 - Driver's dashboard outer trim (see **DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION**)
 - Driver's dashboard lower bracket and dashboard lower bracket (see step 4)
 - Kick panels, both sides (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)
 - A-pillar trim, both sides (see **TRIM REMOVAL/INSTALLATION - PILLAR AREAS**)
 - A-pillar corner trim (see **A-PILLAR CORNER TRIM REPLACEMENT**)

- Steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**)
3. Disconnect the combination switch connectors, ignition switch connectors, driver's airbag connector, cable reel connector, steering angle sensor connector, immobilizer control unit connector, tilt/telescopic motor connectors, and tilt/ telescopic control unit connectors, detach the harness clips and remove the mounting bolts, then lower the steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**). To prevent damage to the steering column, wrap it with a shop towel.
 4. Remove the parking brake lever mounting bolt and screw, then lower the lever (see step 5).

Driver's side

5. Disconnect the roof wire harness connector (A).

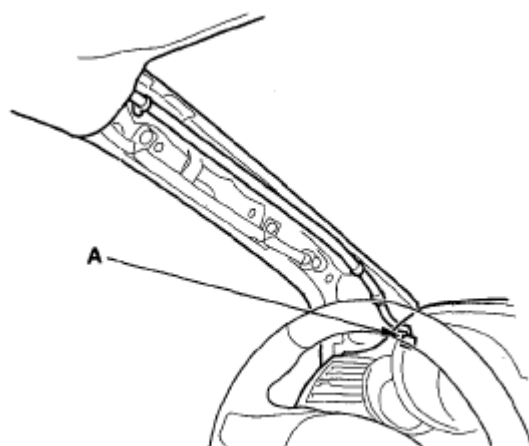


Fig. 43: Identifying Roof Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From under the dash, disconnect the left engine compartment wire harness connectors (A), floor wire harness connector (B), parking brake switch connector (C), and dashboard wire harness connectors (D) from the driver's under-dash fuse/ relay box (E), detach the fuse connector (F), and then release the wire harness clips (G).

NOTE: **Lift the large wire harness connector locks (H) before trying to remove the connectors from the fuse/relay box.**

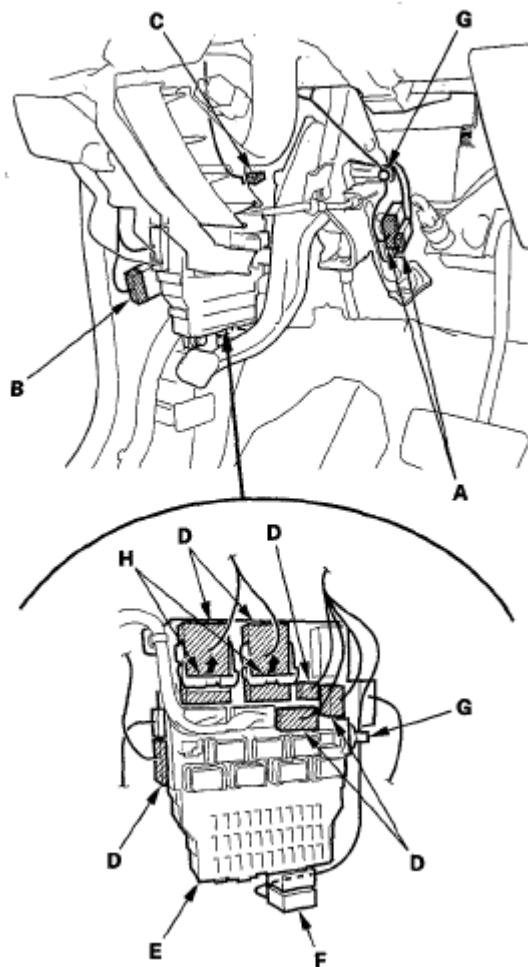


Fig. 44: Identifying Wire Harness Connectors, Floor Wire Harness Connector, Parking Brake Switch Connector And Dashboard Wire Harness Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Middle portion

7. Detach the harness clips (A), and disconnect the SRS unit connectors (B), GPS antenna connector (C) (with navigation system), yaw rate-lateral acceleration sensor connector (D), A/C wire harness connectors (E), and floor wire harness connector (F).

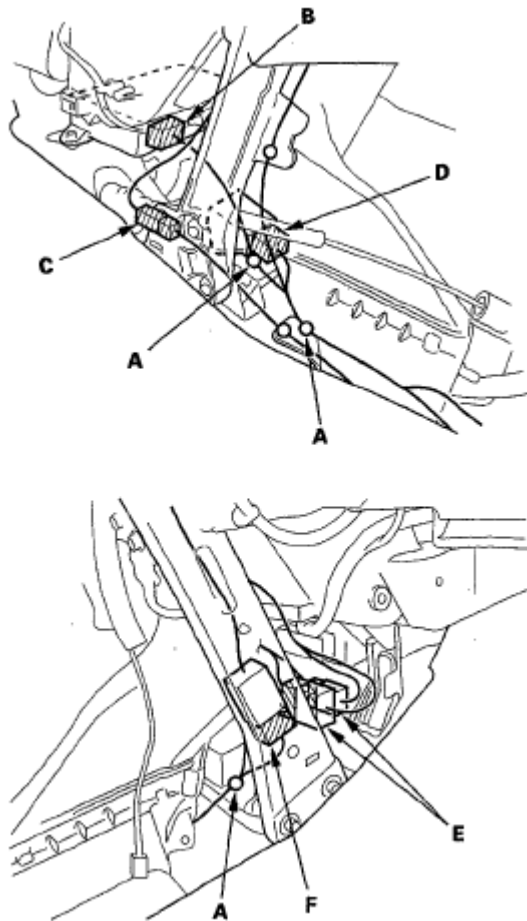


Fig. 45: Identifying Clips, SRS Unit Connectors, GPS Antenna Connector And Yaw Rate-Lateral Acceleration Sensor Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the floor wire harness connector(s) (A), rear mode control motor connector (B), rear evaporator temperature sensor connector (C), rear air mix control motor connector (D), rear power transistor connector (E), and rear blower motor connector (F). Detach the harness clips (G).

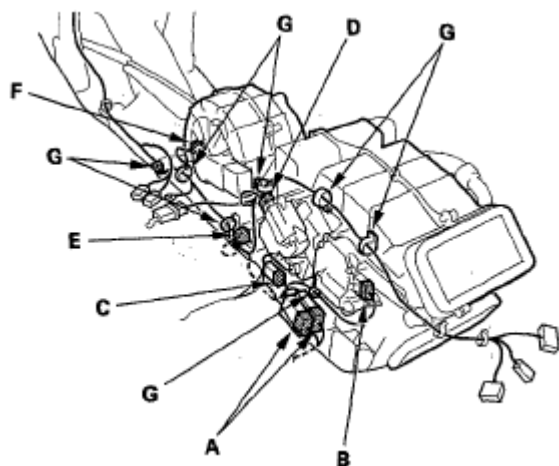


Fig. 46: Identifying Floor Wire Harness Connector, Rear Mode Control Motor Connector And Rear Evaporator Temperature Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's side

9. With rear entertainment system: Disconnect the RES wire harness connectors (A).

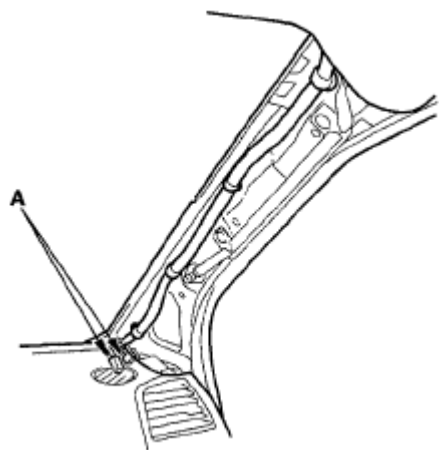


Fig. 47: Identifying RES Wire Harness Connectors - Passenger'S Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. From under the dash, disconnect the passenger's door wire harness connector (A), the floor wire harness connectors (B), stereo amplifier connectors (C), right engine compartment wire harness connectors (D), and AM/FM antenna sublead connector (E).

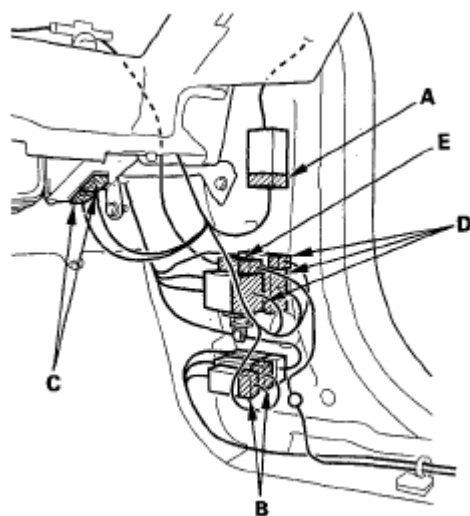


Fig. 48: Identifying Passenger'S Door Wire Harness Connector, Floor Wire Harness Connectors And Stereo Amplifier Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the bolts (A, B) securing the dashboard (C) and center bracket (D).

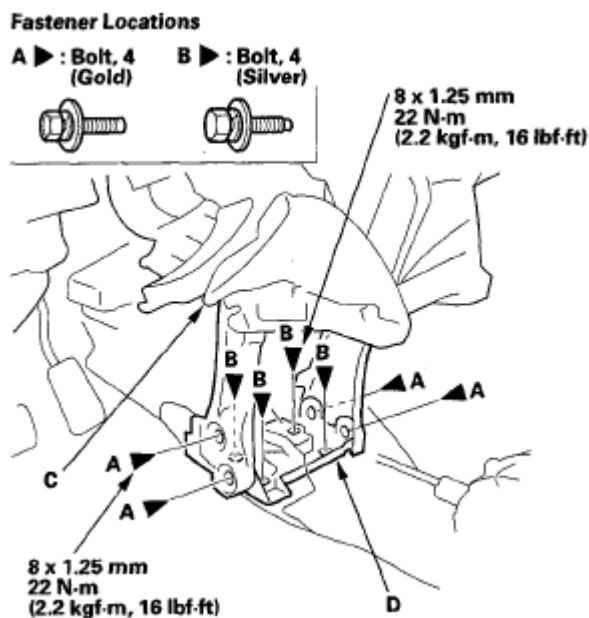


Fig. 49: Identifying Bolts, Dashboard And Center Bracket With torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Open the driver's door, and remove the bolts (A, B, C). Remove the remaining bolts (D, E, F) securing the dashboard (G).

Fastener Locations

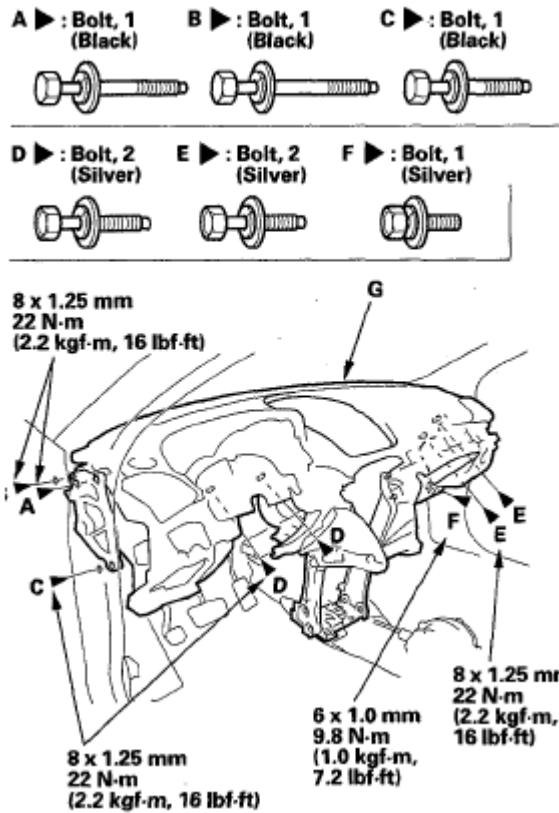


Fig. 50: Identifying Bolts And Dashboard With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Lift up on the dashboard (A) to release it from the guide pins (B, C).

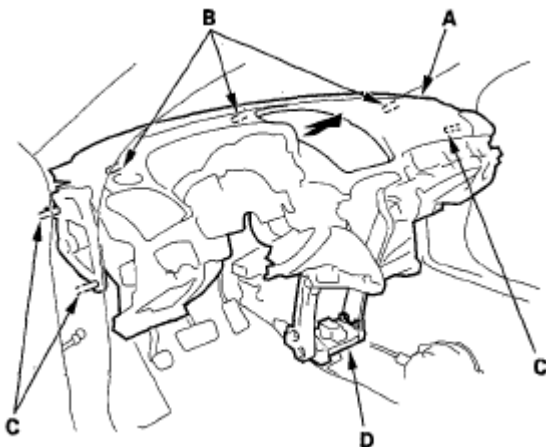


Fig. 51: Identifying Dashboard And Guide Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Carefully remove the dashboard through either front door opening.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Dashboard - MDX

NOTE: **Do not rest the dashboard on its lower center cover opening, or it may be damaged. Lay it on its front or back.**

15. Remove the center bracket (D).
16. Install the dashboard in the reverse order of removal, and note these items:
 - Position the center bracket on the body, then reinstall the dashboard on the body. After tightening the dashboard mounting bolts, tighten the center bracket mounting bolts, and then tighten the center frame mounting bolts.
 - Make sure the dashboard fits onto the guide pins correctly.
 - Before tightening the bolts, make sure the wire harnesses are not pinched.
 - Make sure the connectors are plugged in properly.
 - Do the battery terminal reconnection procedure (See **RECONNECTION** .
 - Check for any DTCs that may have been set during repairs, and clear them.

2007-09 ACCESSORIES AND EQUIPMENT

Rear Window Defogger-MDX

COMPONENT LOCATION INDEX

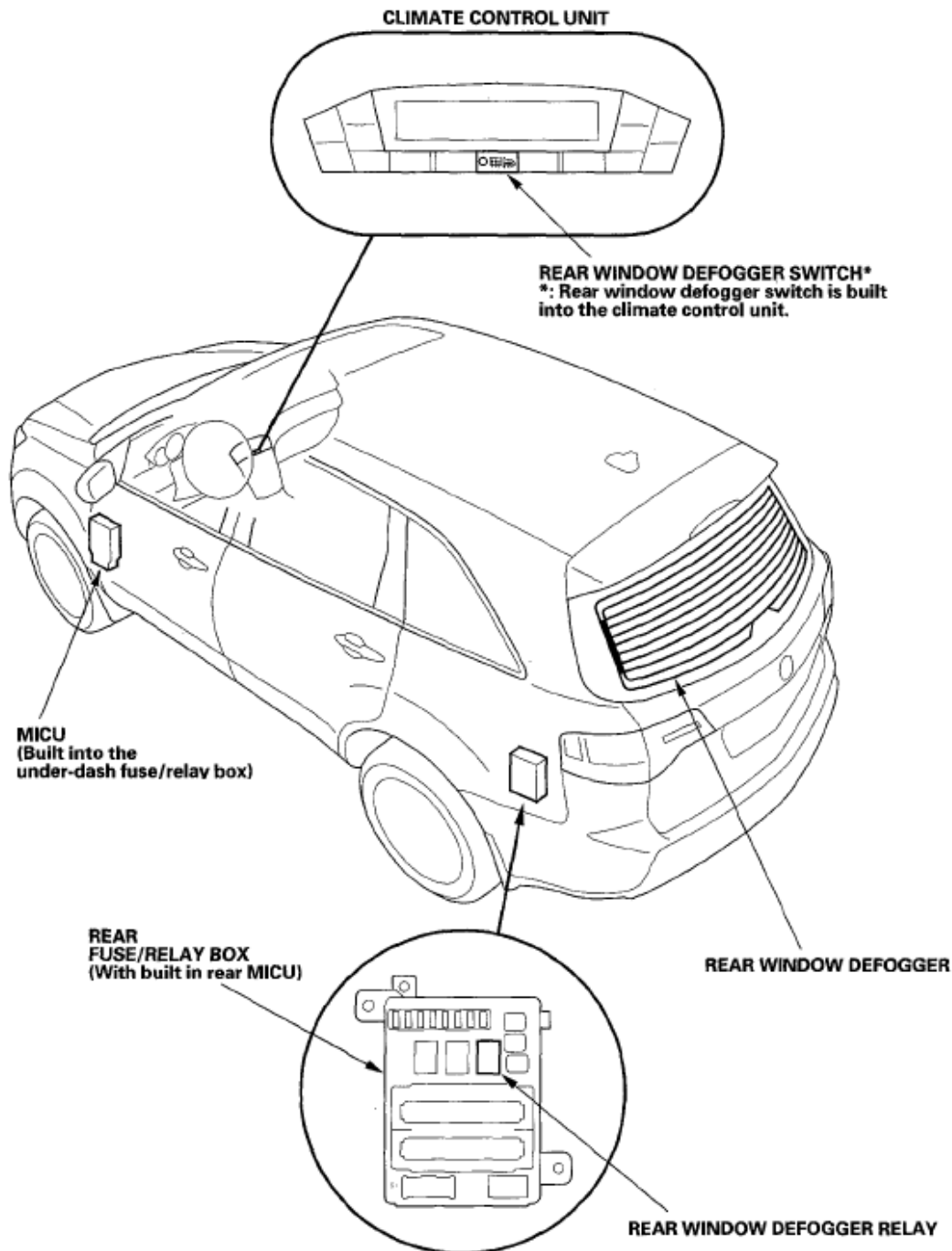


Fig. 1: Identifying Rear Window Defogger Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

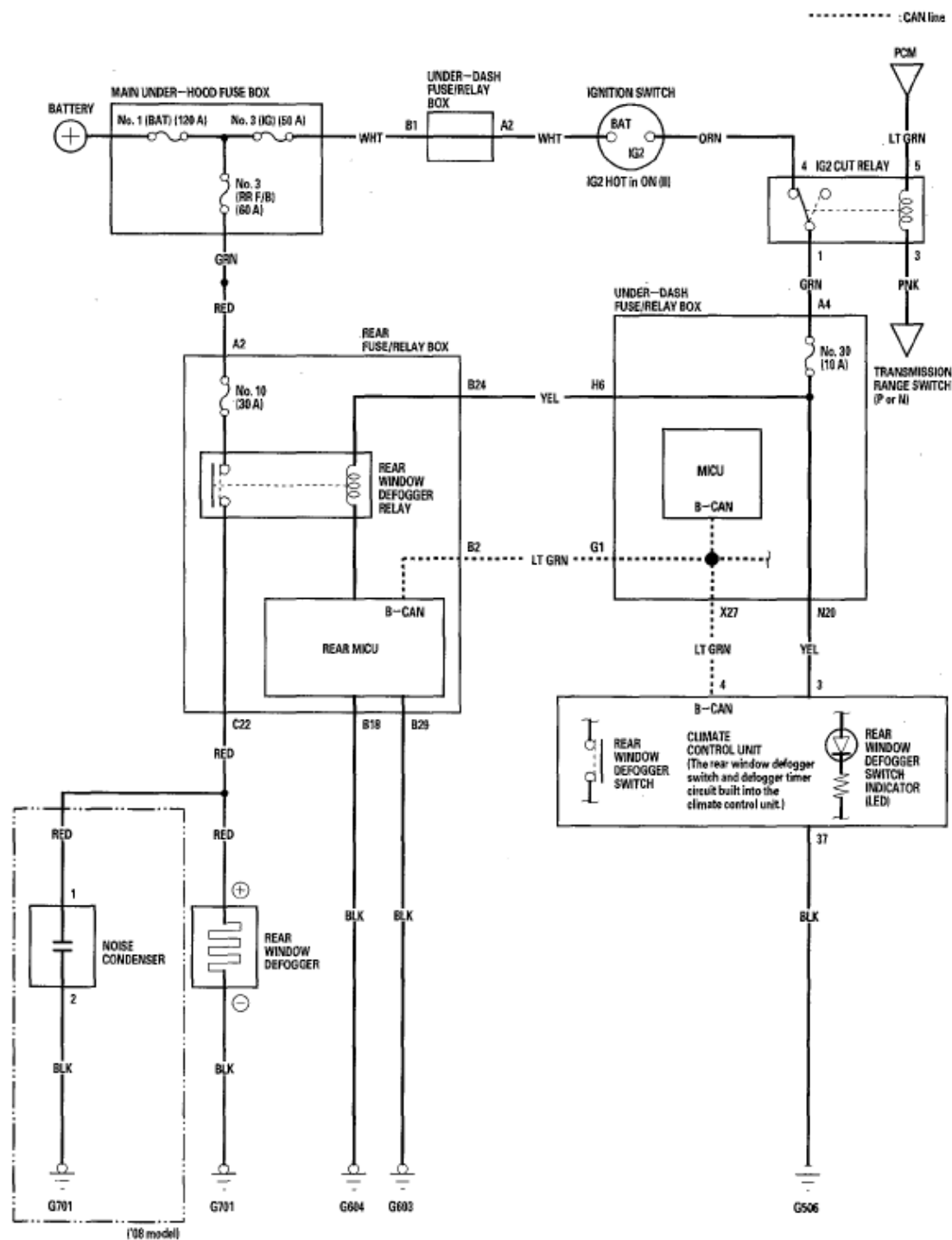


Fig. 2: Rear Window Defogger - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUNCTION TEST

Before troubleshooting the rear window defogger circuit, perform multiplex integrated control system troubleshooting using B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

NOTE:

- Be careful not to scratch or damage the defogger wires with the tester probe.
- Before testing, check the No. 30 (10 A) fuse in the under-dash fuse/relay box and the No. 10 (30 A) fuse in the rear fuse/relay box.

1. Measure the voltage between the positive terminal (A) and body ground with the ignition switch and defogger switch ON.

There should be battery voltage.

- If there is no voltage, check for:
 - Faulty rear window defogger relay.
 - Faulty rear MICU.
 - Faulty climate control unit.
 - An open in the RED wire to the positive terminal.
- If there is voltage, go to step 2.

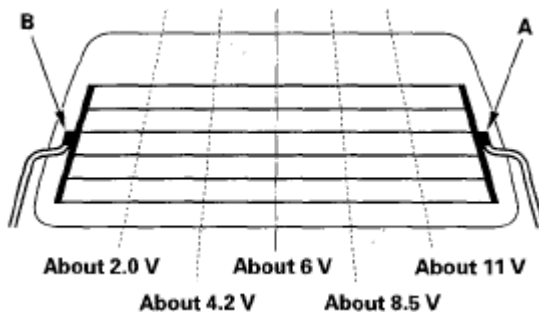


Fig. 3: Identifying Positive Terminal And Negative Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the negative terminal (B) from the rear window defogger.
3. Check for continuity between the negative terminal and body ground.

If there is no continuity, check for an open in the wire or poor ground (G701). If there is continuity, go to step 4.

4. Reconnect the negative terminal to the rear window defogger.
5. Turn the ignition switch ON (II) and the rear window defogger switch ON.

6. Touch the voltmeter positive probe to the each points on each defogger wire, and the negative probe to the negative terminal.
 - If the voltage is as specified, the defogger wire up to that point is OK.
 - If the voltage is not as specified, repair the defogger wire.

DEFOGGER WIRE REPAIR

NOTE: To make an effective repair, the broken section must be no longer than 1 inch (25 mm).

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with isopropyl alcohol.

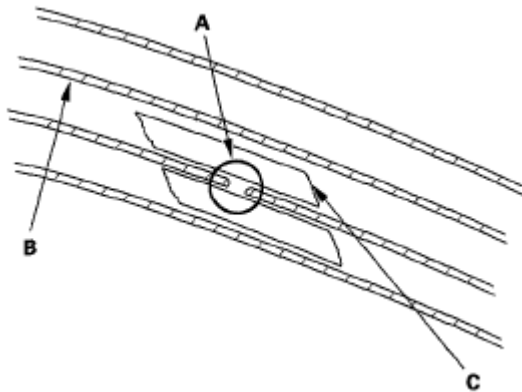


Fig. 4: Identifying Broken Section, Defogger Wire And Cellophane Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Carefully mask above and below the broken portion of the defogger wire (B) with cellophane tape (C).
3. Using a small brush, apply a heavy coat of silver conductive paint (commercially available) extending about 1/8" on both sides of the break. Allow 25 minutes to dry.

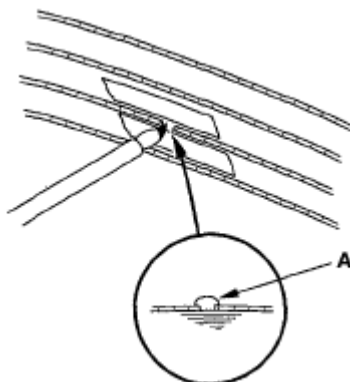


Fig. 5: Applying Heavy Coat Of Silver Conductive Paint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX
2007-09 ACCESSORIES AND EQUIPMENT Rear Window Defogger-MDX

4. Do the function test to confirm that the wire is repaired.
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

2007-09 ACCESSORIES AND EQUIPMENT

Doors - MDX

COMPONENT LOCATION INDEX-FRONT DOOR

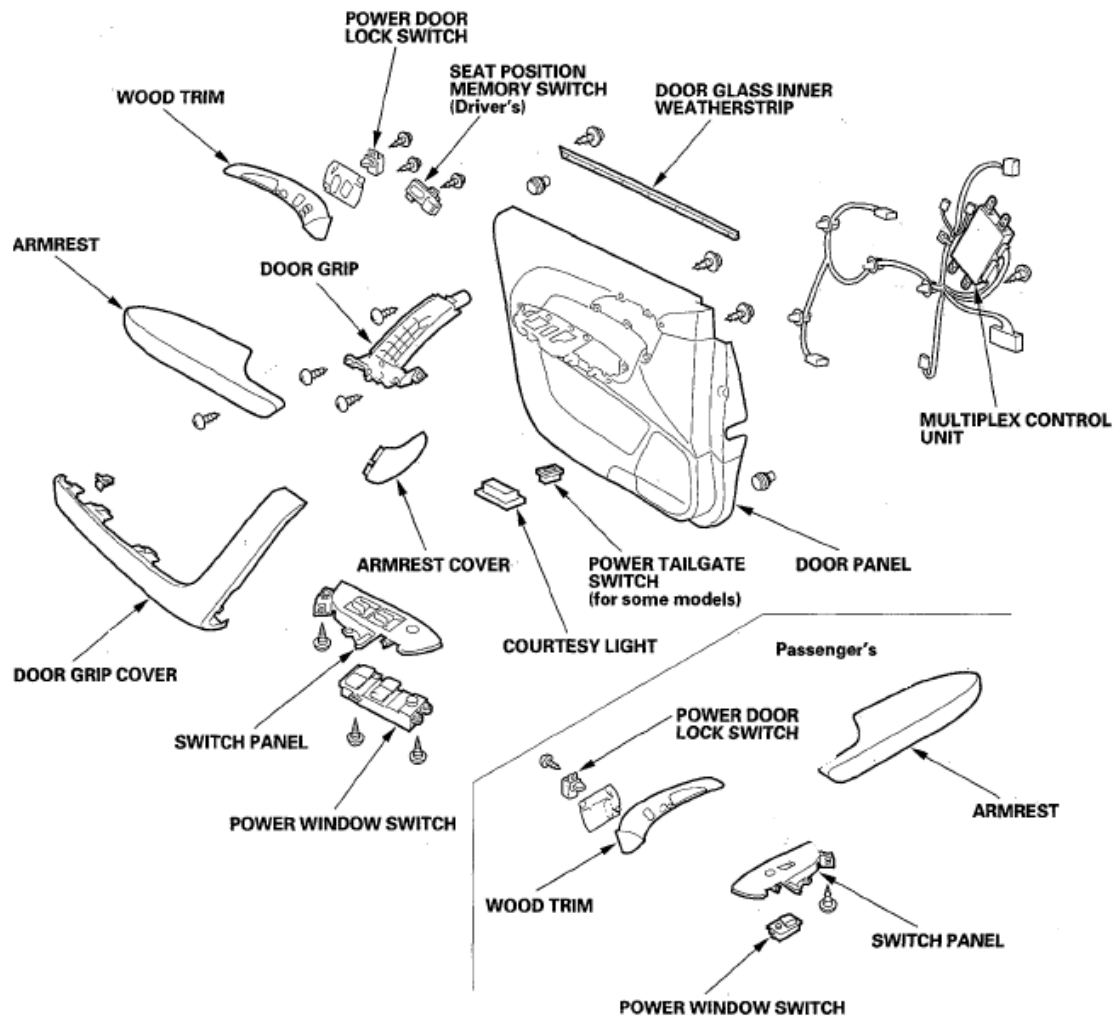


Fig. 1: Identifying Doors Component Location - Front Door (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Doors - MDX

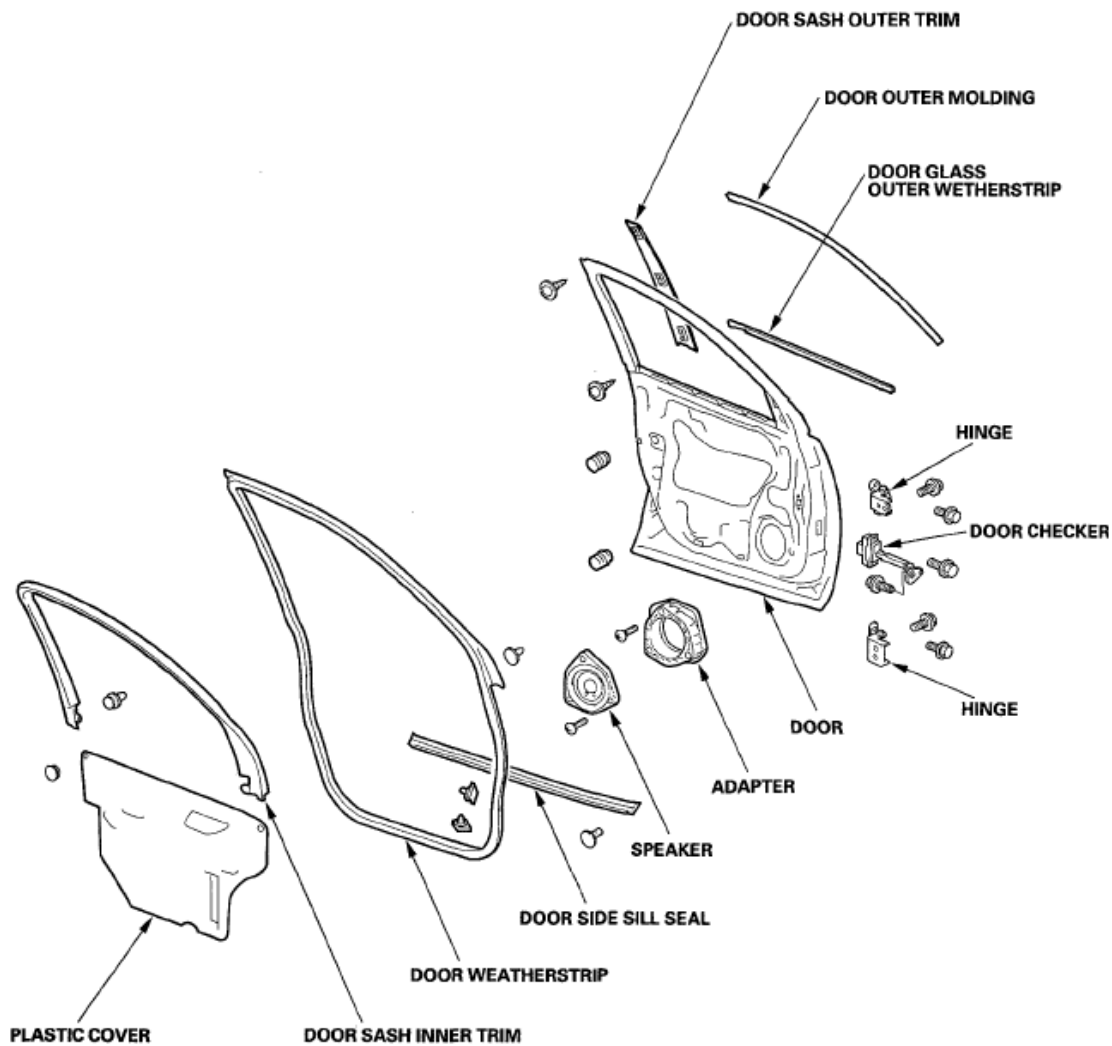


Fig. 2: Identifying Doors Component Location - Front Door (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Doors - MDX

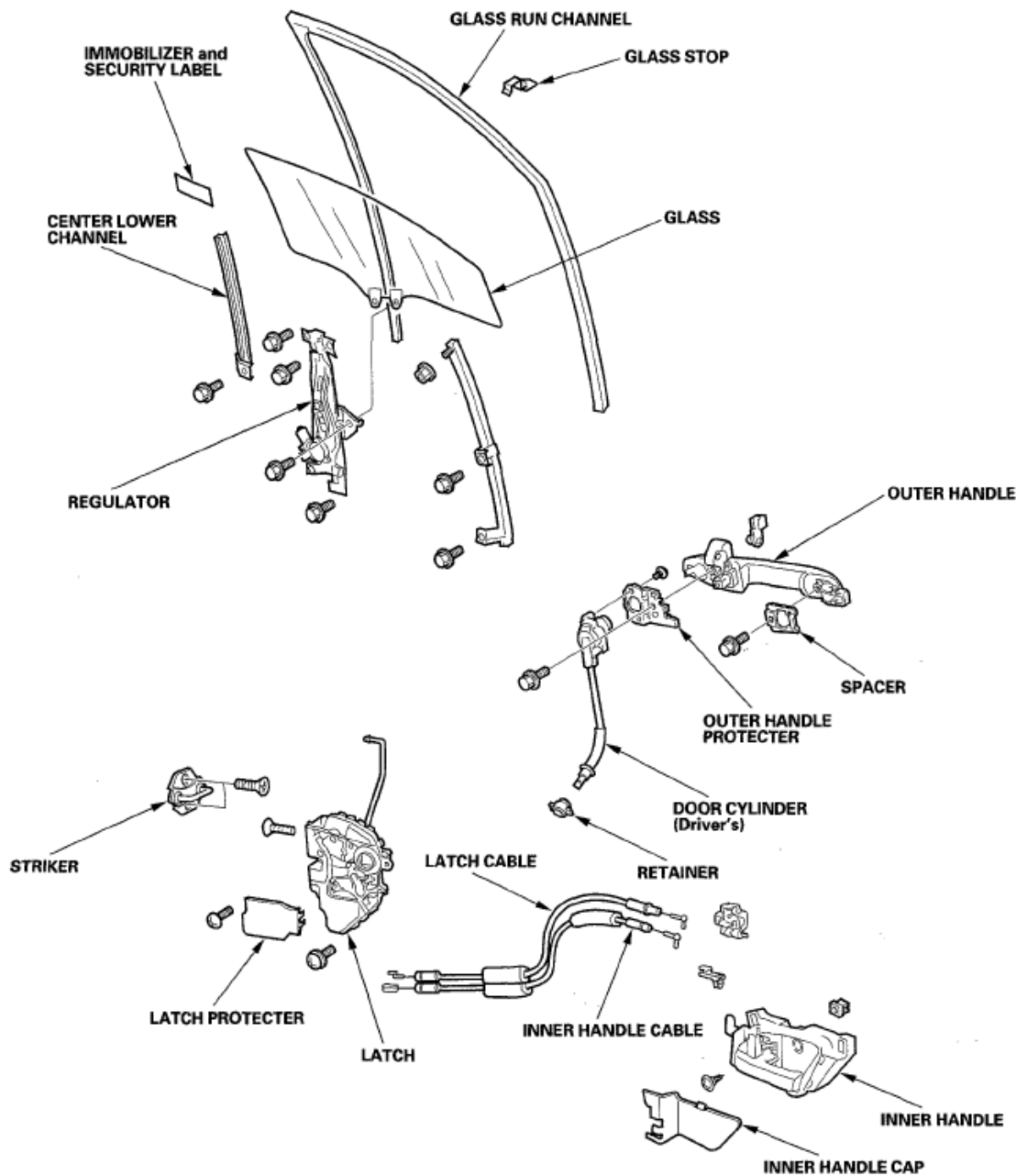


Fig. 3: Identifying Doors Component Location - Front Door (3 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX - REAR DOOR

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Doors - MDX

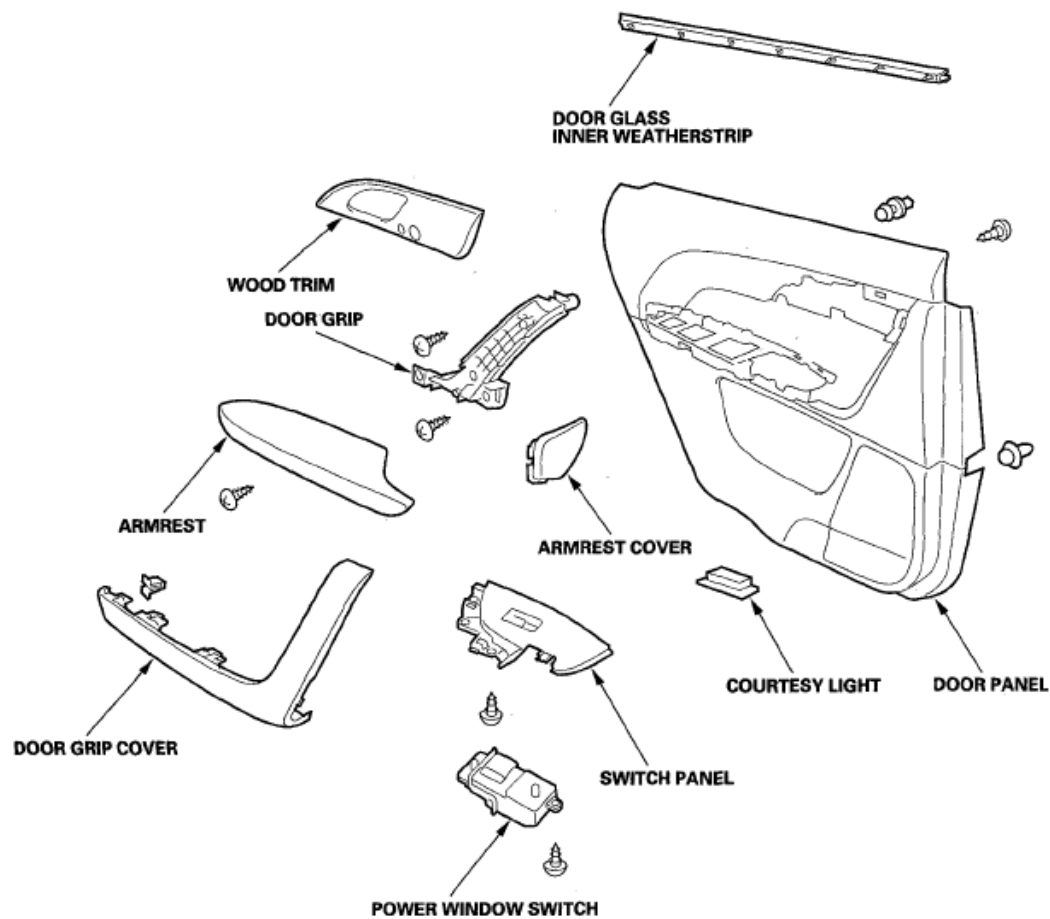


Fig. 4: Identifying Doors Component Location - Rear Door (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Doors - MDX

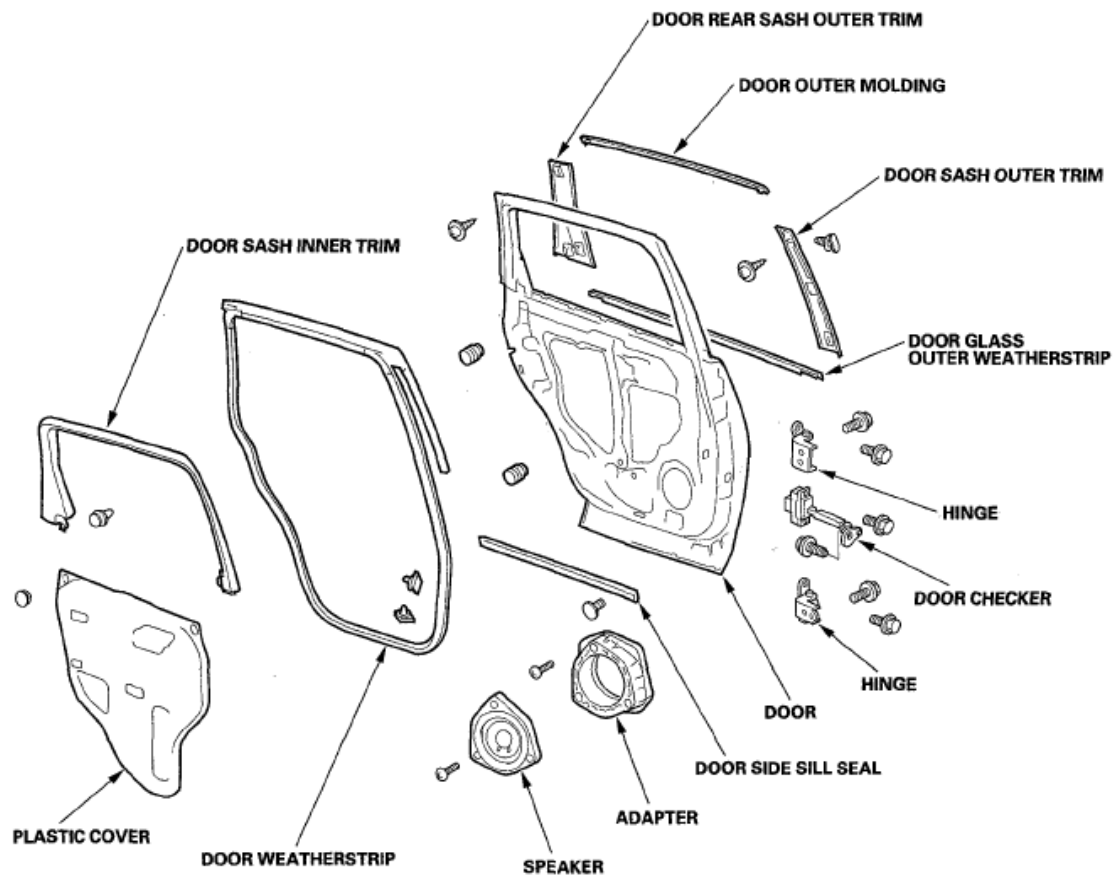


Fig. 5: Identifying Doors Component Location - Rear Door (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

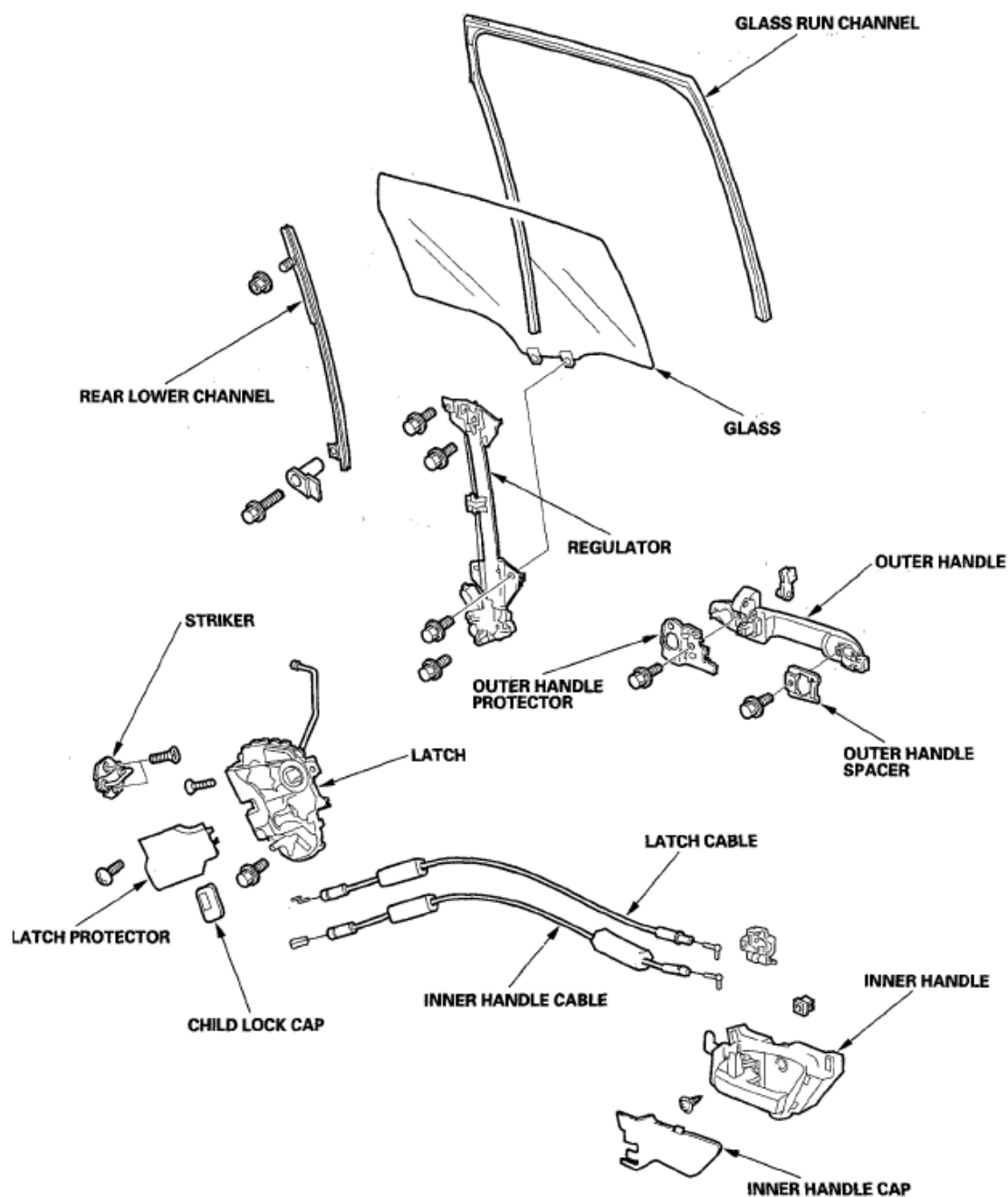


Fig. 6: Identifying Doors Component Location - Rear Door (3 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DOOR PANEL REMOVAL/INSTALLATION

Special Tools Required

- KTC trim tool set SOJATP2014 *
- Trim pad remover, Snap-on A 177A or equivalent, commercially available

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE: Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Using a trim tool, push on the upper hook (A) and pivot the inner handle cap (B) on the bottom hooks (C), then remove the cap and the screw securing the inner handle (D).

Fastener Locations

► : Screw, 2

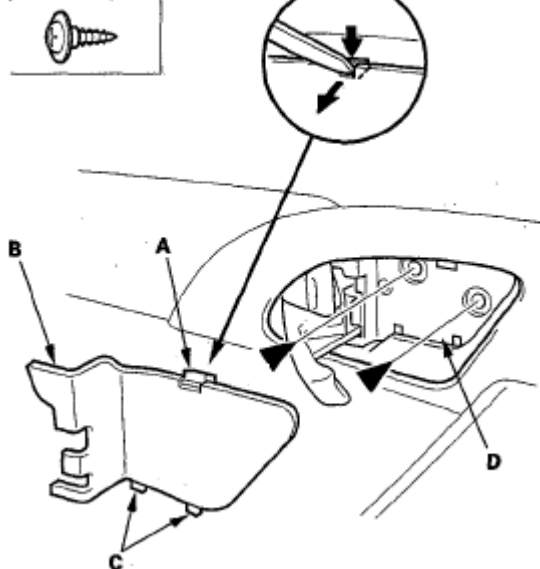


Fig. 7: Identifying Upper Hook, Inner Handle Cap, Bottom Hooks And Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pry out the bottom edge of the grip cover (A) at the notches with the trim tool to detach the clips and to release the hooks (B). Then remove the cover.

Fastener Locations

▷ : Clip, 5

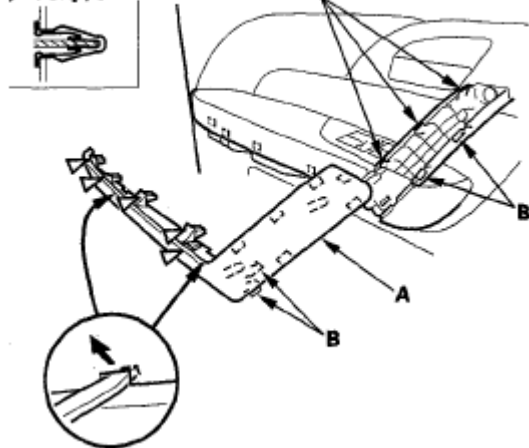


Fig. 8: Identifying Grip Cover And Hooks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws.

Fastener Locations

▶ : Screw, 2

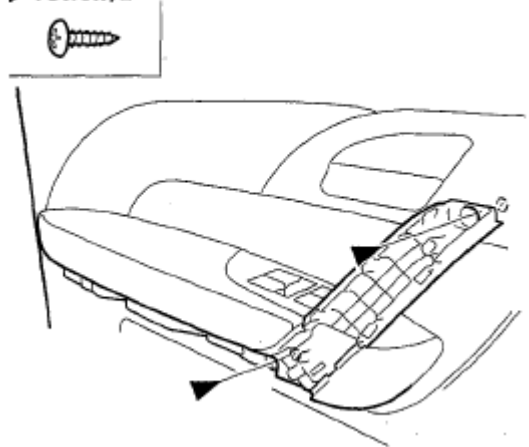


Fig. 9: Identifying Screws

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the door panel (A) with as little bending as possible to avoid creasing or breaking it.
 1. Start at the bottom edge of the door panel, release the clips with a commercially available trim pad remover.
 2. Detach the upper clips.
 3. Starting at the rear, pull the door panel upward.

NOTE:

The inner handle cable (B) and latch cable (C) are connected to the inner handle (D). Do not pull the door panel up too far, or these

cables will be damaged.

Fastener Locations

▷ : Clip, 11
(Gray)

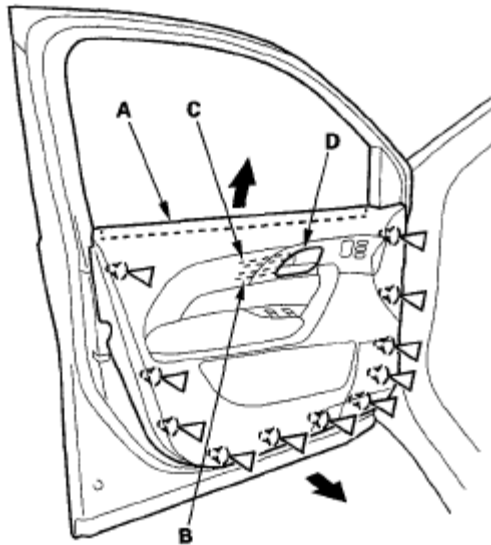


Fig. 10: Identifying Inner Handle Cable, Latch Cable And Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the inner handle (A) from the door panel:
 1. Hold the door panel (8) away from the door.
 2. Pull on the front of the inner handle to detach the first clip. Keep pulling until the rest of the clips are detached, then remove the handle.

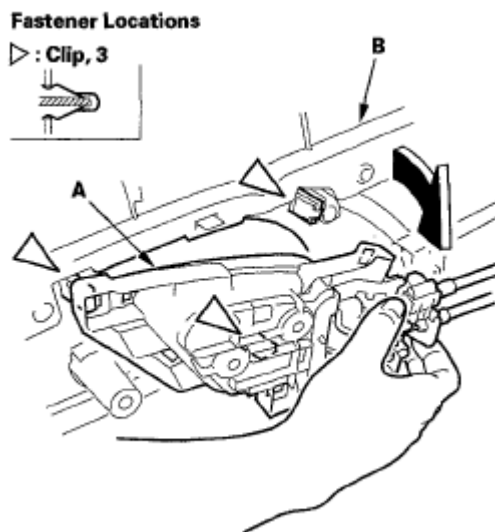


Fig. 11: Identifying Door Panel And Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the door subharness connector (A) and power mirror switch connector (B), then remove the door panel (C).

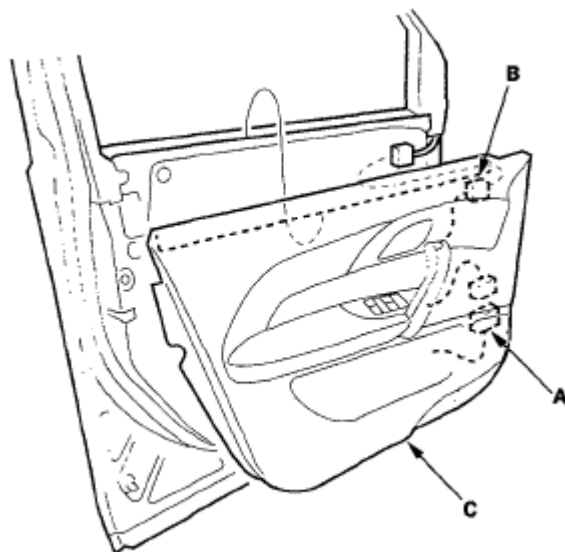


Fig. 12: Identifying Door Subharness Connector, Power Mirror Switch Connector And Door Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the latch cable fastener (A) from the inner handle (B), and then disconnect the latch cable (C) from the cable fastener (D). Disconnect the inner handle cable (E) from the cable fastener (F), then remove the inner handle.

NOTE: Check if the cable fasteners are damaged or stress-whitened.

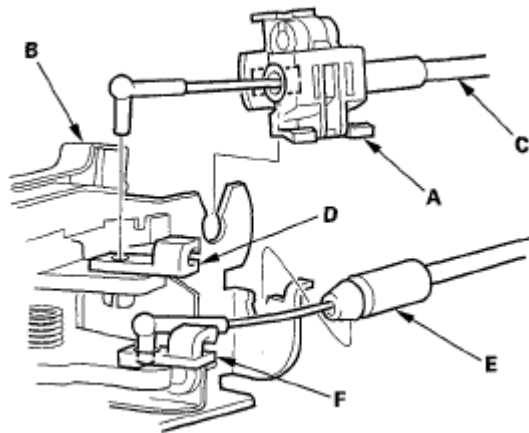


Fig. 13: Identifying Latch Cable Fastener, Inner Handle, Latch Cable And Cable Fastener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the power window switch connector (A), and on the driver's side, disconnect the power door lock switch connector (B) and the seat position memory switch connector (C).

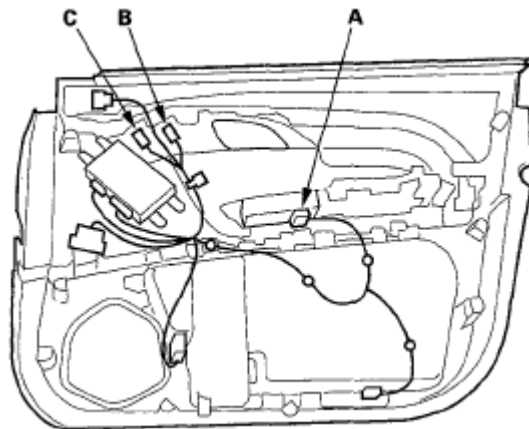


Fig. 14: Identifying Power Window Switch Connector, Power Door Lock Switch Connector And Seat Position Memory Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screws, then remove the grip (A), armrest assembly (B), armrest cover (C), and the wood trim (D) from the door panel (E).

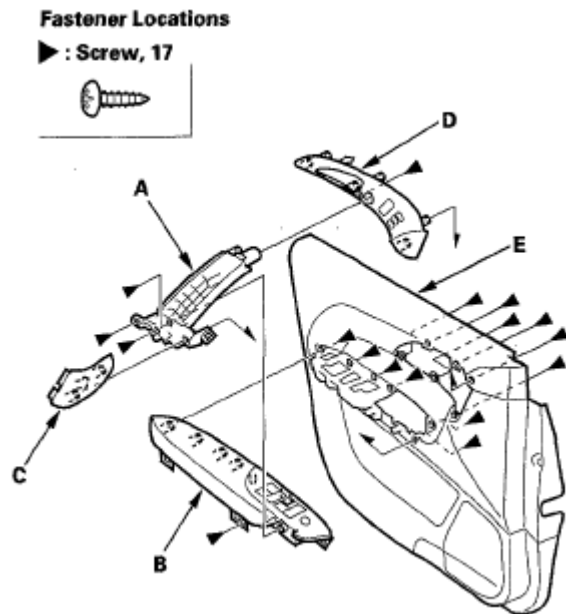


Fig. 15: Identifying Grip, Armrest Assembly, Armrest Cover And Wood Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the screws (A, B), then separate the armrest (C), the power window switch panel (D), and the power window switch (E).

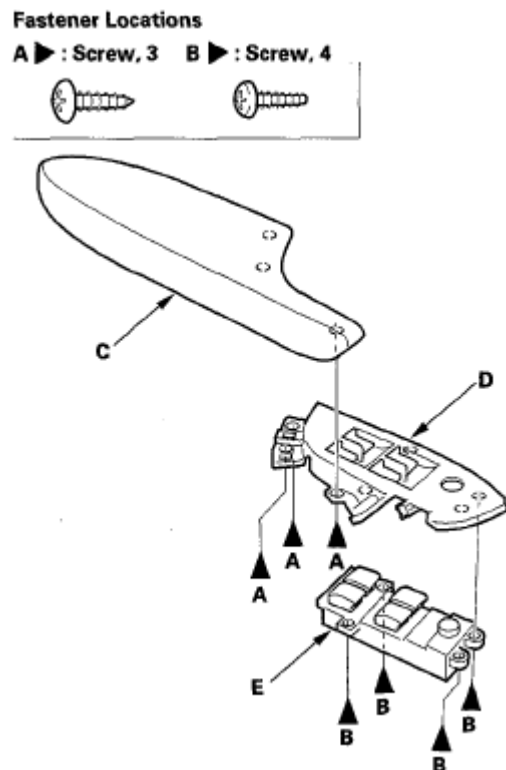


Fig. 16: Identifying Screws, Armrest, Power Window Switch Panel And Power Window Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the door panel in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Replace any damaged cable fasteners with new ones.
 - The latch cable (A) should be fixed to the cable fastener (B) with the latch in the locked position as shown.
 - Make sure the connectors are plugged in properly, and the cables are connected securely.
 - Make sure the window and power door lock operate properly.

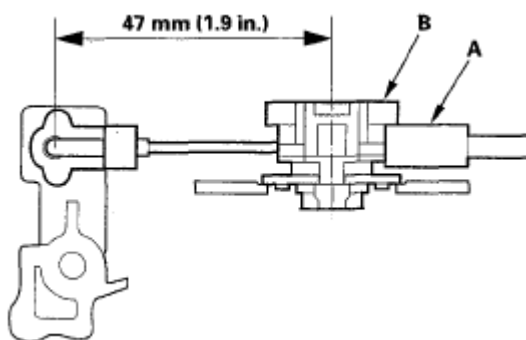


Fig. 17: Identifying Latch Cable And Fastener

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT DOOR OUTER HANDLE REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Raise the glass fully.
2. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect the power door lock actuator connector (A).

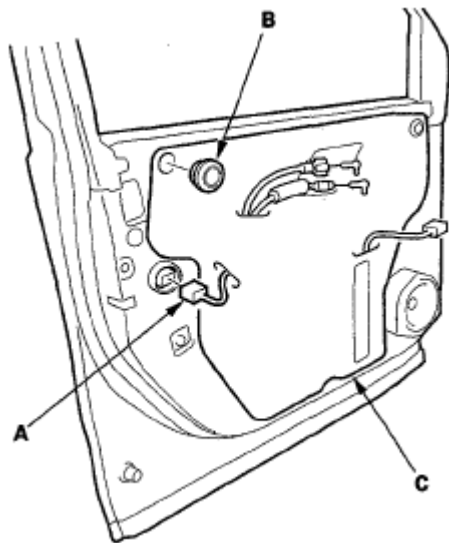


Fig. 18: Identifying Power Door Lock Actuator Connector, Plug Cap And Plastic Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the plug cap (B), then remove the plastic cover (C), as needed.

NOTE: Remove the glue from the door surface. If the plastic cover is damaged or torn, replace it.

5. Detach the rod fastener (A) from the outer handle.

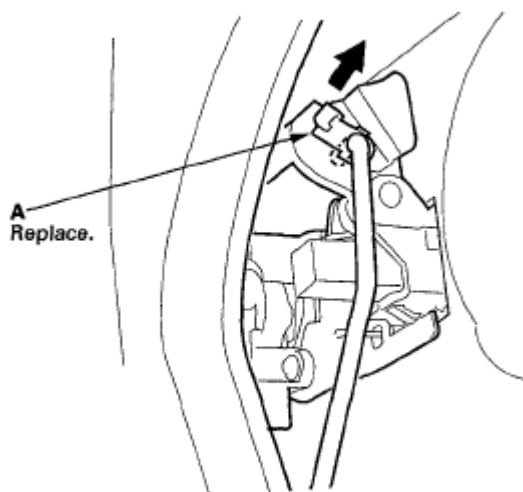


Fig. 19: Identifying Rod Fastener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With a clip remover, disconnect the outer handle rod (A).

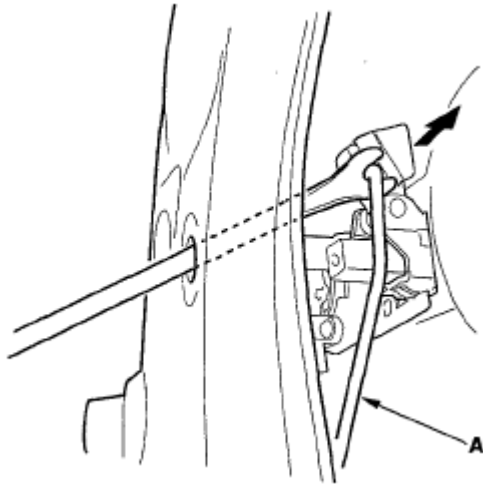


Fig. 20: Identifying Outer Handle Rod

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Driver's side: Pull both side flanges (A) of the retainer (B) outward, and pull the middle flange portion (C) of the outer casing cover (D) out, then disconnect the cylinder cable (E) from the latch.

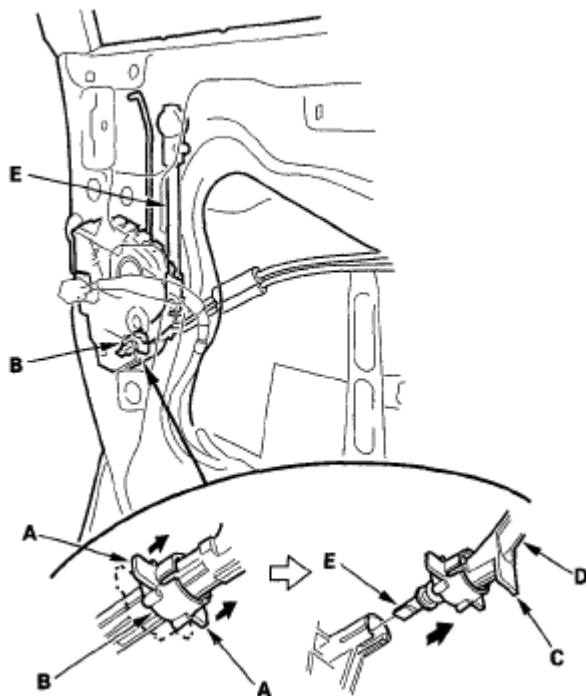


Fig. 21: Identifying Side Flanges, Retainer, Middle Flange Portion And Outer Casing Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolt, then remove the spacer (A).

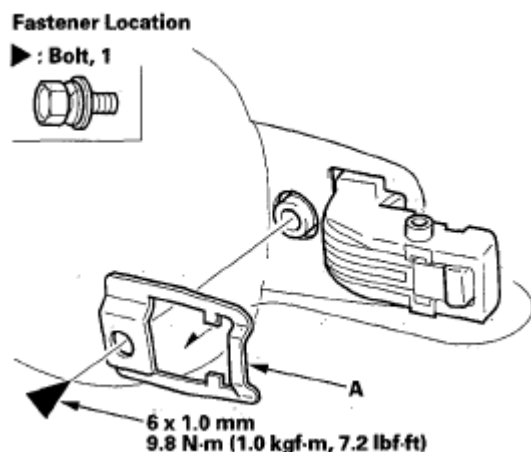


Fig. 22: Identifying Spacer With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the maintenance cap (A). Remove the bolt securing the outer handle protector (B), then remove the protector by releasing the hook (C).

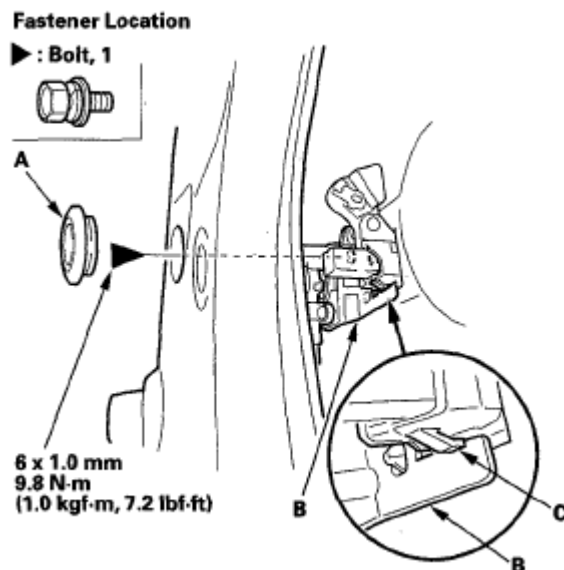


Fig. 23: Identifying Maintenance Cap, Outer Handle Protector And Hook With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If necessary, cut a slot in each screw head of the special screws with a saw, remove the special screws with a flat-tip screwdriver, then separate the door cylinder (A) and outer handle protector (B). If the retainer (C) is damaged, release the hooks (D), and replace it.

NOTE: If removed, the special screws must be replaced.

Fastener Locations

► : Screw, 2

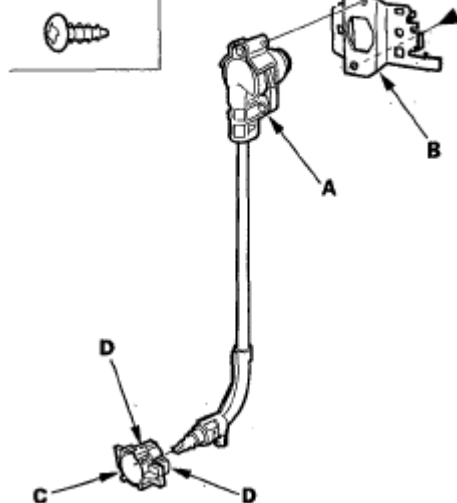


Fig. 24: Identifying Door Cylinder, Outer Handle Protector And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. While pulling the outer handle (A), remove the handle from the holes in the door panel. Take care not to scratch the door.

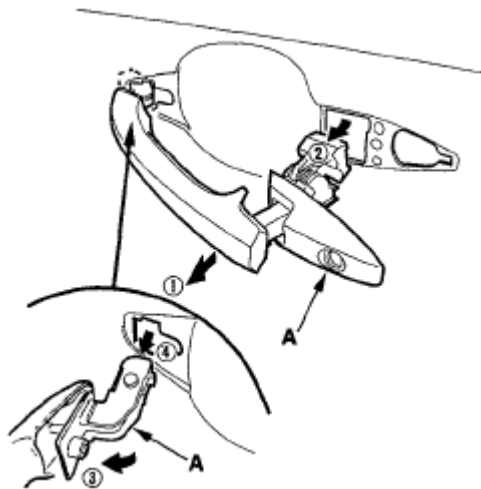


Fig. 25: Identifying Outer Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the rod fastener (A) from the outer handle (B), then replace it with a new one.

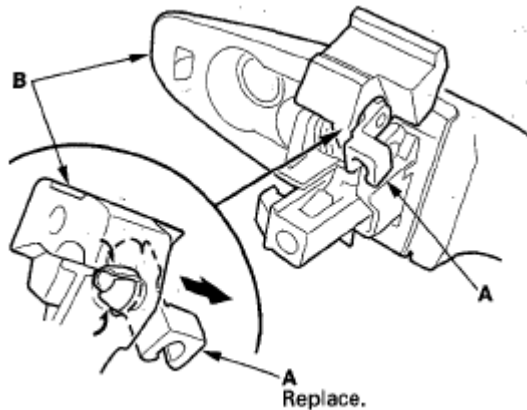


Fig. 26: Identifying Rod Fastener And Outer Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the handle in the reverse order of removal, and note these items:
 - Make sure that the actuator connector is plugged in properly, and that the cylinder cable and the outer handle rod are connected securely.
 - Make sure the door key cylinder/door locks operate properly.
 - Make sure the door handle works properly.
 - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.

FRONT DOOR LATCH REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Raise the glass fully.
2. Remove the door panel and inner handle (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Remove the plastic cover, as needed (see step 3).
4. Detach the rod fastener (see step 5).
5. Disconnect the outer handle rod from the outer handle (see step 6).
6. Disconnect the cylinder cable from the latch (see step 7).
7. Pull the glass run channel (A) away as needed, and remove the bolt, then remove the center lower channel (B) by pulling it downward.

Fastener Location

► : Bolt, 1

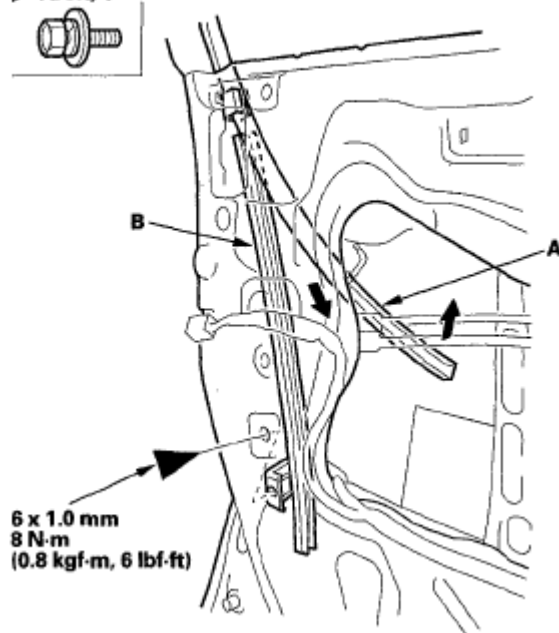


Fig. 27: Identifying Glass Run Channel And Center Lower Channel With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the screws (A, B) securing the latch (C), then remove the latch through the hole in the door. Take care not to bend the outer handle rod (D), latch cable (E), and inner handle cable (F).

Fastener Locations

A ► : Screw, 3 B ► : Screw, 1

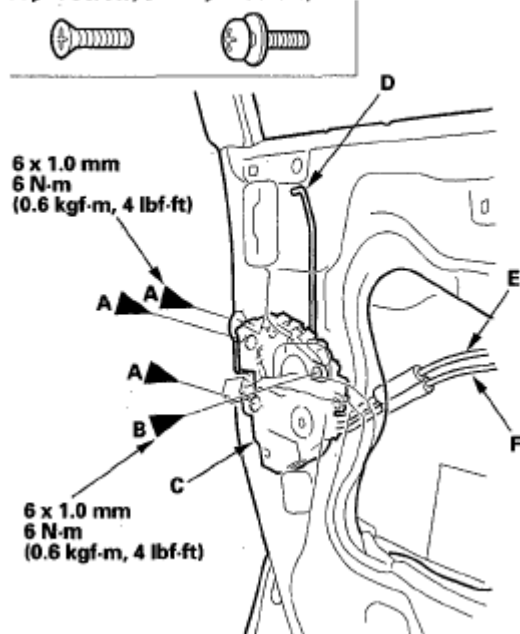


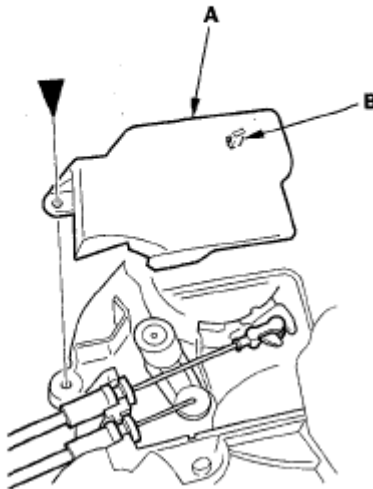
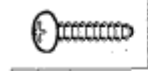
Fig. 28: Identifying Screws, Latch, Outer Handle Rod, Latch Cable And Inner Handle Cable With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screw, then remove the latch protector (A) by releasing the hook (B).

Fastener Location

► : Screw, 1

**Fig. 29: Identifying Latch Protector And Hook**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Detach the latch cable (A) and the inner handle cable (B) from the latch (C).

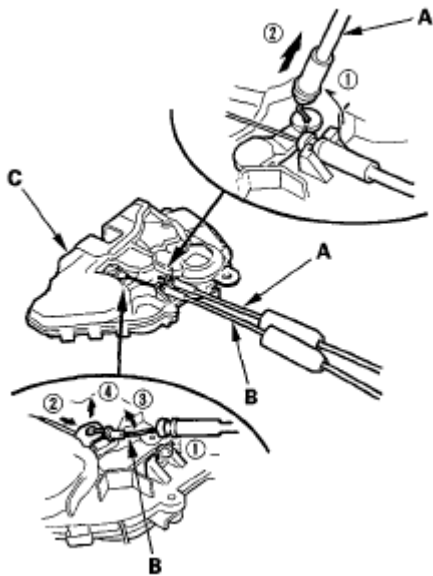


Fig. 30: Identifying Latch Cable, Inner Handle Cable And Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the latch in the reverse order of removal, and note these items:
 - Make sure that the actuator connector is plugged in properly, and that the cylinder cable and the outer handle rod are connected securely.
 - Make sure the door locks and opens properly.
 - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.

FRONT DOOR GLASS AND REGULATOR REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the power door lock actuator connector (A), and remove the plug caps (B).

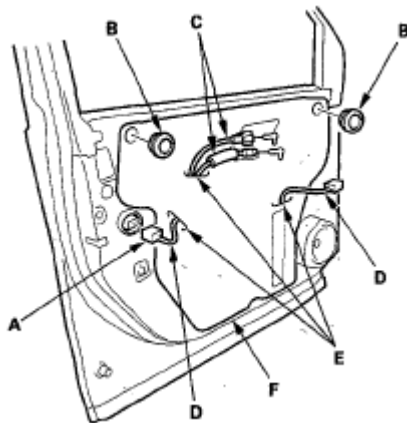


Fig. 31: Identifying Power Door Lock Actuator Connector And Plug Caps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

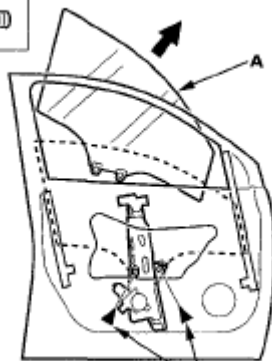
3. Pass the cables (C) and the harnesses (D) through the slits (E) in the plastic cover (F), then remove the plastic cover.

NOTE: Remove the glue from the door surface. If the plastic cover is damaged or torn, replace it.

4. Carefully raise the glass (A) until you can see the bolts, then remove them. Carefully pull the glass out through the window slot. Take care not to drop the glass inside the door.

Fastener Locations

► : Bolt, 2



6 x 1.0 mm
9.8 N·m (1.0 kgf-m, 7.2 lbf-ft)

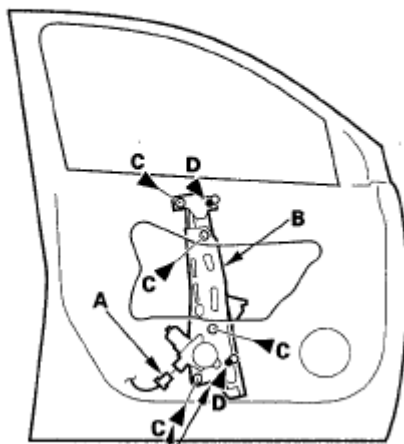
Fig. 32: Identifying Glass With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the connector (A) from the regulator (B).

Fastener Locations

C ► : Bolt, 4
(Silver)

D ► : Bolt, 2
(Black)



6 x 1.0 mm
9.8 N·m (1.0 kgf-m, 7.2 lbf-ft)

Fig. 33: Identifying Connector And Regulator With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts (C), and loosen the bolts (D), then remove the regulator through the hole in the door.
7. Apply multipurpose grease to all the sliding surfaces of the regulator (A) where shown.

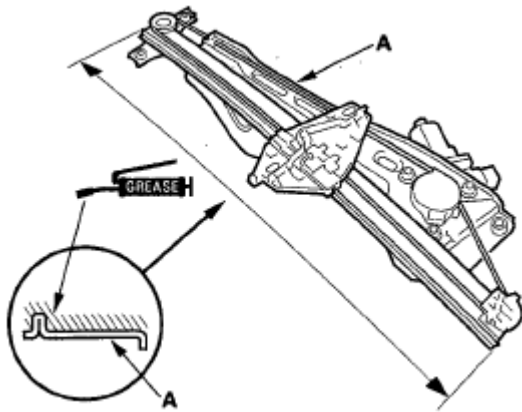


Fig. 34: Identifying Regulator And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the glass and regulator in the reverse order of removal, and note these items:
 - Roll the glass up and down to see if it moves freely without binding.
 - Make sure that there is no clearance between the glass and glass run channel when the glass is closed.
 - Adjust the position of the glass as necessary (see **FRONT AND REAR DOOR GLASS ADJUSTMENT**).
 - Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
 - Check for water leaks (see step 7).
 - Test-drive and check for wind noise and rattles.
 - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.
 - Make sure the power door locks, windows and power mirror operate properly.

FRONT DOOR SASH INNER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Using a clip remover, detach the clips fastening the front door sash inner trim (A).

Fastener Locations

▷ : Clip, 2

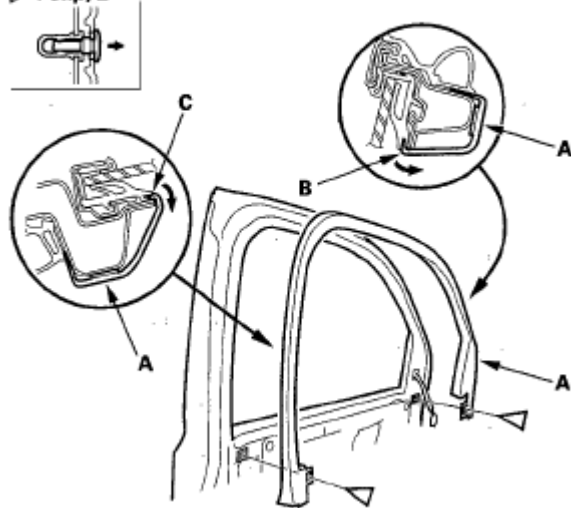


Fig. 35: Identifying Front Door Sash Inner Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the door glass opening side of the trim back to release the hooks (B, C) from the door glass opening flange of the door sash.
4. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the hooks and clips into place securely.

FRONT DOOR SASH OUTER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Lower the glass fully.
2. Remove the door sash outer trim (A).
 1. Pull back the door weatherstrip (B), then remove the screw.
 2. Pull the trim up to release the hooks (C) from the door. Take care not to damage the door glass outer weatherstrip (D).

Fastener Location

► : Screw, 1

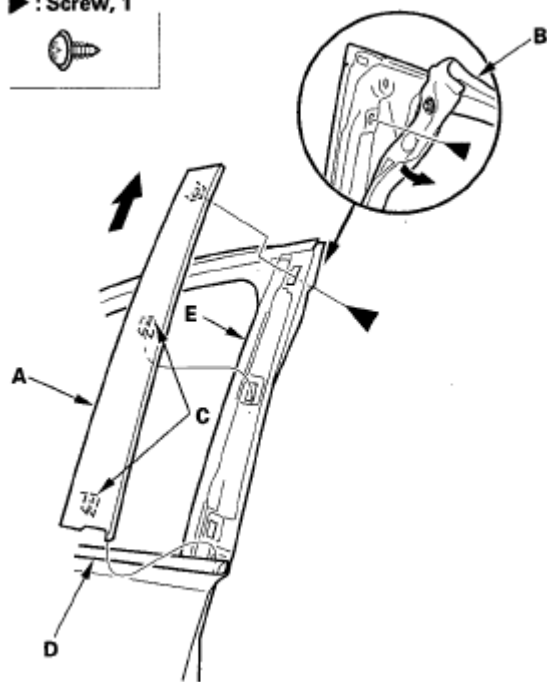


Fig. 36: Identifying Door Weatherstrip, Door Sash Outer Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and make sure the glass run channel (E) is installed in the door sash securely.

FRONT DOOR GLASS OUTER WEATHERSTRIP REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- If you remove the door glass outer weatherstrip, replace it with a new one because it will bend.
- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Remove the screw from the rear edge of the door.

Fastener Location

► : Screw, 1

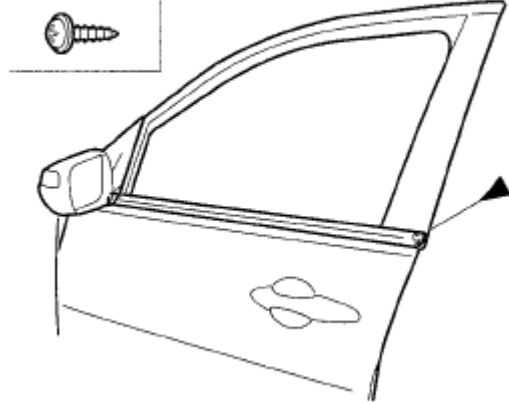


Fig. 37: Identifying Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Starting at the rear, pull the door glass outer weatherstrip (A) up at each portion where the inner molding (B) catches the inside edge of the window slot.

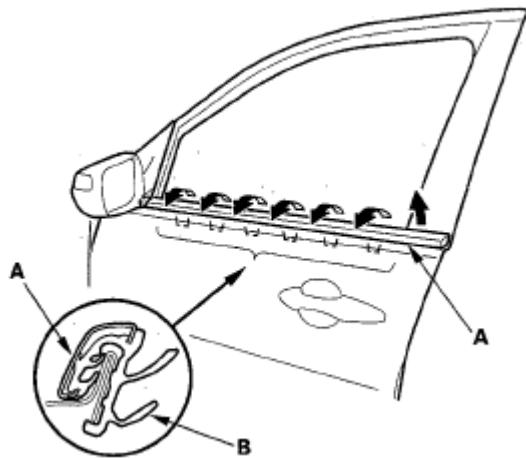


Fig. 38: Identifying Door Glass Outer Weatherstrip And Inner Molding

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull the rear of the glass outer weatherstrip (A) away from the door, then pull the front end of it out from under the power mirror (B).

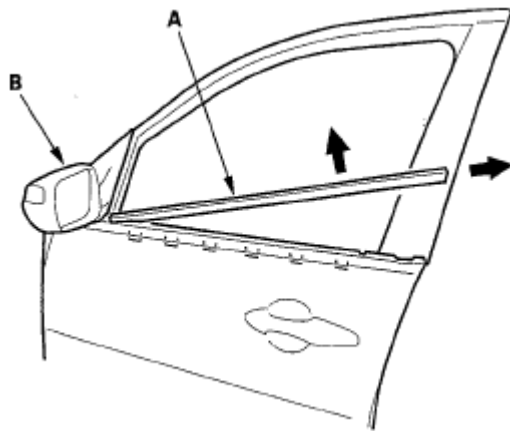


Fig. 39: Identifying Glass Outer Weatherstrip And Power Mirror
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install new weatherstrip in the reverse order of removal.

FRONT DOOR OUTER MOLDING REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- If you remove the door outer molding, replace it with a new one because it will bend during removal.
- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the power mirror (see **POWER MIRROR REPLACEMENT**).
2. Remove the door outer molding (A):
 1. Push out the rear clip (B).
 2. While removing the upper edge of the door outer molding from the edge of the sash, cut the double-sided adhesive tape (C) with a utility knife, then remove the molding.

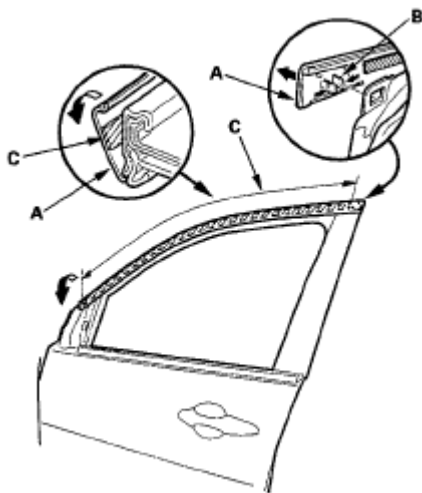


Fig. 40: Identifying Door Outer Molding, Rear Clip And Double-Sided Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Scrape off the remaining double-sided adhesive tape from the sash, then clean the sash surface with a sponge dampened in isopropyl alcohol.
4. Install new door outer molding in the reverse order of removal, and note these items:
 - Push the clip and the adhesive portions into place securely.
 - Make sure the upper and lower sides of the molding are catching the edges of the sash properly.

FRONT DOOR WEATHERSTRIP REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use a clip remover to remove the clips.

1. At the A-pillar, remove the door checker mounting bolt (A).

Fastener Locations

▷ : Clip, 12
(Black)

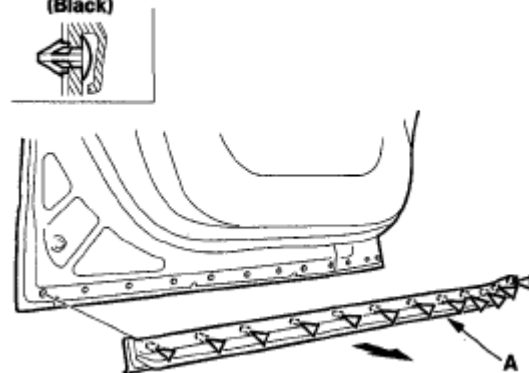


Fig. 42: Identifying Door Side Sill Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the side sill seal in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.
 - Check for water leaks (see step 7).

REAR DOOR PANEL REMOVAL/INSTALLATION

Special Tools Required

- KTC trim tool set SOJATP2014 *
- Trim pad remover, Snap-on A 177A or equivalent, commercially available

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE: Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Using a trim tool, push on the upper hook (A) and pivot the inner handle cap (B) on the bottom hooks (C), then remove the cap and the screws securing the inner handle (D).

Fastener Locations

► : Screw, 2

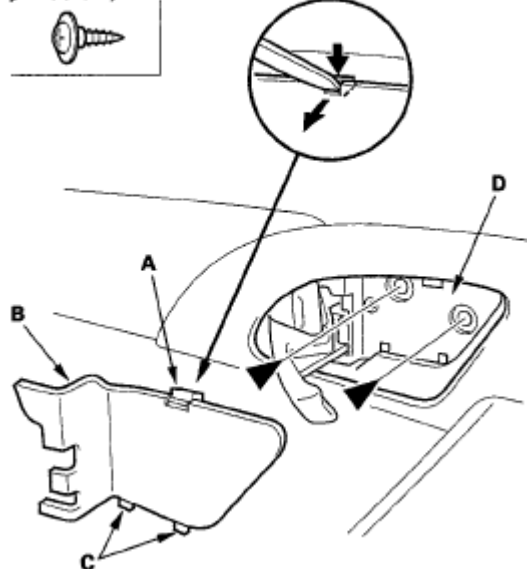


Fig. 43: Identifying Upper Hook, Inner Handle Cap, Bottom Hooks And Inner Handle
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pry out the bottom edge of the grip cover (A) at the notches with the trim tool to detach the clips and to release the hooks (B). Then remove the cover.

Fastener Locations

▷ : Clip, 5

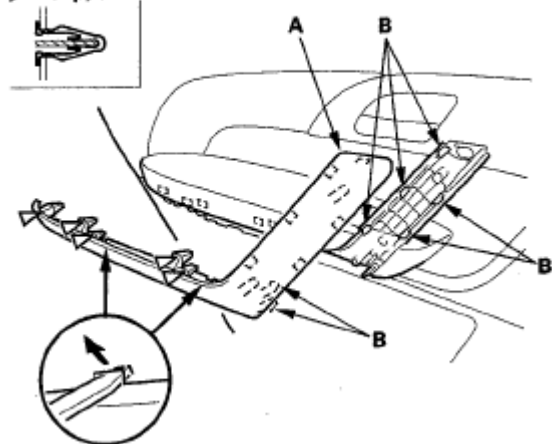


Fig. 44: Identifying Grip Cover And Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws.

Fastener Locations

► : Screw, 2

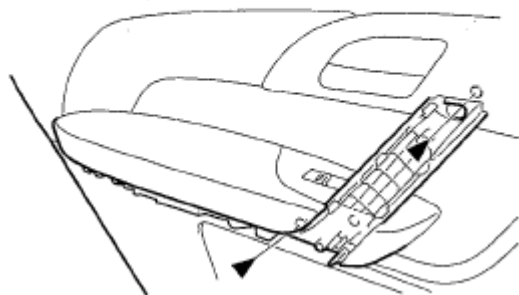


Fig. 45: Identifying Screws

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the door panel (A) with as little bending as possible to avoid creasing or breaking it.
 1. Start at the bottom edge of the door panel, release the clips with a commercially available trim pad remover.
 2. Detach the upper clips.
 3. Starting at the rear, pull the door panel upward.

NOTE: The inner handle cable (B) and latch cable (C) are connected to the inner handle (D). Do not pull the door panel up too far, or the cables will be damaged.

Fastener Locations

▷ : Clip, 11
(Gray)

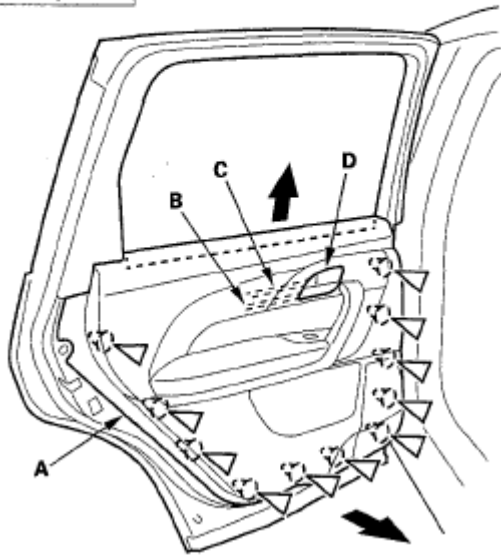


Fig. 46: Identifying Inner Handle Cable, Latch Cable And Inner Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the inner handle (A) from the door panel:
 1. Hold the door panel (B) away from the door.
 2. Pull on the front of the inner handle to detach the first clip. Keep pulling until the rest of the clips are detached, then remove the handle.

Fastener Locations

▷ : Clip, 3

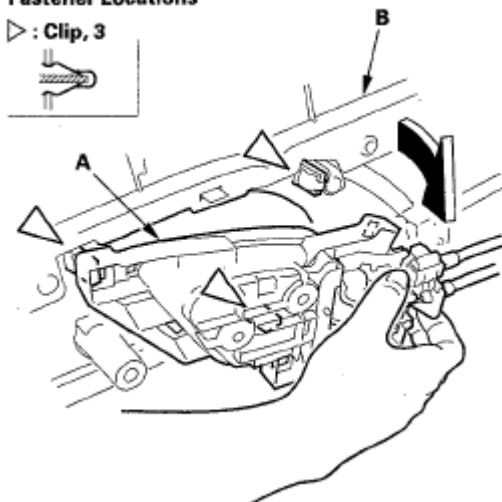


Fig. 47: Identifying Inner Handle And Door Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the power window switch connector (A) and courtesy light connector (B), detach the harness clips (C), then remove the door panel (D).

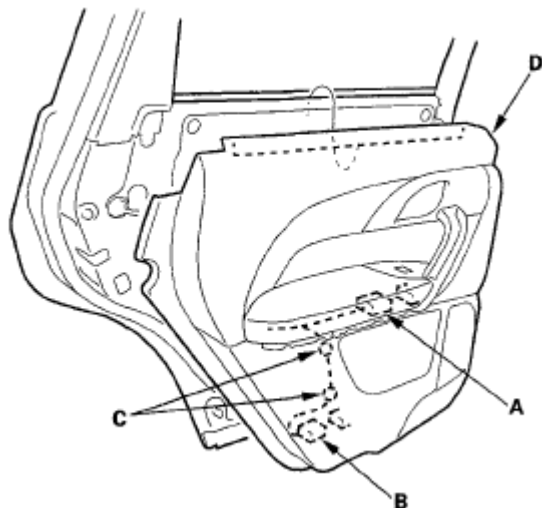


Fig. 48: Identifying Power Window Switch Connector, Courtesy Light Connector, Clips And Door Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the latch cable fastener (A) from the inner handle (B), and then disconnect the latch cable (C) from the cable fastener (D). Disconnect the inner handle cable (E) from the cable fastener (F), then remove the inner handle.

NOTE: Check if the cable fasteners are damaged or stress-whitened.

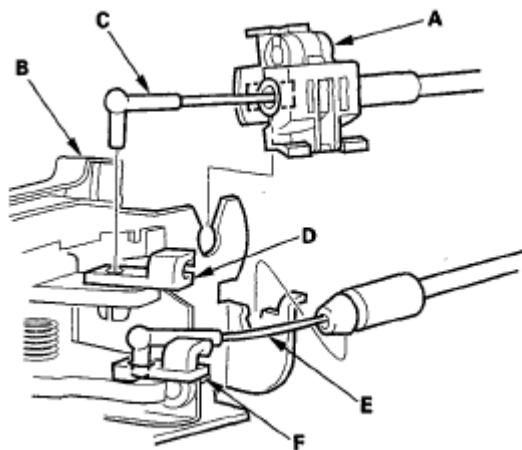


Fig. 49: Identifying Latch Cable Fastener, Inner Handle, Latch Cable And Cable Fastener

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the screws and release the hooks (A), then remove the wood trim (B), the door grip (C), armrest cover (D) and the armrest assembly (E) from the door panel (F).

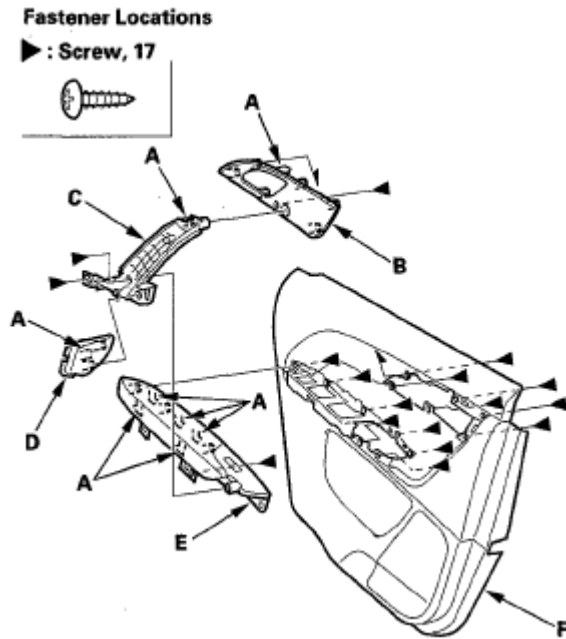


Fig. 50: Identifying Hooks, Wood Trim, Door Grip, Armrest Cover And Armrest Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screws (A, B) and release the pins (C), then separate the armrest (D), the power window switch panel (E), and the power window switch (F).

Fastener Locations

A ▶ : Screw, 3 B ▶ : Screw, 3

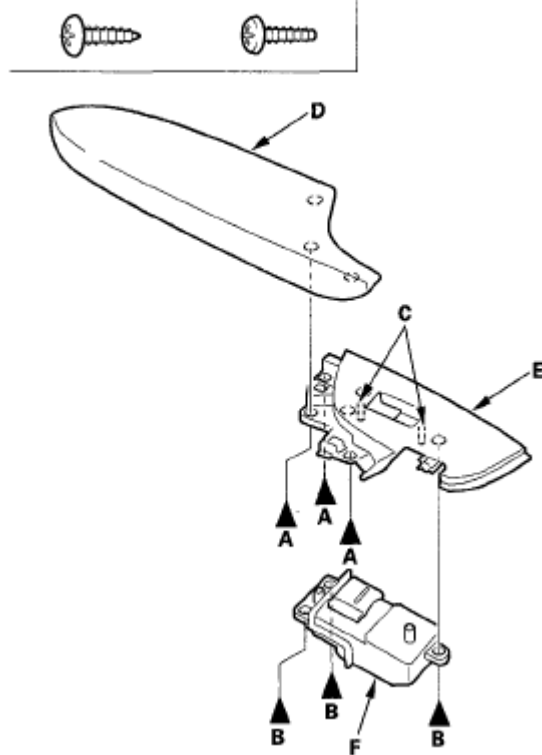


Fig. 51: Identifying Screws, Pins, Armrest, Power Window Switch Panel And Power Window Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the door panel in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Replace any damaged cable fasteners with new ones.
 - The latch cable (A) should be fixed to the cable fastener (B) with the latch in the locked position as shown.
 - Make sure the connectors are plugged in properly, and the cables are connected securely.
 - Make sure the window and power door lock operate properly.

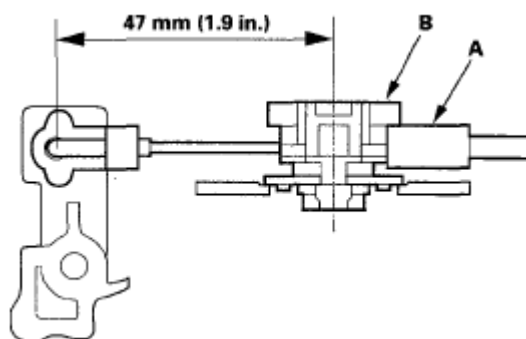


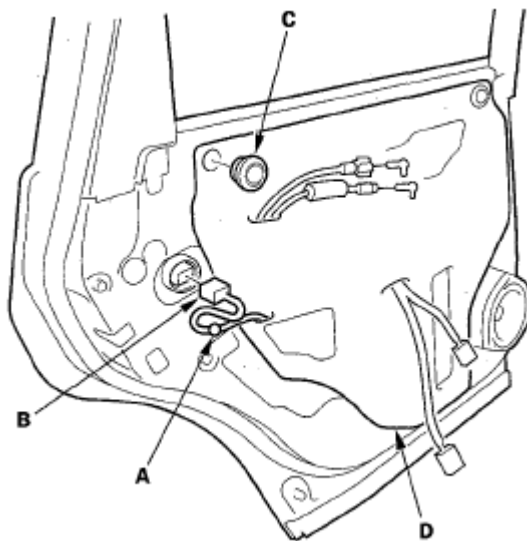
Fig. 52: Identifying Latch Cable And Fastener

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DOOR OUTER HANDLE REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Raise the glass fully.
2. Remove the door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
3. Detach the harness clip (A), and disconnect the power door lock actuator connector (B).

**Fig. 53: Identifying Harness Clip, Power Door Lock Actuator Connector And Rear Plug Cap**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear plug cap (C), then remove the plastic cover (D), as needed.

NOTE: Remove the glue from the door surface. If the plastic cover is damaged or torn, replace it.

5. Detach the rod fastener (A).

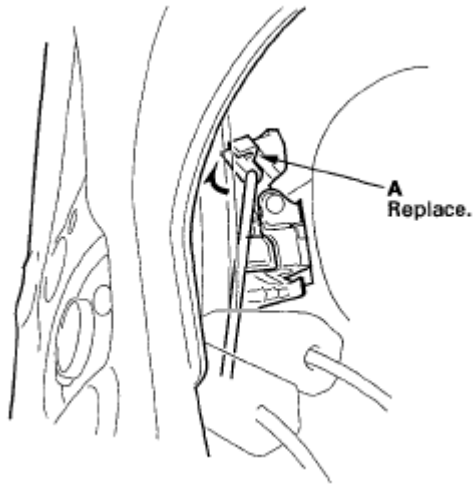


Fig. 54: Identifying Rod Fastener

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the maintenance cap (A) with a clip remover, then disconnect the outer handle rod (B) from the outer handle (C).

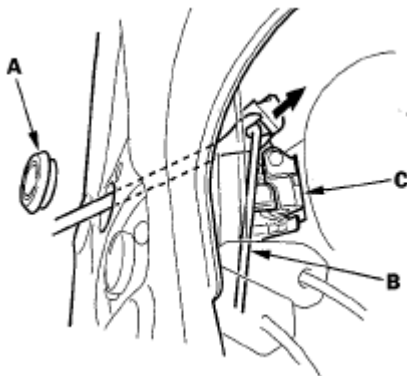


Fig. 55: Identifying Maintenance Cap, Outer Handle Rod And Outer Handle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws (A, B) securing the latch (C), then lower it.

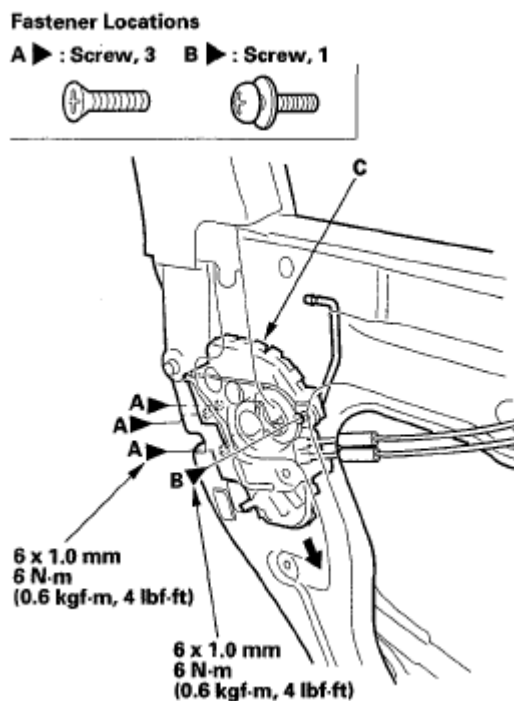


Fig. 56: Identifying Screws And Latch With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolt, then remove the spacer (A).

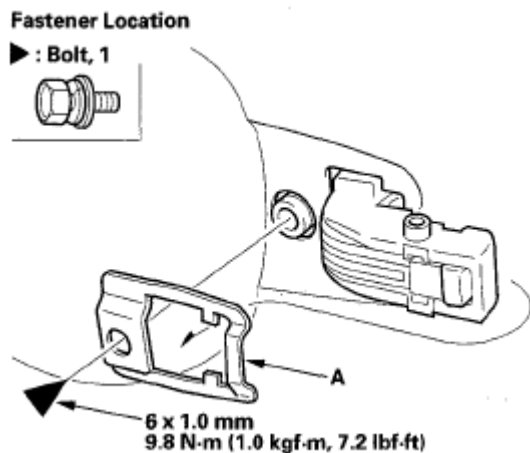


Fig. 57: Identifying Spacer With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the bolt securing the outer handle protector (A), then remove the protector by releasing the hook (B).

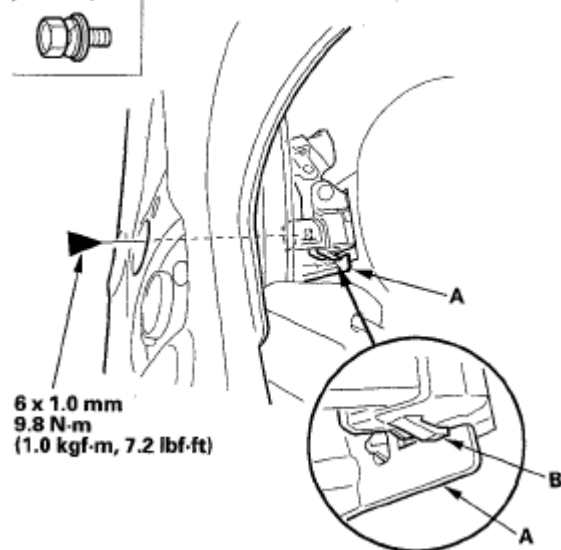
Fastener Location**► : Bolt, 1**

Fig. 58: Identifying Outer Handle Protector And Hook With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. While pulling the outer handle (A), remove the handle from the holes in the door panel. Take care not to scratch the door.

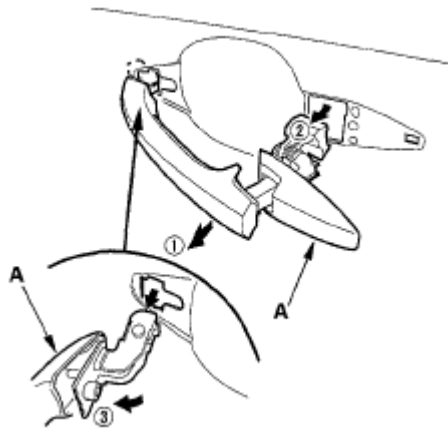


Fig. 59: Identifying Outer Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the rod fastener (A) from the outer handle (B), then replace it with a new one.

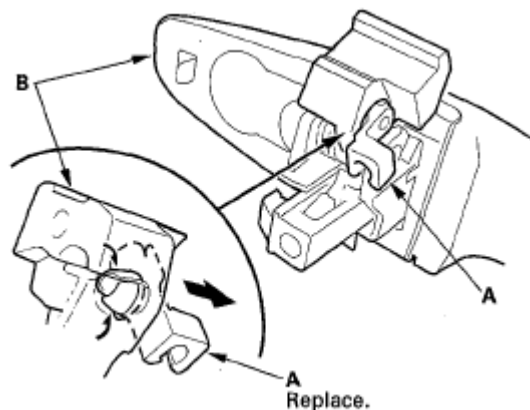


Fig. 60: Identifying Rod Fastener And Outer Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the handle in the reverse order of removal,, and note these items:
 - Make sure the outer handle rod is connected securely.
 - Make sure the door locks operate properly.
 - Make sure the door handle works properly.
 - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.

REAR DOOR LATCH REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Raise the glass fully.
2. Remove the door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
3. Remove the plastic cover, as needed (see step 3 .
4. Remove the screws (A, B) securing the latch (C), then lower it.

Fastener Locations

A ► : Screw, 3 B ► : Screw, 1

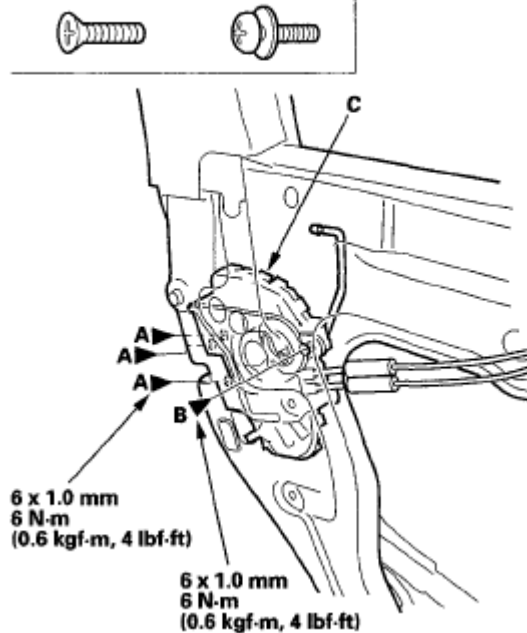


Fig. 61: Identifying Screws And Latch With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Detach the rod fastener (see step 5).
6. Disconnect the outer handle rod from the outer handle (see step 6).
7. Remove the bolt, then remove the collar (A) from the rear lower channel (B).

Fastener Location

► : Bolt, 1

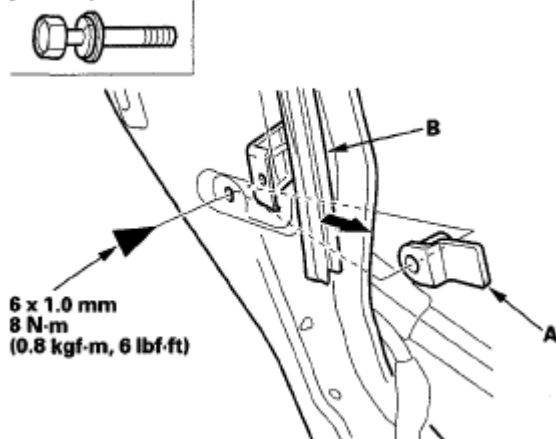


Fig. 62: Identifying Collar And Rear Lower Channel With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the latch (A) out from between the rear lower channel (B) and the door. Take care not to bend

the outer handle rod (C), latch cable (D), and inner handle cable (E).

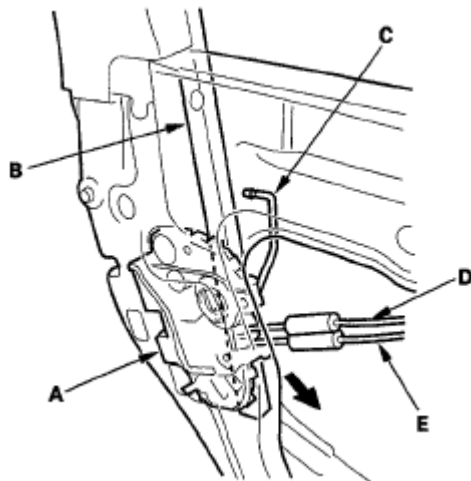


Fig. 63: Identifying Latch, Rear Lower Channel, Outer Handle Rod, Latch Cable And Inner Handle Cable

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the screw, then remove the latch protector (A) by releasing the hook (B).

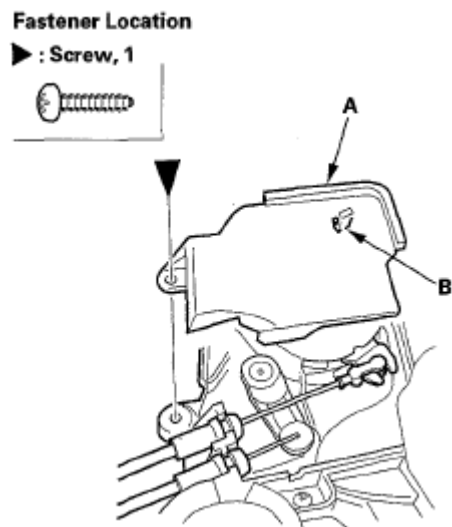


Fig. 64: Identifying Latch Protector And Hook

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Detach the latch cable (A) and the inner handle cable (B) from the latch (C).

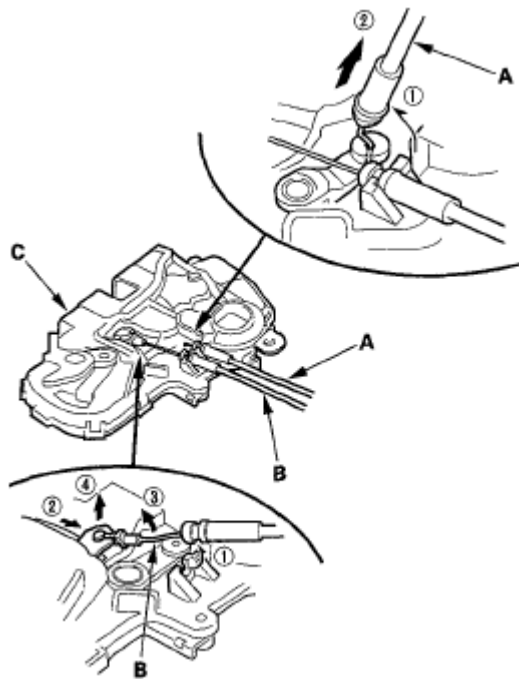


Fig. 65: Identifying Latch Cable, Inner Handle Cable And Latch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the latch in the reverse order of removal, and note these items:
 - Make sure the actuator connector is plugged in properly, and the outer handle rod is connected securely.
 - Make sure the door locks and opens properly.

REAR DOOR GLASS AND REGULATOR REPLACEMENT

NOTE: Put on gloves to protect your hands.

1. Remove the door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Detach the harness clip (A), and disconnect the power door lock actuator connector (B). Remove the plug caps (C).

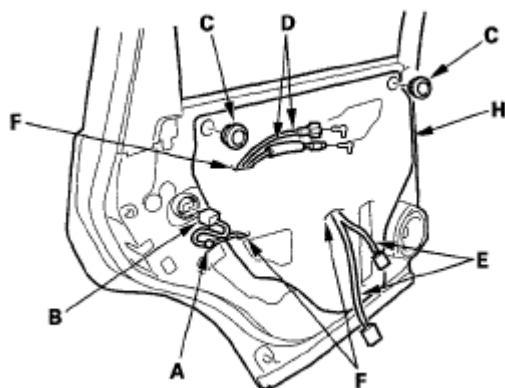


Fig. 66: Identifying Harness Clip, Power Door Lock Actuator Connector, Plug Caps And Cables
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pass the cables (D) and the harnesses (E) through the slits (F) in the plastic cover (H), then remove it.

NOTE: Remove the glue from the door surface. If the plastic cover is damaged or torn, replace it.

4. Carefully move the glass (A) until you can see the bolts, then remove them. Release the glass from the holder (B), then remove it from the regulator (C), and carefully lower the glass. Take care not to drop the glass inside the door.

Fastener Locations

► : Bolt, 2

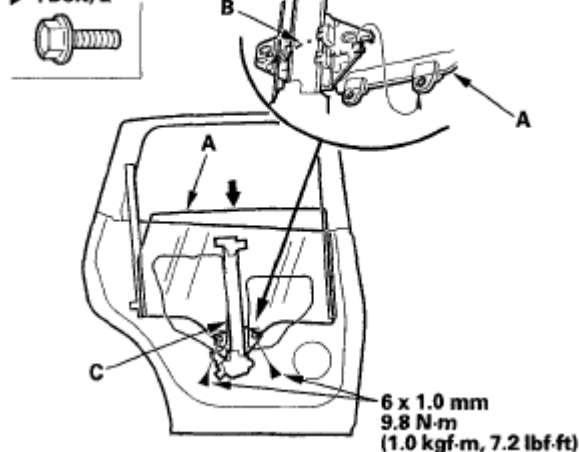


Fig. 67: Identifying Glass, Holder And Regulator With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull the glass run channel (A) away as needed. Loosen the nut (B), and remove the bolt (C) and collar (D) from the rear lower channel (E).

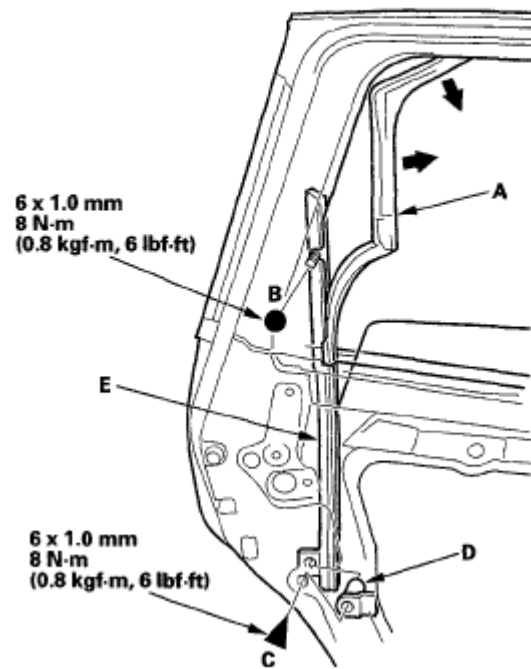
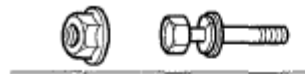
Fastener Locations**B ● : Nut, 1 C ► : Bolt, 1**

Fig. 68: Identifying Glass Run Channel, Nut, Bolt, Collar And Rear Lower Channel With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull the rear lower channel (A) forward, then remove the nut portion (B) from the door. Release the channel from the glass (C), then pull the channel upward to remove it through the window slot. Take care not to scratch the door.

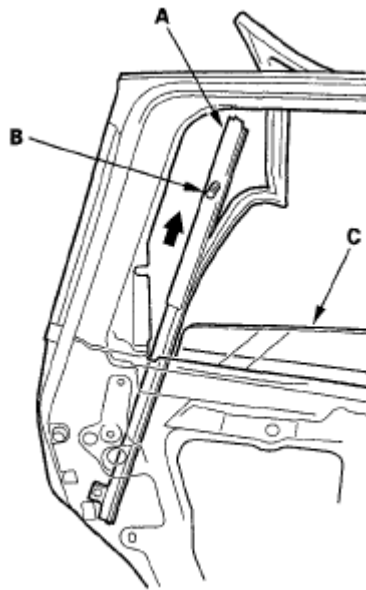


Fig. 69: Identifying Rear Lower Channel, Nut Portion And Glass
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the rear lower channel (A) from the glass run channel (B).

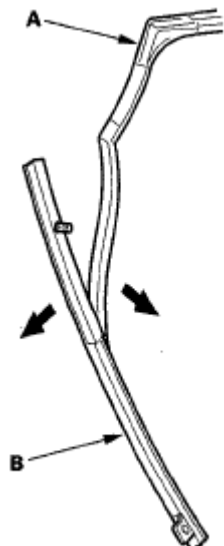
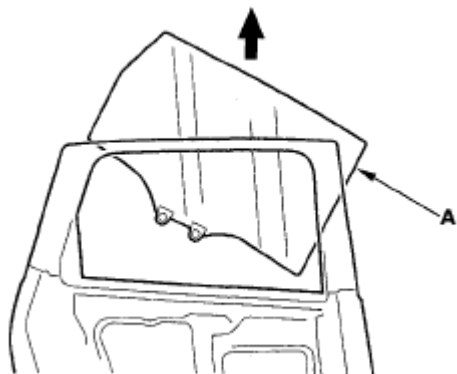


Fig. 70: Identifying Rear Lower Channel And Glass Run Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Carefully remove the glass (A) out through the window slot. Take care not to drop the glass inside the door.

**Fig. 71: Identifying Glass**

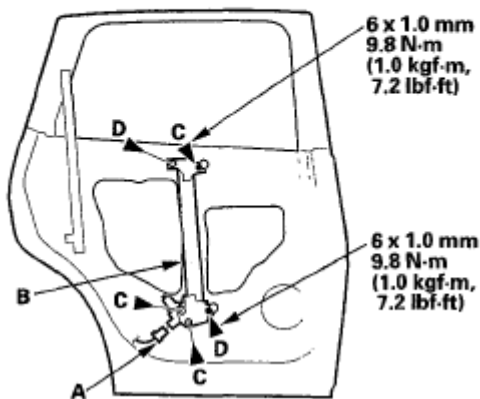
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the connector (A) from the regulator (B).

Fastener Locations

**C ▶ : Bolt, 3
(Silver)**

**D ▶ : Bolt, 2
(Black)**

**Fig. 72: Identifying Connector And Regulator With Torque Specifications**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the bolts (C), and loosen the bolt (D), then remove the regulator through the hole in the door.
11. Apply multipurpose grease to all the sliding surfaces of the regulator (A) where shown.

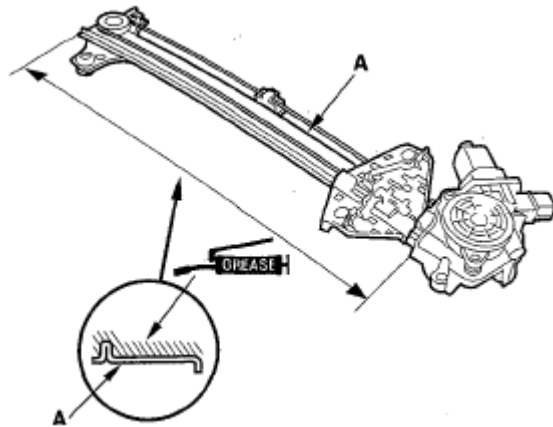


Fig. 73: Identifying Regulator Dimension

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the glass and regulator in the reverse order of removal, and note these items:
 - Roll the glass up and down to see if it moves freely without binding.
 - Make sure that there is no clearance between the glass and glass run channel when the glass is closed.
 - Adjust the position of the glass as necessary (see **FRONT AND REAR DOOR GLASS ADJUSTMENT**).
 - Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
 - Check for water leaks (see step 7).
 - Test-drive and check for wind noise and rattles.
 - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.

REAR DOOR SASH INNER TRIM REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the door.

1. Remove the door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
2. Using a clip remover, detach the clips fastening the rear door sash inner trim (A).

Fastener Locations

▷ : Clip, 2

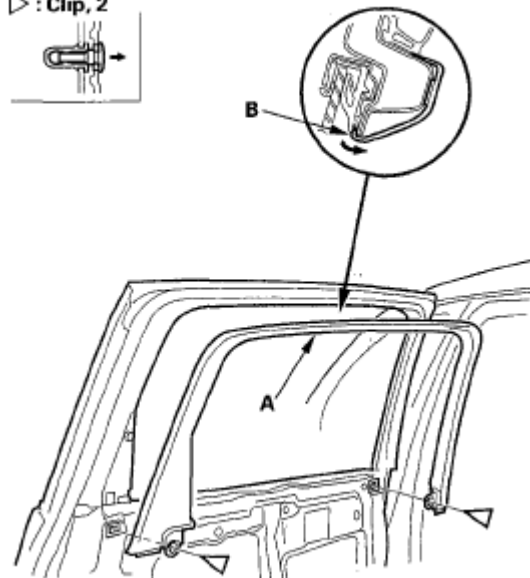
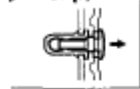


Fig. 74: Identifying Rear Door Sash Inner Trim And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the door glass opening side of the trim back to release the hooks (B) from the door glass opening flange of the door sash.
4. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the hooks and clips into place securely.

REAR DOOR SASH OUTER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Lower the glass fully.
2. Using a clip remover, detach the clips fastening the door weatherstrip (A) from the door sash outer trim (B).

Fastener Locations

▷ : Clip, 5

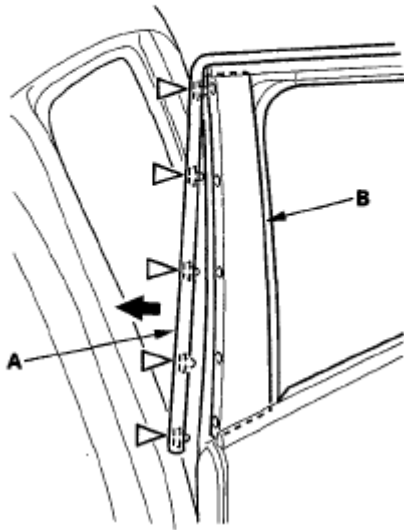


Fig. 75: Identifying Door Weatherstrip And Door Sash Outer Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the door sash outer trim (A).
 1. Pull back the door weatherstrip (B), then remove the screw.
 2. Pull the trim up to release the hooks (C) from the door. Take care not to damage the door glass outer weatherstrip (D).

Fastener Location

► : Screw, 1

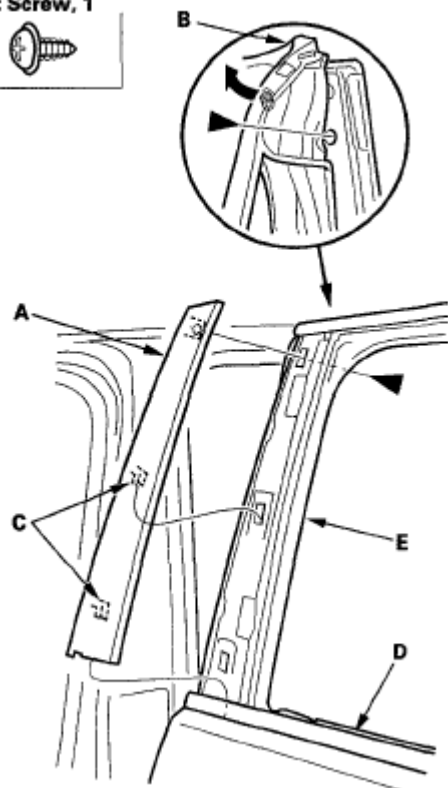


Fig. 76: Identifying Door Sash Outer Trim, Door Weatherstrip And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
 - Make sure the glass run channel (E) is installed in the door sash securely.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

REAR DOOR REAR SASH OUTER TRIM REPLACEMENT

NOTE: Take care not to scratch the door.

1. Lower the glass fully.
2. Remove the door rear sash outer trim (A).
 1. Pull back the door weatherstrip (B), then remove the screw.
 2. Pull the trim up to release the hooks (C) from the door. Take care not to damage the door glass outer weatherstrip (D).

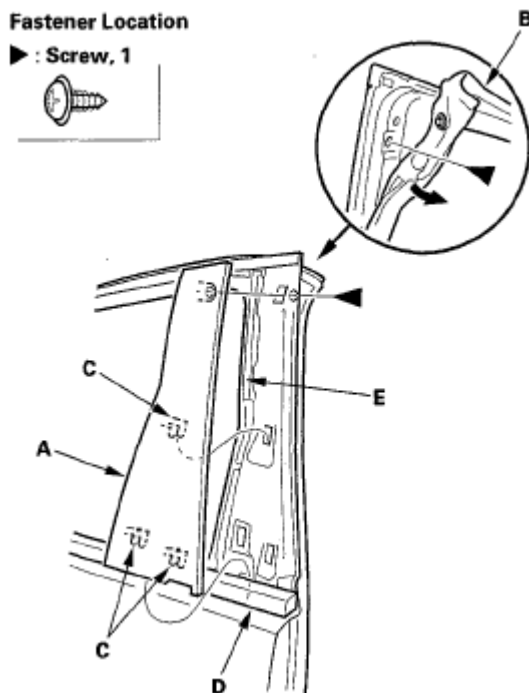


Fig. 77: Identifying Door Weatherstrip, Door Rear Sash Outer Trim And Door Glass Outer Weatherstrip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and make sure the glass run channel (E) is installed in the door sash securely.

REAR DOOR GLASS OUTER WEATHERSTRIP REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- If you remove the door glass outer weatherstrip, replace it with a new one because it will bend.
- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the door panel (see REAR DOOR PANEL REMOVAL/INSTALLATION).
2. Remove the screws from both side edges of the door.

Fastener Locations

► : Screw, 2

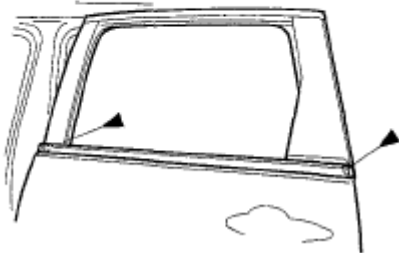


Fig. 78: Identifying Screws

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Starting at the rear, pull the door glass outer weatherstrip (A) up at each portion where the inner molding (B) catches the inside edge of the window slot.

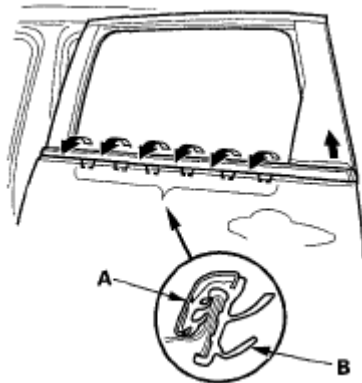


Fig. 79: Identifying Door Glass Outer Weatherstrip And Inner Molding

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the door glass outer weatherstrip (A).

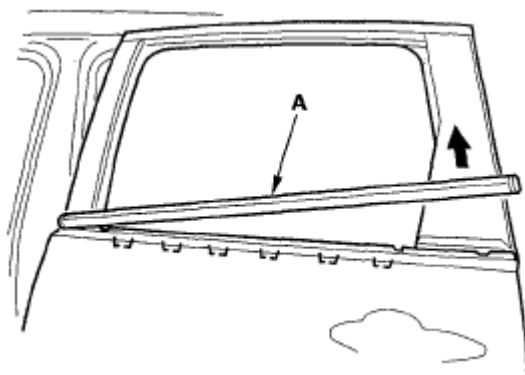


Fig. 80: Identifying Door Glass Outer Weatherstrip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install a new weatherstrip in the reverse order of removal.

REAR DOOR OUTER MOLDING REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014*

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- If you remove the door outer molding, replace it with a new one because it will bend during removal.
- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Release the rear clip (A).

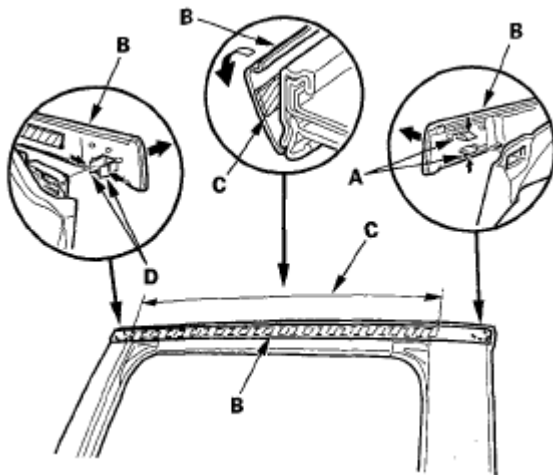


Fig. 81: Identifying Rear Clip, Door Outer Molding And Double-Sided Adhesive Tape
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. While removing the upper edge of the door outer molding (B) from the edge of the sash, cut the double-sided adhesive tape (C) with a utility knife, release the front clip (D), then remove the molding.
3. Scrape off the remaining double-sided adhesive tape from the sash, then clean the sash surface with a sponge dampened in isopropyl alcohol.
4. Install a new door outer molding in the reverse order of removal, and note these items:
 - Push the clips and the adhesive portions into place securely.

- Make sure the upper and lower sides of the molding are catching the edges of the sash properly.

REAR DOOR WEATHERSTRIP REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the door.
- Use a clip remover to remove the clips.

1. At the B-pillar, remove the door checker mounting bolt (A).

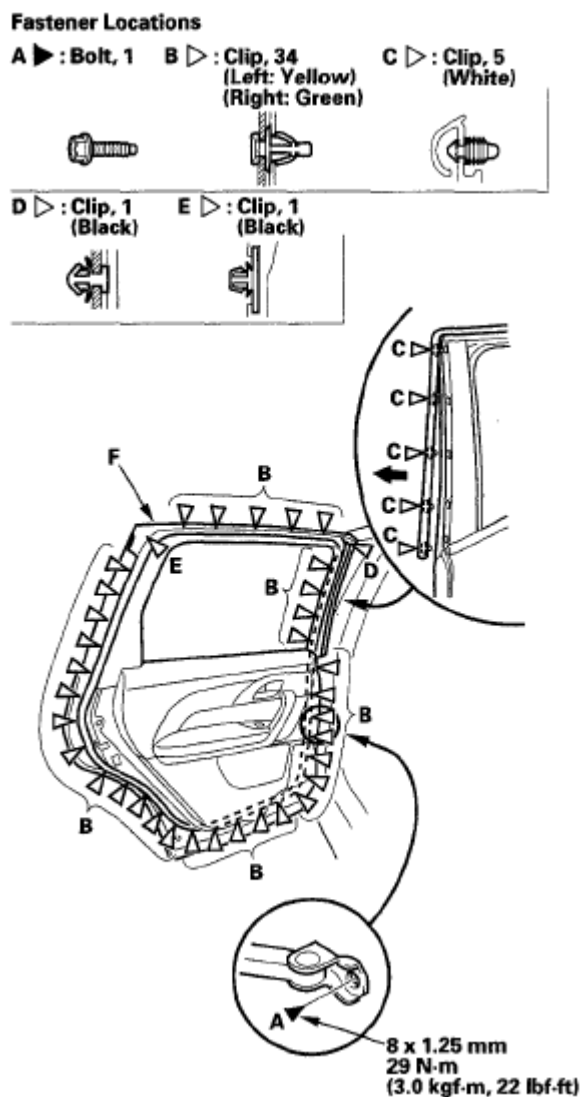


Fig. 82: Identifying Door Checker Mounting Bolt And Clips With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Detach the clips (B, C, D, E), then remove the door weatherstrip (F).

3. Install the weatherstrip in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Apply medium strength type liquid thread lock to the door checker mounting bolt before installation.
 - Check for water leaks (see step 7).

REAR DOOR SIDE SILL SEAL REPLACEMENT

NOTE:

- Take care not to scratch the door.
- Use a clip remover to remove the clips.

1. Detach the clips, then remove the door side sill seal (A).

Fastener Locations

▷ : Clip, 8
(Black)

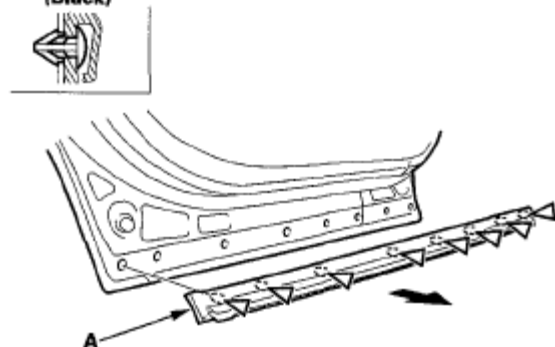


Fig. 83: Identifying Door Side Sill Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the side sill seal in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.
 - Check for water leaks (see step 7).

FRONT AND REAR DOOR GLASS ADJUSTMENT

NOTE:

Check the weatherstrip and glass run channel for damage or deterioration, and replace them if necessary.

1. Place the vehicle on a firm, level surface.
2. Remove these items:
 - Door panel:
 - Front door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)

- Rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)
 - Plastic cover:
 - Front door (see step 3)
 - Rear door (see step 3)
3. Carefully move the glass (A) until you can see the glass mounting bolts (B), then loosen them.

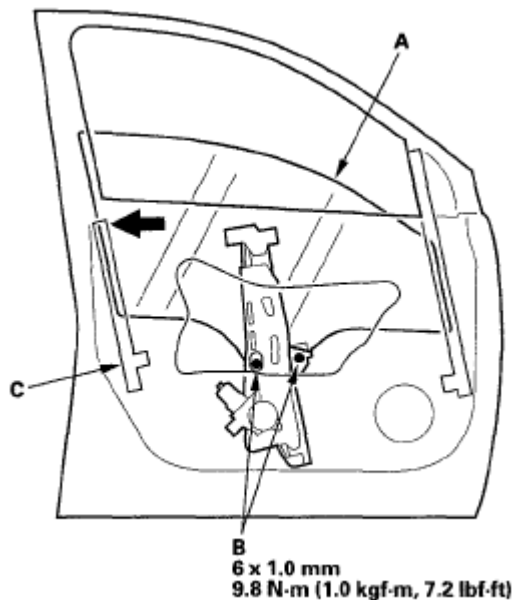
Front

Fig. 84: Identifying Glass And Glass Mounting Bolts - Front With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear

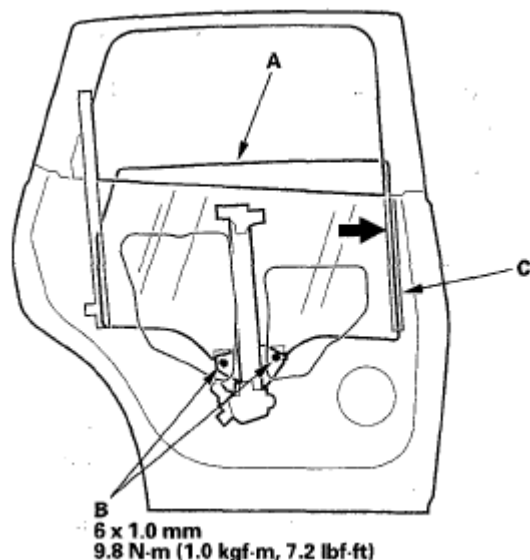


Fig. 85: Identifying Glass And Glass Mounting Bolts - Rear With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Push the glass against the channel (C), then tighten the glass mounting bolts.
5. Check that the glass moves smoothly.
6. Raise the glass fully, and check for gaps. Also make sure that the glass (A) contacts the glass run channel (B) evenly.

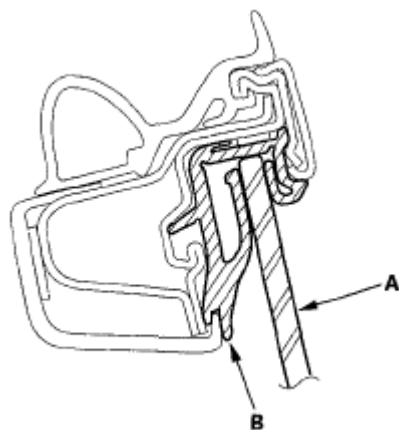


Fig. 86: Identifying Glass And Glass Run Channel
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check for water leaks. Run water over the roof and on the sealing area as shown, and note these items:
 - Use a 12 mm (1/2 in.) diameter hose (A).
 - Adjust the rate of water flow as shown (B).
 - Do not use a nozzle.
 - Hold the hose about 300 mm (12 in.) away from the door (C).

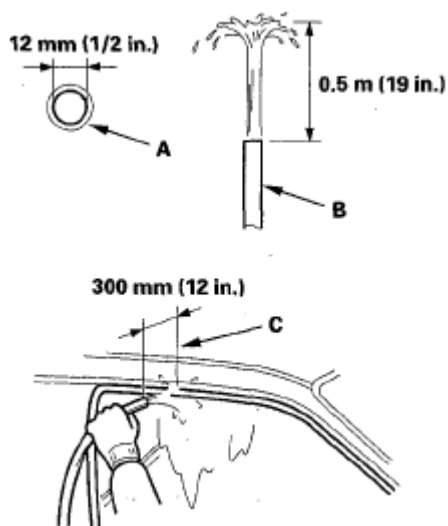


Fig. 87: Identifying Water Leakage

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Attach the plastic cover, making sure it is sealed around its outside perimeter to seal out water, then install the door panel:
 - Front door (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**)
 - Rear door (see **REAR DOOR PANEL REMOVAL/INSTALLATION**)

FRONT AND REAR DOOR POSITION ADJUSTMENT

NOTE: Check for a flush fit with the body, then check for equal gaps between the front, rear, and bottom door edges and the body. Check that the door and body edges are parallel.

1. Place the vehicle on a firm, level surface when adjusting the doors.
2. Adjust at the hinges (A):
 - Pad a floor jack (B) with shop towels (C), then use the jack to support the door to prevent damage to the door while adjusting it.
 - On the front door: Remove the front inner fender (see **FRONT INNER FENDER REPLACEMENT**). Loosen the hinge mounting bolts (D) slightly, and move the door backward or forward, up or down as necessary to equalize the gaps.
 - On the rear door: Loosen the hinge mounting bolts (E) slightly, and move the door backward or forward, up or down as necessary to equalize the gaps.

Front door

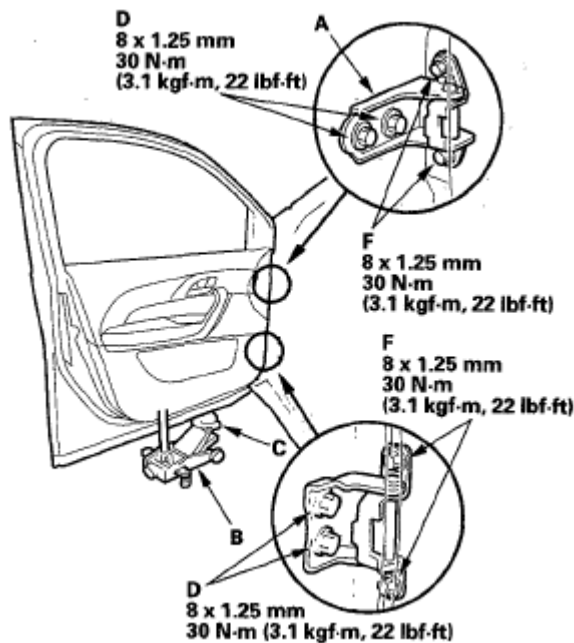


Fig. 88: Identifying Floor Jack, Shop Towels And Hinge Mounting Bolts - Front Door With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear door

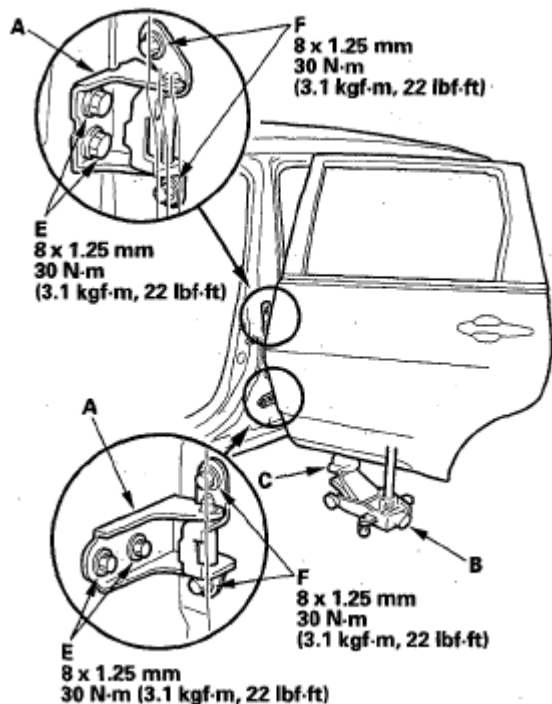


Fig. 89: Identifying Floor Jack, Shop Towels And Hinge Mounting Bolts - Rear Door With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, replace the door mounting bolts with the adjusting bolts (P/N 90102-SFA-305) made specifically for door adjustment, then adjust at the door: Loosen the door mounting bolts (F) slightly, and move the door up or down as necessary to equalize the gaps, and move it in or out until it's flush with the body.
4. Check that the door and body edges are parallel. If necessary, adjust the door cushions (A) to make the rear of the doors flush with the body.

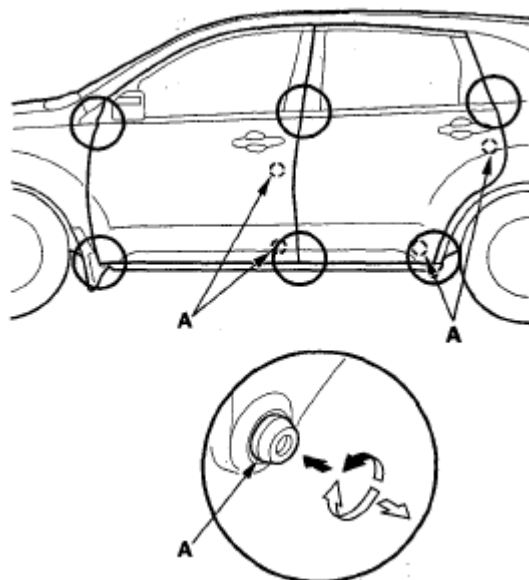


Fig. 90: Identifying Door Cushions

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply touch-up paint to the hinge mounting bolts, and around the hinges.
6. Check for water leaks (see step 7).

FRONT AND REAR DOOR STRIKER ADJUSTMENT

Make sure the door latches securely without slamming it. If necessary, adjust the striker (A): The striker nuts are fixed, but the striker can be adjusted slightly up or down, and in or out.

1. Loosen the screws (B).

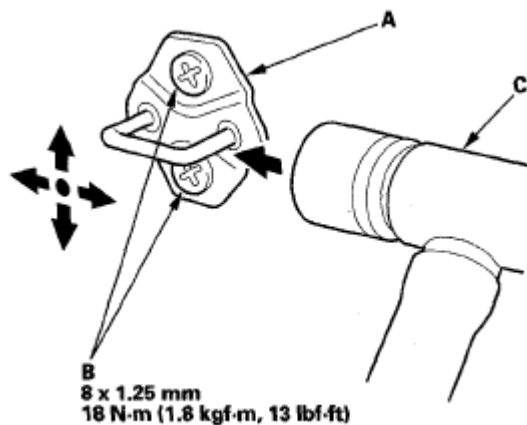


Fig. 91: Identifying Striker And Screws With torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Wrap the striker with a shop towel, then adjust the striker by tapping it with a plastic hammer (C). Do not tap the striker too hard.
3. Lightly tighten the screws.
4. Hold the outer handle out, and push the door against the body to be sure the striker allows a flush fit. If the door latches properly, tighten the screws and recheck.

2007-09 ACCESSORIES AND EQUIPMENT

Driver Position Memory System (DPMS) - MDX

COMPONENT LOCATION INDEX

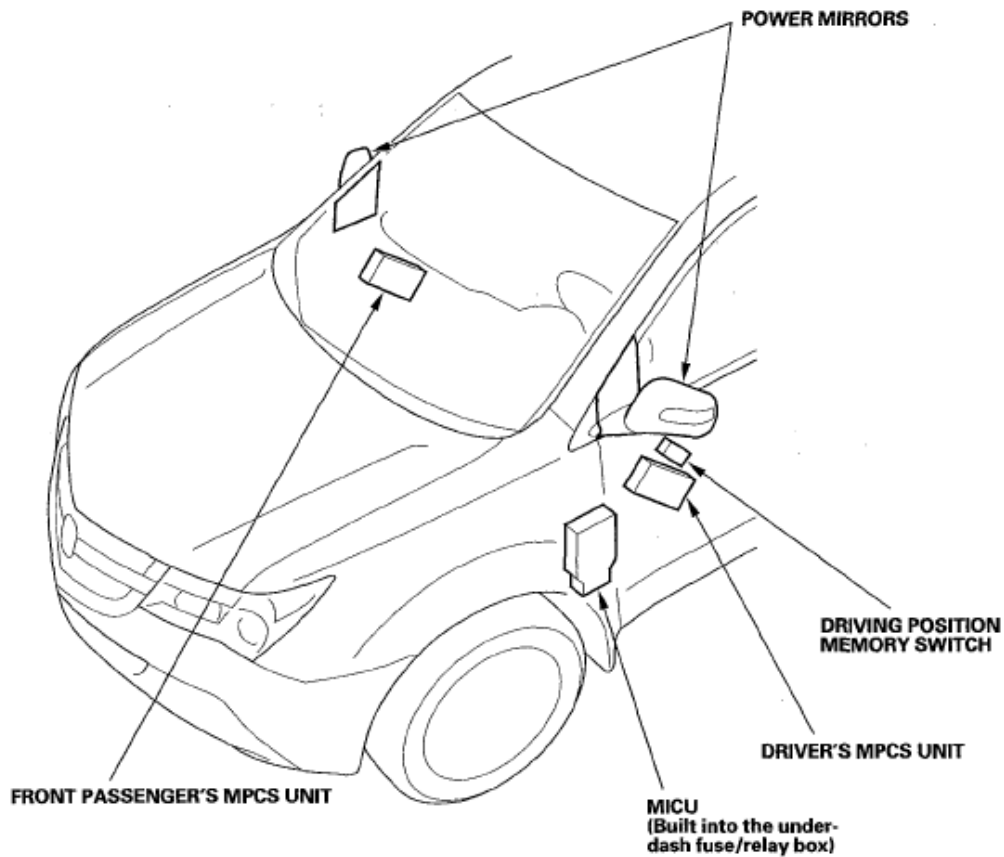


Fig. 1: Identifying Driver Position Memory System (DPMS) Component Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

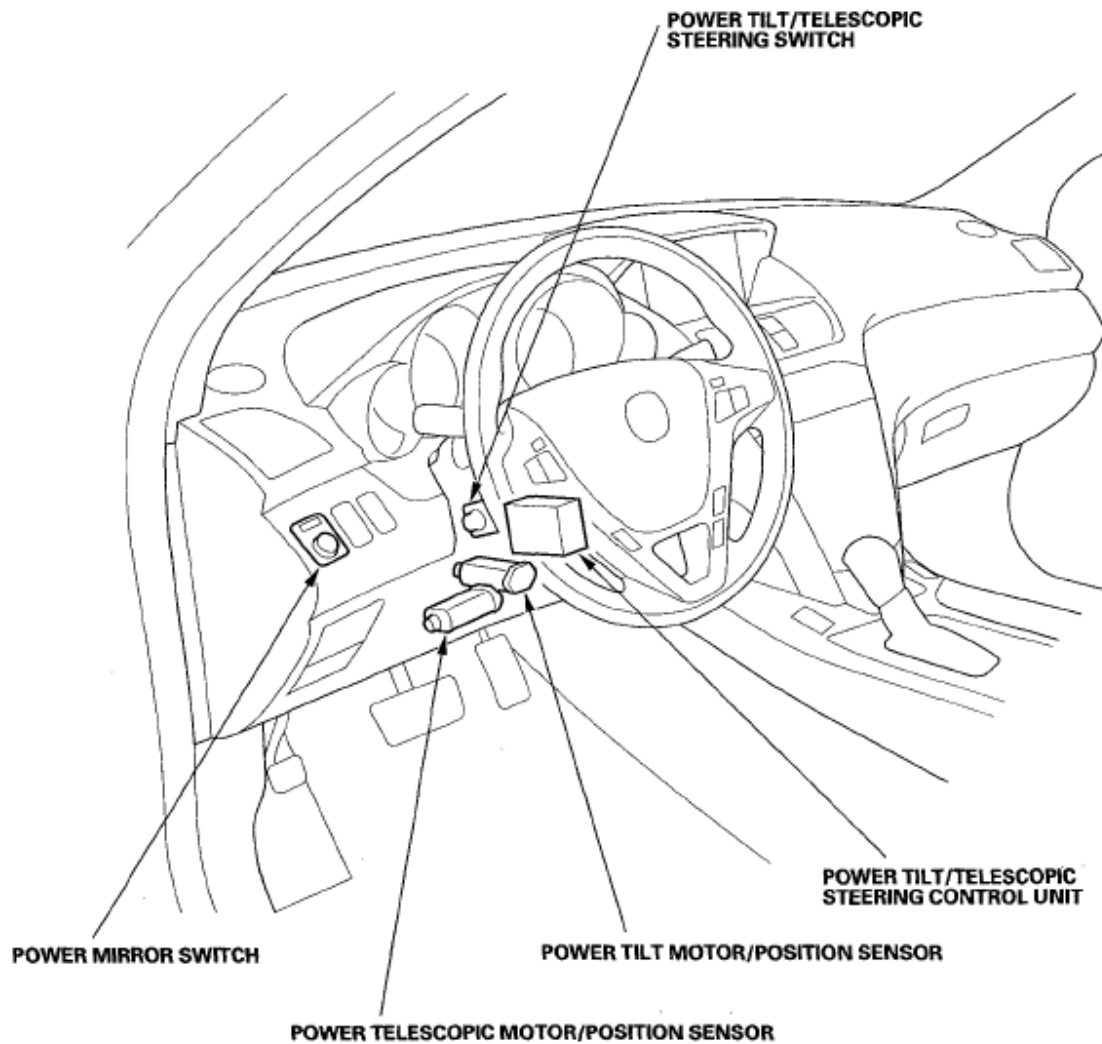


Fig. 2: Identifying Driver Position Memory System (DPMS) Component Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

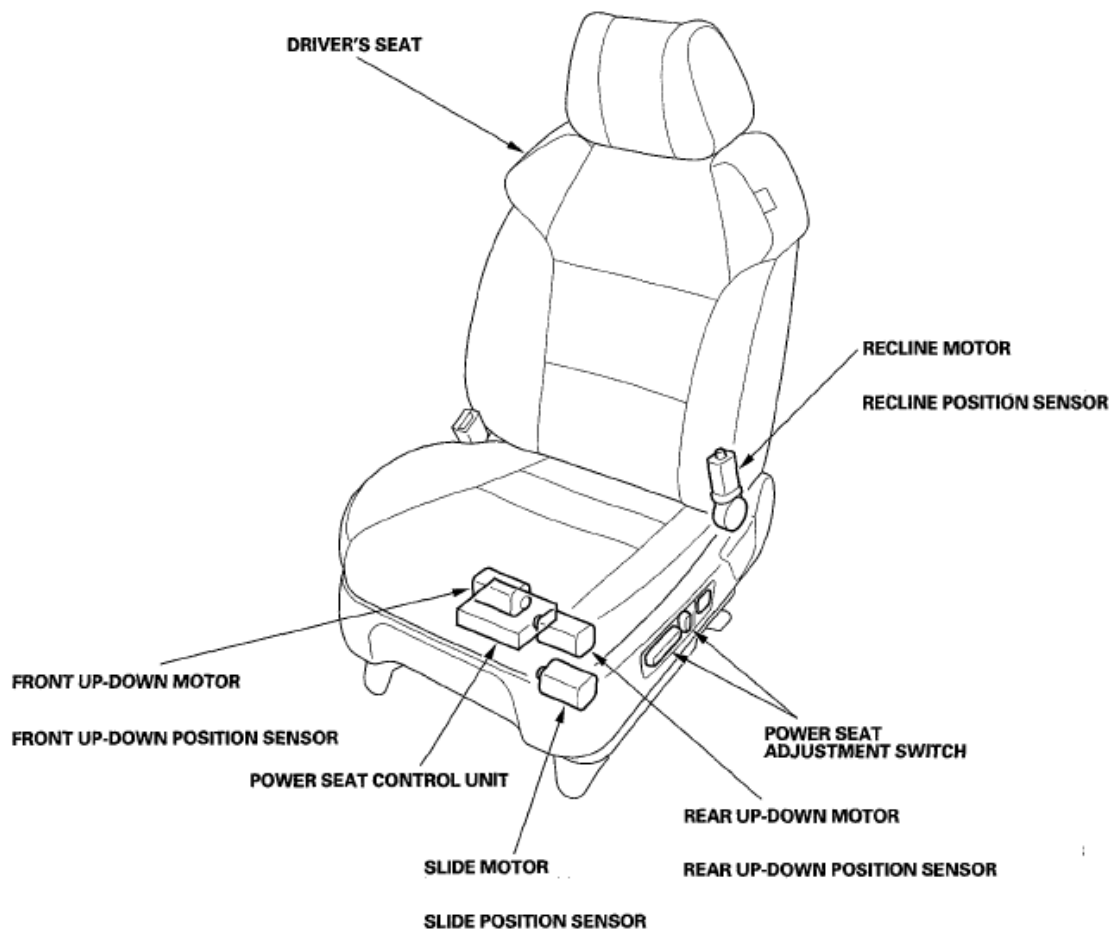


Fig. 3: Identifying Driver Position Memory System (DPMS) Component Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - POWER TILT/TELESCOPIC STEERING

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

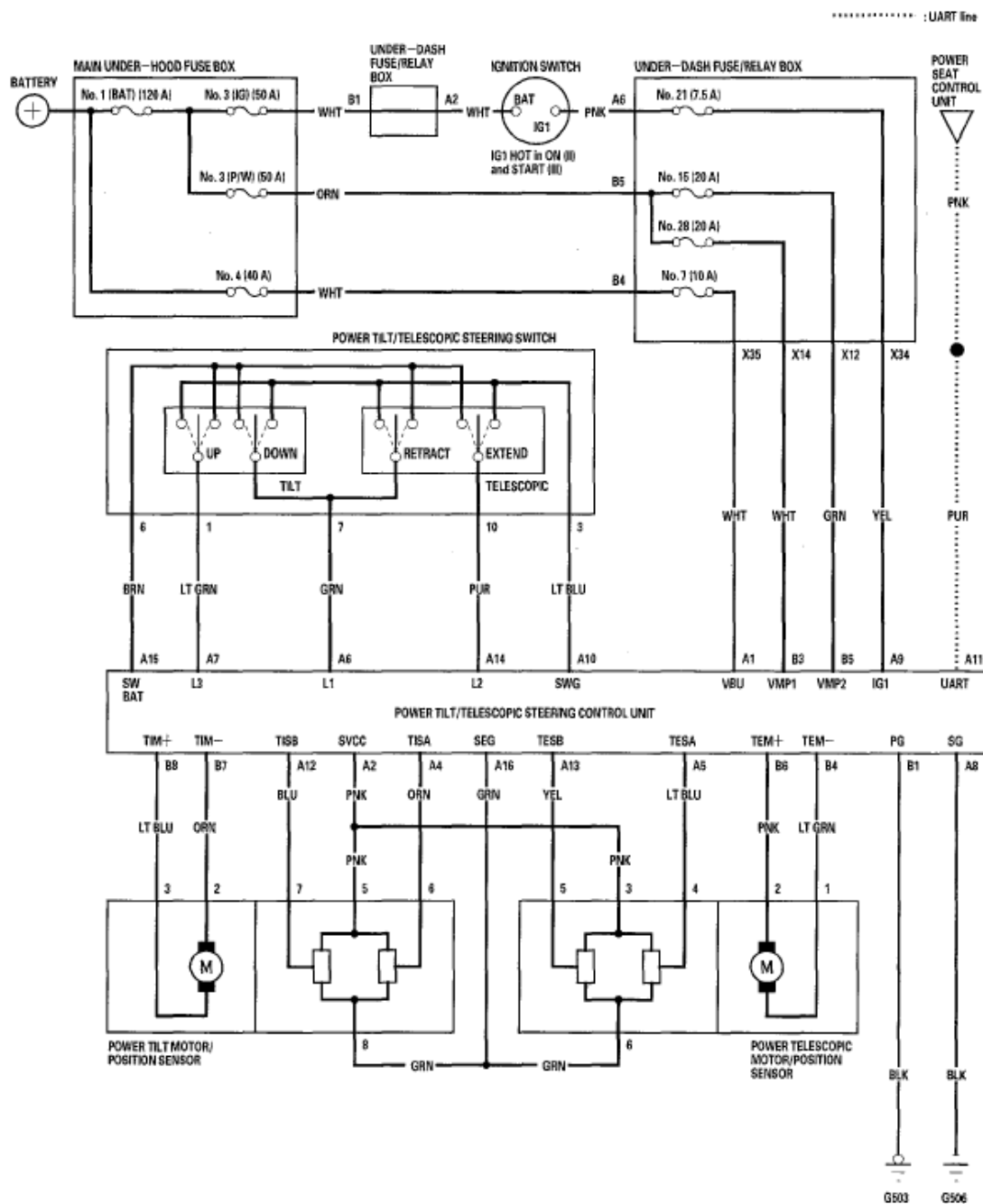


Fig. 4: Circuit Diagram - Power Tilt/Telescopic Steering
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - POWER SEAT

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

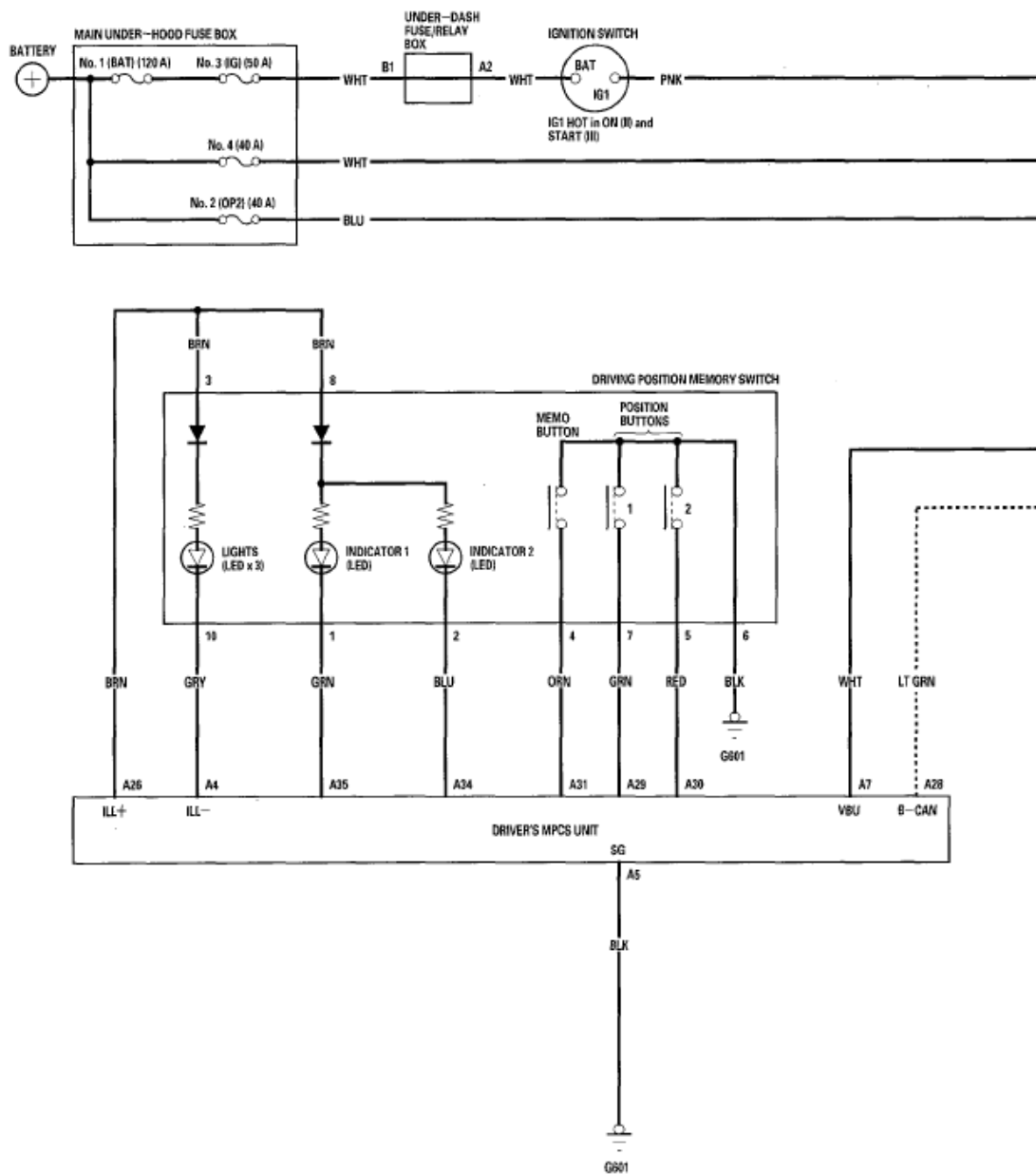


Fig. 5: Circuit Diagram - Power Seat (1 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

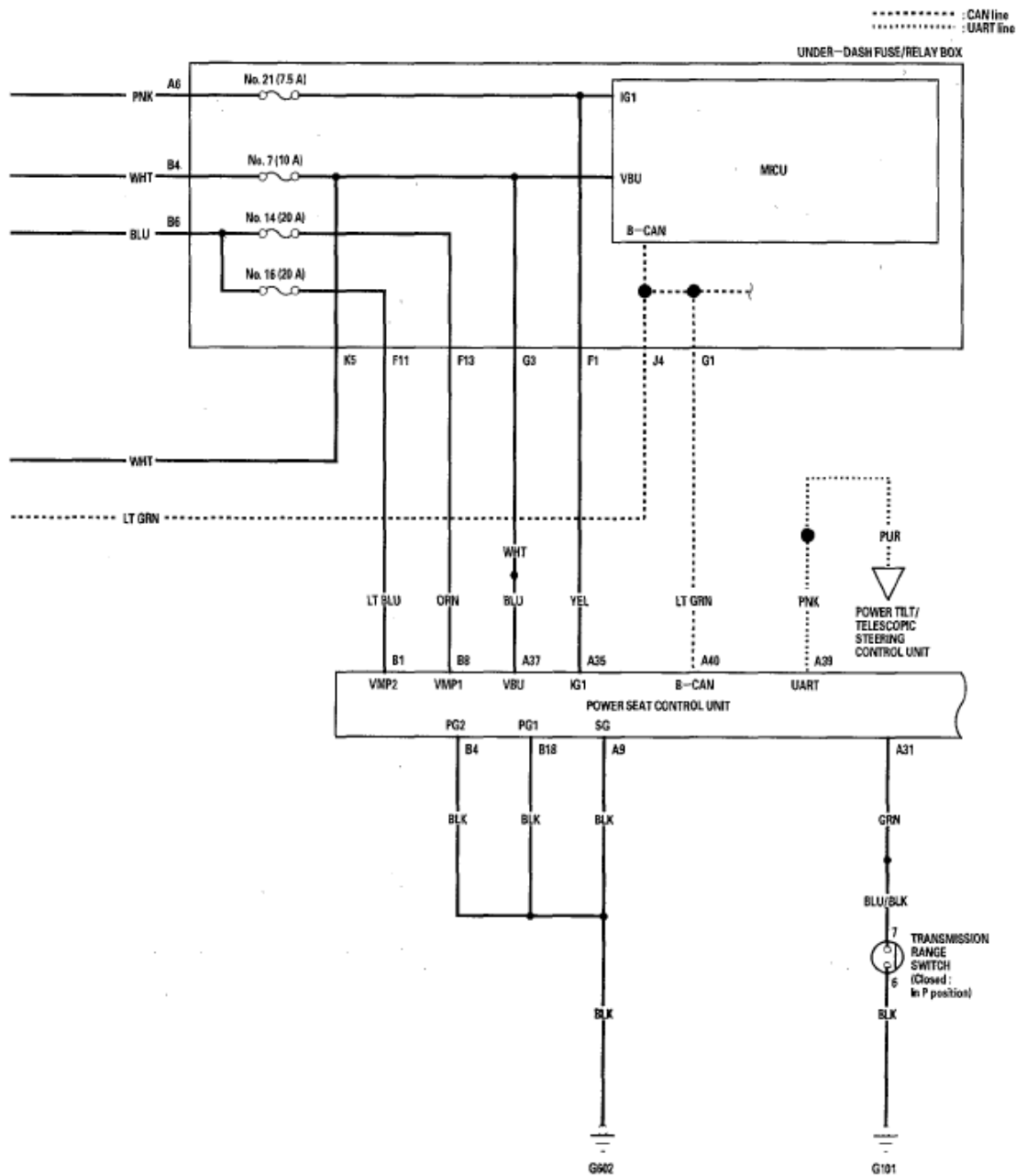


Fig. 6: Circuit Diagram - Power Seat (2 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

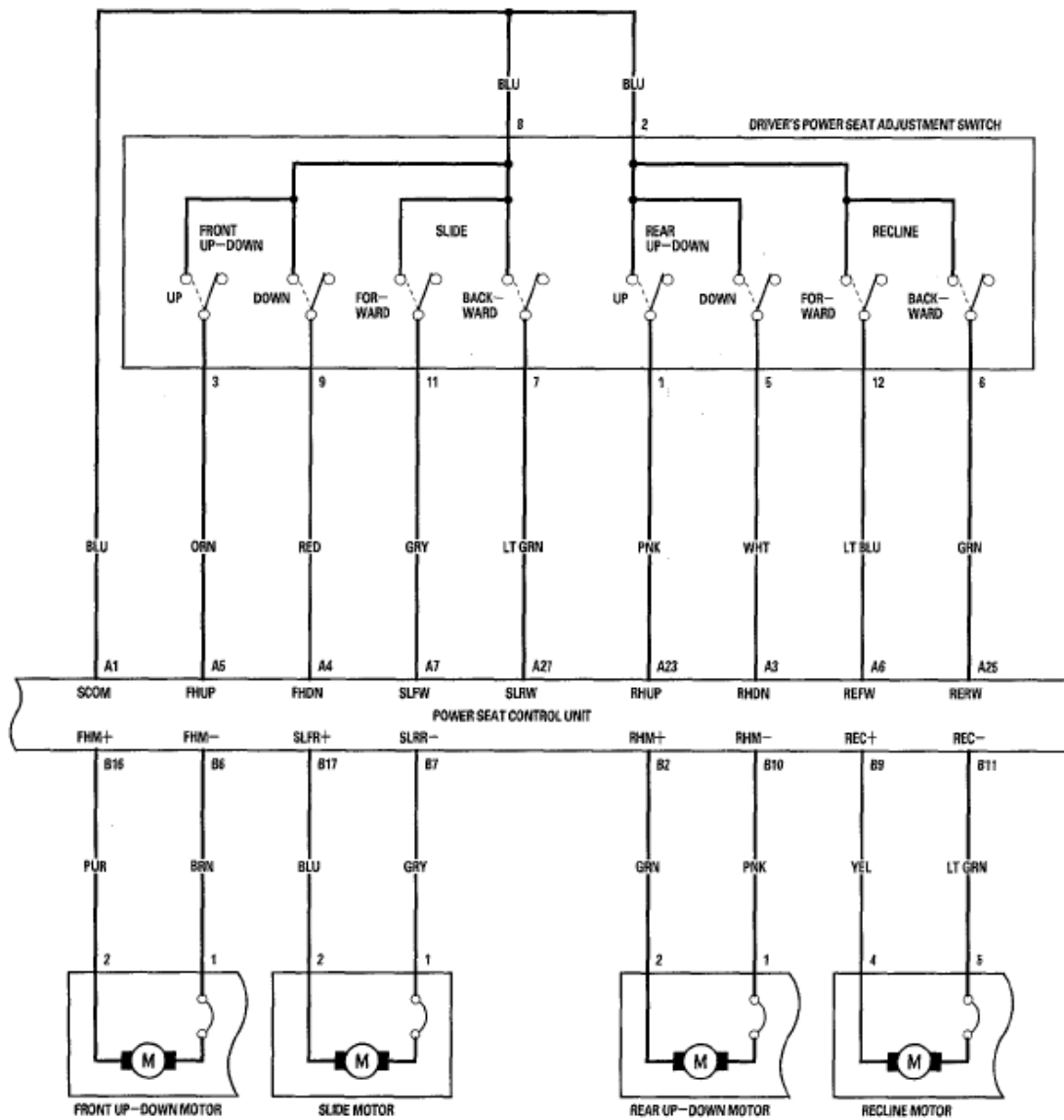


Fig. 7: Circuit Diagram - Power Seat (3 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

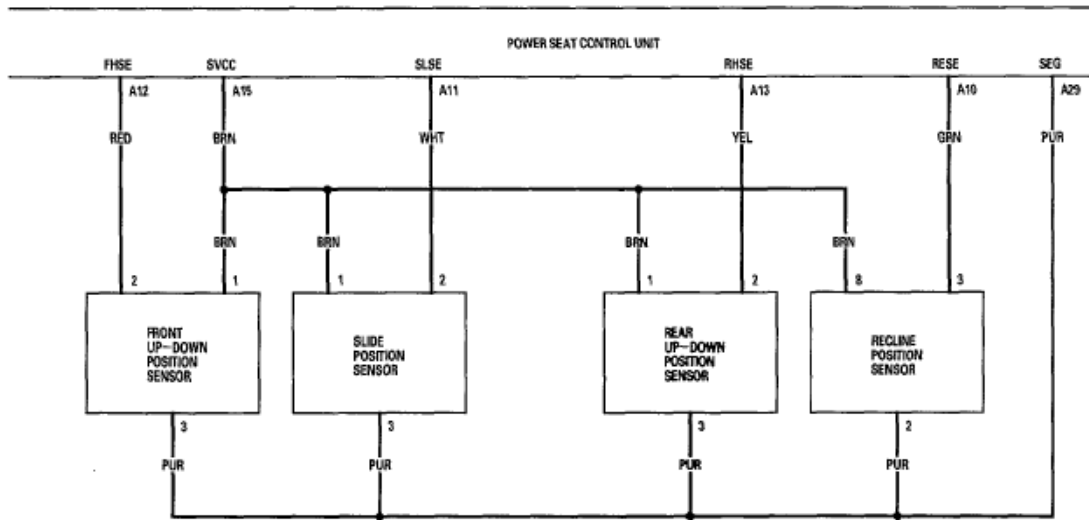


Fig. 8: Circuit Diagram - Power Seat (4 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - POWER MIRROR

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX



..... : CAN line
 : UART line

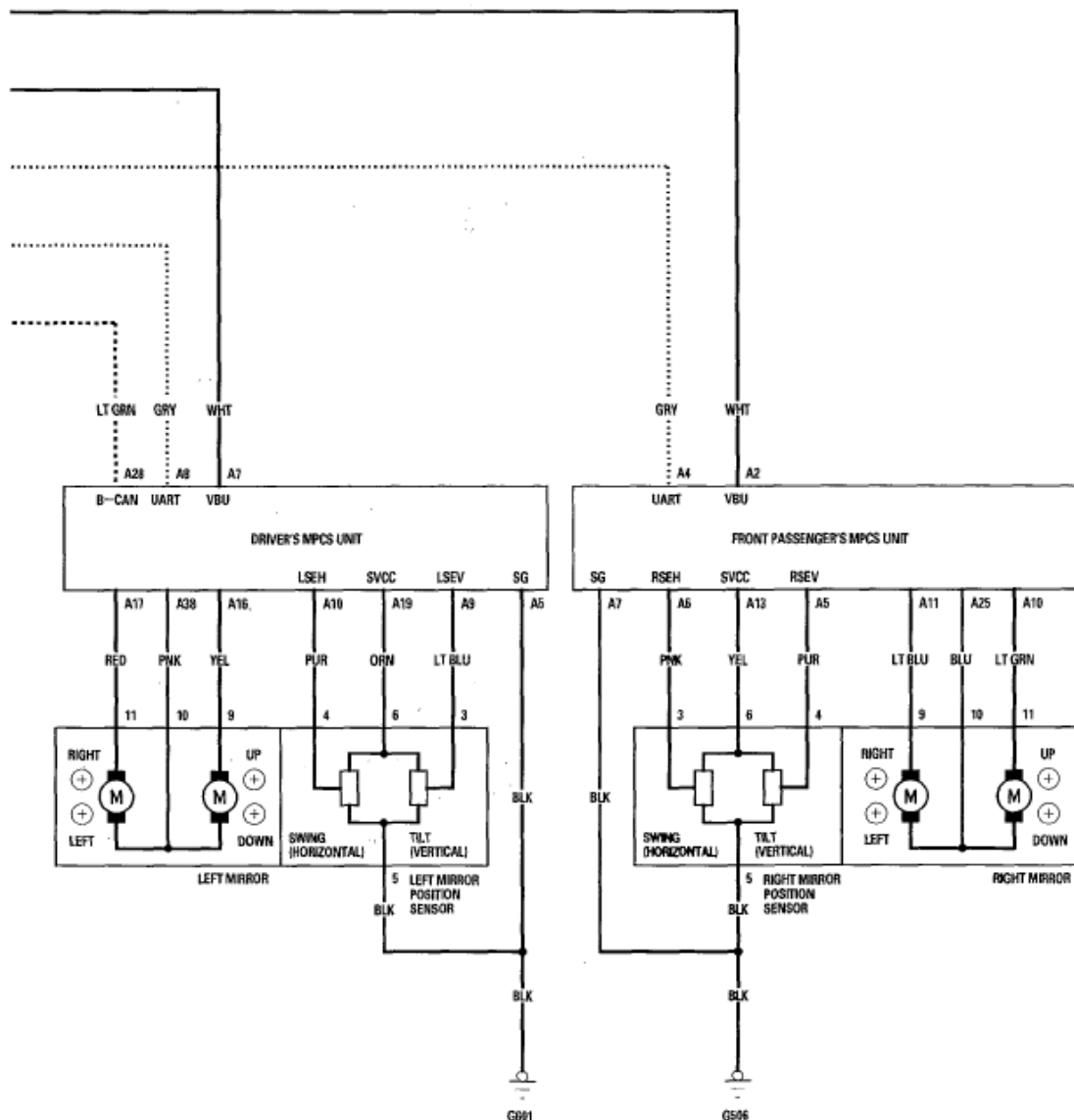


Fig. 10: Circuit Diagram - Power Mirror (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1802: POWER SEAT CONTROL UNIT INTERNAL (EEPROM) ERROR

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

4. Check for DTCs with the HDS.

Is DTC B1802 indicated?

YES - Replace the power seat control unit.

NO - Intermittent failure, the system is OK at this time.

DTC B1805: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VSP/NE MESSAGE); DTC B1808: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (A/T MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1805 and/or B1808 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power seat control unit and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1011, B1060, B1061, B1205, B1357, B1359, B1408, B1805, B1806, B1906, and B2160 also indicated?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Replace the power seat control unit.

DTC B1806: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH MICU (MICU MESSAGE); DTC B1810: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH MICU (MIRROR SW MESSAGE); DTC B1811: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH MICU (DOOR SW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1806, B1810, and/or B1811 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connection between the power seat control unit and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1057, B1157, B1159, B1255, B1355, B1955, B2155, B2156, and B2161 also indicated?

YES - Do the MICU input test (see **MICU INPUT TEST**).

NO - Do the power seat control unit input test (see **POWER SEAT CONTROL UNIT INPUT TEST**).

DTC B1812: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MPCS UNIT (MEM SW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1812 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power seat control unit and the driver's MPCS unit.

5. Check for DTCs with the HDS.

Are DTCs B1013, B1015, B1065, B1182, B1356, B1358, and B1905 also indicated?

YES - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

NO - Do the power seat control unit input test (see **POWER SEAT CONTROL UNIT INPUT TEST**).

DTC B1825: POWER SEAT SLIDE MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

DTC B1825 is stored when the slide switch is operated more than 1 second after the seat slides to the most forward or most backward position even when the system is OK.

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.
3. Operate the power seat adjustment switch in all directions for more than 1 second each.
4. Check for DTCs with the HDS.

Is DTC B1825 indicated?

YES - Go to step 5.

NO - Intermittent failure, the slide position sensor is OK at this time. Check for loose or poor connections at the power seat control unit connector.

5. Check for DTCs with the HDS.

Is DTC B1836 also indicated?

YES - Troubleshoot DTC B1836 first.

NO - Go to step 6.

6. Check for DTCs with the HDS.

Are DTCs B1826, B1827 and/or B1828 also indicated?

YES - Go to step 17.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the slide switch for 2 seconds, and check the slide motor operation.

Does the slide motor run smoothly?

YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the slide position sensor 4P connector.
12. Check for continuity between the power seat control unit connector A (40P) No. 11 and No. 29 terminals and the slide position sensor 4P connector No. 2 and No. 3 terminals respectively.

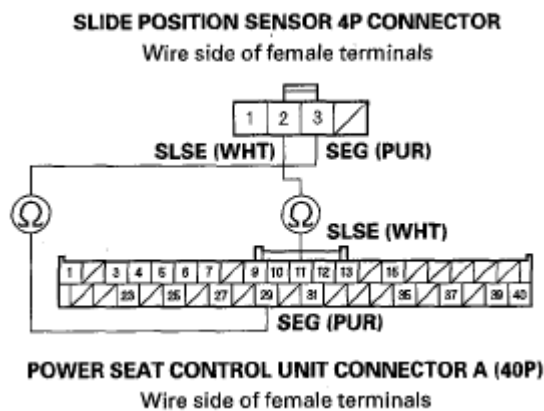


Fig. 11: Identifying Continuity Between No. 11 And No. 29 Terminals And No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between body ground and the power seat control unit connector A (40P) No. 11 terminal.

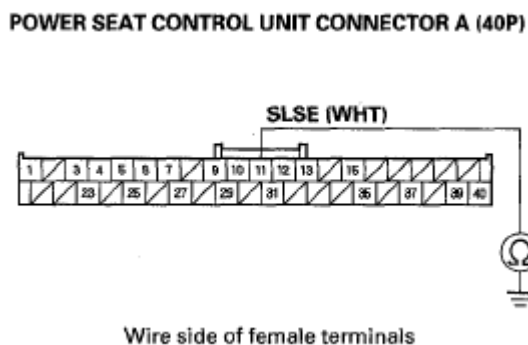


Fig. 12: Identifying Continuity Between Body Ground And Power Seat Control Unit Connector A (40P) No. 11 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

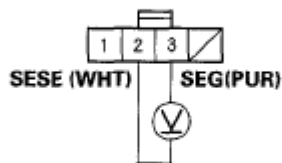
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power seat control unit connector A (40P).
15. Turn the ignition switch ON (II).
16. Measure the voltage between the slide position sensor 4P connector No. 2 (+) and No. 3 (-) terminals.

SLIDE POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 13: Identifying Voltage Between Slide Position Sensor 4P Connector No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Faulty slide position sensor, replace the slide motor.

NO - If there is no voltage, replace the power seat control unit. If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0).
18. Disconnect power seat control unit connector A (40P).
19. Disconnect the slide position sensor 4P connector.
20. Check for continuity between the power seat control unit connector A (40P) No. 15 and No. 29 terminals and the slide position sensor 4P connector No. 1 and No. 3 terminals respectively.

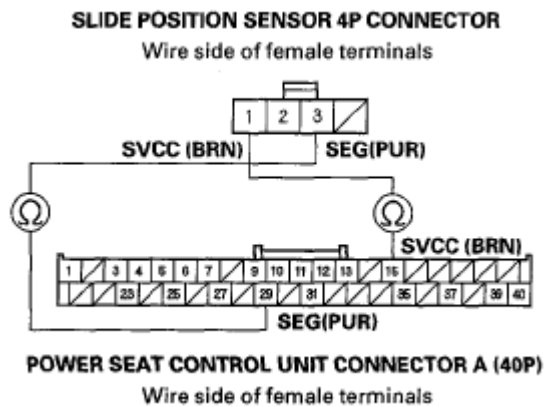


Fig. 14: Identifying Continuity Between No. 15 And No. 29 Terminals And No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

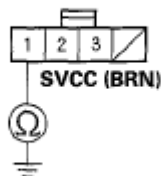
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the 4P connector from the front up-down position sensor and the rear up-down position sensor, then disconnect the recline motor/ lumbar support motor 8P connector.
22. Check for continuity between body ground and the slide position sensor 4P connector No. 1 terminal.

SLIDE POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 15: Identifying Continuity Between Body Ground And Slide Position Sensor 4P Connector No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

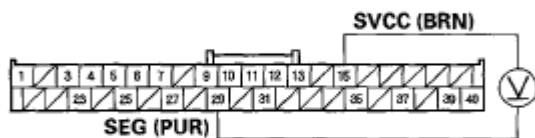
NO - Go to Step 23.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

23. Reconnect power seat control unit connector A (40P).
24. Turn the ignition switch ON (II).
25. Measure the voltage the between power seat control unit connector A (40P) No. 15 and No. 29 terminals.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 16: Identifying Voltage Between Power Seat Control Unit Connector A (40P) No. 15 And No. 29 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the slide switch is operated?

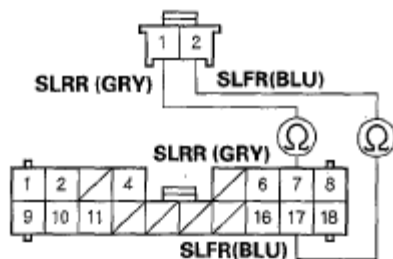
YES - Replace the slide motor/position sensor.

NO - Replace the power seat control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power seat control unit connector B (18P).
28. Disconnect the slide motor 2P connector.
29. Check for continuity between the power seat control unit connector B(18P) No. 7 and No. 17 terminals and the slide motor 2P connector No. 1 and No. 2 terminals respectively:

SLIDE MOTOR 2P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR B (18P)

Wire side of female terminals

Fig. 17: Identifying Continuity Between No. 7 And No. 17 Terminals And No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

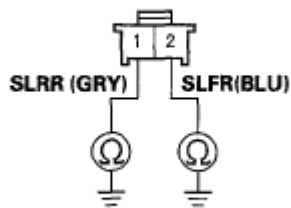
Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire.

30. Check for continuity between body ground and the slide motor 2P connector No. 1 and No. 2 terminals individually.

SLIDE MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 18: Identifying Continuity Between Body Ground And Slide Motor 2P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the slide motor (see **SLIDE MOTOR, FRONT UP-DOWN MOTOR, REAR UP-DOWN MOTOR**).

Is the motor OK?

YES - Replace the power seat control unit.

NO - Replace the slide motor/position sensor.

DTC B1826: POWER SEAT FRONT UP-DOWN MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

DTC B1826 is stored when the front up-down switch is operated more than 1 second after the seat moves to the most up or most down position, even when the system is OK.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.
3. Operate the power seat adjustment switch in all directions for more than 1 second each.
4. Check for the DTCs with the HDS.

Is DTC B1826 indicated?

YES - Go to step 5.

NO - Intermittent failure, the front up-down motor/ position sensor is OK at this time. Check for loose or poor connections at the power seat control unit connectors.

5. Check for DTCs with the HDS.

Is DTC B1836 also indicated?

YES - Troubleshoot DTC B1836 first.

NO - Go to step 6.

6. Check for DTCs with the HDS.

Are DTCs B1825, B1827 and/or B1828 also indicated?

YES - Go to step 17.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the front up-down switch for 2 seconds, and check the front up-down motor operation.

Does the front up-down motor run smoothly?

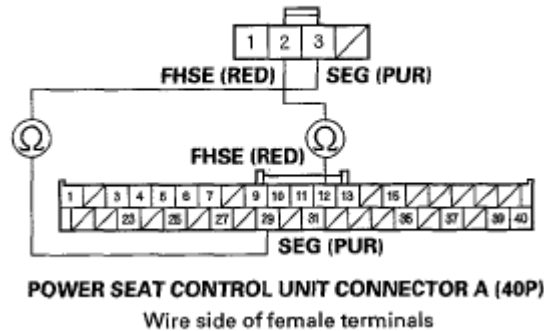
YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the front up-down position sensor 4P connector.
12. Check for continuity between the power seat control unit connector A (40P) No. 12 and No. 29 terminals and the front up-down position sensor 4P connector No. 2 and No. 3 terminals respectively.

FRONT UP-DOWN POSITION SENSOR 4P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 19: Identifying Continuity Between No. 12 And No. 29 Terminals And No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

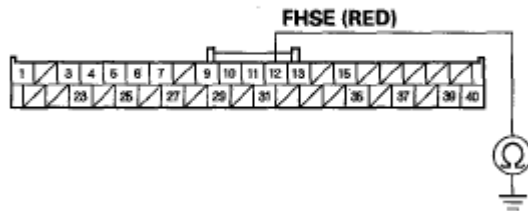
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the power seat control unit connector A (40P) No. 12 terminal and body ground.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 20: Identifying Continuity Between Power Seat Control Unit Connector A (40P) No. 12 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is Mere continuity?

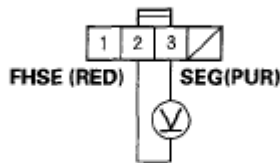
YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power seat control unit connector A (40P).

15. Turn the ignition switch ON (II).
16. Measure the voltage between the front up-down position sensor 4P connector No. 2 (+) and No. 3 (-) terminals.

FRONT UP-DOWN POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 21: Identifying Voltage Between Front Up-Down Position Sensor 4P Connector No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

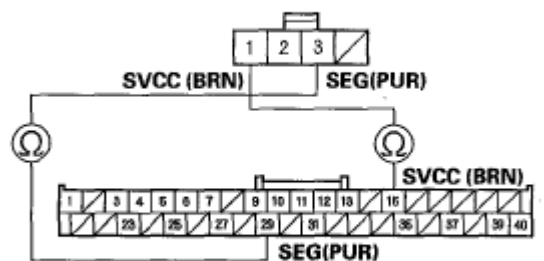
YES - Faulty front up-down position sensor, replace the front up-down motor.

NO - If there is no voltage, replace the power seat control unit. If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0).
18. Disconnect power seat control unit connector A (40P).
19. Disconnect the front up-down position sensor 4P connector.
20. Check for continuity between the power seat control unit connector A (40P) No. 15 and No. 29 terminals and the front up-down position sensor 4P connector No. 1 and No. 3 terminals respectively.

FRONT UP-DOWN POSITION SENSOR 4P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 22: Identifying Continuity Between No. 15 And No. 29 Terminals And No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

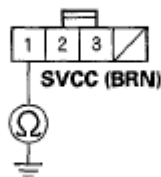
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the 4P connector from the slide position sensor and the rear up-down position sensor, then disconnect the recline motor/lumbar support motor 8P connector.
22. Check for continuity between body ground and the front up-down position sensor 4P connector No. 1 terminal.

FRONT UP-DOWN POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 23: Identifying Continuity Between Body Ground And Front Up-Down Position Sensor 4P Connector No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

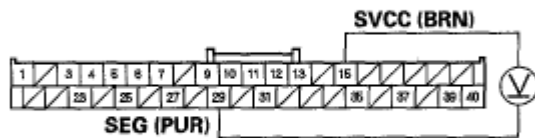
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 23.

23. Reconnect power seat control unit connector A (40P).
24. Turn the ignition switch ON (II).
25. Measure the voltage between the power seat control unit connector A (40P) No. 15 and No. 29 terminals.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 24: Identifying Voltage Between Power Seat Control Unit Connector A (40P) No. 15 And No. 29 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the front up-down switch is operated?

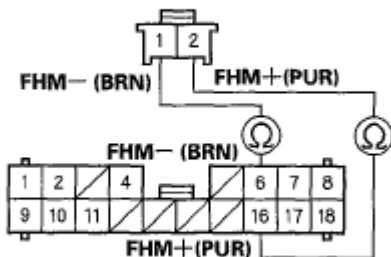
YES - Replace the front up-down motor/position sensor.

NO - Replace the power seat control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power seat control unit connector B (18P).
28. Disconnect the front up-down motor 2P connector.
29. Check for continuity between the power seat control unit connector B (18P) No. 6 and No. 16 terminals and the front up-down motor 2P connector No. 1 and No. 2 terminals respectively.

FRONT UP-DOWN MOTOR 2P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR B (18P)

Wire side of female terminals

Fig. 25: Identifying Continuity Between No. 6 And No. 16 Terminals And No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

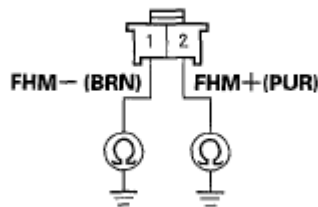
Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire.

30. Check for continuity between body ground and the front up-down motor 2P connector No. 1 and No. 2 terminals individually.

FRONT UP-DOWN MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 26: Identifying Continuity Between Body Ground And Front Up-Down Motor 2P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the front up-down motor (see **SLIDE MOTOR, FRONT UP-DOWN MOTOR, REAR UP-DOWN MOTOR**).

Is the motor OK?

YES - Replace the power seat control unit.

NO - Replace the front up-down motor/position sensor.

DTC B1827: POWER SEAT REAR UP-DOWN MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

DTC B1827 is stored when the rear up-down switch is operated more than 1 second after the seat moves to the most up or most down position, even when the system is OK.

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.
3. Operate the power seat adjustment switch in all directions for more than 1 second each.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

4. Check for the DTCs with the HDS.

Is DTC B1827 indicated?

YES - Go to step 5.

NO - Intermittent failure, the rear up-down motor/ position sensor is OK at this time. Check for loose or poor connections at the power seat control unit connectors.

5. Check for DTCs with the HDS.

Is DTC B1836 also indicated?

YES - Troubleshoot DTC B1836 first.

NO - Go to step 6.

6. Check for DTCs with the HDS.

Are DTCs B1825, B1826, and/or B1828 also indicated?

YES - Go to step 17.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the rear up-down switch for 2 seconds, and check the rear up-down motor operation.

Does the rear up-down motor run smoothly?

YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the rear up-down position sensor 4P connector.
12. Check for continuity between the power seat control unit connector A (40P) No. 13 and No. 29 terminals and the rear up-down position sensor 4P connector No. 2 and No. 3 terminals respectively.

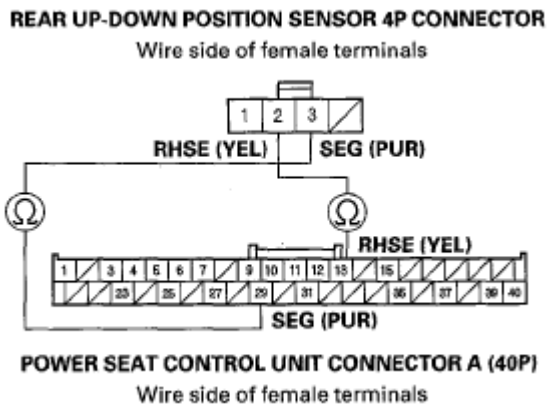


Fig. 27: Identifying Continuity Between No. 13 And No. 29 Terminals And No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the power seat control unit connector A (40P) No. 13 terminal and body ground.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)

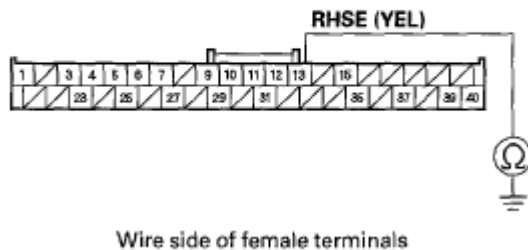


Fig. 28: Identifying Continuity Between Power Seat Control Unit Connector A (40P) No. 13 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

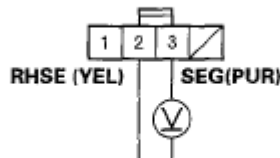
YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power seat control unit connector A (40P).

15. Turn the ignition switch ON (II).
16. Measure the voltage between the rear up-down position sensor 4P connector No. 2 (+) and No. 3 (-) terminals.

REAR UP-DOWN POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 29: Identifying Voltage Between Rear Up-Down Position Sensor 4P Connector No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

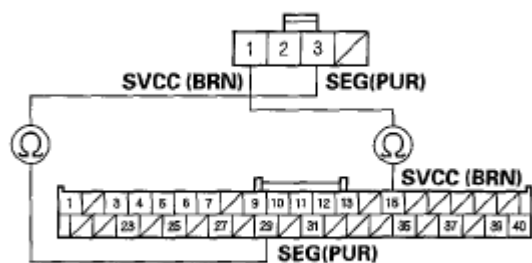
YES - Faulty rear up-down position sensor, replace the rear up-down motor.

NO - If there is no voltage, replace the power seat control unit. If there is battery voltage, repair a short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0).
18. Disconnect power seat control unit connector A (40P).
19. Disconnect the rear up-down position sensor 4P connector.
20. Check for continuity between the power seat control unit connector A (40P) No. 15 and No. 29 terminals and the rear up-down position sensor 4P connector No. 1 and No. 3 terminals respectively.

REAR UP-DOWN POSITION SENSOR 4P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 30: Identifying Continuity Between No. 15 And No. 29 Terminals And No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

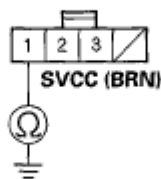
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the 4P connector from the slide position sensor and the front up-down position sensor, then disconnect the recline motor/lumbar support motor 8P connector.
22. Check for continuity between body ground and the rear up-down position sensor 4P connector No. 1 terminal.

REAR UP-DOWN POSITION SENSOR 4P CONNECTOR



Wire side of female terminals

Fig. 31: Identifying Continuity Between Body Ground And Rear Up-Down Position Sensor 4P Connector No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

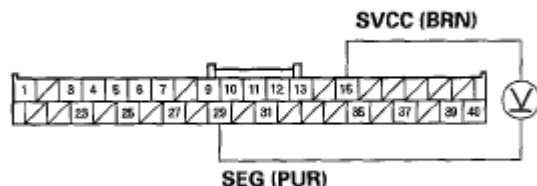
NO - Go to step 23.

23. Reconnect power seat control unit connector A (40P).
24. Turn the ignition switch ON (II).
25. Measure the voltage between the power seat control unit connector A (40P) No. 15 and No. 29 terminals.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 32: Identifying Voltage Between Power Seat Control Unit Connector A (40P) No. 15 And No. 29 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the rear up-down switch is operated?

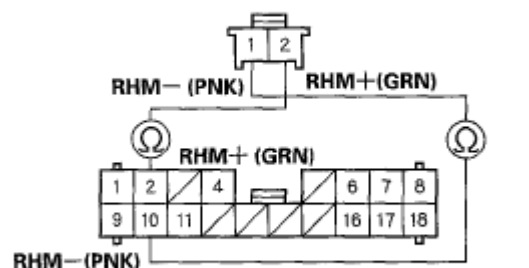
YES - Replace the rear up-down motor/position sensor.

NO - Replace the power seat control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power seat control unit connector B (18P).
28. Disconnect the rear up-down motor 2P connector.
29. Check for continuity between the power seat control unit connector B (18P) No. 2 and No. 10 terminals and the rear up-down motor 2P connector No. 1 and No. 2 terminals respectively.

REAR UP-DOWN MOTOR 2P CONNECTOR

Wire side of female terminals



POWER SEAT CONTROL UNIT CONNECTOR B (18P)

Wire side of female terminals

Fig. 33: Identifying Continuity Between No. 2 And No. 10 Terminals And No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

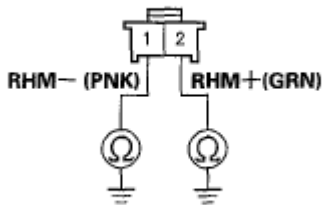
Is there continuity?

YES -Go to step 30.

NO -Repair open in the wire.

30. Check for continuity between body ground and the rear up-down motor 2P connector No. 1 and No. 2 terminals individually.

REAR UP-DOWN MOTOR 2P CONNECTOR



Wire side of female terminals

Fig. 34: Identifying Continuity Between Body Ground And Rear Up-Down Motor 2P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the rear up-down motor (see **SLIDE MOTOR, FRONT UP-DOWN MOTOR, REAR UP-DOWN MOTOR**).

Is the motor OK?

YES - Replace the power seat control unit.

NO - Replace the rear up-down motor/position sensor.

DTC B1828: POWER SEAT RECLINE MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

DTC B1828 is stored when the recline switch is operated more than 1 second after the seat back reclines to the most forward or most backward position, even when the system is OK.

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

3. Operate the power seat adjustment switch in all directions for more than 1 second each.
4. Check for the DTCs with the HDS.

Is DTC B1828 indicated?

YES - Go to step 5.

NO - Intermittent failure, the recline motor/position sensor is OK at this time. Check for loose or poor connections at the power seat control unit connector.

5. Check for DTCs with the HDS.

Is DTC B1836 also indicated?

YES - Troubleshoot DTC B1836 first.

NO - Go to step 6.

6. Check for DTCs with the HDS.

Are DTCs B1825, B1826, and/or B1827 also indicated?

YES - Go to step 17.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the recline switch for 2 seconds, and check the recline motor operation.

Does the recline motor run smoothly?

YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power seat control unit connector A (40P).
11. Disconnect the recline motor/lumbar support motor subharness 8P connector.
12. Check for continuity between the power seat control unit connector A (40P) No. 10 and No. 29 terminals and the recline motor/lumbar support motor subharness 8P connector No. 2 and No. 3 terminals respectively.

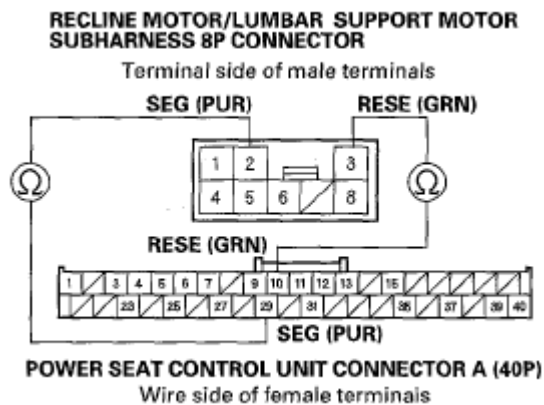


Fig. 35: Identifying Continuity Between No. 10 And No. 29 Terminals And No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the power seat control unit connector A (40P) No. 10 terminal and body ground.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)

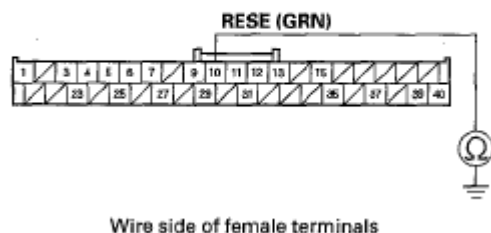


Fig. 36: Identifying Continuity Between Power Seat Control Unit Connector A (40P) No. 10 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

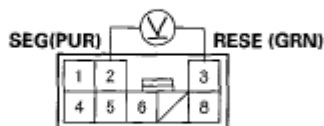
YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power seat control unit connector A (40P).
15. Turn the ignition switch ON (II).

16. Measure the voltage between the recline motor/ lumbar support motor subharness 8P connector No. 3 (+) and No. 2 (-) terminals.

**RECLINE MOTOR/LUMBAR SUPPORT MOTOR
SUBHARNES 8P CONNECTOR**



Terminal side of male terminals

Fig. 37: Identifying Voltage Between Recline Motor/ Lumbar Support Motor Subharness 8P Connector No. 3 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

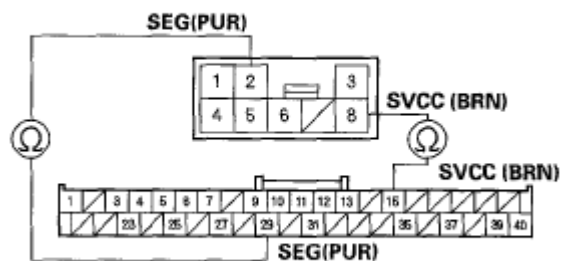
YES - Check for an open/short in the wire of the recline motor/lumbar support motor subharness. If the harness is OK, replace the recline motor/ position sensor.

NO - If there is no voltage, replace the power seat control unit. If there is battery voltage, repair short in the wire (sensor line).

17. Turn the ignition switch to LOCK (0).
18. Disconnect power seat control unit connector A (40P).
19. Disconnect the recline motor/lumbar support motor subharness 8P connector.
20. Check for continuity between the power seat control unit connector A (40P) No. 15 and No. 29 terminals and the recline motor/lumbar support motor subharness 8P connector No. 2 and No. 8 terminals respectively.

**RECLINE MOTOR/LUMBAR SUPPORT MOTOR
SUBHARNES 8P CONNECTOR**

Terminal side of male terminals



POWER SEAT CONTROL UNIT CONNECTOR A (40P)

Wire side of female terminals

Fig. 38: Identifying Continuity Between No. 15 And No. 29 Terminals And No. 2 And No. 8 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

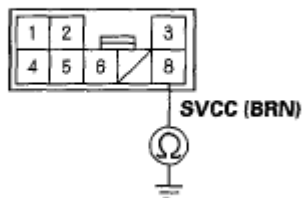
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the 4P connector from the slide position sensor, the front up-down position sensor, and the rear up-down position sensor.
22. Check for continuity between body ground and the recline motor/lumbar support subharness 8P connector No. 8 terminal.

**RECLINE MOTOR/LUMBAR SUPPORT MOTOR
SUBHARNES 8P CONNECTOR**



Terminal side of male terminals

Fig. 39: Identifying Continuity Between Body Ground And Recline Motor/Lumbar Support Subharness 8P Connector No. 8 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

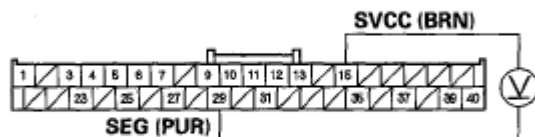
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 23.

23. Reconnect power seat control unit connector A (40P).
24. Turn the ignition switch ON (II).
25. Measure the voltage between the power seat control unit connector A (40P) No. 15 and No. 29 terminals.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 40: Identifying Voltage Between Power Seat Control Unit Connector A (40P) No. 15 And No. 29 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the recline switch is operated?

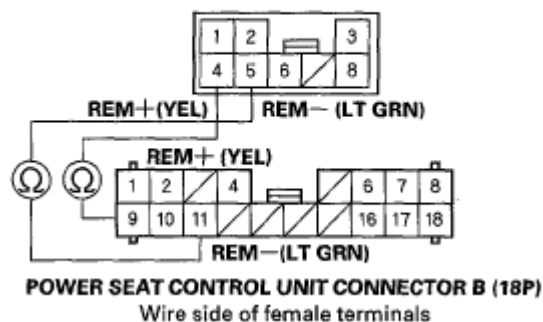
YES - Replace the recline motor/position sensor.

NO - Replace the power seat control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power seat control unit connector B (18P).
28. Disconnect the recline motor/lumbar support motor subharness 8P connector.
29. Check for continuity between the power seat control unit connector B (18P) No. 9 and No. 11 terminals and the recline motor/lumbar support motor subharness 8P connector No. 4 and No. 5 terminals respectively.

RECLINE MOTOR/LUMBAR SUPPORT MOTOR SUBHARNESS 8P CONNECTOR

Terminal side of male terminals



POWER SEAT CONTROL UNIT CONNECTOR B (18P)

Wire side of female terminals

Fig. 41: Identifying Continuity Between No. 9 And No. 11 Terminals And No. 4 And No. 5 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

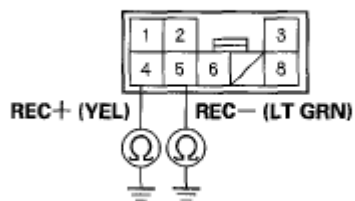
2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

NO - Repair open in the wire.

30. Check for continuity between body ground and the recline motor/lumbar support motor subharness 8P connector No. 4 and No. 5 terminals individually.

RECLINE MOTOR/LUMBAR SUPPORT MOTOR SUBHARNES 8P CONNECTOR



Terminal side of male terminals

Fig. 42: Identifying Continuity Between Body Ground And Recline Motor/Lumbar Support Motor Subharness 8P Connector No. 4 And No. 5 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the recline motor (see **SLIDE MOTOR, FRONT UP-DOWN MOTOR, REAR UP-DOWN MOTOR**).

Is the motor OK?

YES - Replace the power seat control unit.

NO - Replace the recline motor/position sensor.

DTC B1829: A/T P SIGNAL AND VSS SIGNAL MISMATCH

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Start the engine.
3. Test drive at 6 mph (10 km/h) for 10 seconds.
4. Check for the DTCs with the HDS.

Is DTC B1829 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the power seat control unit connector.

5. Check the P indicator of the A/T gear position indicator and the MIL.

Does the P indicator and MIL come on?

YES - Troubleshoot the automatic transmission system.

NO - Go to step 6.

6. Check for the gauge control module DTCs with the HDS.

Are there any DTCs indicated?

YES - Troubleshoot the gauge control module.

NO - Replace the power seat control unit.

DTC B1835: POWER TILT/TELESCOPIC STEERING SWITCH SIGNAL INPUT ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the tilt/telescopic switch in each direction for more than 3 seconds each.
4. Check for DTCs with the HDS.

Is DTC B1835 indicated?

YES - Go to step 5.

NO - Intermittent failure, the power tilt/telescopic steering system is OK at this time. Check for loose or poor connections at the tilt/telescopic switch connector and at the power tilt/telescopic control unit connector.

5. Turn the ignition switch to LOCK (0).
6. Test the power tilt/telescopic steering switch (see **POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES - Go to step 7.

NO - Replace the power tilt/telescopic steering switch.

7. Disconnect power tilt/telescopic steering control unit connector A (16P).
8. Disconnect the power tilt/telescopic steering switch 13P connector.
9. Check for continuity between body ground and power tilt/telescopic steering switch 13P connector No. 1, No. 3, No. 6, No. 7, and No. 10 terminals individually.

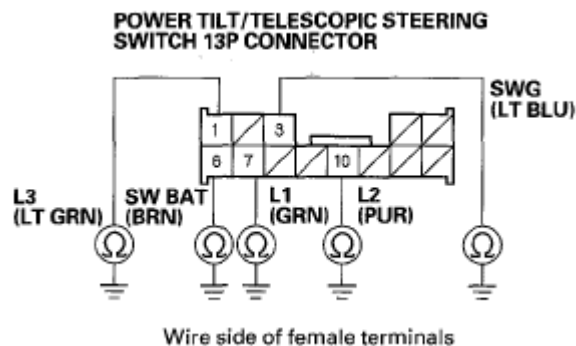


Fig. 43: Identifying Continuity Between Body Ground And No. 1, No. 3, No. 6, No. 7, And No. 10 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 10.

10. Check for continuity between power tilt/telescopic steering control unit connector A (16P) No. 7, No. 6, No. 10, No. 14, and No. 15 terminals and the power tilt/telescopic steering switch 13P connector No. 1, No. 7, No. 3, No. 10, and No. 6 terminals respectively.

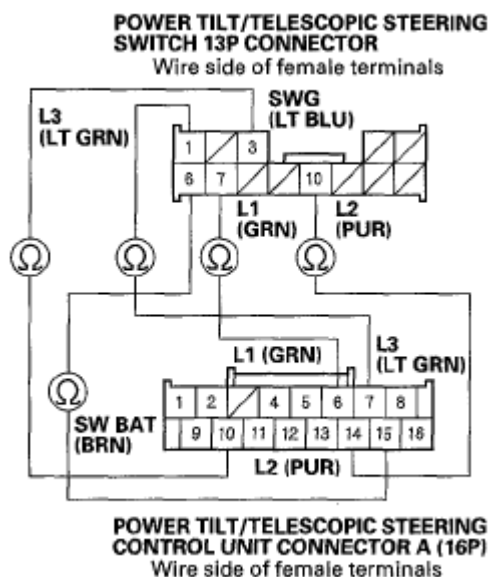


Fig. 44: Identifying Continuity Between No. 7, No. 6, No. 10, No. 14, And No. 15 Terminals And No. 1, No. 7, No. 3, No. 10, And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power tilt/telescopic steering control unit.

NO - Repair open in the wire.

DTC B1836: POWER SEAT POSITION SENSOR CIRCUIT SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the power seat adjustment switch in all direction for more than 1 second each.
4. Check for DTCs with the HDS.

Is DTC B1836 indicated?

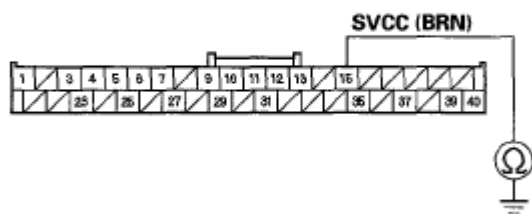
YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the power seat control unit connectors.

5. Turn the ignition switch to LOCK (0).

6. Disconnect power seat control unit connector A (40P).
7. Disconnect the 4P connectors from the slide position sensor, the front up-down position sensor, and the rear up-down position sensor, and disconnect the 8P connector from the recline motor/lumbar support motor subharness.
8. Check for continuity between power seat control unit connector A (40P) No. 15 terminal and body ground.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 45: Identifying Continuity Between Power Seat Control Unit Connector A (40P) No. 15 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

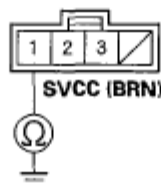
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between body ground (motor body) and the No. 1 terminal of the slide position sensor, the front up-down position sensor, and the rear up-down position sensor.

**SLIDE POSITION SENSOR CONNECTOR (4P)
FRONT UP-DOWN POSITION SENSOR CONNECTOR (4P)
REAR UP-DOWN POSITION SENSOR CONNECTOR (4P)**



Terminal side of male terminals

Fig. 46: Identifying Continuity Between Body Ground (Motor Body) And No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

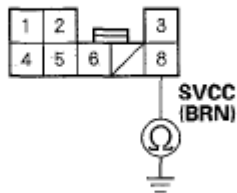
Is there continuity?

YES - Replace the motor/position sensor that has continuity.

NO - Go to step 10.

10. Check for continuity between body ground (seat frame) and the No. 8 terminal of the recline motor/lumbar support motor subharness 8P connector.

**RECLINE MOTOR/LUMBAR SUPPORT MOTOR
8P CONNECTOR**



Wire side of female terminals

Fig. 47: Identifying Continuity Between Body Ground (Seat Frame) And No. 8 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for a short to ground in the wire of the recline motor/lumbar support motor subharness. If the harness is bad, repair it, if the harness is OK, replace the recline motor/position sensor.

NO - Replace the power seat control unit.

DTC B1837: DRIVING POSITION MEMORY RECALL TIMEOUT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A)**.

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Move the steering position to the full tilt up and full telescopic out positions with the power tilt/telescopic steering switch.
4. Move both power mirrors to the full up and full left positions with the power mirror switch.
5. Move the power seat to the full front up and full rear up positions, then slide the seat all the way back and completely recline the seat-back backward with the power seat adjustment switch.
6. Put this seating position into memory with the driving position memory switch.
7. Manually move the seat away from the positions just memorized.
8. Recall the memory positions with the driving position memory switch.
9. Wait for 3 minutes.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

10. Check for DTCs with the HDS.

Are any DTCs indicated?

YES - Go to step 11.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

11. Check for DTCs with the HDS.

Are any DTCs other than B1837 indicated?

YES - Go to the indicated **DTCS TROUBLESHOOTING**.

NO - Go to step 12.

12. Clear the DTCs with the HDS, and wait for 6 seconds.

13. Move the motors shown one at a time, and check the operation time.

- Steering tilt motor up and down
- Steering telescopic motor pulled and pushed
- Power mirror actuator (up, down, left, right)
- Power seat (slide forward/backward, recline forward/backward, front up-down, rear up-down)

Does any motor fail to run smoothly?

YES - Go to the failed motor test:

- Power tilt/telescopic motor test (see **POWER TILT/TELESCOPIC STEERING MOTOR TEST**).
- Power mirror actuator test (see **POWER MIRROR SWITCH TEST/ REPLACEMENT**).
- Power seat motor test (see **DRIVER'S POWER SEAT MOTOR TEST**).

If the motor is OK, check the engagement of the motor gear.

NO - Go to the each input test:

- Power seat control unit input test (see **POWER SEAT CONTROL UNIT INPUT TEST**).
- Power tilt/telescopic steering control unit input test (see **POWER TILT/TELESCOPIC STEERING CONTROL UNIT INPUT TEST**).
- Driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

DTC B1840: TILT MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-

CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the tilt switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1840 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

Is DTC B1841 also indicated?

YES - Go to step 17.

NO - Go to step 6.

6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the tilt switch for 2 seconds, and check the tilt motor operation.

Does the tilt motor run smoothly?

YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power tilt/telescopic control unit connector A (16P).
11. Disconnect the tilt motor/position sensor 8P connector.
12. Check for continuity between power tilt/telescopic control unit connector A (16P) No. 4, No. 12, and No. 16 terminals and tilt motor/position sensor 8P connector No. 6, No. 7, and No. 8 terminals respectively.

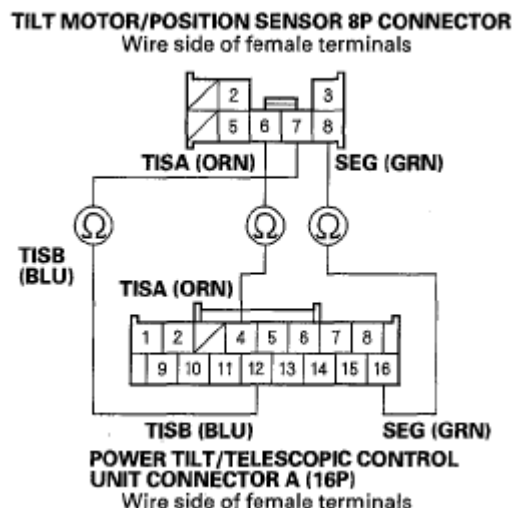


Fig. 48: Identifying Continuity Between No. 4, No. 12, And No. 16 Terminals And No. 6, No. 7, And No. 8 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between body ground and power tilt/telescopic control unit connector A (16P) No. 4 and No. 12 terminals individually.

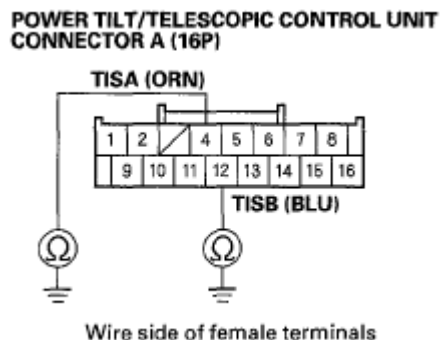


Fig. 49: Identifying Continuity Between Body Ground And Power Tilt/Telescopic Control Unit Connector A (16P) No. 4 And No. 12 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power tilt/telescopic control unit connector A (16P).
15. Turn the ignition switch ON (II).
16. Measure the voltage between tilt motor/position sensor 8P connector No. 6 and No. 8 terminals and between No. 7 and No. 8 terminals.

TILT MOTOR/POSITION SENSOR 8P CONNECTOR

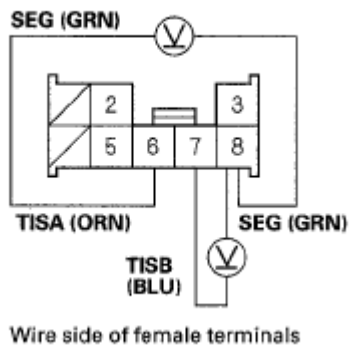


Fig. 50: Identifying Voltage Between Tilt Motor/Position Sensor 8P Connector No. 6 And No. 8 Terminals And Between No. 7 And No. 8 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Faulty tilt motor/position sensor, replace the tilt motor assembly.

NO - If there is no voltage, replace the power tilt/ telescopic control unit. If there is battery voltage, repair short in the wire.

17. Turn the ignition switch to LOCK (0).
18. Disconnect power tilt/telescopic control unit connector A (16P).
19. Disconnect the tilt motor/position sensor 8P connector.
20. Check for continuity between power tilt/telescopic control unit connector A (16P) No. 2 and No. 16 terminals and tilt motor/position sensor 8P connector No. 5 and No. 8 terminals respectively.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

TILT MOTOR/POSITION SENSOR 8P CONNECTOR

Wire side of female terminals

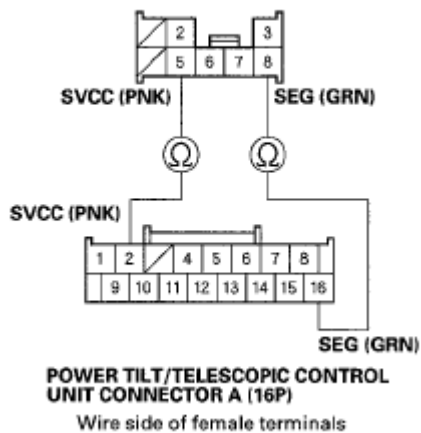


Fig. 51: Identifying Continuity Between No. 2 And No. 16 Terminals And No. 5 And No. 8 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the telescopic motor/position sensor 6P connector.
22. Check for continuity between tilt motor/position sensor 8P connector No. 5 terminal and body ground.

TILT MOTOR/POSITION SENSOR 8P CONNECTOR

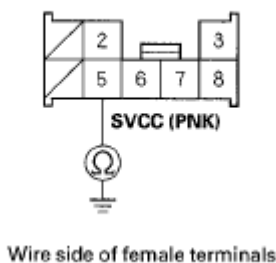


Fig. 52: Identifying Continuity Between Tilt Motor/Position Sensor 8P Connector No. 5 Terminal And Body Ground

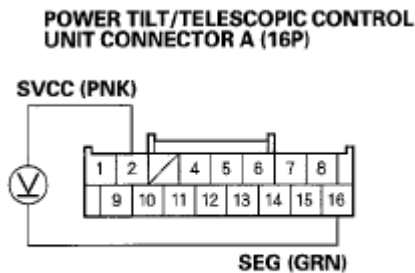
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 23.

23. Reconnect power tilt/telescopic control unit connector A (16P).
24. Turn the ignition switch ON (II).
25. Measure the voltage between power tilt/telescopic control unit connector A (16P) No. 2 and No. 16 terminals.



Wire side of female terminals

Fig. 53: Identifying Voltage Between Power Tilt/Telescopic Control Unit Connector A (16P) No. 2 And No. 16 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the tilt switch is operated?

YES - Faulty tilt motor/position sensor, replace the tilt motor assembly.

NO - Replace the power tilt/telescopic control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power tilt/telescopic control unit connector B (8P).
28. Disconnect the tilt motor/position sensor 8P connector.
29. Check for continuity between power tilt/telescopic control unit connector B (8P) No. 7 and No. 8 terminals and tilt motor/position sensor 8P connector No. 2 and No. 3 terminals respectively.

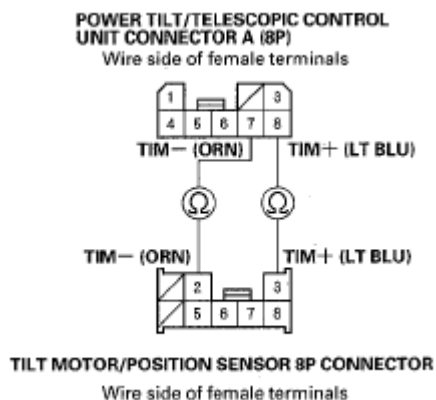


Fig. 54: Identifying Continuity Between No. 7 And No. 8 Terminals And No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire.

30. Check for continuity between body ground and tilt motor/position sensor 8P connector No. 2 and No. 3 terminals individually.

TILT MOTOR/POSITION SENSOR 8P CONNECTOR

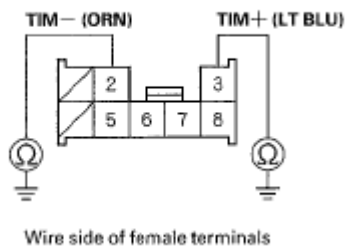


Fig. 55: Identifying Continuity Between Body Ground And Tilt Motor/Position Sensor 8P Connector No. 2 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the tilt motor (see **POWER TILT/TELESCOPIC STEERING MOTOR TEST**).

Is the motor OK?

YES - Replace the power tilt/telescopic control unit.

NO - Replace the tilt motor/position sensor.

DTC B1841: TELESCOPIC MOTOR PULSE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the telescopic switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Is DTC B1841 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Clear the DTCs with the HDS.

Is DTC B1840 also indicated?

YES - Go to step 17.

NO - Go to step 6.

6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Operate the telescopic switch for 2 seconds, and check the telescopic motor operation.

Does the tilt motor run smoothly?

YES - Go to step 9.

NO - Go to step 26.

9. Turn the ignition switch to LOCK (0).
10. Disconnect power tilt/telescopic control unit connector A (16P).
11. Disconnect the telescopic motor/position sensor 6P connector.
12. Check for continuity between power tilt/telescopic control unit connector A (16P) No. 5, No. 13, and No. 16 terminals and telescopic motor/position sensor 6P connector No. 4, No. 5, and No. 6 terminals respectively.

TELESCOPIC MOTOR/POSITION SENSOR 6P CONNECTOR

Wire side of female terminals

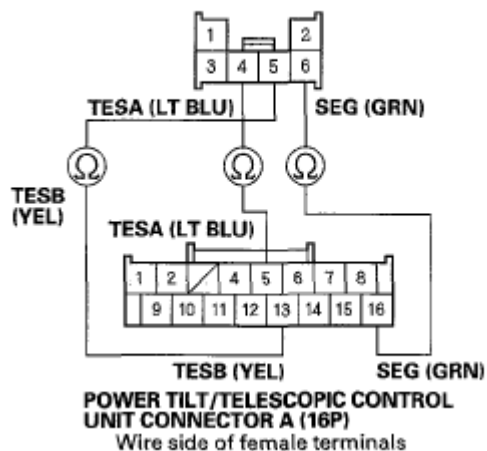


Fig. 56: Identifying Continuity Between No. 5, No. 13, And No. 16 Terminals And No. 4, No. 5, And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between body ground and power tilt/telescopic control unit connector A (16P) No. 5 and No. 13 terminals individually.

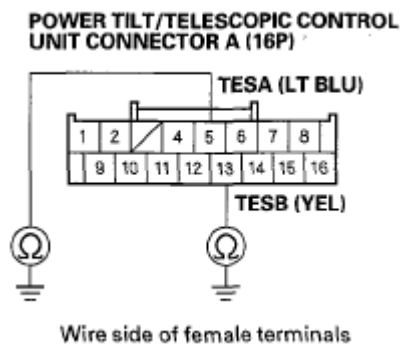


Fig. 57: Identifying Continuity Between Body Ground And Power Tilt/Telescopic Control Unit Connector A (16P) No. 5 And No. 13 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

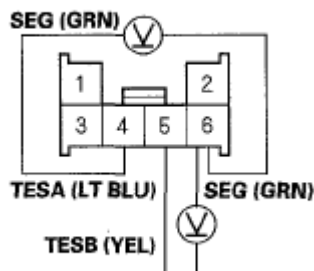
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Reconnect power tilt/telescopic control unit connector A (16P).
15. Turn the ignition switch ON (II).
16. Measure the voltage between telescopic motor/ position sensor 6P connector No. 4 and No. 6 terminals and between No. 5 and No. 6 terminals.

**TELESCOPIC MOTOR/POSITION
SENSOR 6P CONNECTOR**



Wire side of female terminals

Fig. 58: Identifying Voltage Between No. 4 And No. 6 Terminals And No. 5 And No. 6 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

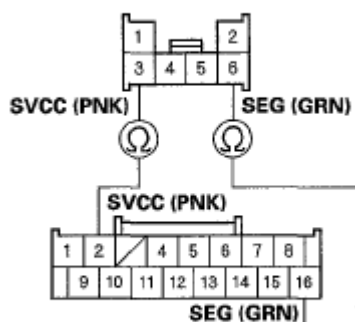
YES - Faulty telescopic motor/position sensor, replace the telescopic motor assembly.

NO - If there is no voltage, replace the power tilt/ telescopic control unit. If there is battery voltage, repair a short in the wire.

17. Turn the ignition switch to LOCK (0).
18. Disconnect power tilt/telescopic control unit connector A (16P).
19. Disconnect the telescopic motor/position sensor 6P connector.
20. Check for continuity between power tilt/telescopic control unit connector A (16P) No. 2 and No. 16 terminals and telescopic motor/position sensor 6P connector No. 3 and No. 6 terminals respectively.

**TELESCOPIC MOTOR/POSITION
SENSOR 6P CONNECTOR**

Wire side of female terminals



**POWER TILT/TELESCOPIC CONTROL
UNIT CONNECTOR A (16P)**
Wire side of female terminals

Fig. 59: Identifying Continuity Between No. 2 And No. 16 Terminals And No. 3 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

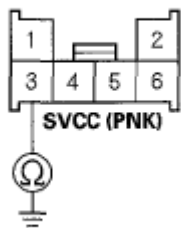
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire.

21. Disconnect the tilt motor/position sensor 8P connector.
22. Check for continuity between telescopic motor/ position sensor 6P connector No. 3 terminal and body ground.

**TELESCOPIC MOTOR/POSITION
SENSOR 6P CONNECTOR**



Wire side of female terminals

Fig. 60: Identifying Continuity Between Telescopic Motor/ Position Sensor 6P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

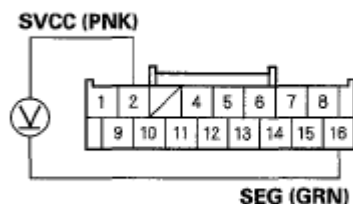
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 23.

23. Reconnect power tilt/telescopic control unit connector A (16P).
24. Turn the ignition switch ON (II).
25. Measure the voltage between power tilt/telescopic control unit connector A (16P) No. 2 and No. 16 terminals.

**POWER TILT/TELESCOPIC CONTROL
UNIT CONNECTOR A (16P)**



Wire side of female terminals

Fig. 61: Identifying Voltage Between Power Tilt/Telescopic Control Unit Connector A (16P) No. 2 And No. 16 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage when the telescopic switch is operated?

YES - Faulty telescopic motor/position sensor, replace the telescopic motor assembly.

NO - Replace the power tilt/telescopic control unit.

26. Turn the ignition switch to LOCK (0).
27. Disconnect power tilt/telescopic control unit connector B (8P).
28. Disconnect the telescopic motor/position sensor 6P connector.
29. Check for continuity between power tilt/telescopic control unit connector B (8P) No. 4 and No. 6 terminals and telescopic motor/position sensor 6P connector No. 1 and No. 2 terminals respectively.

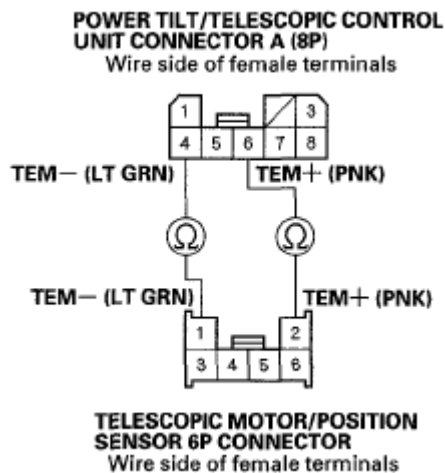


Fig. 62: Identifying Continuity Between No. 4 And No. 6 Terminals And No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire.

30. Check for continuity between body ground and telescopic motor/position sensor 6P connector No. 1 and No. 2 terminals individually.

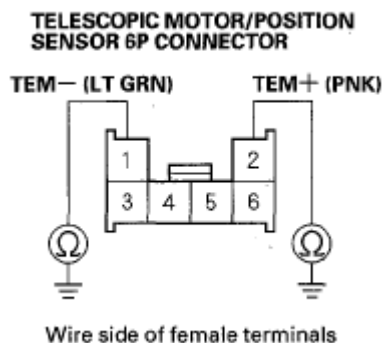


Fig. 63: Identifying Continuity Between Body Ground And Telescopic Motor/Position Sensor 6P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 31.

31. Test the telescopic motor (see **POWER TILT/TELESCOPIC STEERING MOTOR TEST**).

Is the motor OK?

YES - Replace the power tilt/telescopic control unit.

NO - Replace the telescopic motor/position sensor.

DTC B1842: POWER TILT/TELESCOPIC POSITION SENSOR POWER SUPPLY CIRCUIT (SVCC LINE) SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the tilt/telescopic switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1842 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power tilt/telescopic control unit connector A (16P).
7. Disconnect the telescopic motor/position sensor 6P connector.
8. Disconnect the tilt motor/position sensor 8P connector.
9. Check for continuity between power tilt/telescopic control unit connector A (16P) No. 2 terminal and body ground.

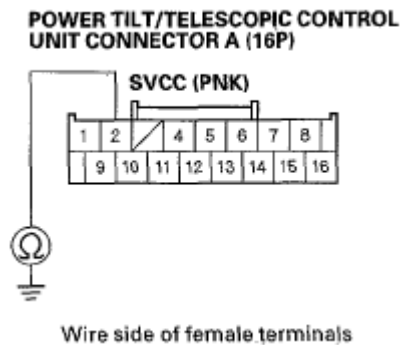


Fig. 64: Identifying Continuity Between Power Tilt/Telescopic Control Unit Connector A (16P) No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 10.

10. At the sensor side, check for continuity between telescopic motor/position sensor 6P connector No. 3 terminal and body ground (motor body).

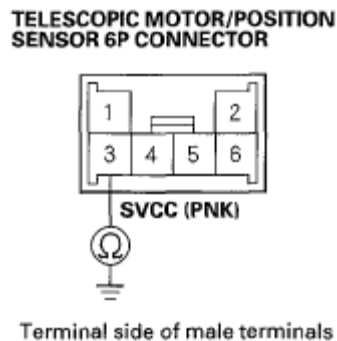


Fig. 65: Identifying Continuity Between Telescopic Motor/Position Sensor 6P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

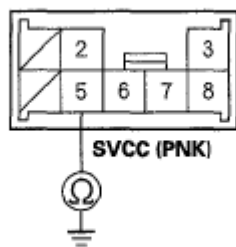
Is there continuity?

YES - Replace the telescopic motor/position sensor.

NO - Go to step 11.

11. At the sensor side, check for continuity between tilt motor/position sensor 8P connector No. 5 terminal and body ground (motor body).

TILT MOTOR/POSITION SENSOR 8P CONNECTOR



Terminal side of male terminals

Fig. 66: Identifying Continuity Between Tilt Motor/Position Sensor 8P Connector No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the tilt motor/position sensor.

NO - Replace the power tilt/telescopic control unit.

DTC B1843: POWER SEAT CONTROL UNIT LOST COMMUNICATION WITH POWER TILT/TELESCOPIC STEERING CONTROL UNIT (UART LINE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B1843 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

4. Move the tilt/telescopic steering in each direction with the tilt/telescopic switch.

Does the tilt/telescopic steering move in each direction smoothly?

YES - Go to step 5.

NO - Go to step 10.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power seat control unit connector A (40P).
7. Disconnect power tilt/telescopic control unit connector A (16P).
8. Check for continuity between power seat control unit connector A (40P) No. 39 terminal and power tilt/telescopic control unit connector A (16P) No. 11 terminal.

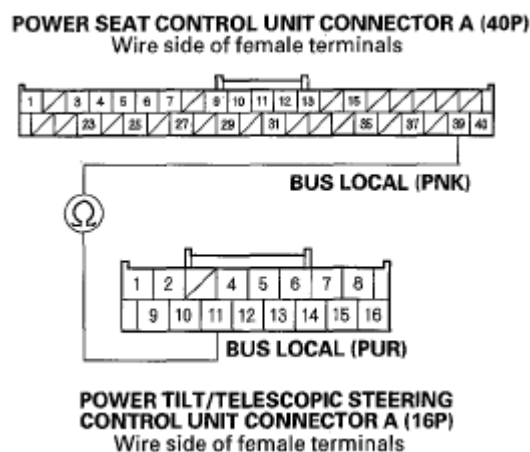


Fig. 67: Identifying Continuity Between No. 39 Terminal And No. 11 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

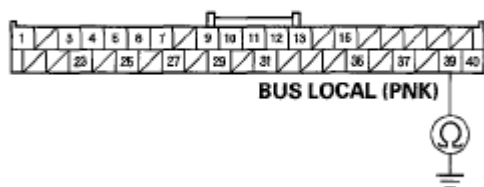
Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire.

9. Check for continuity between power seat control unit connector A (40P) No. 39 terminal and body ground.

POWER SEAT CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 68: Identifying Continuity Between Power Seat Control Unit Connector A (40P) No. 39 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

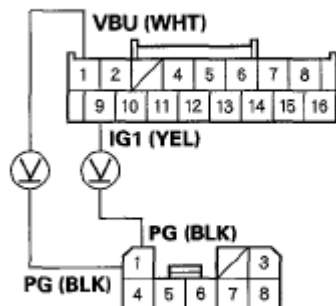
YES - Repair short in the wire.

NO - Substitute a known-good power tilt/telescopic control unit and recheck. If DTC B1843 is still indicated, replace the power seat control unit.

10. Turn the ignition switch to LOCK (0).
11. Disconnect power tilt/telescopic control unit connectors A (16P) and B (8P).
12. Turn the ignition switch ON (II).
13. Measure the voltage between power tilt/telescopic control unit connector A (16P) No. 9 terminal and connector B (8P) No. 1 terminal, and between connector A (16P) No. 1 terminal and connector B (8P) No. 1 terminal.

POWER TILT/TELESCOPIC STEERING CONTROL UNIT CONNECTOR A (16P)

Wire side of female terminals



POWER TILT/TELESCOPIC STEERING CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

Fig. 69: Identifying Voltage Between No. 9 Terminal And Connector B (8P) No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the power tilt/telescopic control unit.

NO - Do the power tilt/telescopic control unit input test (see **POWER TILT/TELESCOPIC STEERING CONTROL UNIT INPUT TEST**).

DTC B1844: POWER SEAT SLIDE SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the slide switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1844 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power seat control unit connector A (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector A (40P) No. 1, No. 7, and No. 27 terminals individually.

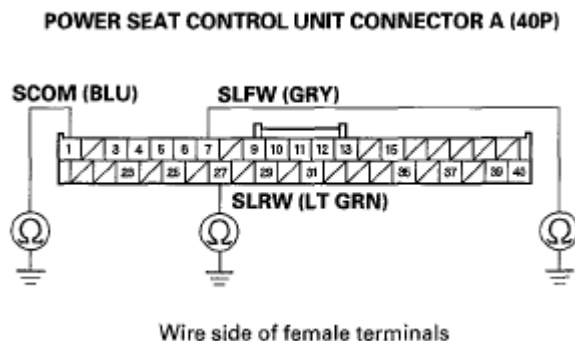


Fig. 70: Identifying Continuity Between Body Ground And Power Seat Control Unit Connector A (40P) No. 1, No. 7, And No. 27 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between these power seat control unit connector A (40P) terminals:

- No. 1 and No. 7
- No. 1 and No. 27
- No. 7 and No. 27

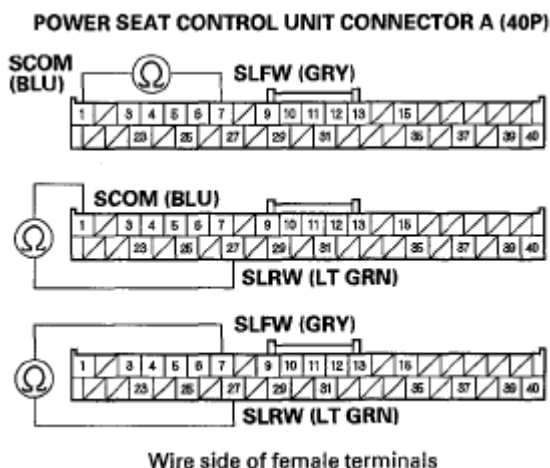


Fig. 71: Identifying Continuity Between These Power Seat Control Unit Connector A (40P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES - Replace the power seat control unit.

NO - Replace the power seat adjustment switch.

DTC B1845: POWER SEAT RECLINE SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the recline switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1845 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power seat control unit connector A (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector A (40P) No. 1, No. 6, and No. 25 terminals individually.

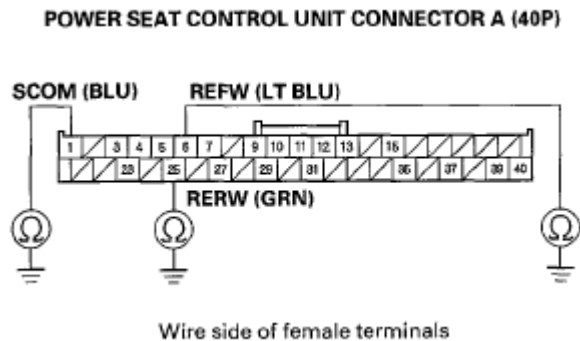


Fig. 72: Identifying Continuity Between Body Ground And Power Seat Control Unit Connector A (40P) No. 1, No. 6, And No. 25 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between these power seat control unit connector A (40P) terminals:
 - No. 1 and No. 6
 - No. 1 and No. 25
 - No. 6 and No. 25

2008 Acura MDX

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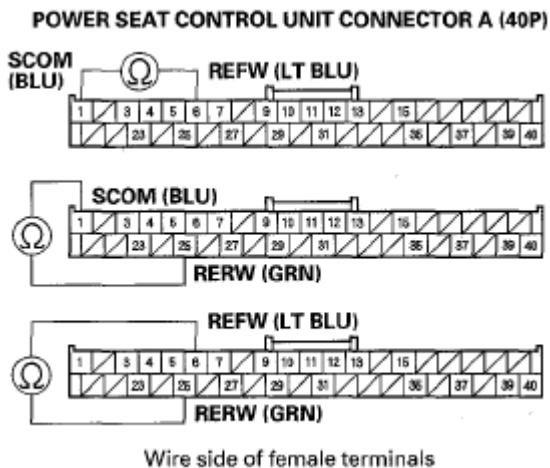


Fig. 73: Identifying Continuity Between These Power Seat Control Unit Connector A (40P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES - Replace the power seat control unit.

NO - Replace the power seat adjustment switch.

DTC B1846: POWER SEAT FRONT UP-DOWN SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the front up-down switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1846 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power seat control unit connector A (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector A (40P) No. 1, No. 4, and No. 5 terminals individually.

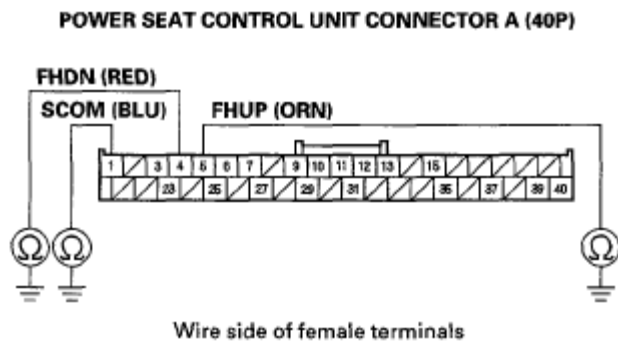


Fig. 74: Identifying Continuity Between Body Ground And Power Seat Control Unit Connector A (40P) No. 1, No. 4, And No. 5 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between these power seat control unit connector A (40P) terminals:
 - No. 1 and No. 4
 - No. 1 and No. 5
 - No. 4 and No. 5

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

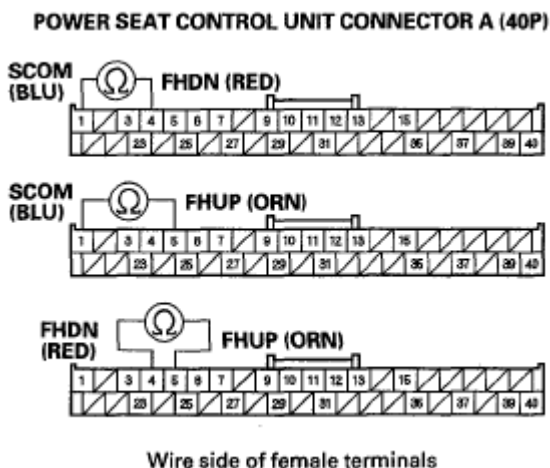


Fig. 75: Identifying Continuity Between These Power Seat Control Unit Connector A (40P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES - Replace the power seat control unit.

NO - Replace the power seat adjustment switch.

DTC B1847: POWER SEAT REAR UP-DOWN SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate the rear up-down switch in each direction for more than 1 second.
4. Check for DTCs with the HDS.

Is DTC B1847 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect power seat control unit connector A (40P).
7. Disconnect the power seat adjustment switch 12P connector.
8. Check for continuity between body ground and power seat control unit connector A(40P) No. 1, No. 3, and No. 23 terminals individually.

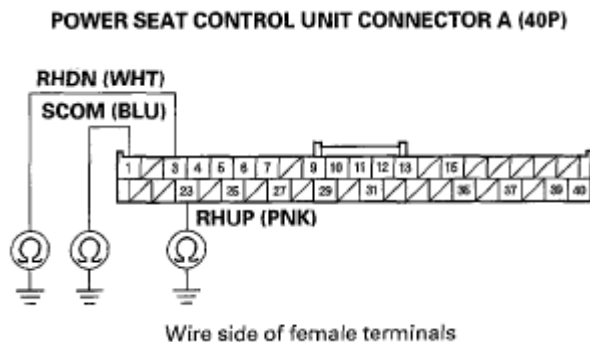


Fig. 76: Identifying Continuity Between Body Ground And Power Seat Control Unit Connector A (40P) No. 1, No. 3, And No. 23 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 9.

9. Check for continuity between these power seat control unit connector A (40P) terminals:
 - No. 1 and No. 3
 - No. 1 and No. 23
 - No. 3 and No. 23

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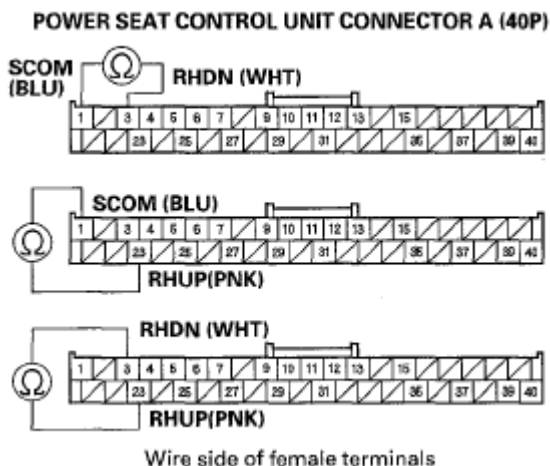


Fig. 77: Identifying Continuity Between These Power Seat Control Unit Connector A (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 10.

10. Test the power seat adjustment switch (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

Is the switch OK?

YES - Replace the power seat control unit.

NO - Replace the power seat adjustment switch.

DTC B2182: LEFT POWER MIRROR HORIZONTAL SENSOR SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Move the left power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

Is DTC B2182 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select POWER SEAT/POWER MIRROR from the BODY ELECTRICAL SYSTEM SELECT menu, and enter the DATA LIST.
6. Check the NORMAL/ABNORMAL information of the DRIVER DOOR MIRROR HORIZONTAL SENSOR in the DATA LIST.

Is the information indicator ABNORMAL?

YES - Go to step 7.

NO - Replace the driver's MPCS unit.

7. Turn the ignition switch to LOCK (0).
8. Disconnect driver's MPCS unit connector A (40P).
9. Disconnect the left power mirror 16P connector.
10. Check for continuity between driver's MPCS unit connector A (40P) No. 10 terminal and left power mirror 16P connector No. 4 terminal.

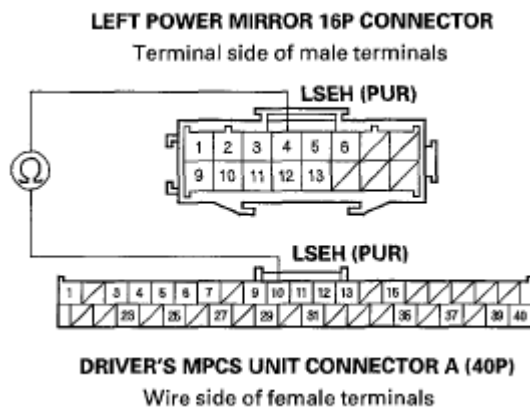


Fig. 78: Identifying Continuity Between Driver's MPCS Unit Connector A (40P) No. 10 Terminal And Left Power Mirror 16P Connector No. 4 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

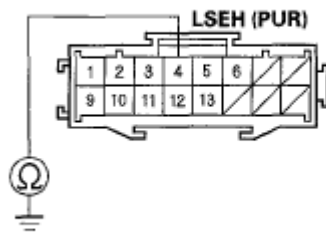
Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire.

11. Check for continuity between left power mirror 16P connector No. 4 terminal and body ground.

LEFT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 79: Identifying Continuity Between Left Power Mirror 16P Connector No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

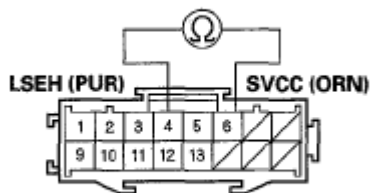
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 12.

12. Check for continuity between left power mirror 16P connector No. 4 and No. 6 terminals.

LEFT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 80: Identifying Continuity Between Left Power Mirror 16P Connector No. 4 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

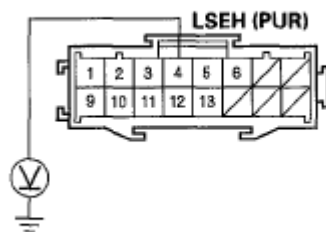
Is there continuity?

YES - Repair short in the wires.

NO - Go to step 13.

13. Reconnect driver's MPCS unit connector A (40P).
14. Turn the ignition switch ON (II).
15. Measure the voltage between left power mirror 16P connector No. 4 terminal and body ground.

LEFT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 81: Identifying Voltage Between Left Power Mirror 16P Connector No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the left power mirror.

NO - Replace the driver's MPCS unit.

DTC B2183: LEFT POWER MIRROR VERTICAL SENSOR SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Move the left power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

Is DTC B2183 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select POWER SEAT/POWER MIRROR from the BODY ELECTRICAL SYSTEM SELECT menu, and enter the DATA LIST.
6. Check the NORMAL/ABNORMAL information of the DRIVER DOOR MIRROR VERTICAL SENSOR in the DATA LIST.

Is the information indicator ABNORMAL?

YES - Go to step 7.

NO - Replace the driver's MPCS unit.

7. Turn the ignition switch to LOCK (0).
8. Disconnect driver's MPCS unit connector A (40P).
9. Disconnect the left power mirror 16P connector.
10. Check for continuity between driver's MPCS unit connector A (40P) No. 9 terminal and left power mirror 16P connector No. 3 terminal.

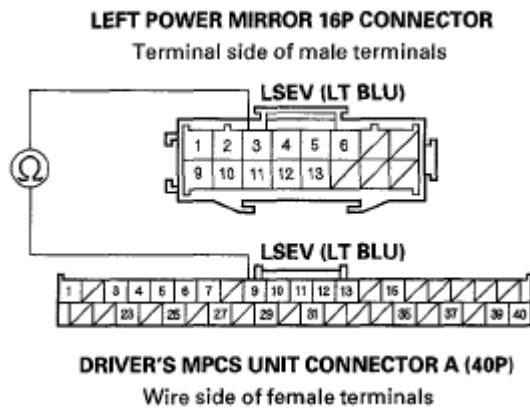


Fig. 82: Identifying Continuity Between Driver's MPCS Unit Connector A (40P) No. 9 Terminal And Left Power Mirror 16P Connector No. 3 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire.

11. Check for continuity between left power mirror 16P connector No. 3 terminal and body ground.

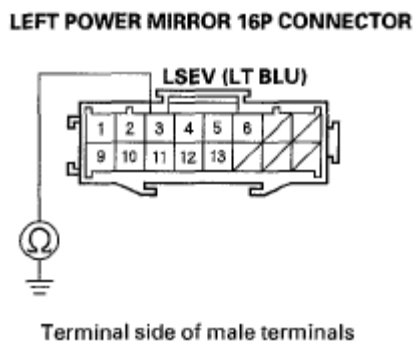


Fig. 83: Identifying Continuity Between Left Power Mirror 16P Connector No. 3 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 12.

12. Check for continuity between left power mirror 16P connector No. 3 and No. 6 terminals.

LEFT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 84: Identifying Continuity Between Left Power Mirror 16P Connector No. 3 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

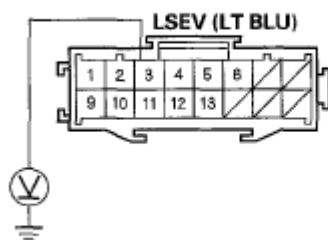
Is there continuity?

YES - Repair short in the wires.

NO - Go to step 13.

13. Reconnect driver's MPCS unit connector A (40P).
14. Turn the ignition switch ON (II).
15. Measure the voltage between left power mirror 16P connector No. 3 terminal and body ground.

LEFT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 85: Identifying Voltage Between Left Power Mirror 16P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the left power mirror.

NO - Replace the driver's MPCS unit.

DTC B2184: RIGHT POWER MIRROR HORIZONTAL SENSOR SIGNAL ERROR

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Move the right power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

Is DTC B2184 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select POWER SEAT/POWER MIRROR from the BODY ELECTRICAL SYSTEM SELECT menu, and enter the DATA LIST.
6. Check the NORMAL/ABNORMAL information of the ASSISTANT DOOR MIRROR HORIZONTAL SENSOR in the DATA LIST.

Is the information indicator ABNORMAL?

YES - Go to step 7.

NO - Replace the front passenger's MPCS unit.

7. Turn the ignition switch to LOCK (0).
8. Disconnect front passenger's MPCS unit connector A (28P).
9. Disconnect the right power mirror 16P connector.
10. Check for continuity between front passenger's MPCS unit connector A (28P) No. 6 terminal and right power mirror 16P connector No. 3 terminal.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

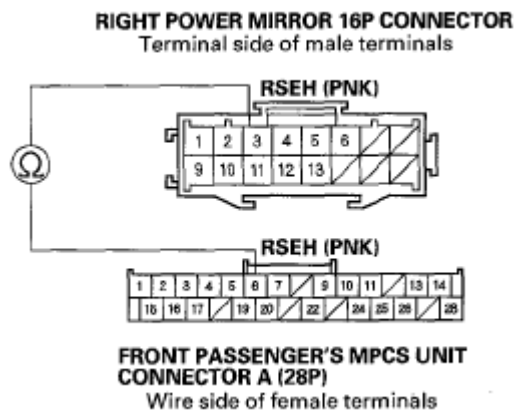


Fig. 86: Identifying Continuity Between Front Passenger's MPCs Unit Connector A (28P) No. 6 Terminal And Right Power Mirror 16P Connector No. 3 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire.

11. Check for continuity between right power mirror 16P connector No. 3 terminal and body ground.

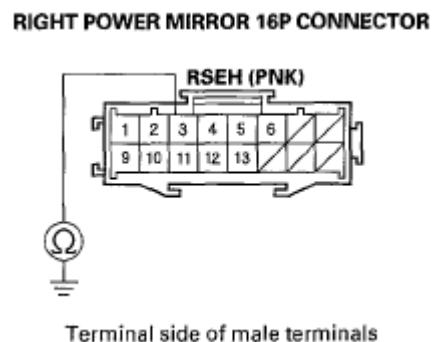


Fig. 87: Identifying Continuity Between Right Power Mirror 16P Connector No. 3 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 12.

12. Check for continuity between right power mirror 16P connector No. 3 and No. 6 terminals.

RIGHT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 88: Identifying Continuity Between Right Power Mirror 16P Connector No. 3 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

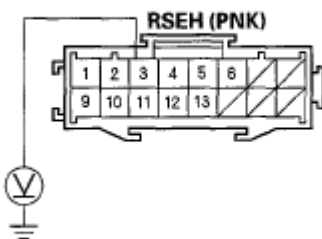
Is there continuity?

YES - Repair short in the wires.

NO - Go to step 13.

13. Reconnect front passenger's MPCS unit connector A (28P).
14. Turn the ignition switch ON (II).
15. Measure the voltage between right power mirror 16P connector No. 3 terminal and body ground.

RIGHT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 89: Identifying Voltage Between Right Power Mirror 16P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the right power mirror.

NO - Replace the front passenger's MPCS unit.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Move the right power mirror in each direction with the power mirror switch.
4. Check for DTCs with the HDS.

Is DTC B2185 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select POWER SEAT/POWER MIRROR from the BODY ELECTRICAL SYSTEM SELECT menu, and enter the DATA LIST.
6. Check the NORMAL/ABNORMAL information of the ASSISTANT DOOR MIRROR VERTICAL SENSOR in the DATA LIST.

Is the information indicator ABNORMAL?

YES - Go to step 7.

NO - Replace the front passenger's MPCS unit.

7. Turn the ignition switch to LOCK (0).
8. Disconnect front passenger's MPCS unit connector A(28P).
9. Disconnect the right power mirror 16P connector.
10. Check for continuity between front passenger's MPCS unit connector A (28P) No. 5 terminal and right power mirror 16P connector No. 4 terminal.

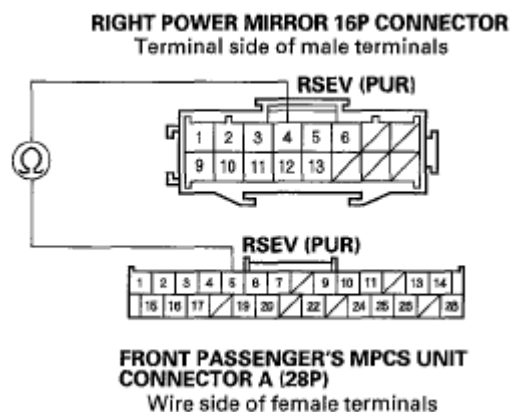


Fig. 90: Identifying Continuity Between Front Passenger'S MPCS Unit Connector A (28P) No. 5 Terminal And Right Power Mirror 16P Connector No. 4 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

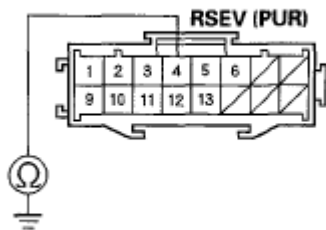
Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire.

11. Check for continuity between right power mirror 16P connector No. 4 terminal and body ground.

RIGHT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 91: Identifying Continuity Between Right Power Mirror 16P Connector No. 4 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

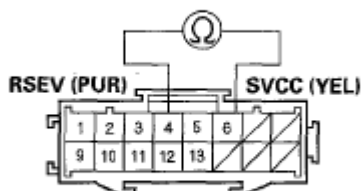
Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 12.

12. Check for continuity between right power mirror 16P connector No. 4 and No. 6 terminals.

RIGHT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 92: Identifying Continuity Between Right Power Mirror 16P Connector No. 4 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

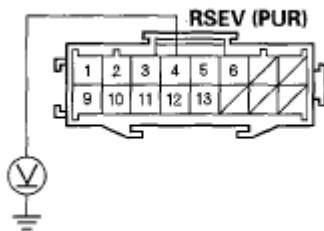
Is there continuity?

YES - Repair short in the wires.

NO - Go to step 13.

13. Reconnect front passenger's MPCS unit connector A(28P).
14. Turn the ignition switch ON (II).
15. Measure the voltage between right power mirror 16P connector No. 4 terminal and body ground.

RIGHT POWER MIRROR 16P CONNECTOR



Terminal side of male terminals

Fig. 93: Identifying Voltage Between Right Power Mirror 16P Connector No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the right power mirror.

NO - Replace the front passenger's MPCS unit.

SYSTEM INPUT TEST AND FUNCTION TEST

1. Connect the HDS to the DLC.
2. Turn the ignition switch ON (II).
3. From the BODY ELECTRICAL SYSTEM SELECTION menu, select POWER SEAT/POWER MIRROR, then DTCs.
 - If DTCs are found, troubleshoot the DTCs using B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).
 - If no DTCs are found, go to step 4.
4. Exit the DTC mode, and select DATA LIST from the POWER SEAT/POWER MIRROR TEST MODE MENU.
5. Test each input and monitor each output under the condition shown below:

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

- If the data list indication is correct, continue to the next switch. If all switches are OK, go to step 6.
- If the data list indication is not correct, do the appropriate test at the control unit and terminal indicated in the table.
 - Voltage drop tests should be done with the ignition switch ON (II) and all connectors connected and the meter negative test lead attached to a good body ground, unless specified otherwise.
 - Continuity tests should be done with the ignition switch in LOCK (0) and indicated terminals disconnected.

DATA LIST

Data List Input/Command	Condition: Data List Indication	Control Unit/Terminal Number/ Test (If applicable)	Possible cause if desired result is not obtained
Door Mirror UP switch	Mirror select switch in LEFT, then RIGHT Mirror up switch pressed: ON Mirror up switch released: OFF	MICU/P9 (WHT) Mirror select switch UP: 0 V Center or DOWN: 5 V	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Door Mirror Select in LEFT selection	Mirror select switch in LEFT position: ON Select switch in CENTER or RIGHT position: OFF	MICU/P11 (PUR) Mirror select switch LEFT: 0 V Center or RIGHT: 5 V	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Door Mirror DOWN switch	Mirror select switch in LEFT, then RIGHT Mirror down switch pressed: ON Mirror switch released: OFF	MICU/P10 (PNK) Mirror select switch DOWN: 0 V Center or UP: 5 V	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Door Mirror Select in RIGHT selection	Mirror select switch in RIGHT position: ON Select switch	MICU/P22 (GRY) Mirror select switch RIGHT: 0 V Center or LEFT: 5	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

	in CENTER or LEFT position: OFF	V	• A short in the wire • Faulty control unit
Door Mirror LEFT switch	Mirror select switch in LEFT, then RIGHT Mirror left switch pressed: ON Mirror switch released: OFF	MICU/P25 (GRN) Mirror select switch LEFT: 0 V Center or RIGHT: 5 V	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Door Mirror RIGHT switch	Mirror select switch in LEFT, then RIGHT Mirror right switch pressed: ON Mirror switch released: OFF	MICU/P26 (BLU) Mirror select switch RIGHT: 0 V Center or LEFT: 5 V	• Faulty switch (see <u>POWER MIRROR SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Slide Switch Forward	Slide switch forward: ON Switch released: OFF	Power seat control unit/A1, A7 (GRY) Slide switch forward: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Slide Switch Backward	Slide switch backward: ON Switch released: OFF	Power seat control unit/A1, A27 (LTGRN) Slide switch backward: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Recline Switch Forward	Recline switch forward: ON Switch released: OFF	Power seat control unit/A1, A6 (LT BLU) Recline switch forward: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
			• Faulty switch (see <u>POWER</u>

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Recline Switch Backward	Recline switch backward: ON Switch released: OFF	Power seat control unit/A1, A25 (GRN) Recline switch backward: 0 V Switch released: 5 V	<u>SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Front Up-Down Switch Up	Front up-down switch up: ON Switch released: OFF	Power seat control unit/A1, A5 (ORN) Front up-down switch up: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Front Up-Down Switch Down	Front up-down switch down: ON Switch released: OFF	Power seat control unit A1, A4 (RED) Front up-down switch down: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Rear Up-Down Switch Up	Rear up-down switch up: ON Switch released: OFF	Power seat control unit/A1, A23 (PNK) Rear up-down switch up: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Rear Up-Down Switch Down	Rear up-down switch down: ON Switch released: OFF	Power seat control unit/A1, A3 (WHT) Rear up-down switch up: 0 V Switch released: 5 V	• Faulty switch (see <u>POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Ignition Switch for Power Seat Control	Ignition switch ON (II): ON Ignition switch OFF: OFF	Power seat control unit/A35 (YEL) Ignition switch ON (II): 12 V	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire • Faulty control unit
	Transmission range switch P	Power seat control	• Faulty transmission range

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

A/T Gear Position Switch (P)	position: ON Any other position than P: OFF	unit/A31 (GRN) Transmission range switch P: 0V	switch • An open in the wire • Faulty control unit
Seat MEMO Switch	Seat MEMO switch pressed: ON Switch released: OFF	Driver's MPCS unit/A31 (ORN) Seat MEMO switch pressed: 0 V Switch released: 5 V more	• Faulty switch (see <u>DRIVING POSITION MEMORY SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit • Poor ground (G601)
Driver 1 Position Switch	Driver position 1 switch pressed: ON Switch released: OFF	Driver's MPCS unit/A29 (GRN) Driver's position 1 switch pressed: 0 V Switch released: 5 V more	• Faulty switch (see <u>DRIVING POSITION MEMORY SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit • Poor ground (G601)
Driver 2 Position Switch	Driver position 2 switch pressed: ON Switch released: OFF	Driver's MPCS unit/A30 (RED) Driver's position 2 switch pressed: 0 V Switch released: 5 V more	• Faulty switch (see <u>DRIVING POSITION MEMORY SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit • Poor ground (G601)
Column Tilt Up Switch	Steering tilt switch up: ON Switch released: OFF	Power tilt/telescopic steering control unit/A15(BRN),A7 (LT GRN) Switch in TILT UP: 0V Switch released: Battery voltage	• Faulty switch (see <u>POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Column Tilt Down Switch	Steering tilt switch down: ON	Power tilt/telescopic steering control unit/A15(BRN),A6 (GRN)	• Faulty switch (see <u>POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT</u>)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

	Switch released: OFF	Switch in TILT DOWN: 0V Switch released: Battery voltage	• An open in the wire • A short in the wire • Faulty control unit
Column Telescopic Extend Switch	Steering telescopic switch extend: ON Switch released: OFF	Power tilt/telescopic steering control unit/A15 (BRN), A14 (PUR) Switch in TELESCOPIC EXTEND: 0 V Switch released: Battery voltage	• Faulty switch (see <u>POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Column Telescopic Retract Switch	Steering telescopic switch retract: ON Switch released: OFF	Power tilt/telescopic steering control unit/A15 (BRN), A6 (GRN) Switch in TELESCOPIC RETRACT: 0 V Switch released: Battery voltage	• Faulty switch (see <u>POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT</u>) • An open in the wire • A short in the wire • Faulty control unit
Ignition Switch (IG1)	Ignition switch ON (II): ON Ignition switch OFF: OFF	Power tilt/telescopic steering control unit/A9 (YEL) Ignition switch ON (II): 12 V	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire • Faulty control unit
Slide Sensor	Seat moving forward or backward: ON Seat not moving: OFF	Power seat control unit/A11 (WHT) Pulses as seat moves: 2.5 V average	• Faulty sensor • An open in the wire • Faulty control unit
Front Up-Down Sensor	Seat front moving up/down: ON Seat not moving: OFF	Power seat control unit/A12 (RED) Pulses as seat moves: 2.5 V average	• Faulty sensor • An open in the wire • Faulty control unit
Recline Sensor	Seat back moving forward or backward: ON Seat not moving: OFF	Power seat control unit/A10 (GRN) Pulses as seat moves: 2.5 V average	• Faulty sensor • An open in the wire • Faulty control unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Rear Up-Down Sensor	Seat rear moving up/down: ON Seat not moving: OFF	Power seat control unit/A13 (YEL) Pulses as seat moves: 2.5 V average	- Faulty sensor - An open in the wire - Faulty control unit
Column Tilt Sensor Up/Down	Steering tilting up/down: ON Steering not moving: OFF	Power tilt/telescopic steering control unit/A2 (PNK) to A16 (GRN) as steering moves: 12 V A16 (GRN) to A13 (YEL), A5 (LT BLU) Pulses as steering moves: 2.5 V average	- Faulty sensor - An open in the wire(s) - Faulty control unit
Column Telescopic Sensor Extend/ Retract	Steering telescopic extend/ retract: ON Steering not moving: OFF	Power tilt/telescopic steering control unit/A2 (PNK) to A16 (GRN) as steering moves: 12 V A16(GRN) to A12(BLU),A4 (ORN) Pulses as steering moves: 2.5 V average	- Faulty sensor - An open in the wire(s) - Faulty control unit
Left mirror horizontal sensor	Left mirror moves left/right: NORMAL Left mirror does not move: ABNORMAL	Driver's MPCS unit/A10 (PUR), A19(ORN) Left mirror moving from full left to full right: A10 (about 0.5 V to 4.5V),A19 (5V or more)	- Faulty sensor - An open in the wire - Faulty control unit
Left mirror vertical sensor	Left mirror moves up/down: NORMAL Left mirror stopped: ABNORMAL	Driver's MPCS unit/A9 (LT BLU), A19(ORN) Left mirror moving from full left to full right: A9 (about 0.5 V to 4.5V),A19 (5V or more)	- Faulty sensor - An open in the wire - Faulty control unit
	Right mirror	Front passenger's MPCS unit/A6	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Right door mirror horizontal sensor	moves left/right: NORMAL Right mirror stopped: ABNORMAL	(PNK),A13(YEL) Right mirror moving from full left to full right: A6 (about 0.5 V to 4.5 V), A13 (5 V or more)	- Faulty sensor - An open in the wire - Faulty control unit
Right door mirror vertical sensor	Right mirror moves up/down: NORMAL Right mirror stopped: ABNORMAL	Front passenger's MPCS unit/A5 (PUR),A13(YEL) Right mirror moving from full left to full up: A5 (about 0.5 V to 4.5V),A13(5V or more)	- Faulty sensor - An open in the wire - Faulty control unit
DPMS MEM switch	Driving position memory switch MEMO button pushed: ON Switch released: OFF	Driver's MPCS unit/A31 (ORN) Driving position memory switch MEMO button pushed: A31 (about 1 V or less) MEMO button released: A31 (5 V or more)	- Faulty switch - An open in the wire - A short in the wire - Faulty control unit
DPMS POS1 switch	Driving position memory switch POS1 button pushed: ON Switch released: OFF	Driver's MPCS unit/A29 (GRN) Driving position memory switch MEMO button pushed: A29 (about 1 V or more) MEMO button released: A29 (5 V or more)	- Faulty switch - An open in the wire - A short in the wire - Faulty control unit
DPMS POS2 switch	Driving position memory switch POS2 button pushed: ON Switch released: OFF	Driver's MPCS unit/A30 (RED) Driving position memory switch MEMO button pushed: A30 (about 1 V or more) MEMO button released: A30 (5 V or more)	- Faulty switch - An open in the wire - A short in the wire - Faulty control unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

6. Exit the DATA LIST and select FUNCTION TEST.
7. Do each of the function tests listed in the table shown. The appropriate output should occur.
 - If the function operates normally, go to the next function test. If all function tests operate normally, the system is OK.
 - If the function does not occur, do the appropriate test at the control unit and terminal indicated in the table.
 - Voltage drop tests should be done with the ignition switch ON (II) and all connectors connected.
 - Continuity tests should be done with the ignition switch LOCK (0) and indicated terminals disconnected.
 - Jumper tests should be done according to the instructions indicated.
 - If the test indicates that the component operates normally, but the function will not operate by doing the function test or the normal use of the component, the control unit that operates that function must be faulty; replace it.
 - If the test indicates that the component does not operate normally, check for an open or short in the harnesses between the component and the control unit. If the harness is OK, replace the component.

COMPONENT AND OPERATION CHART

Function Test	Component and Operation	Control Unit/Terminal Number/Test (If applicable)	Possible cause if desired result is not obtained
Power Seat: Slide Motor-Full Forward	Seat slides forward	Power seat control unit/B8 (ORN), A9 (BLK), B7 (GRY), B17(BLU) Disconnect the power seat control unit connectors A and B. Connect B8 to B17 and B7 to A9; driver's seat should slide forward.	• Faulty motor • An open in the wire • A short in the wire
Power Seat: Slide Motor-Full Backward	Seat slides backward	Power seat control unit/B8 (ORN), A9 (BLK), B7 (GRY), B17(BLU) Disconnect the power seat control unit connectors A and B. Connect B8 to B7 and B17 to A9; driver's seat should slide backward.	• Faulty motor • An open in the wire • A short in the wire
Power Seat: Front UP-DOWN Motor-Full Up	Front of seat moves up	Power seat control unit/B8 (ORN), A9 (BLK), B6 (BRN), B16(PUR) Disconnect the power seat control unit connectors A and B. Connect B8 to B16 and B6 to A9; front of driver's seat should move up.	• Faulty motor • An open in the wire • A short in the wire
Power Seat: Front UP-DOWN Motor-Full Down	Front of seat moves down	Power seat control unit/B8 (ORN), A9 (BLK), B6 (BRN), B16(PUR) Disconnect the power seat control unit connectors A and B. Connect B8 to B6 and B16 to A9; front of driver's seat	• Faulty motor • An open in the wire • A short in

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

		should move down.	the wire
Power Seat: Rear Up-Down Motor-Full Up	Rear of seat moves up	Power seat control unit/B1 (LT BLU), A9 (BLK), B2 (GRN), B10 (PNK) Disconnect the power seat control unit connectors A and B. Connect B1 to B2 and B10 to A9; rear of driver's seat should move up.	- Faulty motor - An open in the wire - A short in the wire
Power Seat: Rear Up-Down Motor-Full Down	Rear of seat moves down	Power seat control unit/B1 (LT BLU), A9 (BLK), B2 (GRN), B10(PNK) Disconnect the power seat control unit connectors A and B. Connect B1 to B10 and B2 to A9; rear of driver's seat should move down.	- Faulty motor - An open in the wire - A short in the wire
Power Seat: Recline Motor-Full Forward	Seat back moves forward	Power seat control unit/B1 (LT BLU), A9 (BLK), B9 (YEL), B11 (LTGRN) Disconnect power seat control unit connectors A and B. Connect B1 to B11 and B9 to A9; driver's seat back should move forward.	- Faulty motor - An open in the wire - A short in the wire
Power Seat: Recline Motor-Full Backward	Seat back moves backward	Power seat control unit/B1 (LT BLU), A9 (BLK), B9 (YEL), B11 (LTGRN) Disconnect power seat control unit connectors A and B. Connect B1 to B9 and B11 to A9; driver's seat back should move backward.	- Faulty motor - An open in the wire - A short in the wire
Column Tilt Up	Power tilt/telescopic steering tilts up	Power tilt/telescopic steering control unit/B1 (BLK), B3 (WHT), B7 (ORN), B8 (LT BLU) Disconnect tilt/telescopic steering control unit connectors A and B. Connect B3 to B7 and B1 to B8; steering tilts up.	- Faulty motor - An open in the wire - A short in the wire
Column Tilt Down	Power tilt/telescopic steering tilts down	Power tilt/telescopic steering control unit/B1 (BLK), B3 (WHT), B7 (ORN), B8 (LT BLU) Disconnect tilt/telescopic steering control unit connectors A and B. Connect B3 to B8 and B1 to B7; steering tilts down.	- Faulty motor - An open in the wire - A short in the wire
Column Telescopic Extend	Power tilt/telescopic steering telescopic extend	Power tilt/telescopic steering control unit/B1 (BLK), B3 (WHT), B6 (PNK), B4 (LT GRN) Disconnect tilt/telescopic steering control unit connectors A and B. Connect B3 to B4 and B1 to B6; steering telescopic extend.	- Faulty motor - An open in the wire - A short in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Column Telescopic Retract	Power tilt/telescopic steering telescopic retract	Power tilt/telescopic steering control unit/B1 (BLK), B3 (WHT), B6 (PNK), B4 (LT GRN) Disconnect tilt/telescopic steering control unit connectors A and B. Connect B3 to B6 and B1 to B4; steering telescopic retract.	• Faulty motor • An open in the wire • A short in the wire
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POWER SEAT CONTROL UNIT INPUT TEST

NOTE: Before testing the power seat control unit, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's seat (see FRONT SEAT REMOVAL/INSTALLATION).

NOTE: Be careful not to scratch the interior trim.

3. Disconnect the 40P connector (A) and 18P connector (B) from the power seat control unit(C).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

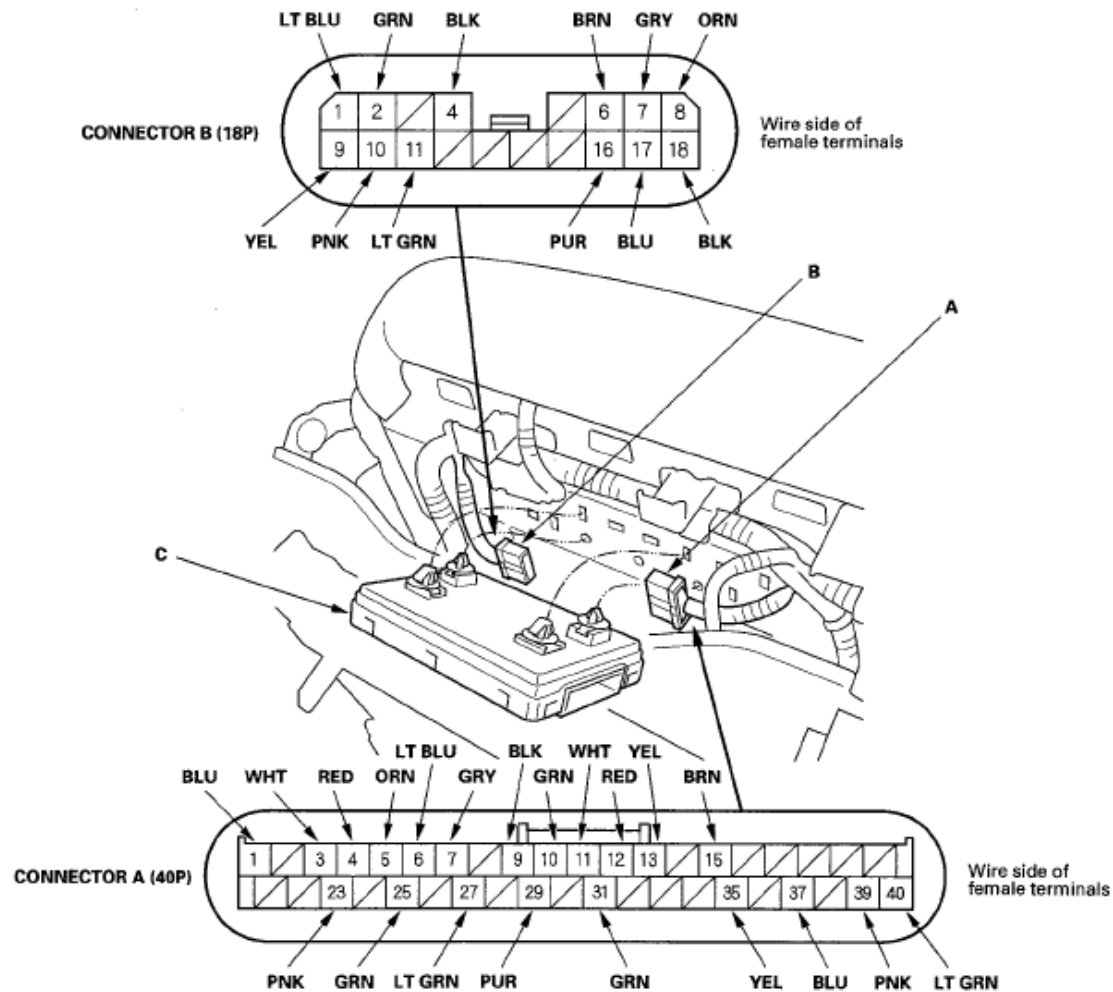


Fig. 94: Identifying 40P Connector, 18P Connector And Power Seat Control Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make the input test at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A37	BLU	Under all conditions	Measure the voltage to ground: There should be	• Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Blown No. 4 (40 A) fuse in the main

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

		battery voltage.	under-hood fuse box
			An open in the wire

6. Reconnect the connectors to the power seat control unit, and make these input tests at the connectors.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the control unit must be faulty; replace it.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A9	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	- Poor ground(G602) - An open in the wire
B4	BLK			
B18	BLK			
A35	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box - An open in the wire
B1	LT BLU	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 2 (OP2) (40 A) fuse in the main under-hood fuse box - Blown No. 16 (20 A) fuse in the under-dash fuse/relay box - An open in the wire
B8	ORN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 2 (OP2) (40 A) fuse in the main under-hood fuse box - Blown No. 14 (20 A) fuse in the under-dash fuse/relay box - An open in the wire
A31	GRN	Shift lever in P position	Measure the voltage to ground: There should be less than 1 V.	- Faulty transmission range switch - An open in the wire
		Shift lever out of P position	Measure the voltage to ground: There should be about 10 V.	A short to ground in the wire

POWER MIRROR CIRCUIT INPUT TEST

NOTE: Before testing the power mirror circuit unit, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

MICU

1. Turn the ignition switch to LOCK (0).
2. Remove the left side kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
3. Disconnect under-dash fuse/relay box connector P (30P).

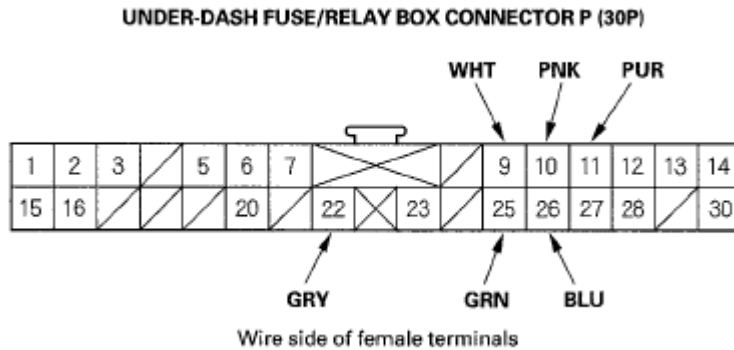


Fig. 95: Identifying Under-Dash Fuse/Relay Box Connector P (30P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 5.
5. Reconnect the connector to the under-dash fuse/relay box.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
P9	WHT	Power mirror switch in UP	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V or more.	• Faulty power mirror switch • A short to ground in the wire
P10	PNK	Power mirror switch in DOWN	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V	• Faulty power mirror switch

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

			or more.	• A short to ground in the wire
P25	GRN	Power mirror switch in LEFT	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V or more.	• Faulty power mirror switch • A short to ground in the wire
P26	BLU	Power mirror switch in RIGHT	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V or more.	• Faulty power mirror switch • A short to ground in the wire
P11	PUR	Power mirror switch in L position	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V or more.	• Faulty power mirror switch • A short to ground in the wire
P22	GRY	Power mirror switch in R position	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G501) • Faulty power mirror switch • An open in the wire
		Power mirror switch released	Measure the voltage to ground: There should be 5 V or more.	• Faulty power mirror switch • A short to ground in the wire

Driver's MPCS Unit

6. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
7. Disconnect driver's MPCS unit connector A (40P).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

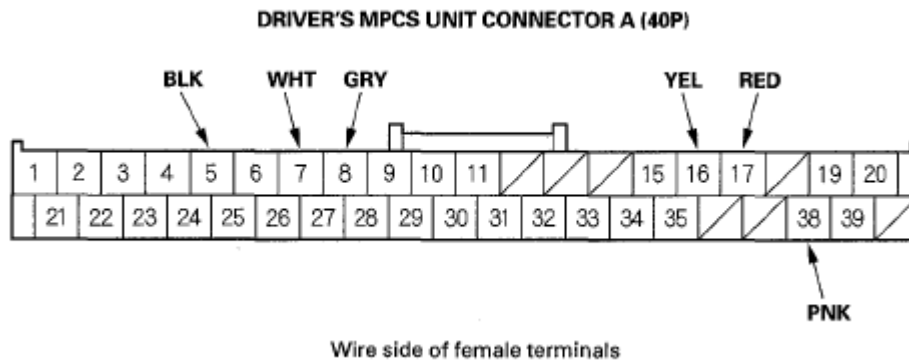


Fig. 96: Identifying Driver'S MPCS Unit Connector A (40P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 9.
9. With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 10.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A5 ⁽¹⁾	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G601) • Faulty power mirror switch • An open in the wire
A7 ⁽¹⁾	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • An open in the wire
A8	GRY	Under all conditions	Check for continuity between the A8 terminal and front passenger's MPCS unit connector A (28P) No. 4 terminal: There should be continuity.	• Faulty under-dash fuse/relay box • An open in the wire
A16	YEL	Under all conditions	Connect the A7 and A16 terminals, and A5 and A38 terminals: The left power mirror moves UP.	• Faulty left power mirror actuator • An open in the wire
A38	PNK			

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

A17	RED	Under all conditions	Connect the A7 and A17 terminals, and A5 and A38 terminals: The left power mirror swings LEFT.	- Faulty left power mirror actuator - An open in the wire
A38	PNK			
(1) Reconnect the connector to the driver's MPCS unit.				

Front Passenger's MPCS Unit

- Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
- Disconnect the front passenger's MPCS unit connector A (28P).

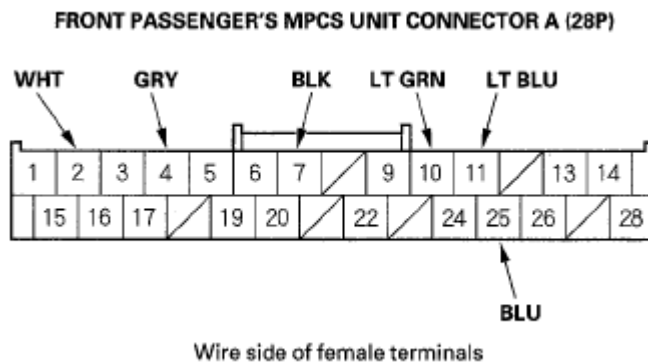


Fig. 97: Identifying Front Passenger'S MPCS Unit Connector A (28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 13.
- With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 14.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A7 ⁽¹⁾	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	- Poor ground (G506) - Faulty power mirror switch - An open in the wire
		Under all	Measure the voltage to ground:	Blown No. 4 (40 A) fuse in the main under-hood fuse box

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

A2 ⁽¹⁾	WHT	conditions	There should be battery voltage.	• Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • An open in the wire
A4	GRY	Under all conditions	Check for continuity between the A4 terminal and driver's MPCs unit connector A (40P) No. 8 terminal: There should be continuity.	• Faulty under-dash fuse/relay box • An open in the wire
A10	LTGRN	Under all conditions	Connect the A2 and A10 terminals, and A7 and A25 terminals: The right power mirror moves UP.	• Faulty right power mirror actuator • An open in the wire
A25	BLU			
A11	LT BLU	Under all conditions	Connect the A2 and A11 terminals, and A7 and A25 terminals: The left power mirror swings RIGHT.	• Faulty right power mirror actuator • An open in the wire
A25	BLU			
(1) Reconnect the connector to the front passenger's MPCs unit.				

14. If multiple failures are found on the more than one control unit, replace the under-dash fuse/relay box (includes the MICU). If input failures are related to a particular control unit, replace the control unit.

POWER TILT/TELESCOPIC STEERING CONTROL UNIT INPUT TEST

NOTE: Before testing the power till/telescopic steering control unit, troubleshoot the multiplex integrated control unit first, using **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Turn the ignition switch to LOCK (0).
2. Remove the steering column cover (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnected the 16P connector (A) and 8P connector (B) from the power till/telescopic steering control unit (C).

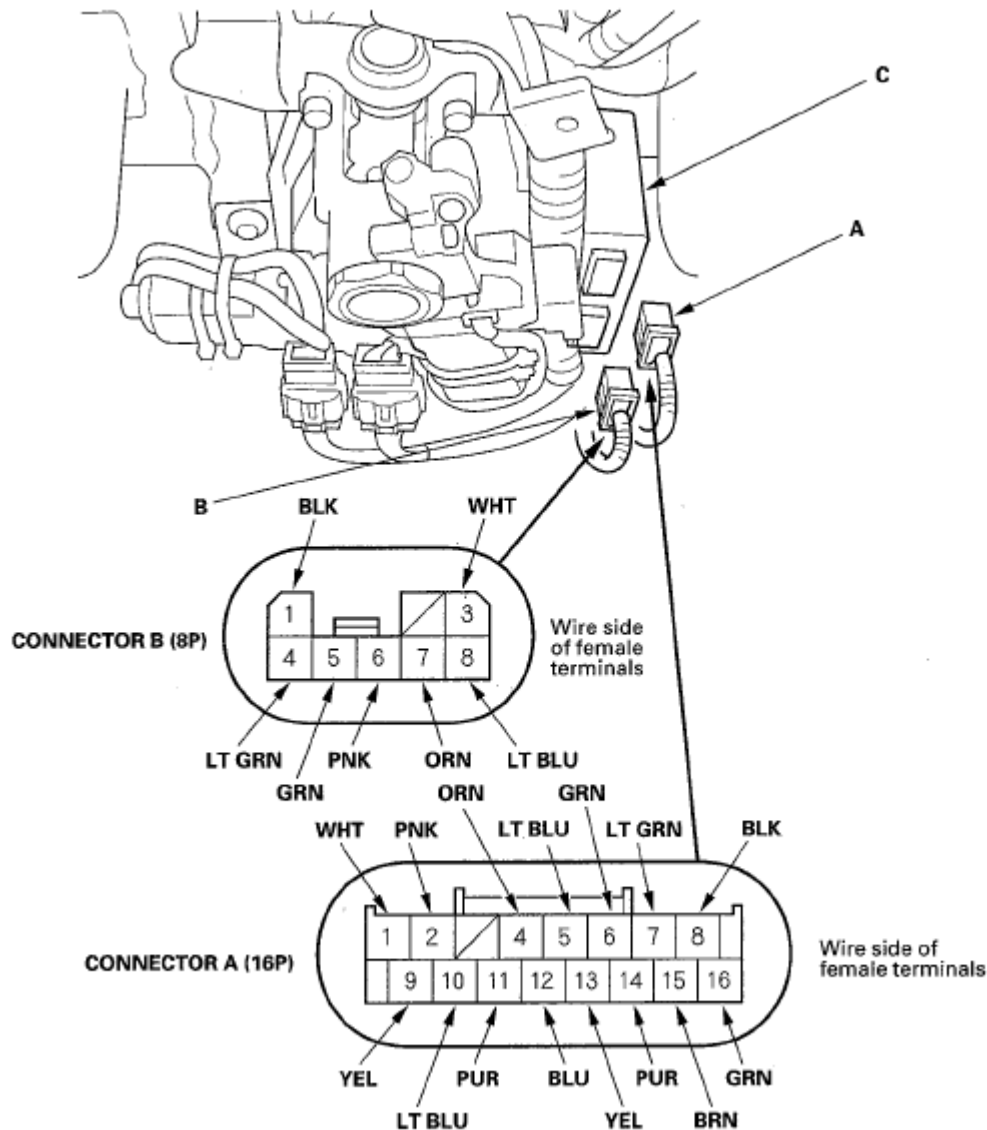


Fig. 98: Identifying 16P Connector, 8P Connector And Power Tilt/Telescopic Steering Control Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. Reconnect the connectors to the power tilt/telescopic steering control unit, and make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the control unit must be faulty; replace it.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not
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2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX**

				obtained
A8	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G503, G506) • An open in the wire
B1				
A1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • An open in the wire
A9	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire
B3	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 2 (OP2) (40 A) fuse in the main under-hood fuse box • Blown No. 28 (20 A) fuse in the under-dash fuse/relay box • An open in the wire
B5	GRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3 (P/W) (50 A) fuse in the main under-hood fuse box • Blown No. 15 (20 A) fuse in the under-dash fuse/relay box • An open in the wire

DRIVING POSITION MEMORY SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the driving position memory switch (B).

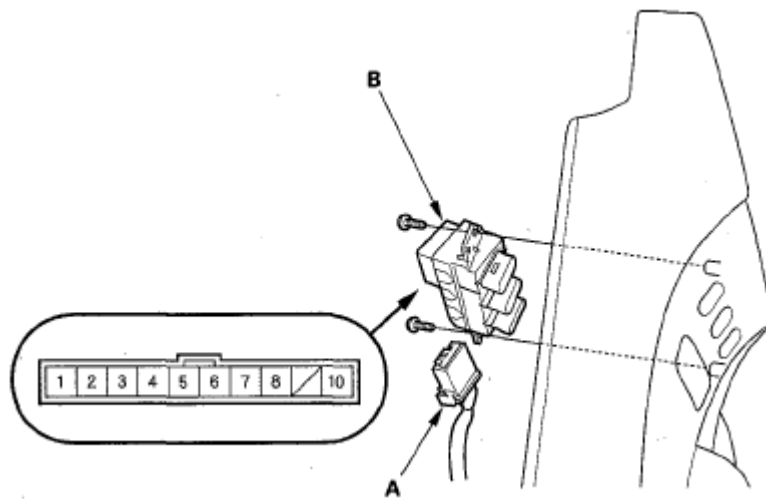


Fig. 99: Identifying 10P Connector And Driving Position Memory Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two screws, then remove the switch from the door panel.
4. Check for continuity between the terminals in each switch position according to the table.

Terminal		8		1	2	4	5	6	7
Position									
MEMO BUTTON	OFF								
	ON					○ — ○			
POSITION 1 BUTTON	OFF								
	ON							○ — ○	
POSITION 2 BUTTON	OFF								
	ON						○ — ○		
INDICATOR 1		○ — ⊗ — ○							
INDICATOR 2		○ — ⊗ — ○							

Fig. 100: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.

POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT

1. Remove the power seat adjustment switch knobs (A) and recline cover from the driver's power seat (see **FRONT SEAT DISASSEMBLY/REASSEMBLY**), then remove the two screws and the power seat adjustment switch (B).

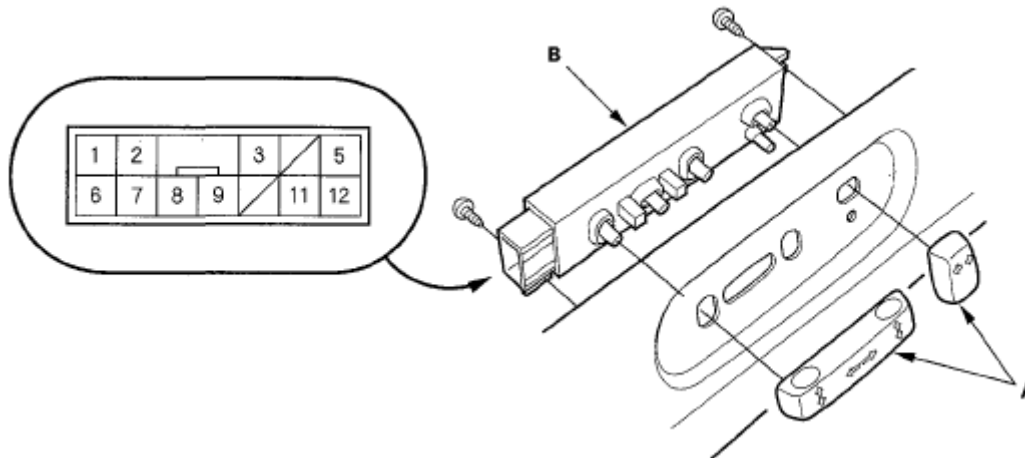


Fig. 101: Identifying Power Seat Adjustment Switch Knobs And Power Seat Adjustment Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 12P connector from the power seat adjustment switch.
3. Reinstall the adjustment switch knobs to the switch.
4. Check for continuity between the terminals in each switch position according to the table.

Terminal		1	2	3	5	6	7	8	9	11	12
Position	SLIDE SWITCH										
	FORWARD							○	—	○	
	BACKWARD						○	—	○		
RECLINE SWITCH	FORWARD		○	—	—	—	—	—	—	—	○
	BACKWARD		○	—	—	○					
FRONT UP-DOWN SWITCH	UP			○	—	—	—	○			
	DOWN							○	—	○	
REAR UP-DOWN SWITCH	UP	○	—	○							
	DOWN		○	—	○						

Fig. 102: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.

DRIVER'S POWER SEAT MOTOR TEST

SLIDE MOTOR, FRONT UP-DOWN MOTOR, REAR UP-DOWN MOTOR

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector from each power seat motor.

NOTE: All connectors are terminal side of male terminals.

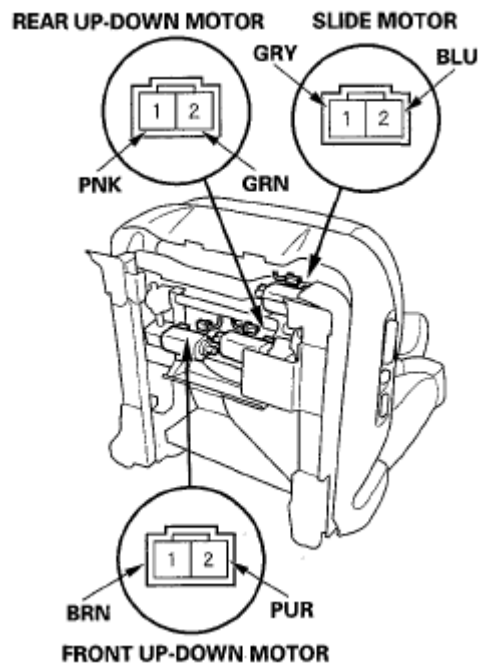


Fig. 103: Identifying 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test each motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Driver Position Memory System (DPMS) - MDX

Terminal		1	2
Position			
SLIDE MOTOR	FORWARD	⊖	⊕
	BACKWARD	⊕	⊖

Terminal		1	2
Position			
FRONT UP-DOWN MOTOR	UP	⊖	⊕
	DOWN	⊕	⊖

Terminal		1	2
Position			
REAR UP-DOWN MOTOR	UP	⊖	⊕
	DOWN	⊕	⊖

Fig. 104: Terminal Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the motor does not run or fails to run smoothly, replace the seat linkage assembly (see **FRONT SEAT LINKAGE DISASSEMBLY/REASSEMBLY**).

NOTE: The slide and up-down motors are not available separately because of the part of seat linkage, refer to the seat linkage disassembly/ reassembly (see **FRONT SEAT LINKAGE DISASSEMBLY/REASSEMBLY**).

RECLINE MOTOR

1. Remove the driver's seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Disconnect the power seat wire harness 8P connector from the recline motor/lumbar support motor subharness.

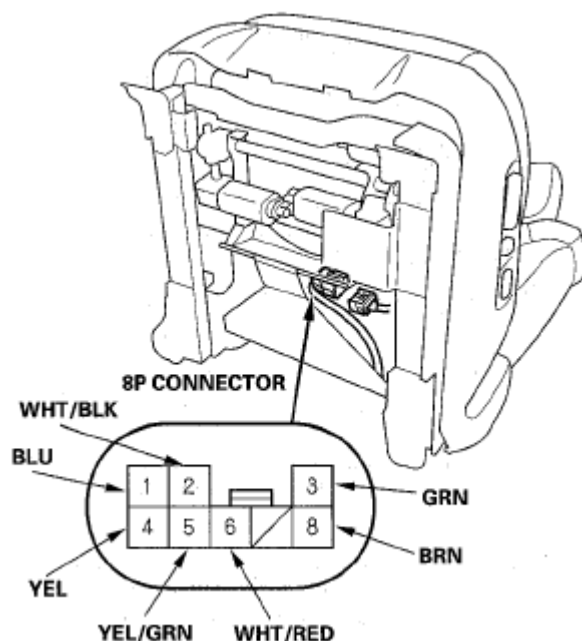


Fig. 105: Identifying Power Seat Wire Harness 8P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Test motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

Terminal		4	5
Position	RECLINE MOTOR	⊕	⊖
	BACKWARD	⊖	⊕

Fig. 106: Terminal Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the motor does not run or fails to run smoothly, check for an open in the wire between the 8P connector and recline motor. If the harness is OK, replace the recline motor (see **FRONT SEAT RECLINE MOTOR REPLACEMENT**).

POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT

- Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
- Disconnect the 13P connector (A) from the power tilt/telescopic steering switch (B).

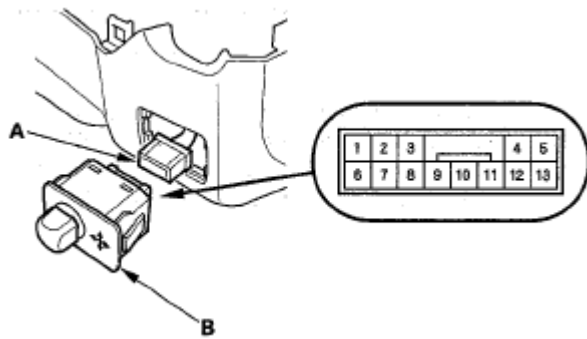


Fig. 107: Identifying 13P Connector And Power Tilt/Telescopic Steering Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	1	3	6	7	10
TILT UP	○	○	○	○	
TILT DOWN	○	○	○	○	
TELESCOPIC PUSH		○	○	○	○
TELESCOPIC PULL		○	○	○	○

Fig. 108: Checking For Continuity Between Terminals In Each Switch Position
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the switch.

POWER TILT/TELESCOPIC STEERING MOTOR TEST

1. Remove the steering column covers (see COLUMN COVER REMOVAL/INSTALLATION).
2. Disconnect the 6P connector and 8P connector from the power tilt/telescopic steering motors.

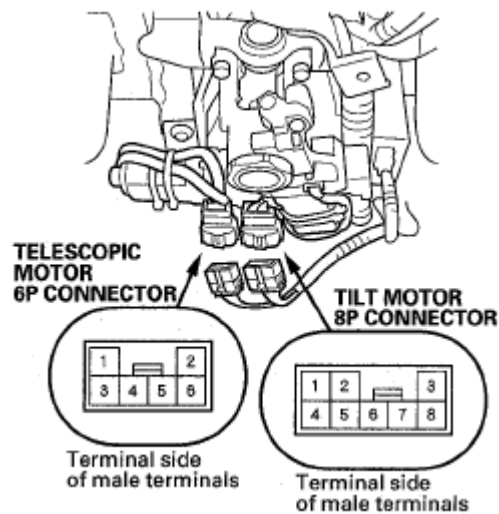


Fig. 109: Identifying 6P Connector And 8P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check each motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

TILT MOTOR:

Terminal	2	3
Position		
TILT UP	⊖	⊕
TILT DOWN	⊕	⊖

Fig. 110: Tilt Motor Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TELESCOPIC MOTOR:

Terminal	1	2
Position		
TELESCOPIC IN	⊖	⊕
TELESCOPIC OUT	⊕	⊖

Fig. 111: Telescopic Motor Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the motor does not run or fails to run smoothly; replace the steering column assembly (see **STEERING COLUMN REMOVAL AND INSTALLATION**).

2007-09 ENGINE PERFORMANCE

EGR System - MDX

COMPONENT LOCATION INDEX

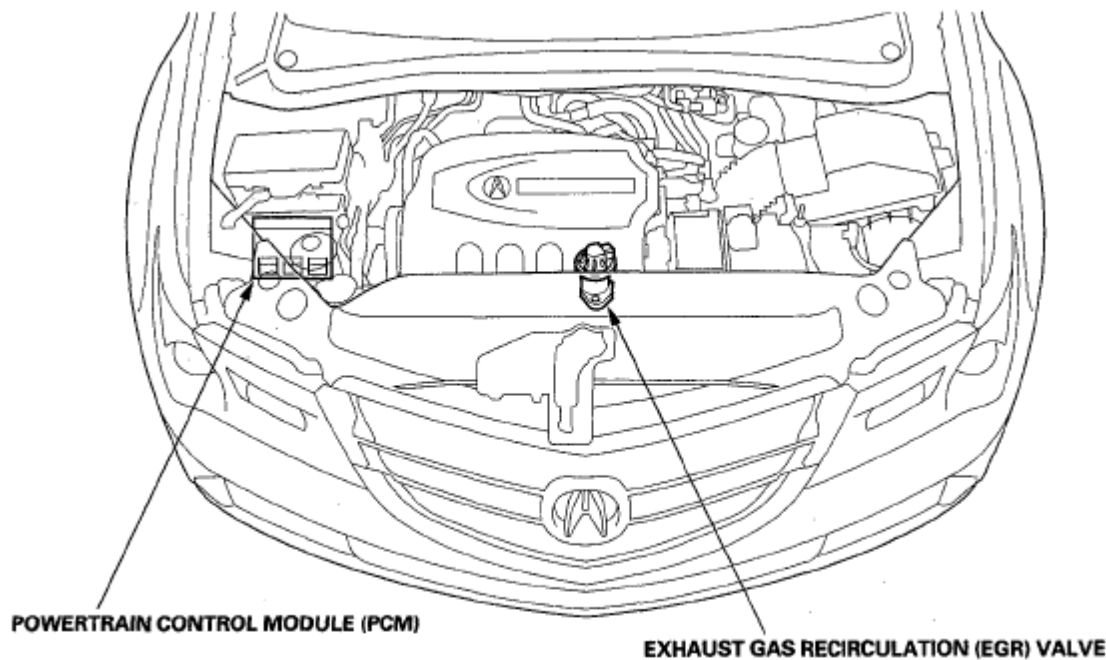


Fig. 1: Identifying EGR System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0401: EGR INSUFFICIENT FLOW

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

YES - Go to step 5.

NO - Go to step 7.

5. Test-drive under these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
- Transmission in D position
- Vehicle speed at 25 mph (40 km/h) or more, and engine speed between 1,100 rpm and 3,000 rpm
- During the drive, decelerate (with the throttle fully closed) for 5 seconds

6. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Remove the engine cover, clean the intake manifold, and EGR ports with throttle plate and induction cleaner, then go to step 9.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 5 and recheck.

7. Turn the ignition switch OFF.

8. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).

9. Turn the ignition switch ON (II).

10. Reset the PCM with the HDS.

11. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

12. Test-drive under these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
- Transmission in D position
- Vehicle speed at 25 mph (40 km/h) or more, and engine speed between 1,100 rpm and 3,000 rpm
- During the drive, decelerate (with the throttle fully closed) for 5 seconds

13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0401 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 15.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 13, go

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

15. Reconnect all connectors, then update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
16. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Vehicle speed at 25 mph (40 km/h) or more, and engine speed between 1,100 rpm and 3,000 rpm
 - During the drive, decelerate (with the throttle fully closed) for 5 seconds
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0401 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 16. If the PCM was substituted, go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 17, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 16. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 16.

DTC P0404: EGR CONTROL CIRCUIT RANGE/ PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.

3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

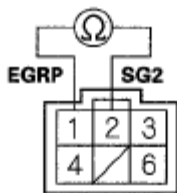
Is the result OK?

YES - Intermittent failure, the system is OK at this time. Clean any carbon build-up on the EGR valve with throttle plate and induction cleaner.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the EGR valve 6P connector.
7. At the sensor side, measure resistance between EGR valve 6P connector terminals No. 1 and No. 2.

EGR VALVE 6P CONNECTOR



Terminal side of male terminals

Fig. 2: Identifying Resistance Between EGR Valve 6P Connector Terminals No. 1 And No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

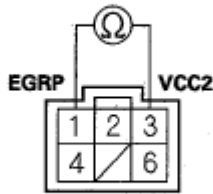
Is there 100 kohms, or more?

YES - Go to step 25.

NO - Go to step 8.

8. Measure resistance between EGR valve 6P connector terminals No. 1 and No. 3.

EGR VALVE 6P CONNECTOR



Terminal side of male terminals

Fig. 3: Identifying Resistance Between EGR Valve 6P Connector Terminals No. 1 And No. 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

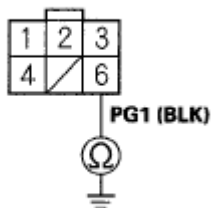
Is there 100 kohms, or more?

YES - Go to step 25.

NO - Go to step 9.

9. Check for continuity between EGR valve 6P connector terminal No. 6 and body ground.

EGR VALVE 6P CONNECTOR



Wire side of female terminals

Fig. 4: Identifying Continuity Between EGR Valve 6P Connector Terminal No. 6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the EGR valve and G101, then go to step 26.

10. Jump the SCS line with the HDS.
11. Disconnect PCM connector C (49P).
12. Check for continuity between PCM connector terminal C10 and body ground.

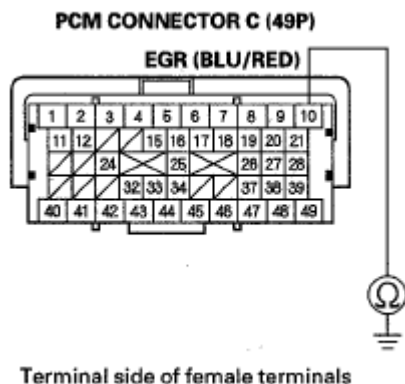


Fig. 5: Checking Continuity Between PCM Connector Terminal C10 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wire between the PCM (C10) and the EGR valve, then go to step 26.

NO - Go to step 13.

13. Check for continuity between PCM connector terminal C10 and EGR valve 6P connector terminal No. 4.

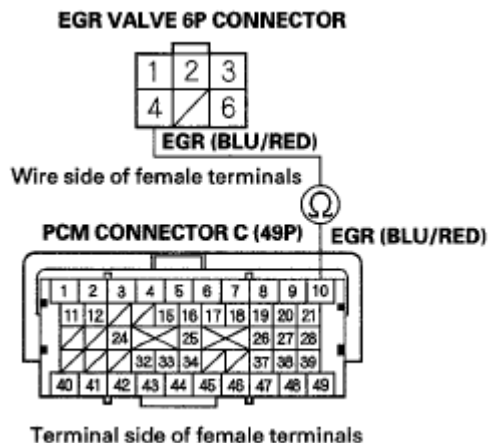


Fig. 6: Identifying Continuity Between PCM Connector Terminal C10 And EGR Valve 6P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the PCM (C10) and the EGR valve, then go to step 26.

14. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

15. Clean the intake manifold EGR port and the passage inside the EGR valve with throttle plate and induction cleaner.
16. Install the EGR valve (see **EGR VALVE REPLACEMENT**).
17. Reconnect the EGR valve 6P connector.
18. Reconnect PCM connector C (49P).
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
23. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Go to step 32.

NO - Go to step 24.

24. Turn the ignition switch OFF.
25. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
26. Reconnect all connectors.
27. Turn the ignition switch ON (II).
28. Reset the PCM with the HDS.
29. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
30. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
31. Do the EGR TEST in the INSPECTION MENU with the HDS.
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0404 indicated?

YES -Check for poor connections or loose terminals at the EGR valve and the PCM. If the connector and terminal fits are OK, go to step 34.

NO -Go to step 33.

33. Monitor the OBD STATUS for DTC P0404 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 32, go to the indicated **DTCs troubleshooting**.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 30.

34. Reconnect all connectors, then update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
35. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
36. Do the EGR TEST in the INSPECTION MENU with the HDS.
37. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0404 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 35. If the PCM was substituted, go to step 1.

NO - Go to step 38.

38. Monitor the OBD STATUS for DTC P0404 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 37, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 35. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 35.

DTC P0406: EGR VALVE POSITION SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check the EGR VLS in the DATA LIST with the HDS.

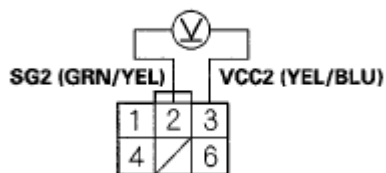
Is 4.88 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the EGR valve 6P connector.
5. Turn the ignition switch ON (II).
6. Measure voltage between EGR valve 6P connector terminals No. 2 and No. 3.

EGR VALVE 6P CONNECTOR



Wire side of female terminals

Fig. 7: Identifying Voltage Between EGR Valve 6P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 11.

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector C (49P).
10. Check for continuity between PCM connector terminal C16 and EGR valve 6P connector terminal No. 2.

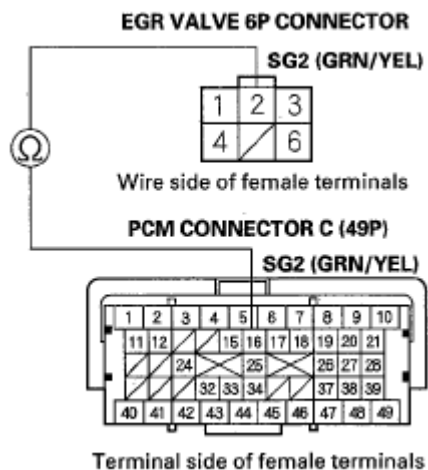


Fig. 8: Identifying Continuity Between PCM Connector Terminal C16 And EGR Valve 6P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the EGR valve and the PCM (C16), then go to step 13.

11. Turn the ignition switch OFF.
12. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0406 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0406 indicated?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

YES - Check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

DTC P2413: EGR SYSTEM MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the PCM.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II).
7. Check the EGR VLS in the DATA LIST with the HDS.

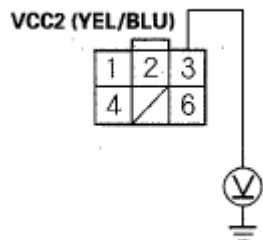
Is about 0 V indicated?

YES - Go to step 8.

NO - Go to step 21.

8. Turn the ignition switch OFF.
9. Disconnect the EGR valve 6P connector.
10. Turn the ignition switch ON (II).
11. Measure voltage between EGR valve 6P connector terminal No. 3 and body ground.

EGR VALVE 6P CONNECTOR



Wire side of female terminals

Fig. 9: Identifying Voltage Between EGR Valve 6P Connector Terminal No. 3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 12.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (49P).
15. Check for continuity between PCM connector terminal C12 and EGR valve 6P connector terminal No. 3.

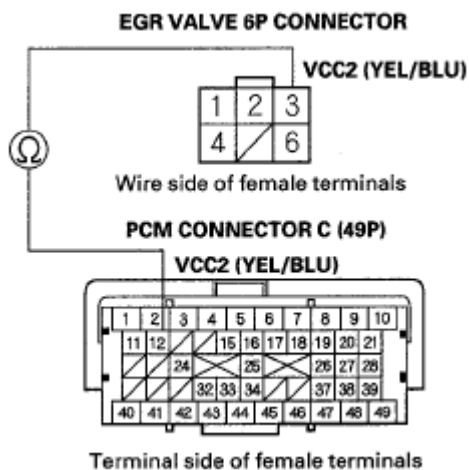


Fig. 10: Identifying Continuity Between PCM Connector Terminal C12 And EGR Valve 6P Connector Terminal No. 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 52.

NO - Repair open in the wire between the EGR valve and the PCM (C12), then go to step 44.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector C (49P).
19. Check for continuity between PCM connector terminal C34 and body ground.

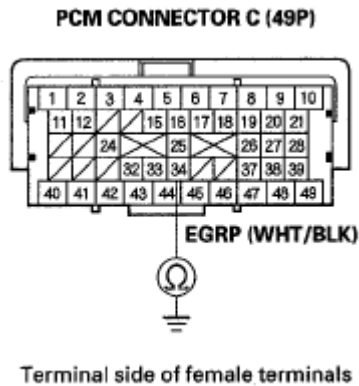


Fig. 11: Identifying Continuity Between PCM Connector Terminal C34 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C34) and the EGR valve, then go to step 44.

NO - Go to step 20.

20. Check for continuity between PCM connector terminal C34 and EGR valve 6P connector terminal No. 1.

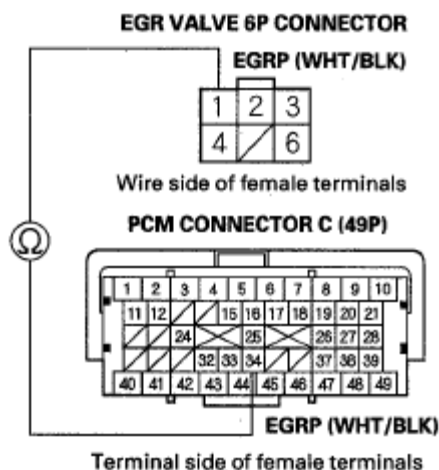


Fig. 12: Identifying Continuity Between PCM Connector Terminal C34 And EGR Valve 6P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

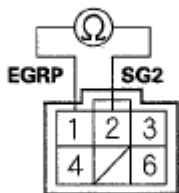
Is there continuity?

YES - Go to step 21.

NO - Repair open in the wire between the PCM (C34) and the EGR valve, then go to step 44.

21. Turn the ignition switch OFF.
22. If not already done, disconnect the EGR valve 6P connector.
23. At the EGR valve side, measure resistance between EGR valve 6P connector terminals No. 1 and No. 2.

EGR VALVE 6P CONNECTOR



Terminal side of male terminals

Fig. 13: Identifying Resistance Between EGR Valve 6P Connector Terminals No. 1 And No. 2
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

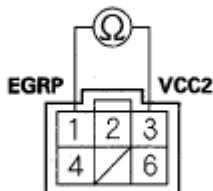
Is there resistance of 100 kohms or more?

YES - Go to step 43.

NO - Go to step 24.

24. At the EGR valve side, measure resistance between EGR valve 6P connector terminals No. 1 and No. 3.

EGR VALVE 6P CONNECTOR



Terminal side of male terminals

Fig. 14: Identifying Resistance Between EGR Valve 6P Connector Terminals No. 1 And No. 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there resistance of 100 kohms or more?

YES - Go to step 43.

NO - Go to step 25.

25. If not already done, jump the SCS line with the HDS.
26. If not already done, disconnect PCM connector C (49P).
27. Check for continuity between PCM connector terminal C10 and body ground.

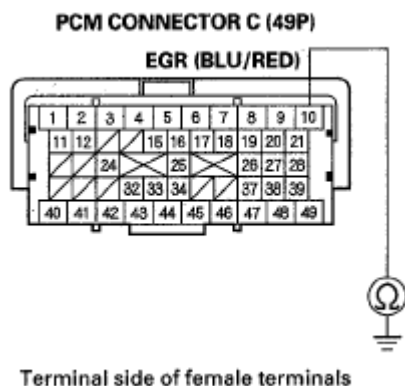


Fig. 15: Identifying Continuity Between PCM Connector Terminal C10 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C10) and the EGR valve, then go to step 44.

NO - Go to step 28.

28. Check for continuity between PCM connector terminal C10 and EGR valve 6P connector terminal No. 4.

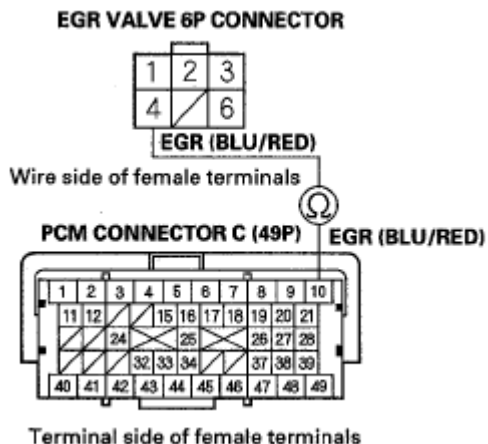


Fig. 16: Identifying Continuity Between PCM Connector Terminal C10 And EGR Valve 6P Connector Terminal No. 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

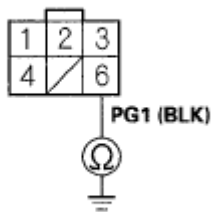
Is there continuity?

YES - Go to step 29.

NO - Repair open in the wire between the PCM (C10) and the EGR valve, then go to step 44.

29. Check for continuity between EGR valve 6P connector terminal No. 6 and body ground.

EGR VALVE 6P CONNECTOR



Wire side of female terminals

Fig. 17: Identifying Continuity Between EGR Valve 6P Connector Terminal No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

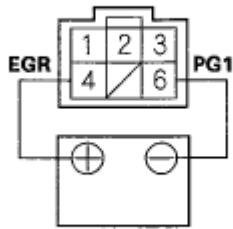
Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire between the EGR valve and G101 (see **GROUND TO COMPONENTS INDEX**), then go to step 44.

30. Reconnect PCM connector C (49P).
31. At the EGR valve side, connect the battery positive terminal to EGR valve 6P connector terminal No. 4 with a jumper wire.

EGR VALVE 6P CONNECTOR



Terminal side of male terminals

Fig. 18: Identifying Battery Positive Terminal To EGR Valve 6P Connector Terminal No. 4 With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Start the engine and let it idle, then connect the battery negative terminal to EGR valve 6P connector terminal No. 6 with a jumper wire.

Does the engine stall or run rough?

YES - Go to step 51.

NO - Go to step 33.

33. Turn the ignition switch OFF.
34. Remove the EGR valve (see **EGR VALVE REPLACEMENT**).
35. Clean the intake manifold EGR port at the passage inside the EGR valve with throttle plate and induction cleaner.
36. Install the EGR valve (see **EGR VALVE REPLACEMENT**).
37. Reconnect all connectors.
38. Turn the ignition switch ON (II).
39. Reset the PCM with the HDS.
40. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
41. Do the EGR TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Go to step 49.

NO - Go to step 42.

42. Turn the ignition switch OFF.
43. Replace the EGR valve (see **EGR VALVE REPLACEMENT**).
44. Reconnect all connectors.
45. Turn the ignition switch ON (II).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EGR System - MDX

46. Reset the PCM with the HDS.
47. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
48. Do the EGR TEST in the INSPECTION MENU with the HDS.
49. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2413 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 1.

NO - Go to step 50.

50. Monitor the OBD STATUS for DTC P2413 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 49, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EGR valve and the PCM, then go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

51. Turn the ignition switch OFF.
52. Reconnect all connectors.
53. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
54. Do the EGR TEST in the INSPECTION MENU with the HDS.
55. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2413 indicated?

YES - Check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 56.

56. Monitor the OBD STATUS for DTC P2413 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 55, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates **FAILED**, check for poor connections or loose terminals at the EGR valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 54. If the PCM was substituted, go to step 1. If the screen indicates **EXECUTING** or **OUT OF CONDITION**, go to step 54 and recheck.

EGR VALVE REPLACEMENT

1. Remove the engine cover (see step 1 on **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
2. Remove the main under-hood fuse box.
3. Disconnect the EGR valve connector (A).

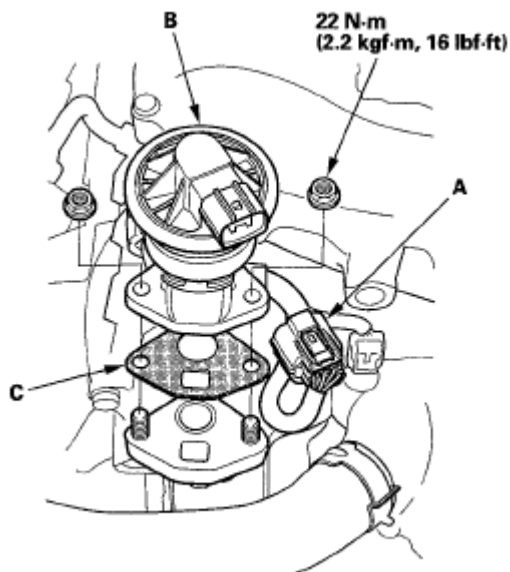


Fig. 19: Identifying EGR Valve Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the EGR valve (B).
5. Install the parts in the reverse order of removal with a new gasket (C).

2008 Acura MDX

2008 ACURA MDX

2008 ACURA**MDX****BUZZERS, RELAYS & TIMERS****BUZZERS, RELAYS & TIMERS LOCATION**

Component	Location
Accessory Power Socket Relay (20)	In underdash fuse/relay box. See Fig. 2 .
A/C Compressor Clutch Relay (3)	In auxiliary underhood fuse/relay box. See Fig. 1 .
A/C Condenser Fan Relay (4)	In auxiliary underhood fuse/relay box. See Fig. 1 .
ACC Relay	Under left side of dash. See Fig. 145 .
Brake Light Relay	Under left side of dash. See Fig. 145 .
Cargo Area Accessory Power Socket Relay (4)	In rear fuse/relay box. See Fig. 3 .
Fan Control Relay (7)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Foglight Relay (1)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Front Blower Motor Relay (8)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Front Seat Heater Relay (21)	In underdash fuse/relay box. See Fig. 2 .
Headlight Low Beam Relay (9)	In auxiliary underhood fuse/relay box. See Fig. 1 .
IG2 Relay	Under left side of dash. See Fig. 145 .
Interior Light Relay (2)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Keyless Buzzer/Power Tailgate Buzzer	Behind rear bumper. See Fig. 16 .
PGM-FI Main Relay 2 (22)	In underdash fuse/relay box. See Fig. 2 .
Power Window Relay (23)	In underdash fuse/relay box. See Fig. 2 .
Radiator Fan Relay (10)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Rear Blower Motor Relay	Under center console. See Fig. 126 .
Rear Window Defogger Relay (6)	In rear fuse/relay box. See Fig. 3 .
Second Row Seat Heater Relay	Under center console. See Fig. 128 .
SH-AWD Relay (7)	In rear fuse/relay box. See Fig. 3 .
Starter Cut Relay 1	Under left side of dash. See Fig. 145 .
Starter Cut Relay 2	Under left side of dash. See Fig. 145 .
Trailer Backup Relay	Under rear fuse/relay box. See Fig. 65 .
Trailer Charge Relay	Under rear fuse/relay box. See Fig. 65 .
Trailer Lighting Relay	Under rear fuse/relay box. See Fig. 65 .
Turn Signal/Hazard Relay (26)	In underdash fuse/relay box. See Fig. 2 .

CIRCUIT PROTECTION DEVICES**CIRCUIT PROTECTION DEVICES LOCATION**

Component	Location
A/C Condenser Fan Diode (5)	In auxiliary underhood fuse/relay box. See Fig. 1 .

2008 Acura MDX

2008 ACURA MDX

Back-Up Sensor In-Line Fuse	Left rear of cargo area. See Fig. 65 .
Main Under-Hood Fuse/Relay Box	Left front of engine compartment. See Fig. 53 .
PCM Inline Fuse 1	Behind left kick panel. See Fig. 8 .
PCM Inline Fuse 2	Behind left kick panel. See Fig. 8 .
Radiator Fan Diode (6)	In auxiliary underhood fuse/relay box. See Fig. 1 .
Rear Fuse/Relay Box	Left side of cargo area. See Fig. 63 .
Under-Dash Fuse/Relay Box	Behind left kick panel. See Fig. 8 .
Under-Hood Fuse/Relay Box	Right side of engine compartment. See Fig. 116 .

CONTROL UNITS

CONTROL UNITS LOCATION

Component	Location
Active Damper System Control Unit	Left side of cargo area. See Fig. 67 .
AcuraLink Control Unit (XM Receiver)	Right side of cargo area. See Fig. 107 .
Back-Up Sensor Control Unit	Left rear of cargo area. See Fig. 66 .
Fuel Pump Control Module	Left side of cargo area. See Fig. 61 .
HandsFreeLink Control Unit	Under rear of center console. See Fig. 155 .
Headlight Adjuster Control Unit	Under right side of dash. See Fig. 159 .
Moonroof Control Unit	Center front of roof. See Fig. 35 .
MPCS Unit (Driver's)	In driver's door. See Fig. 5 .
MPCS Unit (Passenger's)	In front passenger's door. See Fig. 7 .
Music Link Unit	Behind right side of dash. See Fig. 20 .
Navigation Unit	On floor, under driver's seat. See Fig. 132 .
OPS Unit	In left side of front passenger's seat. See Fig. 13 .
PCM	Right front of engine compartment. See Fig. 101 .
Power Seat Control Unit (Driver's)	Under driver's seat. See Fig. 131 .
Power Tailgate Closer Unit	Center of tailgate. See Fig. 27 .
Power Tailgate Control Unit	Left side of cargo area. See Fig. 69 .
Power Tilt/Telescopic Steering Control Unit	Under left side of dash. See Fig. 142 .
SH-AWD Control Unit	Left side of cargo area. See Fig. 60 .
SRS Unit	Behind lower center of dash. See Fig. 149 .
TPMS Control Unit	Under left side of dash. See Fig. 141 .
Trailer Lighting Control Unit	Under rear fuse/relay box. See Fig. 65 .
VSA Modulator-Control Unit	Left side of engine compartment. See Fig. 79 .

MOTORS

MOTORS LOCATION

Component	Location
A/C Condenser Fan Motor	Behind radiator. See Fig. 102 .

2008 Acura MDX

2008 ACURA MDX

Air Mix Control Motor (Driver's)	Under left side of dash. See <u>Fig. 140.</u>
Air Mix Control Motor (Front Passenger's)	Under middle of dash. See <u>Fig. 153.</u>
Air Mix Control Motor (Rear)	Under center console. See <u>Fig. 127.</u>
Blower Motor	Under right side of dash. See <u>Fig. 156.</u>
Door Lock Actuator (Driver's)	In driver's door. See <u>Fig. 29.</u>
Door Lock Actuator (Front Passenger's)	In front passenger's door. See <u>Fig. 40.</u>
Door Lock Actuator (Left Rear)	In left rear door. See <u>Fig. 59.</u>
Door Lock Actuator (Right Rear)	In right rear door. See <u>Fig. 105.</u>
Front Recirculation Control Motor	Under middle of dash. See <u>Fig. 154.</u>
Fuel Tank Unit	Top of fuel tank. See <u>Fig. 42.</u>
Headlight Leveling Motor (Left)	Behind left headlight assembly. See <u>Fig. 164.</u>
Headlight Leveling Motor (Right)	Behind right headlight assembly. See <u>Fig. 165.</u>
Lumbar Support Motor (Driver's)	In right side of driver's seat back. See <u>Fig. 166.</u>
Mode Control Motor (Front)	Under middle of dash. See <u>Fig. 154.</u>
Mode Control Motor (Rear)	Under center console. See <u>Fig. 127.</u>
Power Mirror Actuator (Left)	In driver's door mirror. See <u>Fig. 30.</u>
Power Mirror Actuator (Right)	In front passenger's door mirror. See <u>Fig. 41.</u>
Power Seat Front Up-Down Motor (Driver's)	Under driver's seat. See <u>Fig. 130.</u>
Power Seat Front Up-Down Motor (Front Passenger's)	Under front passenger's seat. See <u>Fig. 135.</u>
Power Seat Rear Up-Down Motor (Driver's)	Under driver's seat. See <u>Fig. 130.</u>
Power Seat Rear Up-Down Motor (Front Passenger's)	Under front passenger's seat. See <u>Fig. 135.</u>
Power Seat Recline Motor (Driver's)	In driver's seat back. See <u>Fig. 73.</u>
Power Seat Recline Motor (Front Passenger's)	Left side of front passenger's seat back. See <u>Fig. 168.</u>
Power Seat Slide Motor (Driver's)	Under driver's seat. See <u>Fig. 130.</u>
Power Seat Slide Motor (Front Passenger's)	Under front passenger's seat. See <u>Fig. 135.</u>
Power Tailgate Closer Motor	Center of tailgate. See <u>Fig. 27.</u>
Power Tailgate Driver Unit	At left "D" pillar. See <u>Fig. 52.</u>
Power Telescopic Steering Motor	On steering column. See <u>Fig. 47.</u>
Power Tilt Steering Motor	On steering column. See <u>Fig. 47.</u>
Power Window Motor (Driver's)	In driver's door. See <u>Fig. 29.</u>
Power Window Motor (Front Passenger's)	In front passenger's door. See <u>Fig. 40.</u>
Power Window Motor (Left Rear)	In left rear door. See <u>Fig. 59.</u>
Power Window Motor (Right Rear)	In right rear door. See <u>Fig. 105.</u>
Radiator Fan Motor	Front of engine compartment. See <u>Fig. 56.</u>
Rear Blower Motor	Under center console. See <u>Fig. 126.</u>
Rear Window Wiper Motor	Center of tailgate. See <u>Fig. 26.</u>
Tailgate Release Actuator	Center of tailgate. See <u>Fig. 28.</u>
Throttle Body	Right side of engine. See <u>Fig. 78.</u>

2008 Acura MDX

2008 ACURA MDX

Windshield Washer Motor	Behind right side of front bumper, on washer reservoir. See Fig. 21 .
Windshield Wiper Motor	Under left side of cowl cover. See Fig. 139 .

SENDING UNITS & SENSORS**SENDING UNITS & SENSORS LOCATION**

Component	Location
A/C Pressure Sensor	Right side of engine compartment. See Fig. 114 .
APP Sensor	Under left side of dash. See Fig. 140 .
ATF Temperature Sensor	On transaxle end cover. See Fig. 137 .
Automatic Lighting Sensor/Sunlight Sensor	Under top center of dash. See Fig. 37 .
Back-Up Sensors (4)	In rear bumper. See Fig. 94 .
CMP Sensor	Right front of engine. See Fig. 112 .
ECT Sensor 1	Rear of engine. See Fig. 74 .
ECT Sensor 2	Left side of engine compartment. See Fig. 81 .
EGR Valve Position Sensor	Rear of engine. See Fig. 74 .
Evaporator Sensor (Rear)	Under center console. See Fig. 127 .
Evaporator Temperature Sensor (Front)	Under left side of dash. See Fig. 140 .
Front A/F Sensor (B2, S1)	Left rear of engine. See Fig. 31 .
Front Passenger's Weight Sensor (Inner Side)	Under front passenger's seat. See Fig. 133 .
Front Passenger's Weight Sensor (Outer Side)	Under front passenger's seat. See Fig. 133 .
Front Secondary HO2S (B2, S2)	Left rear of engine. See Fig. 31 .
Front Vertical Acceleration Sensor	Under left side of dash. See Fig. 141 .
Fuel Tank Pressure (FTP) Sensor	In fuel tank. See Fig. 44 .
Impact Sensor (Left Front)	Behind left side of front bumper. See Fig. 12 .
Impact Sensor (Right Front)	Behind left side of front bumper. See Fig. 23 .
In-Car Temperature Sensor	Behind lower left dash cover. See Fig. 14 .
Input Shaft (Mainshaft) Speed Sensor	On transmission housing. See Fig. 124 .
Left Side Impact Sensor (1st)	Base of left "B" pillar. See Fig. 48 .
Left Side Impact Sensor (2nd)	In left "C" pillar. See Fig. 50 .
MAF/IAT Sensor	In air intake duct. See Fig. 77 .
MAP Sensor	Top of throttle body. See Fig. 78 .
Output Shaft (Countershaft) Speed Sensor	On transmission housing. See Fig. 124 .
Outside Air Temperature Sensor	Forward of radiator. See Fig. 39 .
Power Mirror Position Sensor (Left)	In driver's door mirror. See Fig. 30 .
Power Mirror Position Sensor (Right)	In front passenger's door mirror. See Fig. 41 .
Power Seat Front Up-Down Sensor (Driver's)	Under driver's seat. See Fig. 130 .
Power Seat Rear Up-Down Sensor (Driver's)	Under driver's seat. See Fig. 130 .
Power Seat Recline Position Sensor (Driver's)	In driver's seat back. See Fig. 73 .
Power Seat Slide Sensor (Driver's)	Under driver's seat. See Fig. 130 .

2008 Acura MDX

2008 ACURA MDX

Power Tailgate Pinch Sensor (Left)	Left side of tailgate. See Fig. 86.
Power Tailgate Pinch Sensor (Right)	Right side of tailgate. See Fig. 121.
Power Telescopic Steering Motor/Position Sensor	On steering column. See Fig. 169.
Power Tilt Steering Motor/Position Sensor	On steering column. See Fig. 47.
Rear A/F Sensor (B1, S1)	Right rear of engine. See Fig. 32.
Rear Differential Oil Temperature Sensor	Right side of rear differential. See Fig. 118.
Rear Safing Sensor	Middle of floor. See Fig. 93.
Rear Secondary HO2S (B1, S1)	Right rear of engine. See Fig. 32.
Rear Vertical Acceleration Sensor (Left)	Left side of cargo area. See Fig. 68.
Rear Vertical Acceleration Sensor (Right)	Right side of cargo area. See Fig. 108.
Right Side Impact Sensor (1st)	Base of right "B" pillar. See Fig. 96.
Right Side Impact Sensor (2nd)	In right "C" pillar. See Fig. 98.
Roll Rate Sensor	Middle of floor. See Fig. 93.
Seat Position Sensor (Driver's)	Under driver's seat. See Fig. 129.
Steering Angle Sensor	Behind steering column cover. See Fig. 46.
Stroke/Headlight Leveling Sensor (Left Front)	On left front suspension. See Fig. 58.
Stroke/Headlight Leveling Sensor (Left Rear)	On left side of rear subframe. See Fig. 85.
Stroke Sensor (Right Front)	On right front suspension. See Fig. 104.
Stroke Sensor (Right Rear)	On right rear subframe. See Fig. 120.
Wheel Speed Sensor (Connector) (Left Front)	Lower left front of engine compartment. See Fig. 136.
Wheel Speed Sensor (Connector) (Left Rear)	Left side of rear subframe. See Fig. 84.
Wheel Speed Sensor (Connector) (Right Front)	Lower right front of engine compartment. See Fig. 161.
Wheel Speed Sensor (Connector) (Right Rear)	Right side of rear subframe. See Fig. 119.
Yaw Rate-Lateral/Longitudinal Acceleration Sensor	Under middle of dash. See Fig. 150.

SOLENOIDS & SOLENOID VALVES**SOLENOIDS & SOLENOID VALVES LOCATION**

Component	Location
A/C Compressor Clutch	Left front of engine. See Fig. 115.
A/T Clutch Pressure Control Valve A	On transmission housing. See Fig. 76.
A/T Clutch Pressure Control Valve B	On transmission housing. See Fig. 76.
A/T Clutch Pressure Control Valve C	On transmission housing. See Fig. 125.
A/T Shift Lock Solenoid	Under center console, at base of shift lever assembly. See Fig. 128.
EGR Valve	Rear of engine. See Fig. 74.
Engine Mount Control Solenoid	On transmission housing. See Fig. 123.
EVAP Canister Purge Valve	Top rear of intake manifold. See Fig. 75.
EVAP Canister Vent Shut Valve	Near fuel tank. See Fig. 43.

2008 Acura MDX

2008 ACURA MDX

Fuel Fill Door Opener Solenoid	Left side of cargo area. See Fig. 62.
IMT Actuator	Top front of engine. See Fig. 111.
Injectors No. 1 - No. 6	Top of engine. See Fig. 91.
Rocker Arm Oil Control Solenoid Valve	Under right side of engine compartment. See Fig. 163.
Starter Solenoid	Left rear of engine. See Fig. 76.

SWITCHES**SWITCHES LOCATION**

Component	Location
Brake Fluid Level Switch	On brake fluid reservoir. See Fig. 80.
Brake Pedal Position Switch	Top of brake pedal arm. See Fig. 143.
Door Switch (Driver's)	In left "B" pillar. See Fig. 49.
Door Switch (Front Passenger's)	In right "B" pillar. See Fig. 97.
Door Switch (Left Rear)	In left "C" pillar. See Fig. 50.
Door Switch (Right Rear)	In right "C" pillar. See Fig. 98.
Driver's Seat Belt Buckle Switch (Connector)	Under driver's seat. See Fig. 129.
Front Passenger's Seat Belt Buckle Switch (Connector)	Under front passenger's seat. See Fig. 133.
Hood Switch	Center front of engine compartment. See Fig. 38.
Horn Switch (Positive Terminal)	Inside steering wheel. See Fig. 122.
Key Cylinder Switch (Driver's)	In driver's door. See Fig. 29.
Knob Switch (Driver's)	In driver's door. See Fig. 29.
Knob Switch (Front Passenger's)	In front passenger's door. See Fig. 40.
Knob Switch (Left Rear)	In left rear door. See Fig. 59.
Knob Switch (Right Rear)	In right rear door. See Fig. 105.
Oil Pressure Switch	Under right side of engine compartment. See Fig. 162.
Parking Brake Switch	Under left side of dash. See Fig. 146.
Power Steering Pressure Switch	On power steering pressure line, near gearbox. See Fig. 160.
Power Tailgate Inside Switch	Center of tailgate. See Fig. 27.
Rocker Arm Oil Pressure Switch	Under right side of engine compartment. See Fig. 162.
Tailgate Latch Switch	Center of tailgate. See Fig. 28.
Tailgate Outside Handle Switch	Center of tailgate. See Fig. 26.
Transmission Gear Selection Switch/Park Pin Switch	Under center console. See Fig. 128.
Transmission Range Switch	On transmission housing. See Fig. 76.
Washer Fluid Level Switch	Behind right side of front bumper, on washer reservoir. See Fig. 21.

2008 Acura MDX

2008 ACURA MDX

2nd Clutch Transmission Fluid Pressure Switch	On transmission housing. See Fig. 123 .
3rd Clutch Transmission Fluid Pressure Switch	On transmission housing. See Fig. 124 .
4th Clutch Transmission Fluid Pressure Switch	On transmission housing. See Fig. 125 .

MISCELLANEOUS

MISCELLANEOUS LOCATION

Component	Location
AC Inverter Unit	Under middle of dash. See Fig. 152 .
Airbag First & Second Inflators (Driver's)	Inside steering wheel. See Fig. 122 .
Airbag First & Second Inflators (Front Passenger's)	Behind right side of dash. See Fig. 157 .
AM/FM Amplifier	Center rear of roof. See Fig. 95 .
Back-Up Sensor Beeper	Left rear of cargo area. See Fig. 66 .
Cable Reel	Behind steering column cover. See Fig. 45 .
Damper Coil (Left Front)	Behind left front wheel. See Fig. 167 .
Damper Coil (Left Rear)	Behind left rear wheelwell. See Fig. 11 .
Damper Coil (Right Front)	Behind right front wheel. See Fig. 167 .
Damper Coil (Right Rear)	Behind right rear wheelwell. See Fig. 19 .
DLC	Under middle of dash. See Fig. 148 .
Driver's Seat Back Heater (Connector)	Under driver's seat. See Fig. 129 .
Driver's Seat Cushion Heater (Connector)	Under driver's seat. See Fig. 129 .
Front Blower Power Transistor	Under middle of dash. See Fig. 153 .
Front Passenger's Seat Cushion Heater (Connector)	Under front passenger's seat. See Fig. 134 .
GPS Antenna Lead	Under middle of dash. See Fig. 149 .
Horn (High)	Behind right side of front bumper. See Fig. 22 .
Horn (Low)	Behind right side of front bumper. See Fig. 24 .
Ignition Coils No. 1, 2 & 3	Top right side of engine. See Fig. 92 .
Ignition Coils No. 4, 5 & 6	Top left side of engine. See Fig. 90 .
Junction Connector C103	Right side of engine. See Fig. 89 .
Junction Connector C104	Right side of engine. See Fig. 89 .
Junction Connector C105	Right side of engine. See Fig. 89 .
Junction Connector C208	Behind right kick panel. See Fig. 17 .
Junction Connector C209	Behind right side of dash. See Fig. 157 .
Junction Connector C210	Behind right side of dash. See Fig. 157 .
Junction Connector C211	Under left side of dash. See Fig. 141 .
Junction Connector C212	Right front of engine compartment. See Fig. 101 .
Junction Connector C510	Under left side of dash. See Fig. 71 .
Junction Connector C511	Under left side of dash. See Fig. 146 .
Junction Connector C512	Under left side of dash. See Fig. 146 .
Junction Connector C513	Under left side of dash. See Fig. 142 .
Junction Connector C514	Under left side of dash. See Fig. 142 .

2008 Acura MDX

2008 ACURA MDX

Junction Connector C515	Under left side of dash. See Fig. 72 .
Junction Connector C516	Under left side of dash. See Fig. 72 .
Junction Connector C517	Under left side of dash. See Fig. 72 .
Junction Connector C518	Under left side of dash. See Fig. 72 .
Junction Connector C519	Under middle of dash. See Fig. 149 .
Junction Connector C520	Under middle of dash. See Fig. 149 .
Junction Connector C521	Behind center of dash. See Fig. 87 .
Junction Connector C522	Behind center of dash. See Fig. 87 .
Junction Connector C523	Behind center of dash. See Fig. 88 .
Junction Connector C524	Behind center of dash. See Fig. 87 .
Junction Connector C525	Behind center of dash. See Fig. 87 .
Junction Connector C526	Behind center of dash. See Fig. 88 .
Junction Connector C527	Behind center of dash. See Fig. 87 .
Junction Connector C528	Behind center of dash. See Fig. 87 .
Junction Connector C529	Behind right side of dash. See Fig. 157 .
Junction Connector C530	Behind right side of dash. See Fig. 158 .
Junction Connector C608	Under middle of dash. See Fig. 150 .
Junction Connector C612	Left side of cargo area. See Fig. 61 .
Junction Connector C615	Right side of cargo area. See Fig. 106 .
Junction Connector C852	Left front of roof. See Fig. 57 .
Junction Connector C853	Center front of roof. See Fig. 36 .
Junction Connector C854	Center front of roof. See Fig. 36 .
Junction Connector C902	Under middle of dash. See Fig. 152 .
Navigation Service Check Connector	Under driver's seat. See Fig. 132 .
Noise Condenser (High Mount Brake Light)	Left side of cargo area. See Fig. 62 .
Noise Condenser (Rear Defogger)	Left side of cargo area. See Fig. 62 .
Rear Blower Power Transistor	Under center console. See Fig. 126 .
Rearview Camera	Center of tailgate. See Fig. 26 .
Reverse Diode	Left side of cargo area. See Fig. 171 .
Seat Belt Tensioner (Driver's)	Base of left "B" pillar. See Fig. 48 .
Seat Belt Tensioner (Front Passenger's)	Base of right "B" pillar. See Fig. 96 .
Side Airbag Inflator (Driver's)	Under driver's seat. See Fig. 129 .
Side Airbag Inflator (Front Passenger's)	Under front passenger's seat. See Fig. 133 .
Side Curtain Airbag Inflator (Left)	Top of left "C" pillar. See Fig. 51 .
Side Curtain Airbag Inflator (Right)	Top of right "C" pillar. See Fig. 99 .
Stereo Amplifier	Under right side of dash. See Fig. 156 .
TPMS Initiator (Left Front)	Behind left side of front bumper. See Fig. 12 .
TPMS Initiator (Left Rear)	Rear of left rear wheelwell. See Fig. 10 .
TPMS Initiator (Right Front)	Behind right side of front bumper. See Fig. 23 .
TPMS Initiator (Right Rear)	Rear of right rear wheelwell. See Fig. 18 .
Trailer Connectors (4 & 7 Pin)	Under center of rear bumper. See Fig. 15 .

2008 Acura MDX

2008 ACURA MDX

	Under left side of dash. See Fig. 144.
XM Receiver	Right side of cargo area. See Fig. 109.

CONNECTORS**CONNECTORS LOCATION**

Component	Location
C101 (Black, 13 Pin)	Right front of engine compartment. See Fig. 101.
C102 (Black, 1 Pin)	Left rear of engine compartment. See Fig. 80.
C151 (Black, 6 Pin)	Under right side of engine compartment. See Fig. 163.
C152 (Black, 1 Pin)	Top front of engine. See Fig. 111.
C153 (Black, 5 Pin)	Rear of engine. See Fig. 76.
C201 (White, 34 Pin)	Behind right kick panel. See Fig. 17.
C202 (White, 5 Pin)	Behind right kick panel. See Fig. 17.
C203 (Yellow, 4 Pin)	Behind right kick panel. See Fig. 17.
C204 (White, 23 Pin)	Behind right kick panel. See Fig. 17.
C205 (Gray, 2 Pin)	Left front of engine compartment. See Fig. 56.
C206 (White, 14 Pin)	Under left side of dash. See Fig. 141.
C207 (White, 20 Pin)	Under left side of dash. See Fig. 141.
C301 (Black, 3 Pin)	Left front of engine compartment. See Fig. 55.
C303 (Brown, 7 Pin)	Behind left kick panel. See Fig. 8.
C304 (White, 14 Pin)	Under left side of dash. See Fig. 143.
C305 (Yellow, 4 Pin)	Under left side of dash. See Fig. 143.
C306 (Black, 2 Pin)	Left side of engine compartment. See Fig. 80.
C307 (Black, 2 Pin)	Right side of engine compartment. See Fig. 113.
C501 (White, 20 Pin)	In left "A" pillar. See Fig. 70.
C502 (White, 12 Pin)	Under middle of dash. See Fig. 151.
C503 (White, 16 Pin)	Under middle of dash. See Fig. 151.
C531 (White, 8 Pin)	Under steering column. See Fig. 47.
C532 (Light Blue, 6 Pin)	Under steering column. See Fig. 47.
C601 (White, 20 Pin)	Behind left kick panel. See Fig. 8.
C602 (White, 20 Pin)	Under center console. See Fig. 127.
C603 (White, 5 Pin)	Under center console. See Fig. 127.
C604 (White, 12 Pin)	Behind right kick panel. See Fig. 17.
C605 (White, 18 Pin)	Behind right kick panel. See Fig. 17.
C606 (White, 24 Pin)	Under middle of dash. See Fig. 152.
C609 (White, 23 Pin)	Under driver's seat. See Fig. 129.
C610 (White, 14 Pin)	Under front passenger's seat. See Fig. 134.
C611 (Base) (White, 4 Pin)	Left side of cargo area. See Fig. 63.
C611 (Tech, Sport; Canada: Base) (White, 12 Pin)	Left side of cargo area. See Fig. 64.

2008 Acura MDX

2008 ACURA MDX

C613 (Black, 23 Pin)	Under left rear of vehicle. See <u>Fig. 138.</u>
C614 (Base) (White, 2 Pin)	Right side of cargo area. See <u>Fig. 106.</u>
C614 (Tech, Sport) (White, 13 Pin)	Right side of cargo area. See <u>Fig. 107.</u>
C616 (Gray, 4 Pin)	Under front passenger's seat. See <u>Fig. 134.</u>
C617 (Blue/Black, 2 Pin)	Behind left rear wheelwell. See <u>Fig. 11.</u>
C618 (Blue/Black, 2 Pin)	In right rear wheelwell. See <u>Fig. 19.</u>
C619 (Gray, 4 Pin)	Under front passenger's seat. See <u>Fig. 135.</u>
C651 (Gray, 4 Pin)	At rear differential. See <u>Fig. 83.</u>
C652 (Gray, 4 Pin)	At rear differential. See <u>Fig. 118.</u>
C701 (White, 23 Pin)	At left "D" pillar. See <u>Fig. 52.</u>
C702 (Blue, 18 Pin)	Left side of tailgate. See <u>Fig. 86.</u>
C703 (White, 18 Pin)	Right side of tailgate. See <u>Fig. 121.</u>
C704 (White, 12 Pin)	In right "D" pillar. See <u>Fig. 100.</u>
C705 (Gray, 2 Pin)	Left side of cargo area. See <u>Fig. 69.</u>
C751 (White, 20 Pin)	In driver's door. See <u>Fig. 29.</u>
C752 (White, 28 Pin)	In driver's door. See <u>Fig. 4.</u>
C753 (White, 16 Pin)	In driver's door. See <u>Fig. 4.</u>
C771 (White, 23 Pin)	Behind right kick panel. See <u>Fig. 17.</u>
C772 (White, 20 Pin)	In front passenger's door. See <u>Fig. 6.</u>
C773 (White, 16 Pin)	In front passenger's door. See <u>Fig. 6.</u>
C781 (White, 18 Pin)	In left "B" pillar. See <u>Fig. 49.</u>
C791 (White, 18 Pin)	In right "B" pillar. See <u>Fig. 97.</u>
C851 (Blue, 4 Pin)	Left front of roof. See <u>Fig. 57.</u>
C901 (White, 23 Pin)	Under middle of dash. See <u>Fig. 152.</u>
C903 (White, 8 Pin)	Left side of cargo area. See <u>Fig. 65.</u>
C904 (White, 6 Pin)	Left rear of cargo area. See <u>Fig. 66.</u>
C905 (White, 14 Pin)	Behind right side of dash. See <u>Fig. 20.</u>
C931 (White/Green, 8 Pin)	Under driver's seat. See <u>Fig. 129.</u>
C932 (Gray/Blue, 2 Pin)	Right side of driver's seat back. See <u>Fig. 166.</u>
C951 (White, 24 Pin)	In right "A" pillar. See <u>Fig. 110.</u>

GROUPS**GROUPS LOCATION**

Component	Location
G1	Left front of engine compartment. See <u>Fig. 54.</u>
G2	Lower left front of engine compartment. See <u>Fig. 137.</u>
G3	Right front of engine. See <u>Fig. 103.</u>
G101	Right side of engine compartment. See <u>Fig. 114.</u>
G201	Right side of engine compartment. See <u>Fig. 117.</u>

2008 Acura MDX

2008 ACURA MDX

G202	Right side of engine compartment. See Fig. 113.
G301	Left side of engine compartment. See Fig. 82.
G302	Left rear of engine compartment. See Fig. 80.
G303	Lower left front of engine compartment. See Fig. 136.
G401	Behind right kick panel. See Fig. 17.
G501	Under left side of dash. See Fig. 147.
G502	Under left side of dash. See Fig. 147.
G504	Behind right side of dash. See Fig. 158.
G505	Behind right side of dash. See Fig. 158.
G506	Behind right side of dash. See Fig. 158.
G507	Behind right side of dash. See Fig. 157.
G601	Behind left kick panel. See Fig. 9.
G602	On floor, under driver's seat. See Fig. 33.
G603	Left side of cargo area. See Fig. 62.
G604	Left side of cargo area. See Fig. 61.
G605	On floor, under front passenger's seat. See Fig. 34.
G606	Base of right "B" pillar. See Fig. 96.
G701	At left "D" pillar. See Fig. 52.
G702	Center of cargo area floor. See Fig. 25.

SPLICES

SPLICES LOCATION

Component	Location
S103 (Thermal Joint)	Top of transmission housing. See Fig. 123.
S104 (Thermal Joint)	Top of transmission housing. See Fig. 123.
S701 (Thermal Joint)	Left side of cargo area. See Fig. 170.

COMPONENT LOCATION GRAPHICS

NOTE: Figures may show multiple component locations. Refer to appropriate table for proper figure references.

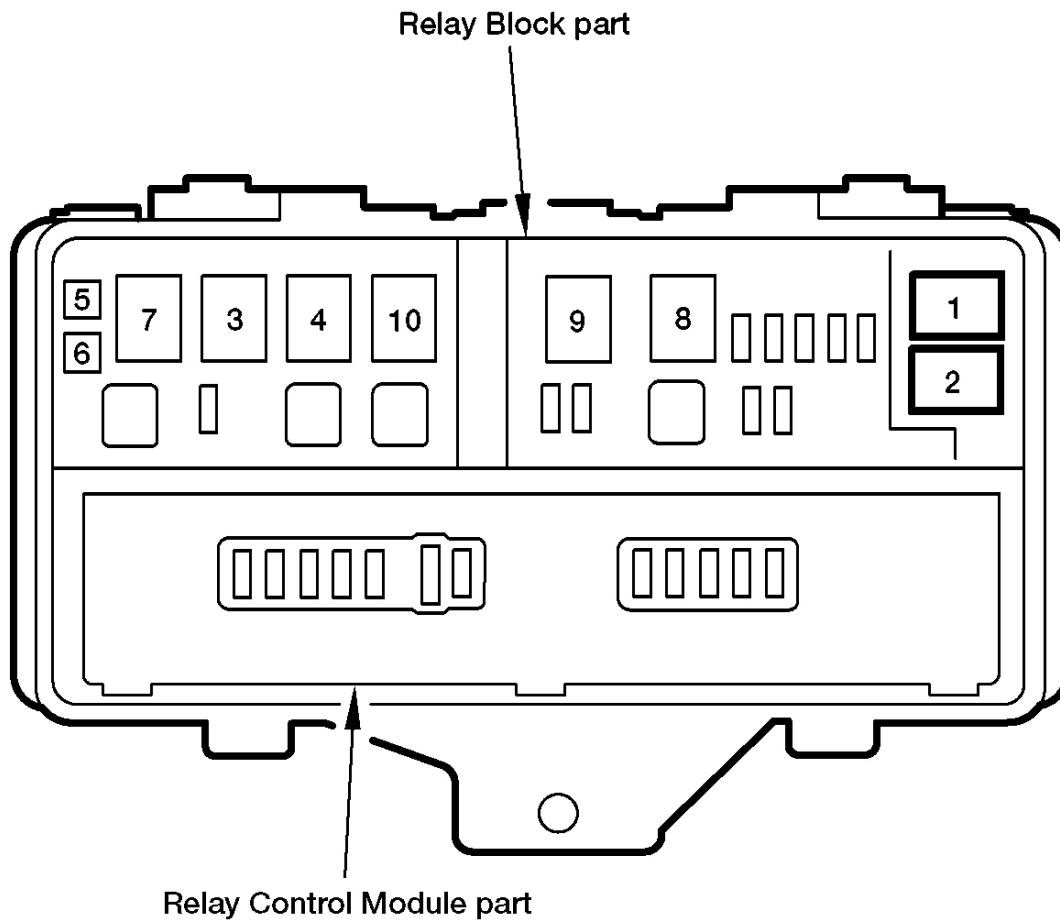


Fig. 1: Auxiliary Underhood Fuse/Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

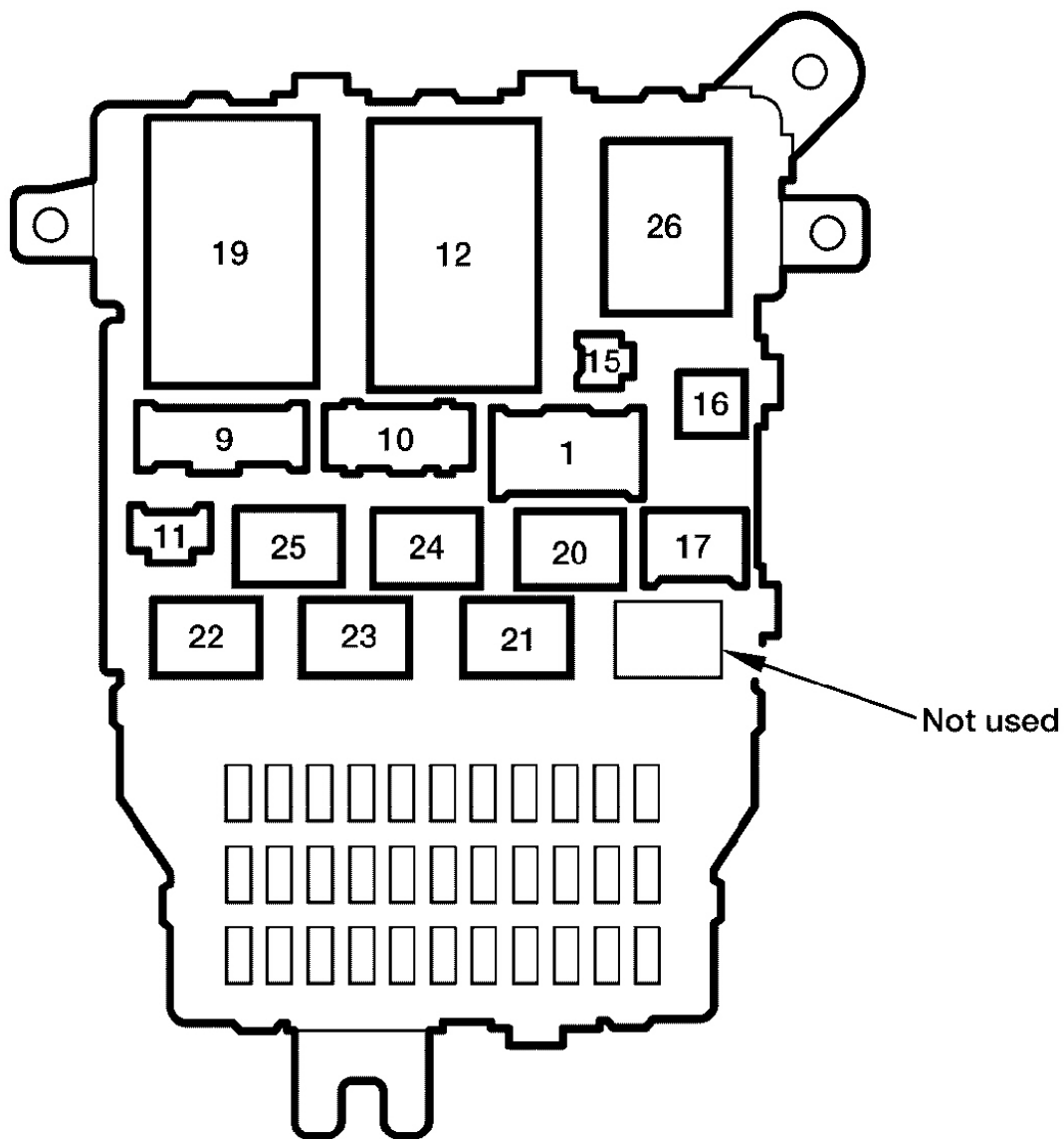


Fig. 2: Underdash Fuse/Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

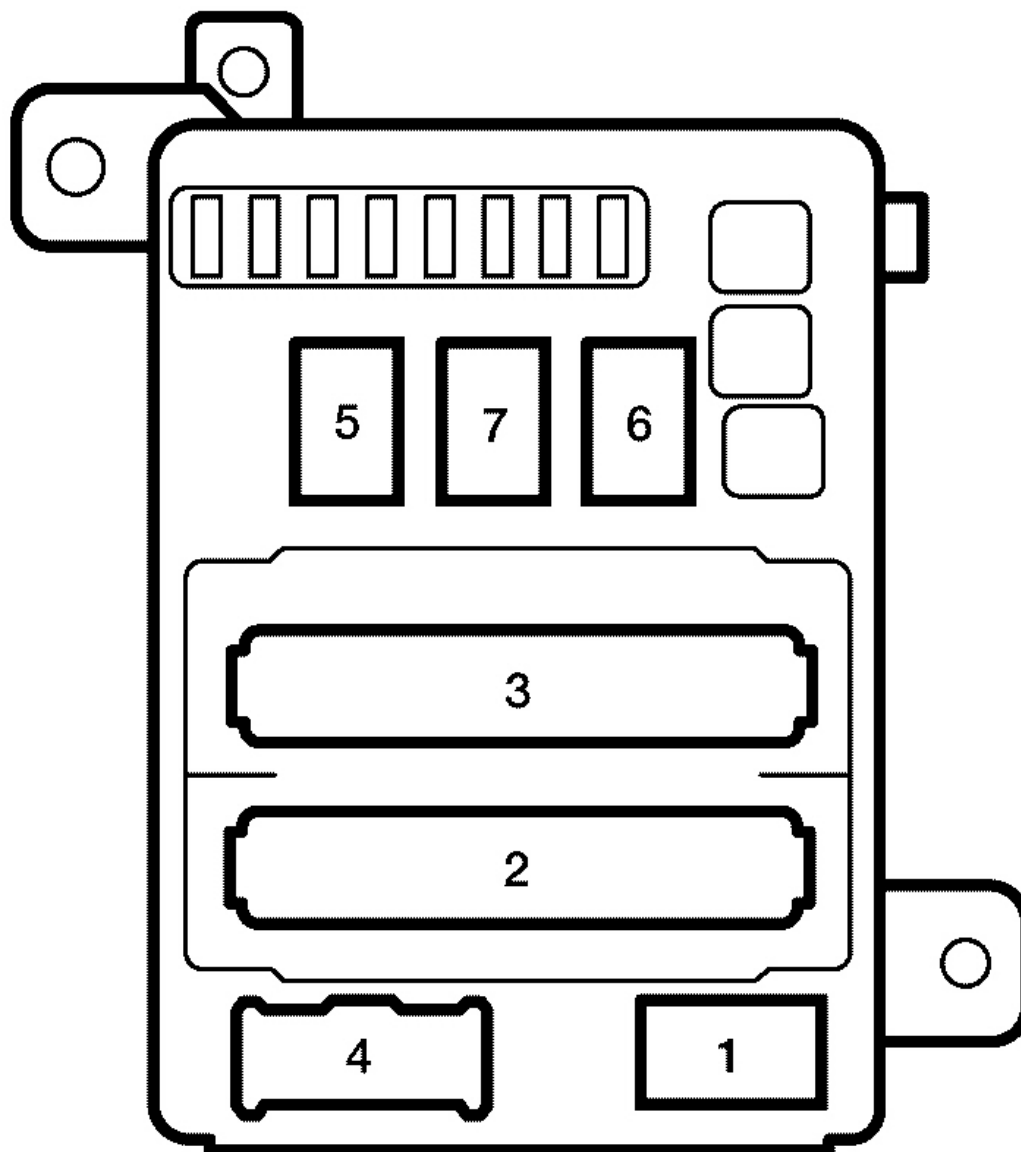


Fig. 3: Rear Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

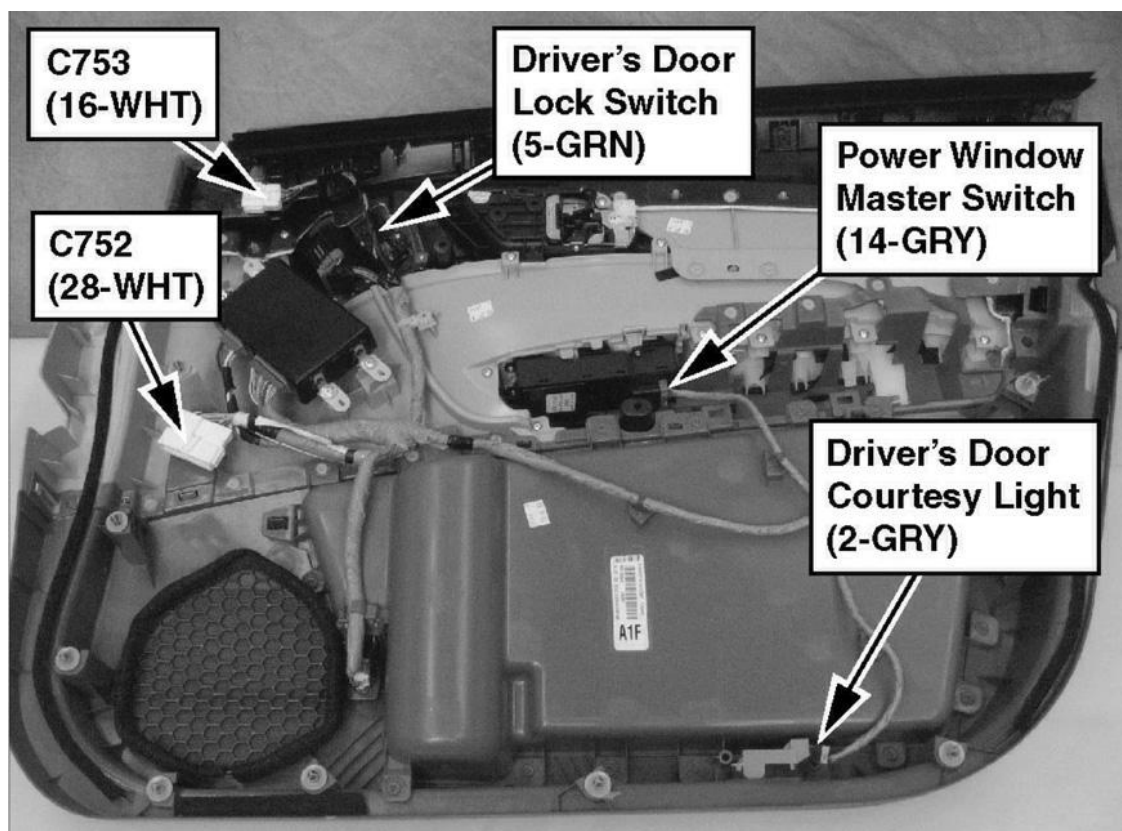


Fig. 4: Driver's Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

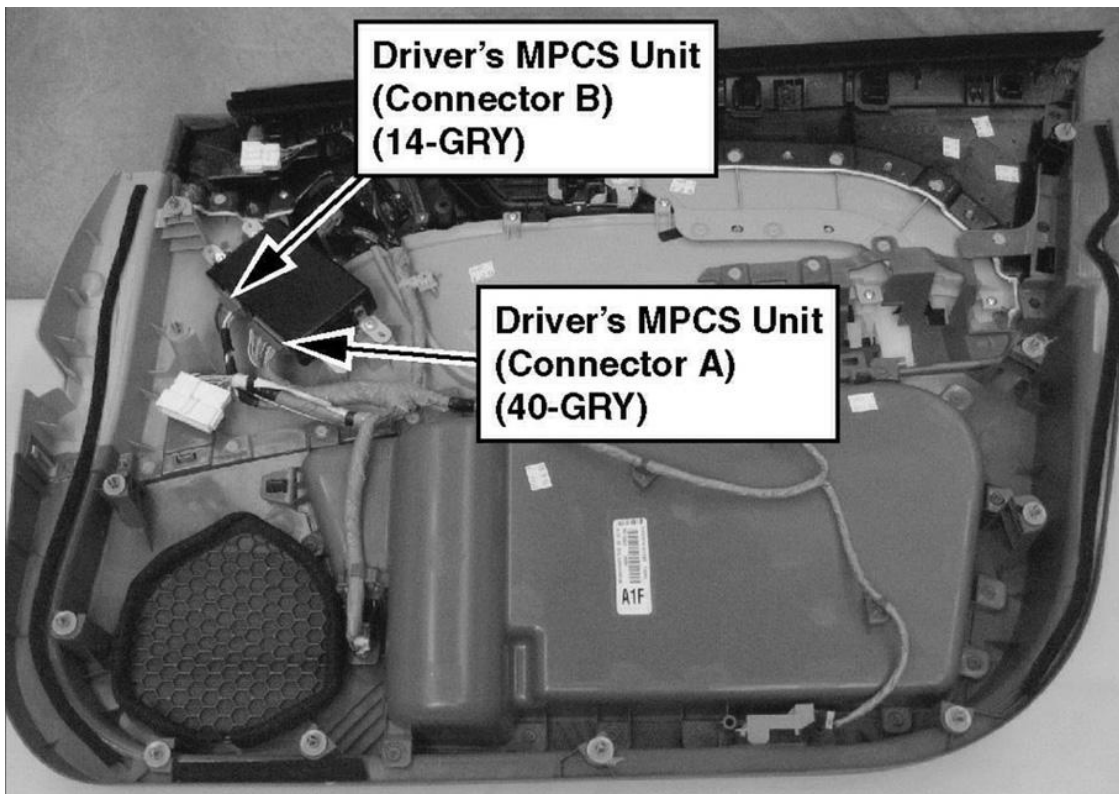


Fig. 5: Driver's Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

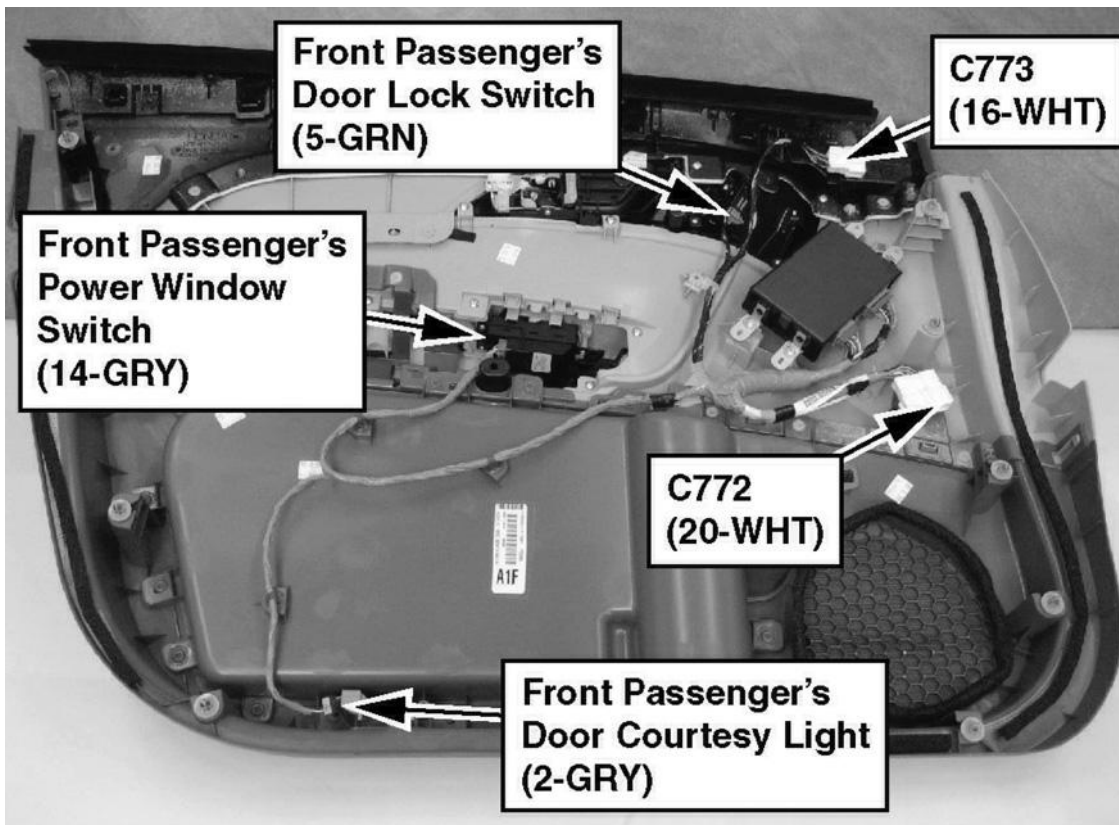


Fig. 6: Front Passenger's Door
Courtesy of AMERICAN HONDA MOTOR CO., INC.

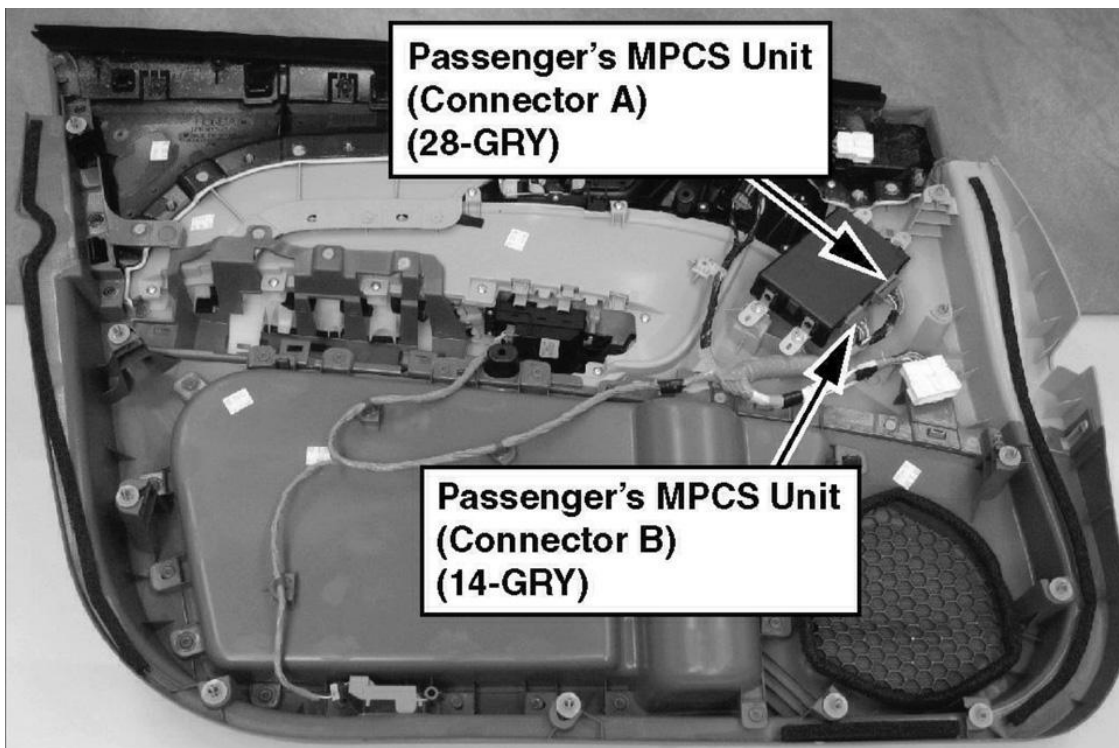


Fig. 7: Front Passenger's Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

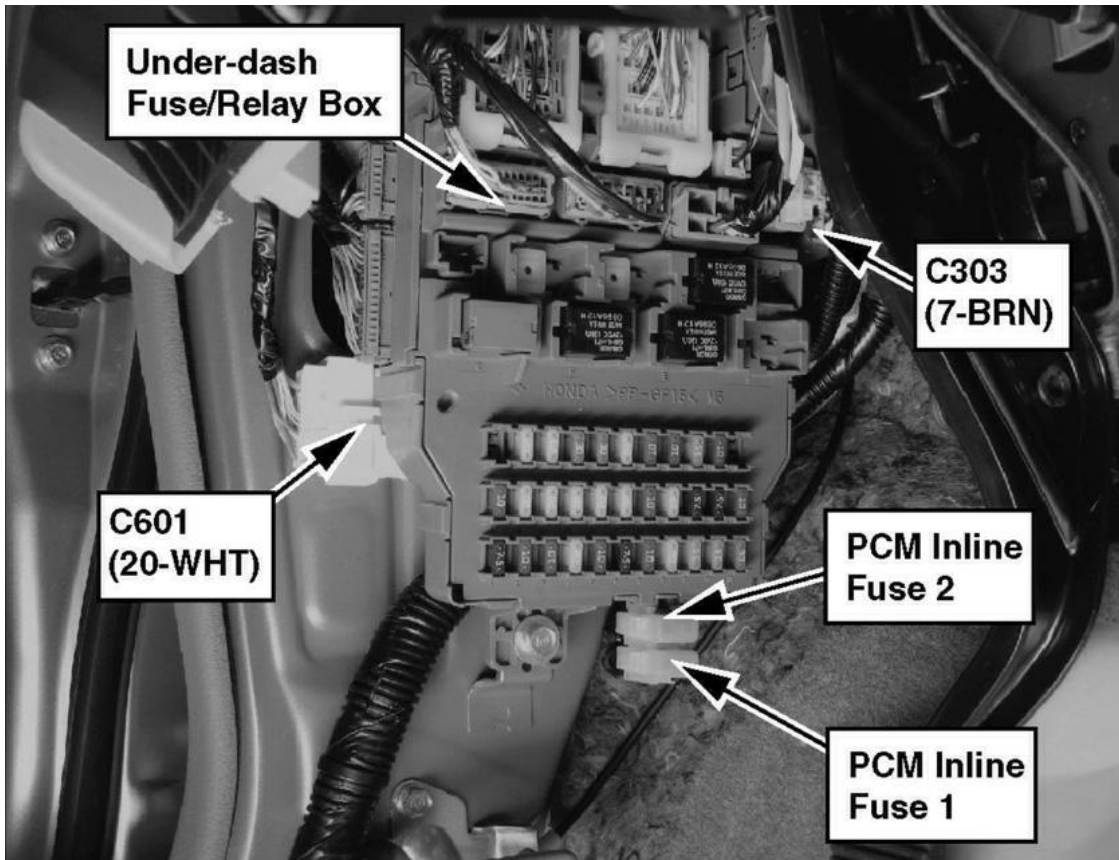


Fig. 8: Left Kick Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

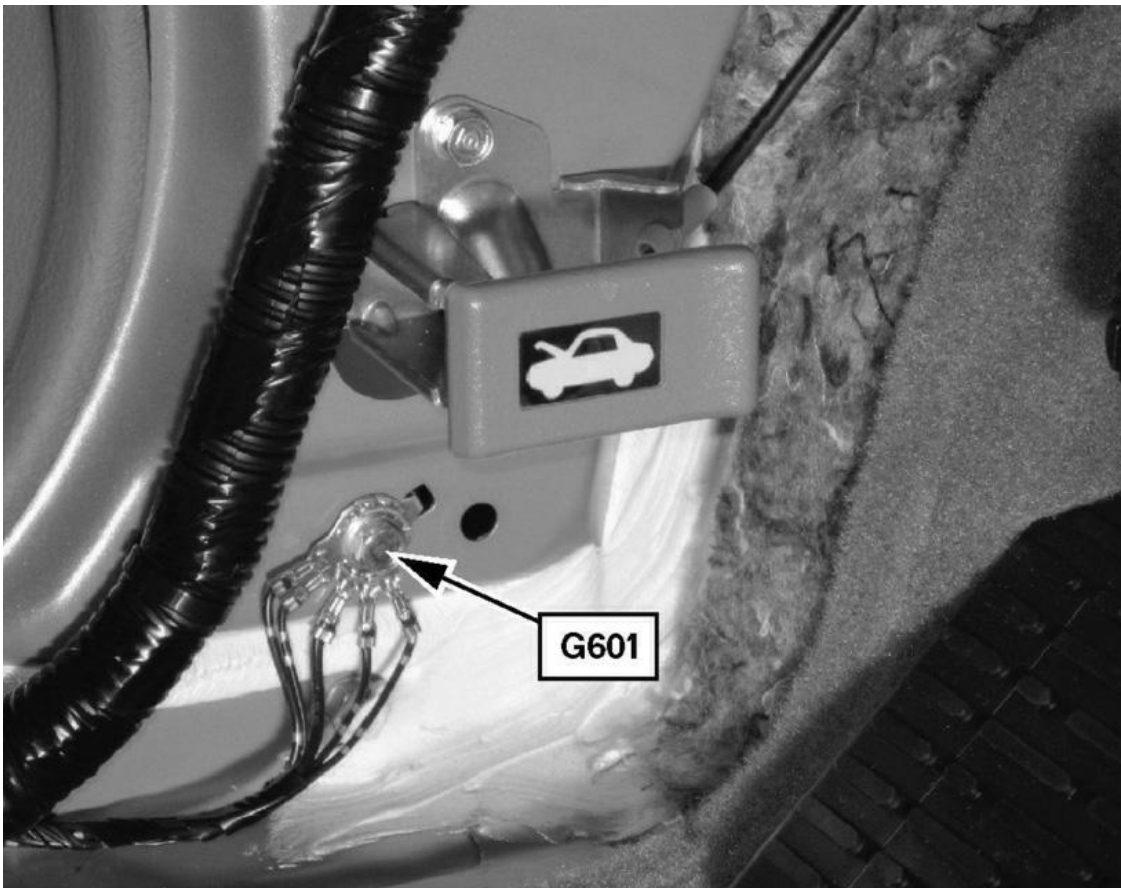


Fig. 9: Left Kick Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

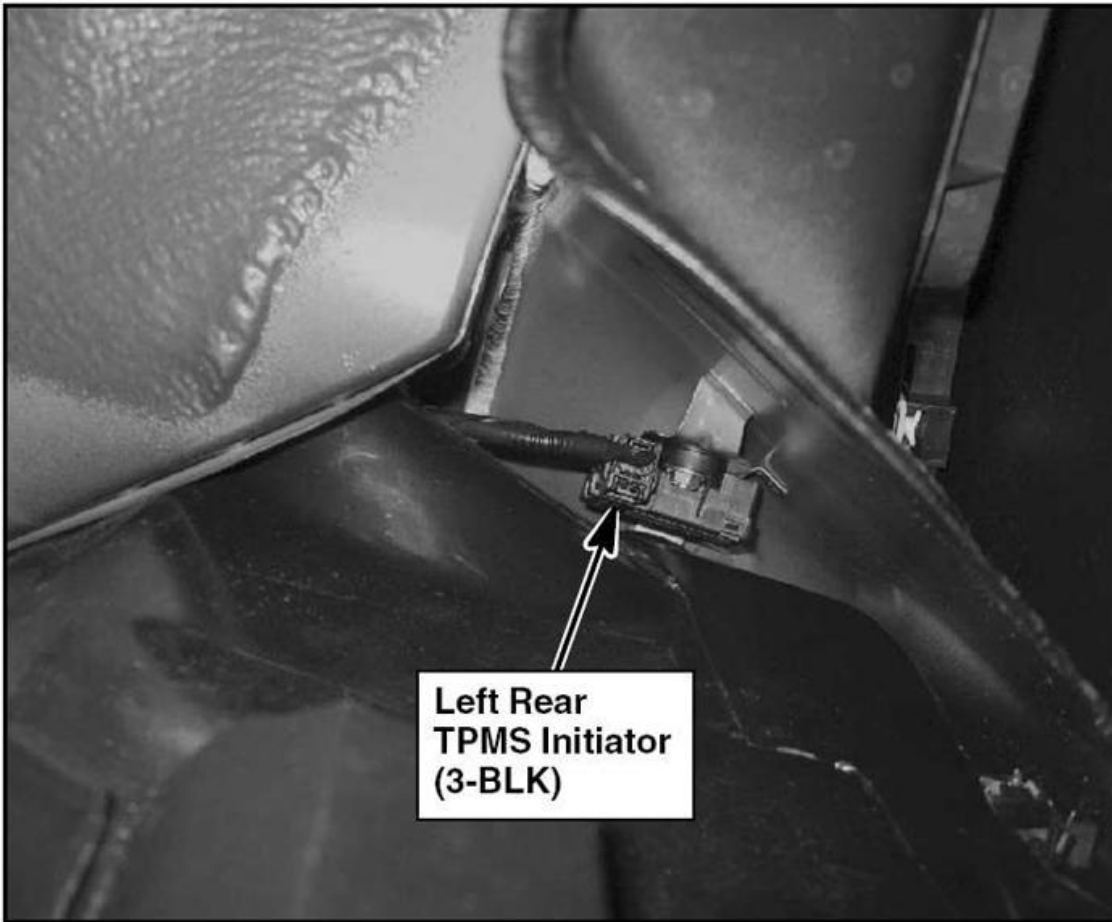


Fig. 10: Left Rear Wheelwell

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 11: Left Rear Wheelwell

Courtesy of AMERICAN HONDA MOTOR CO., INC.

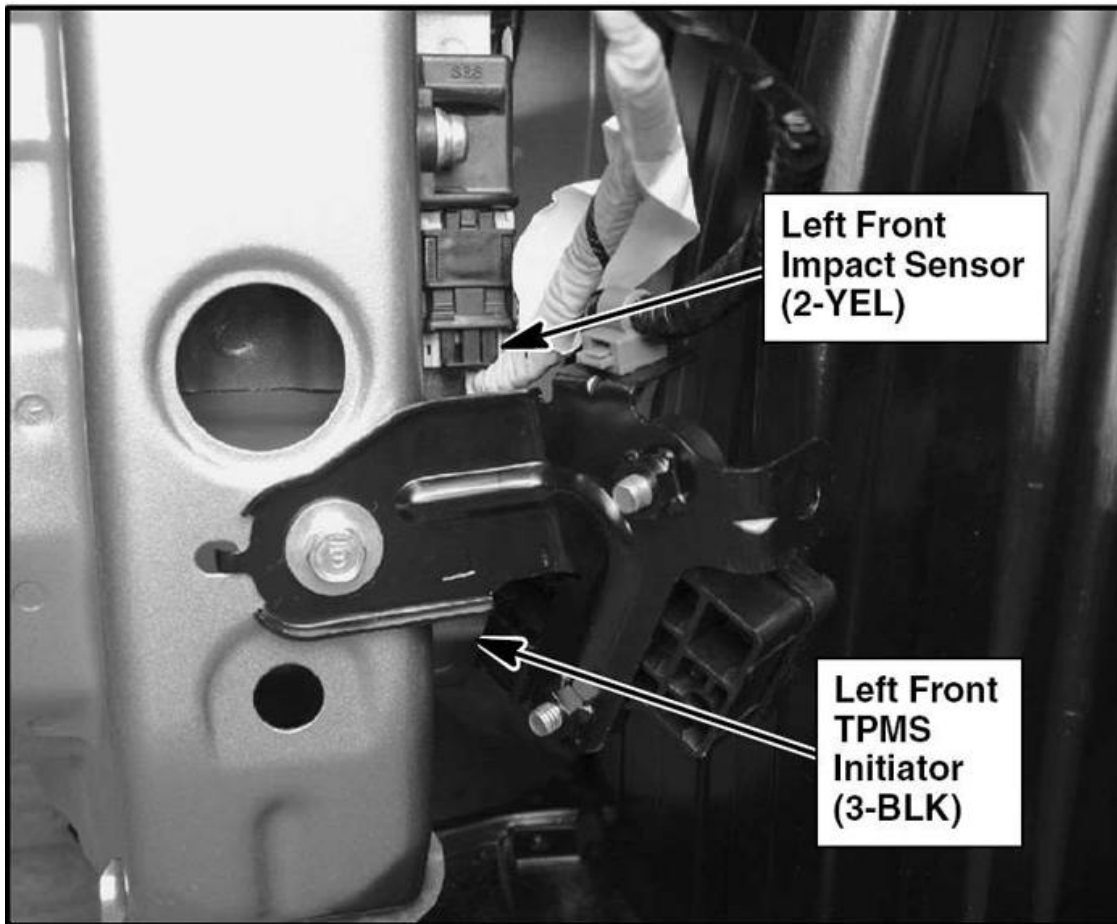


Fig. 12: Left Side Of Front Bumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

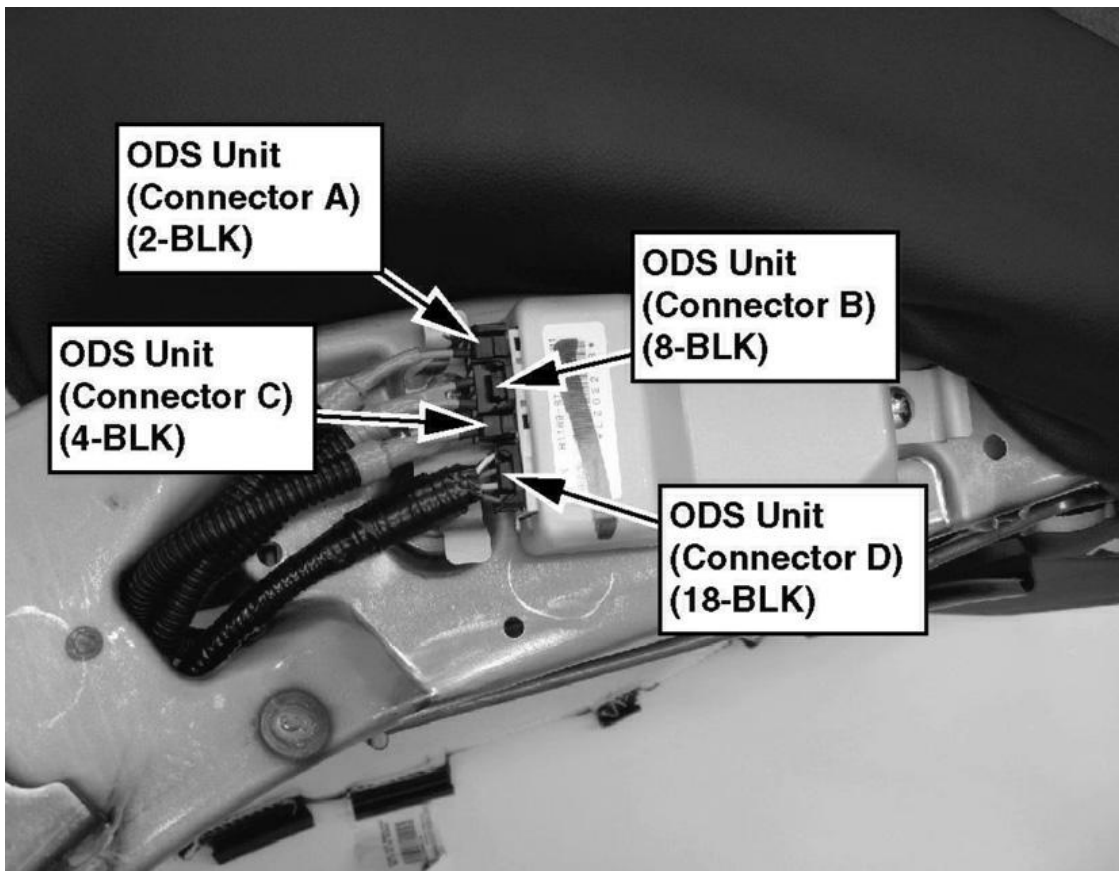


Fig. 13: Front Passenger's Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

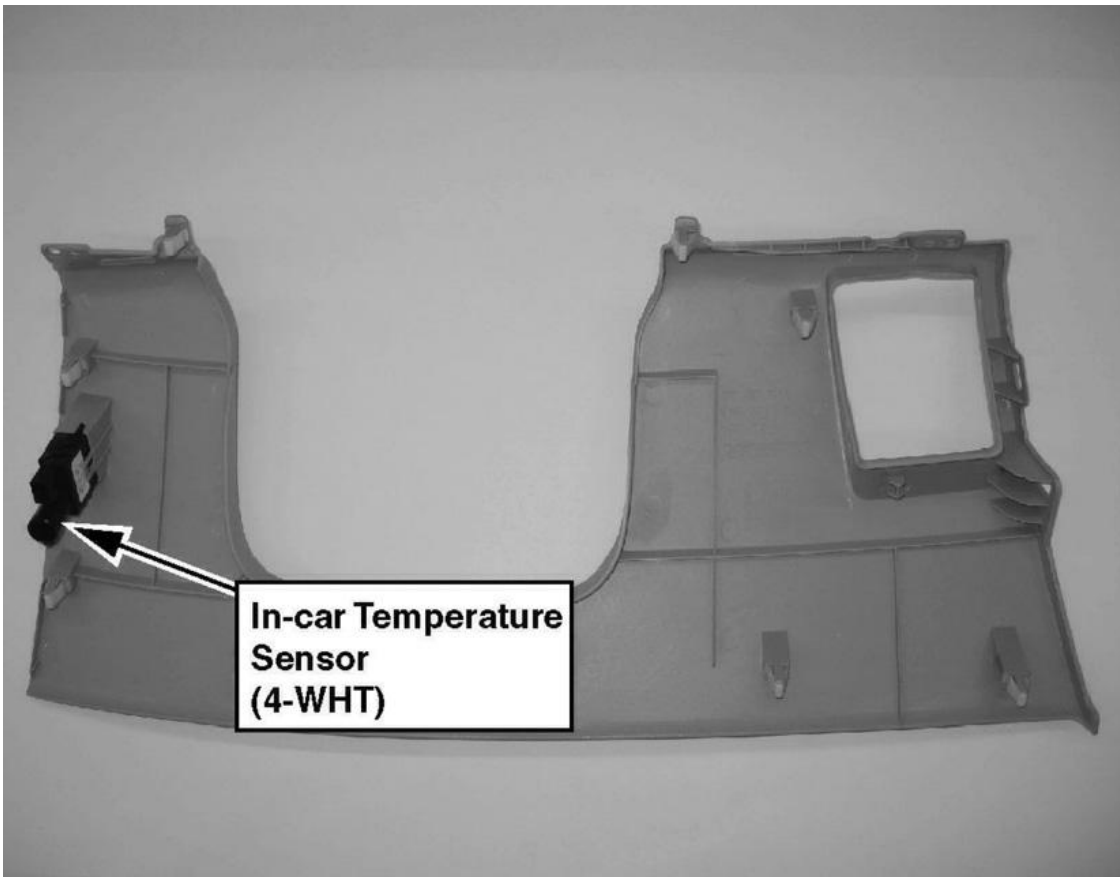


Fig. 14: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

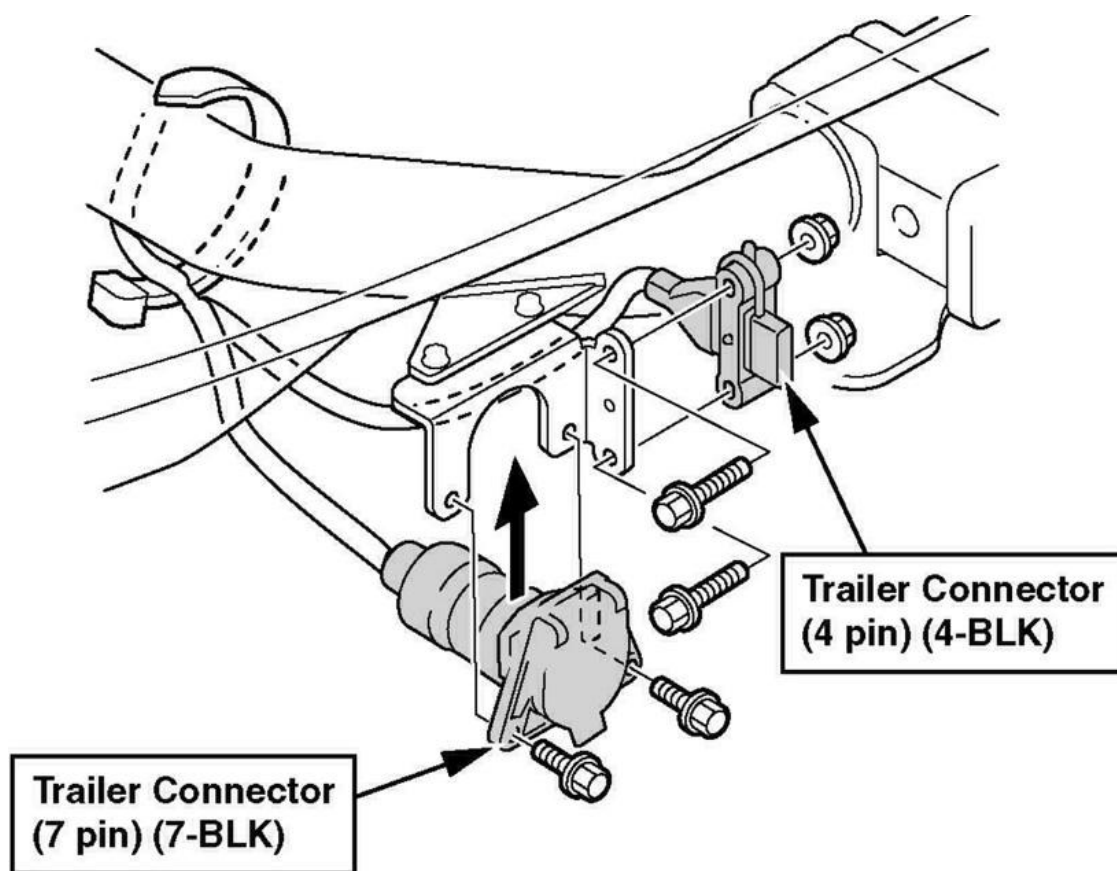


Fig. 15: Middle Of Rear Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

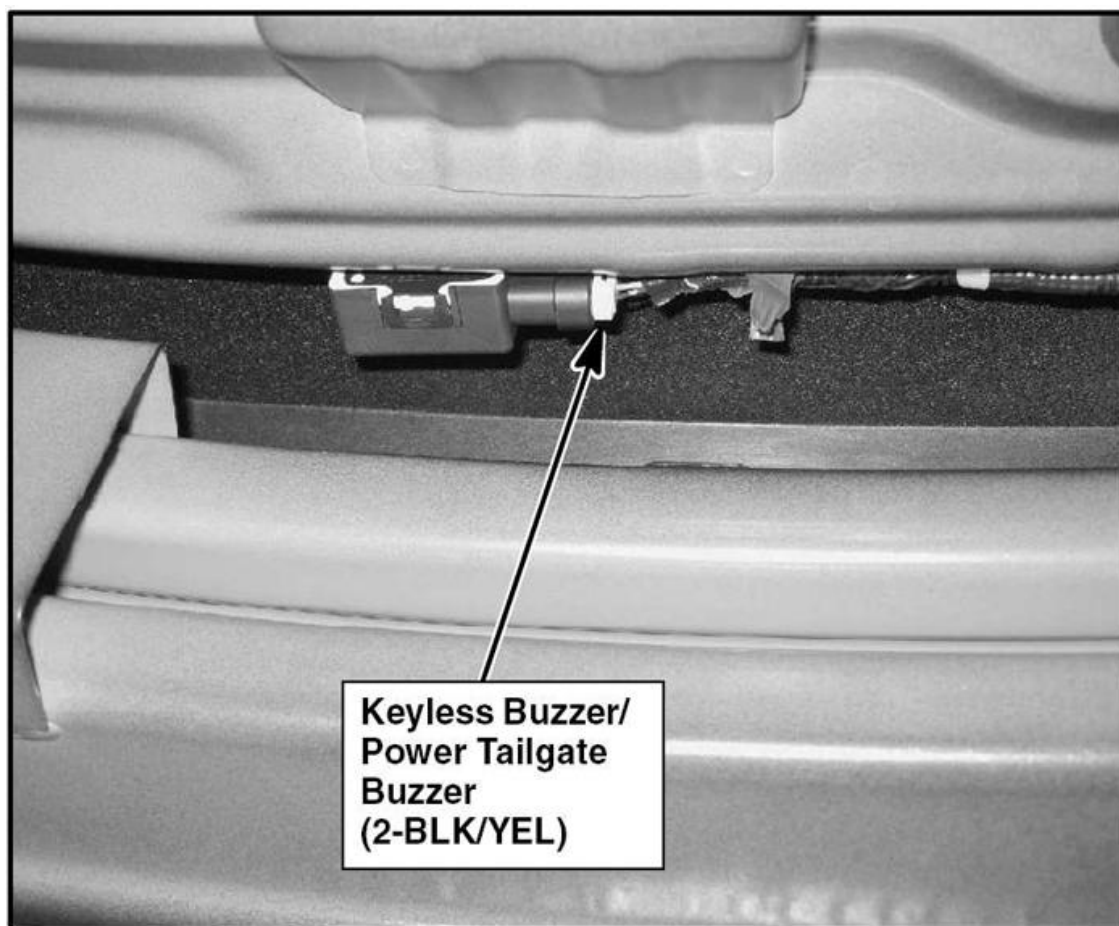


Fig. 16: Rear Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

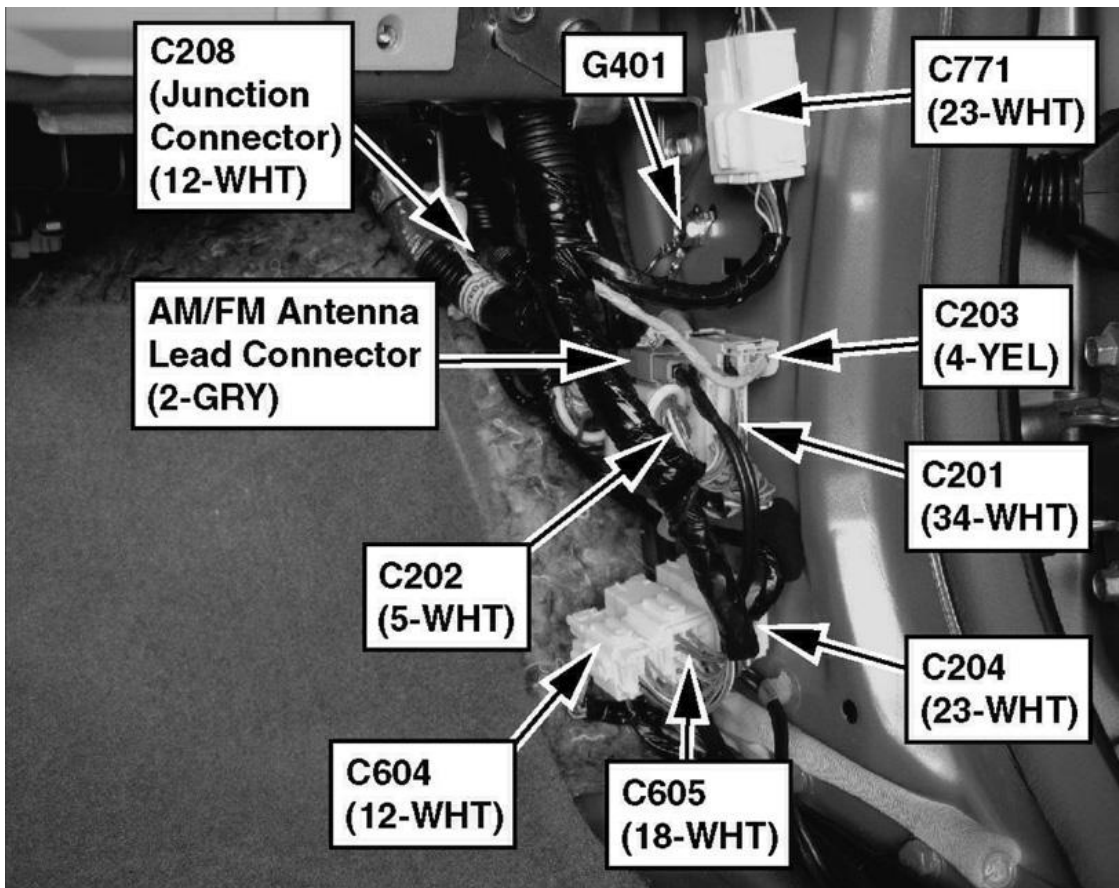


Fig. 17: Right Kick Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

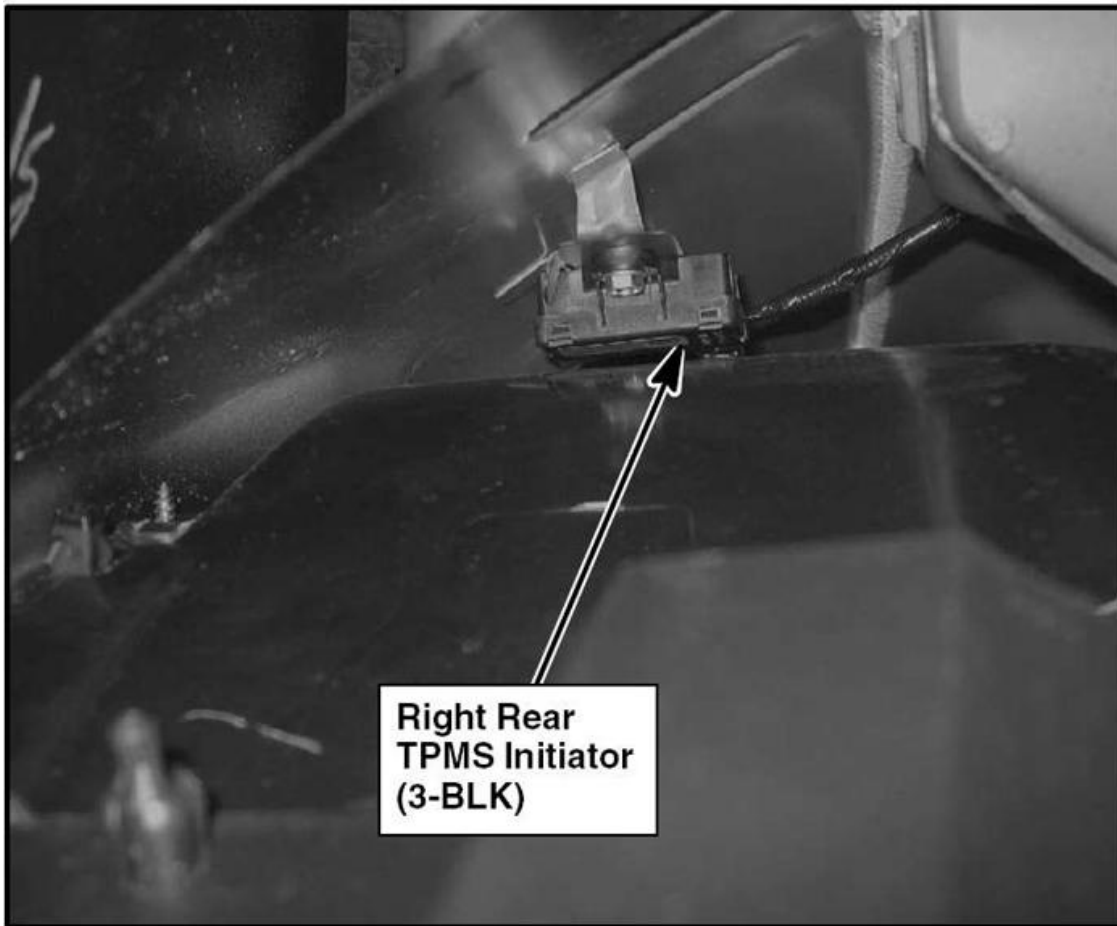


Fig. 18: Right Rear Wheelwell
Courtesy of AMERICAN HONDA MOTOR CO., INC.

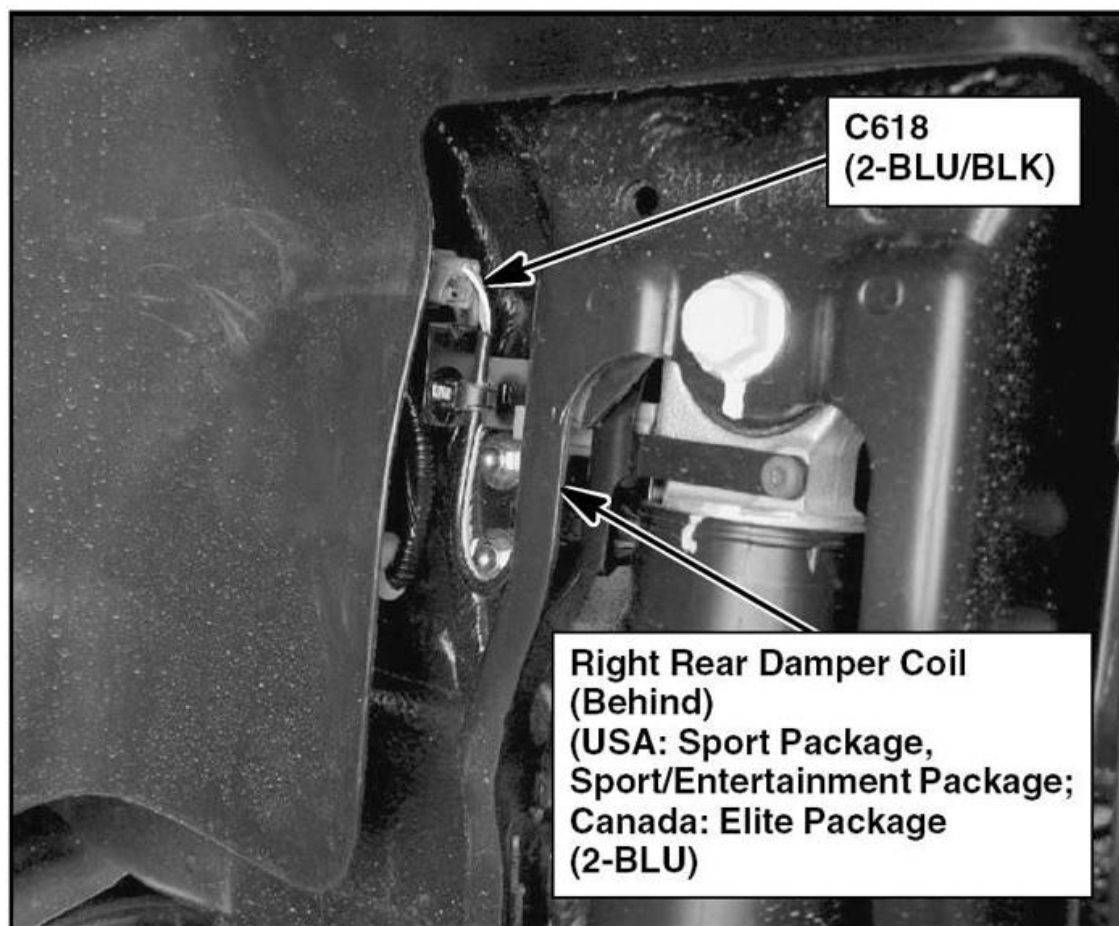


Fig. 19: Right Rear Wheelwell

Courtesy of AMERICAN HONDA MOTOR CO., INC.

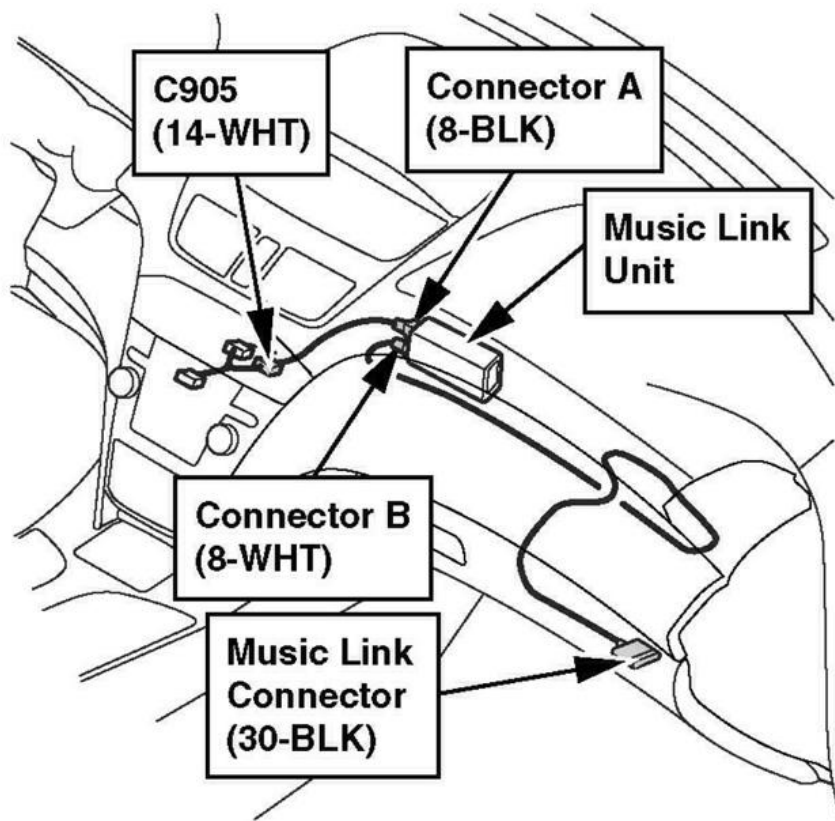


Fig. 20: Right Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

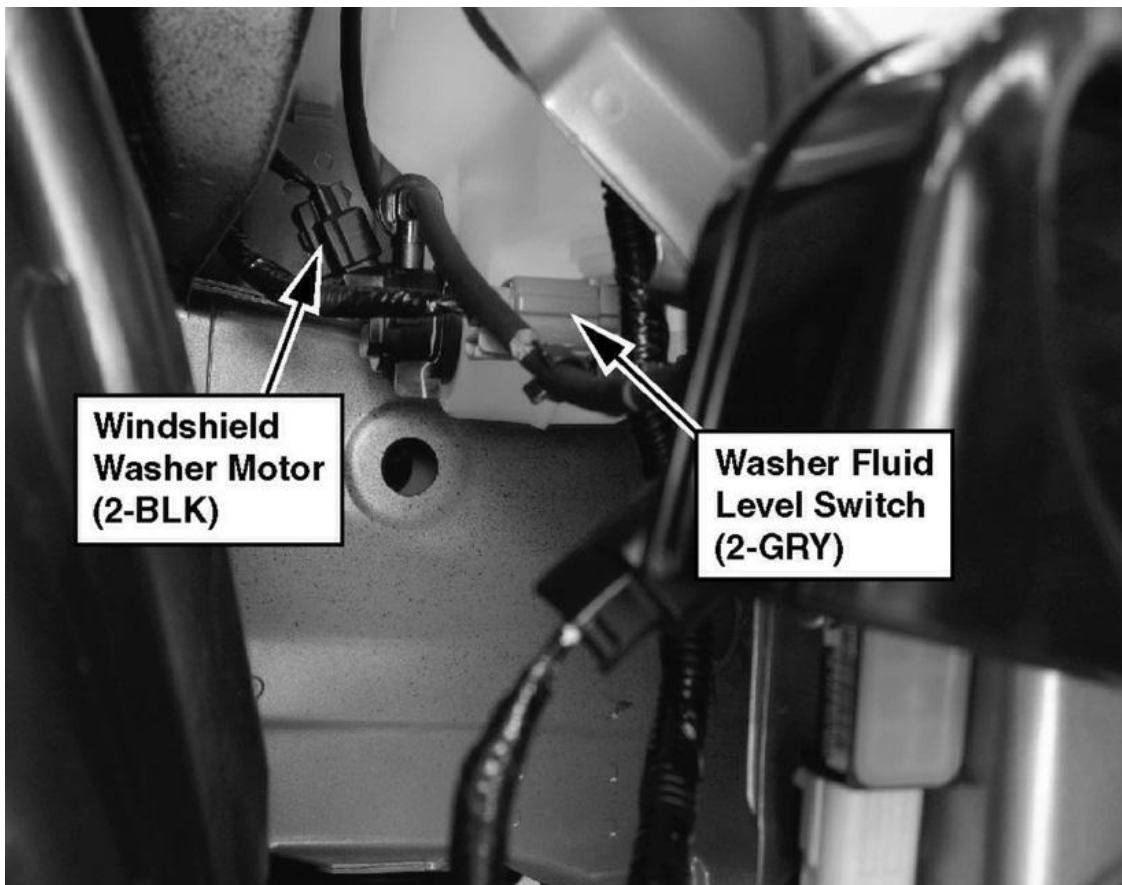


Fig. 21: Right Side Of Front Bumper
Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 22: Right Side Of Front Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

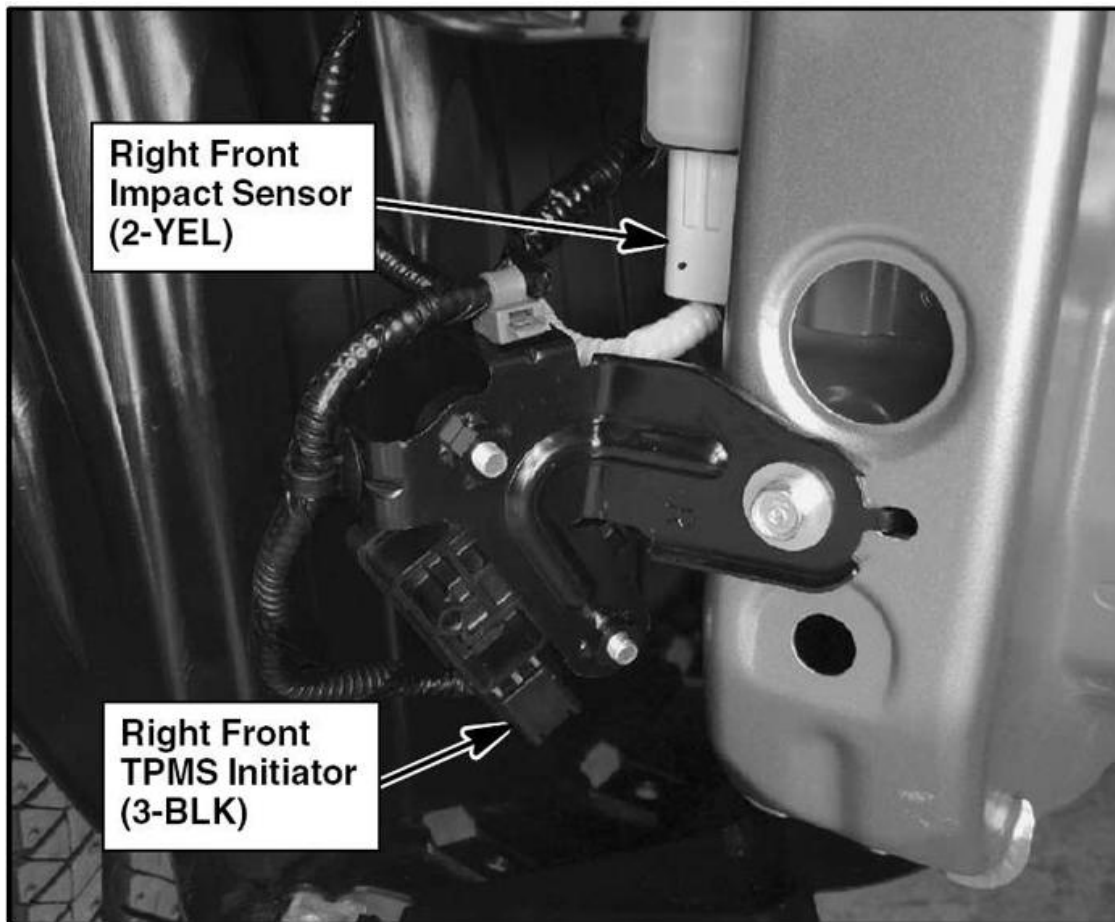


Fig. 23: Right Side Of Front Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

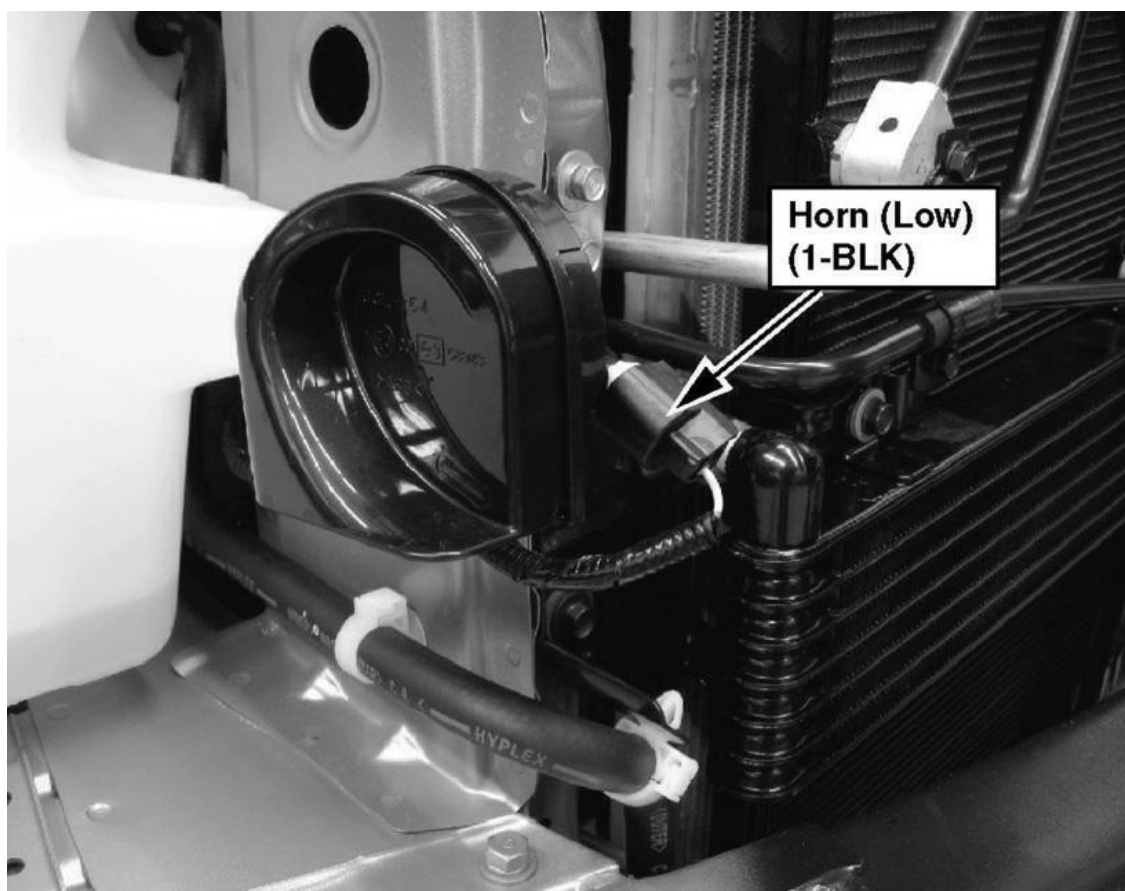


Fig. 24: Right Side Of Front Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

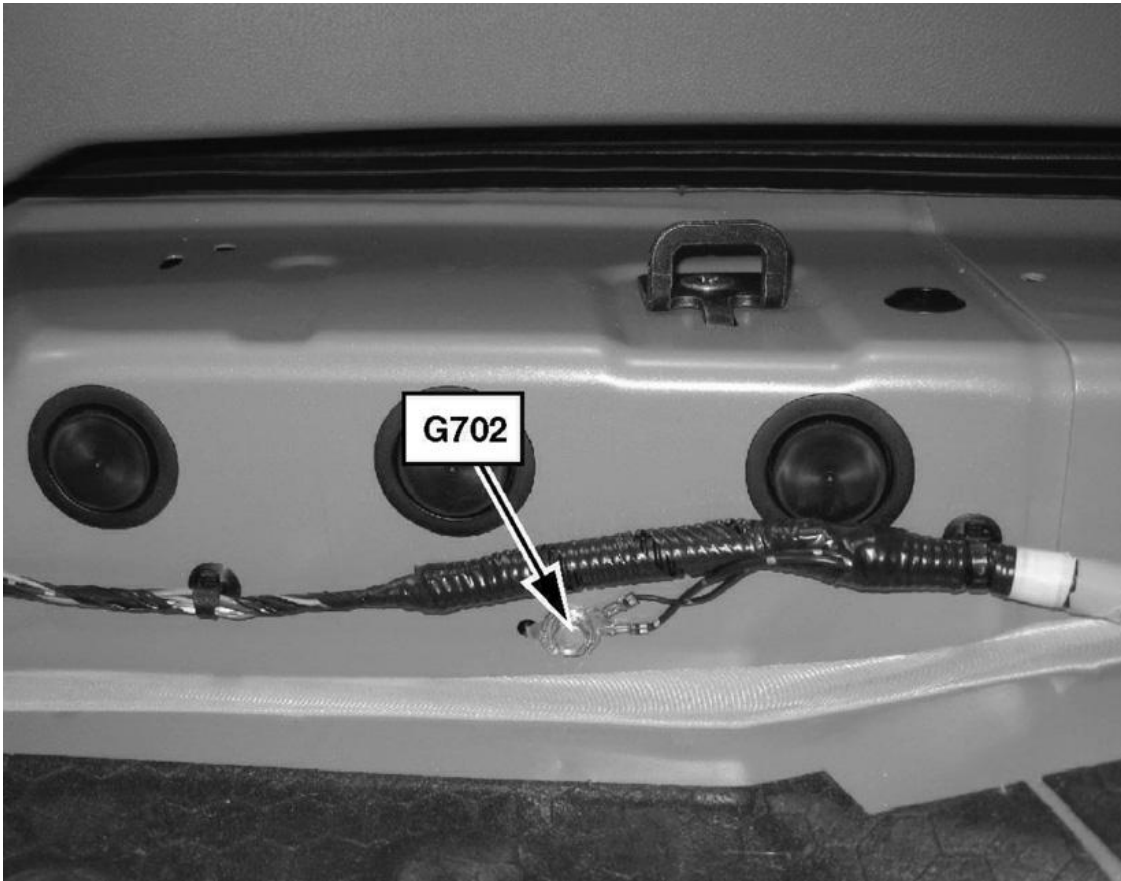


Fig. 25: Cargo Area Floor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

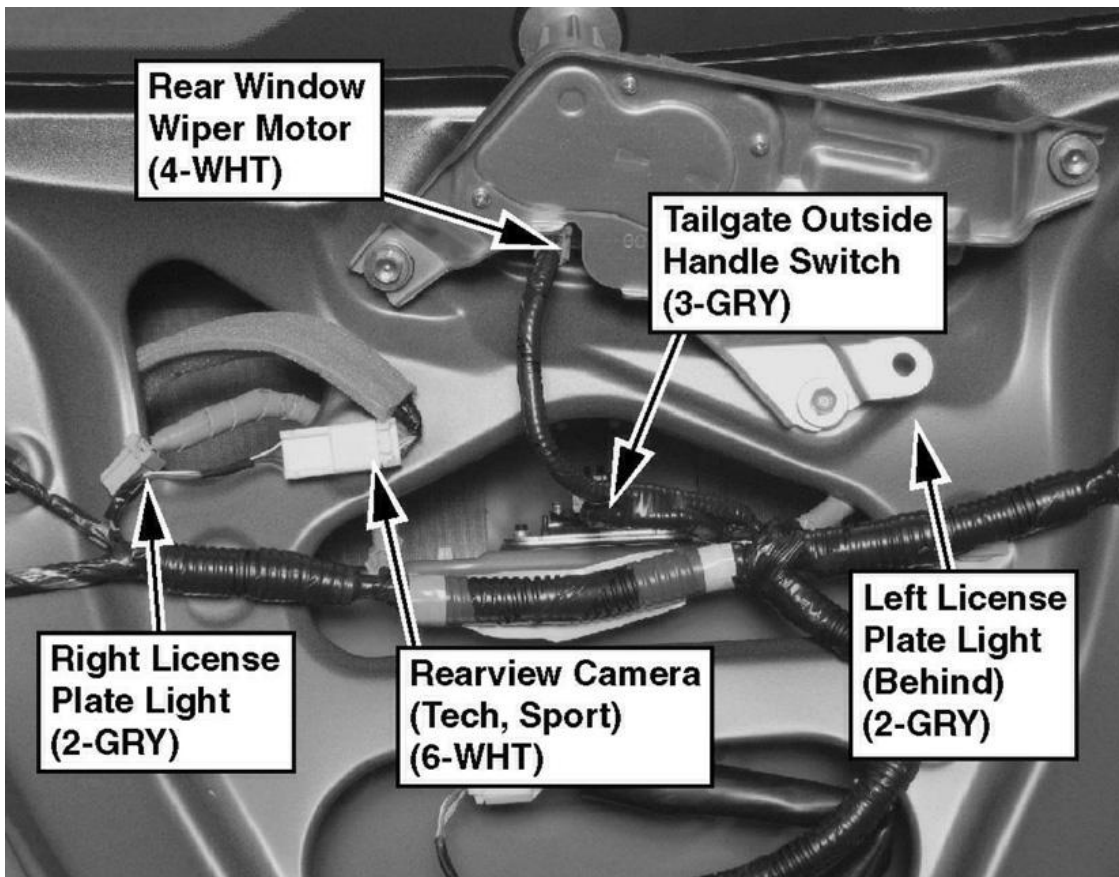


Fig. 26: Center Of Tailgate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

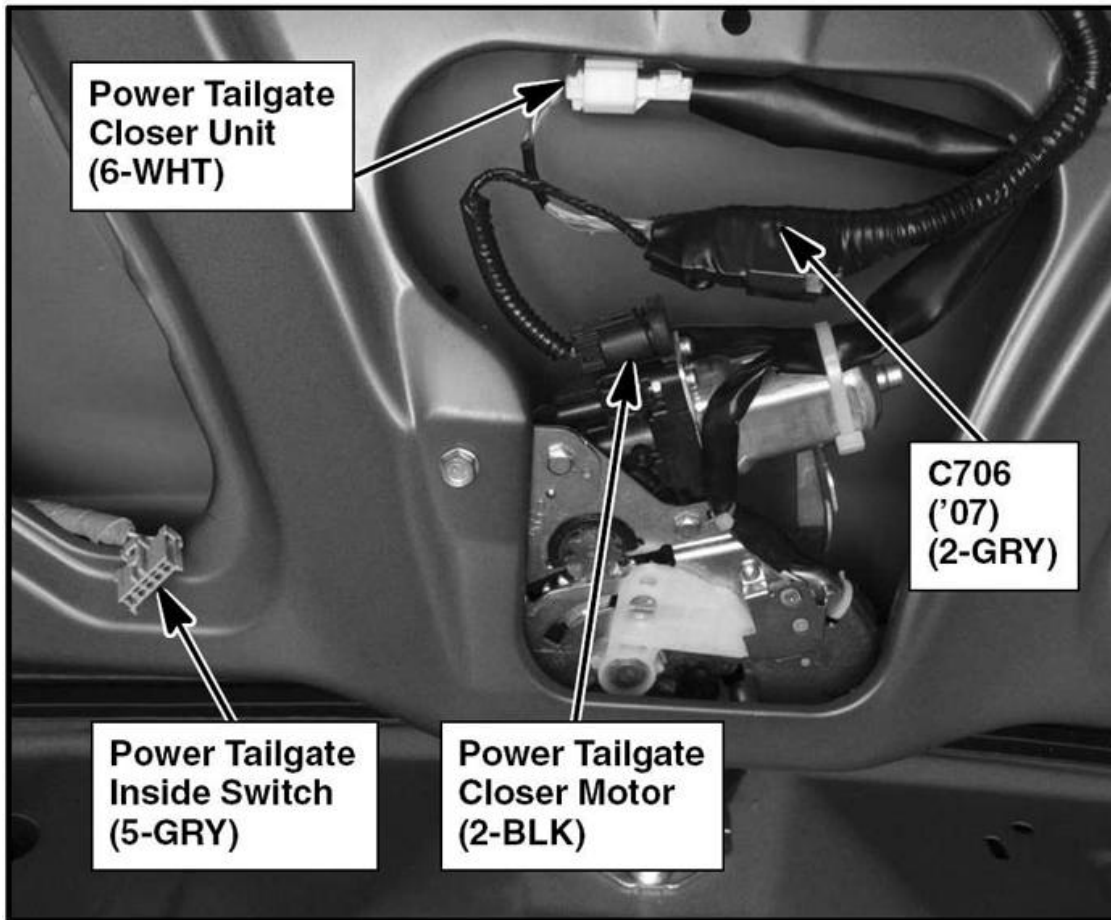


Fig. 27: Center Of Tailgate (USA: Technology/Entertainment Package; Canada: Elite)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

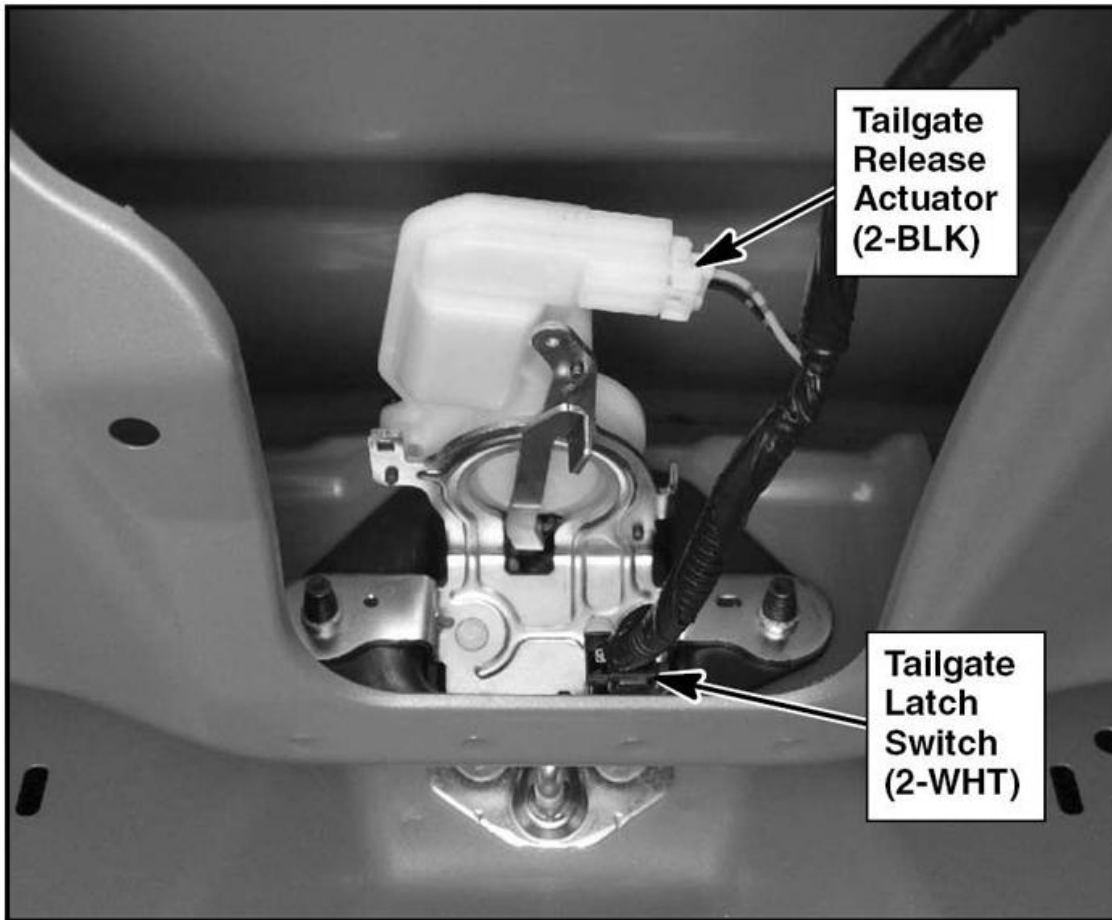


Fig. 28: Center Of Tailgate (Base: Technology Package; USA: Sport Package)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

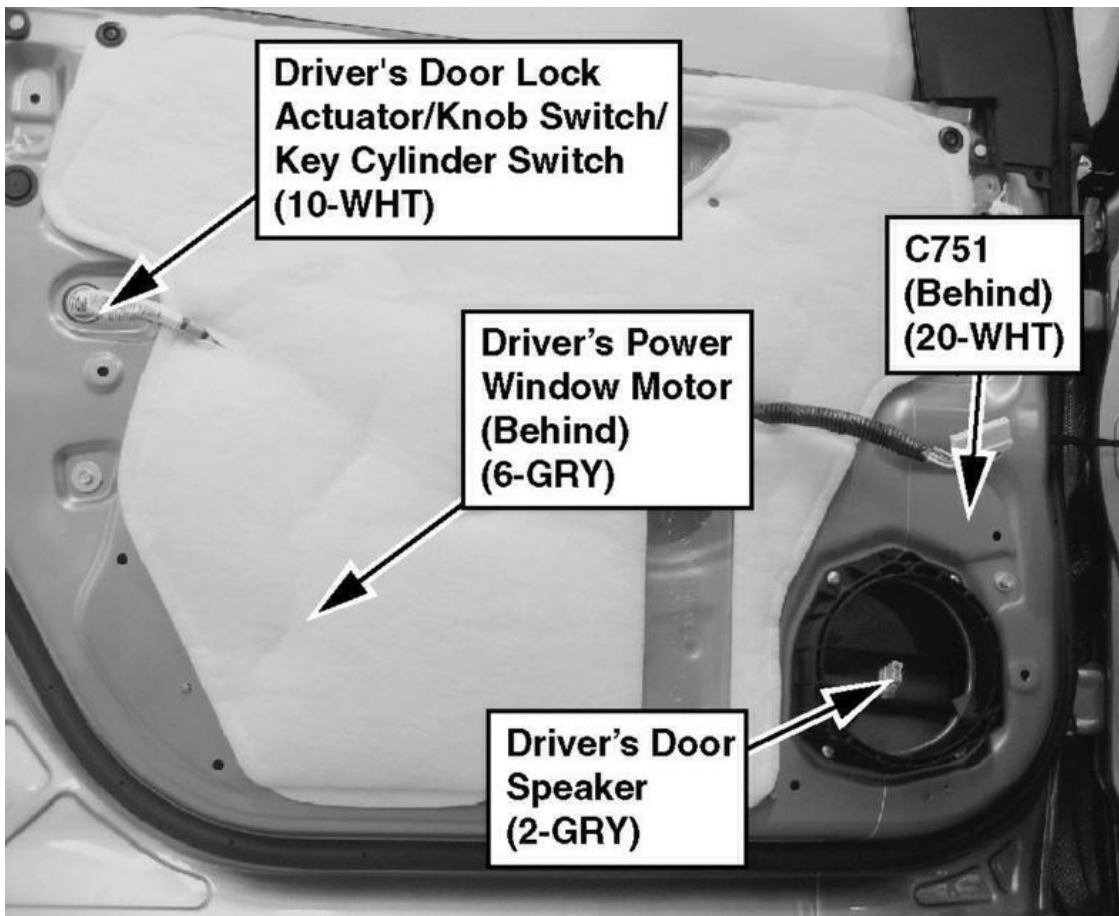


Fig. 29: Driver's Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

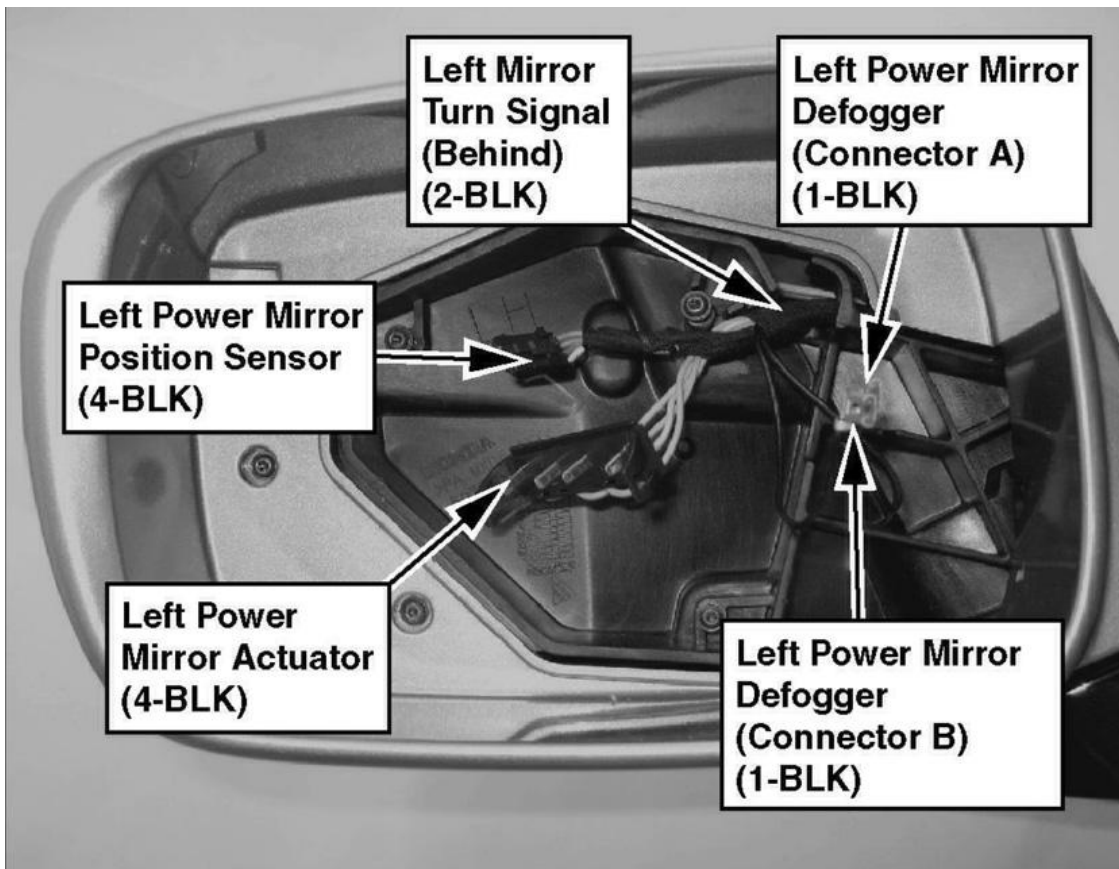


Fig. 30: Driver's Door Mirror

Courtesy of AMERICAN HONDA MOTOR CO., INC.

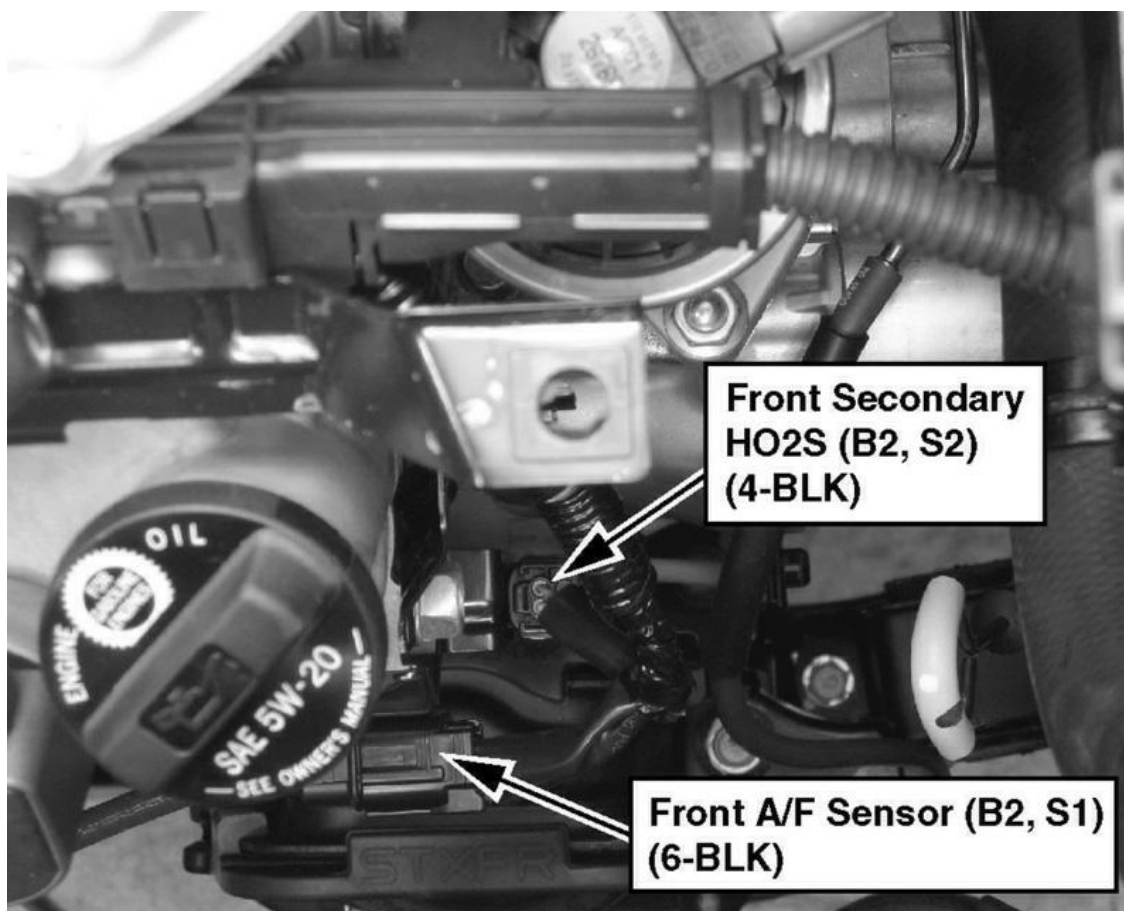


Fig. 31: Left Rear Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

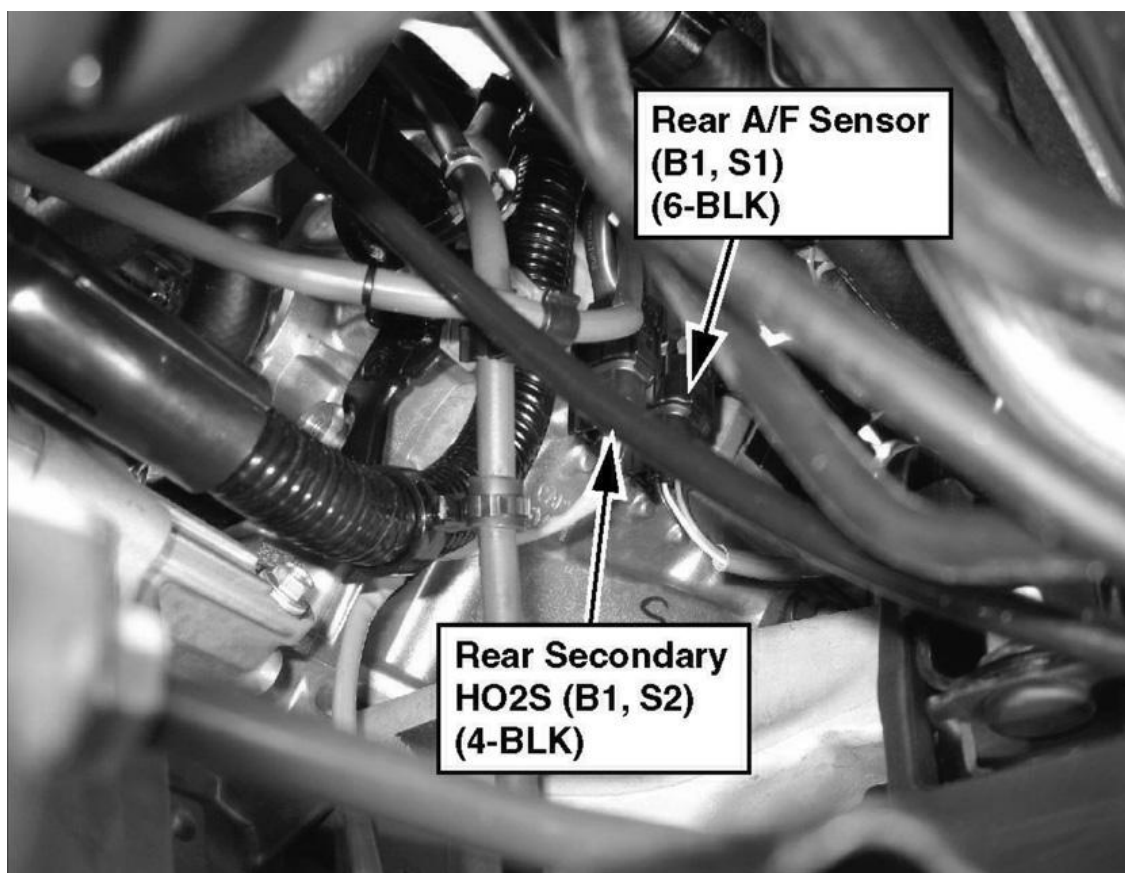


Fig. 32: Right Rear Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 33: Under Driver's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

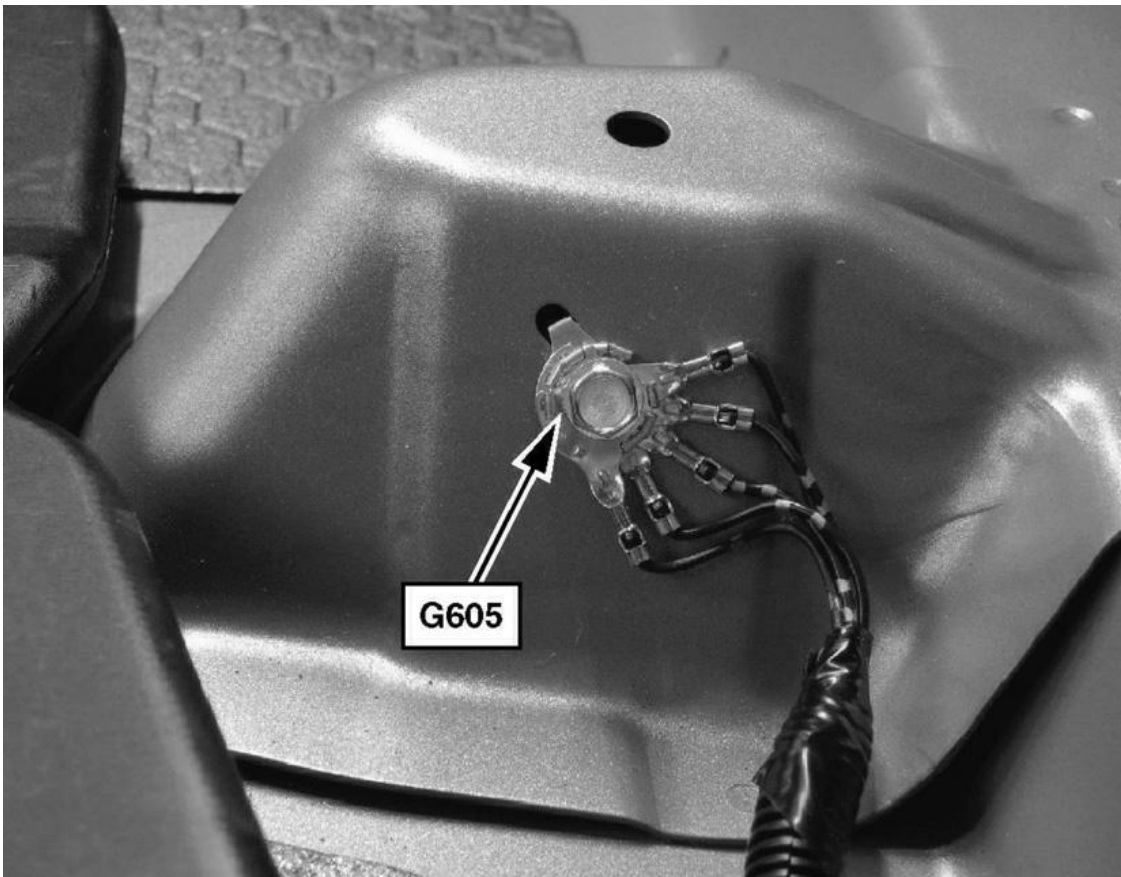


Fig. 34: Under Front Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

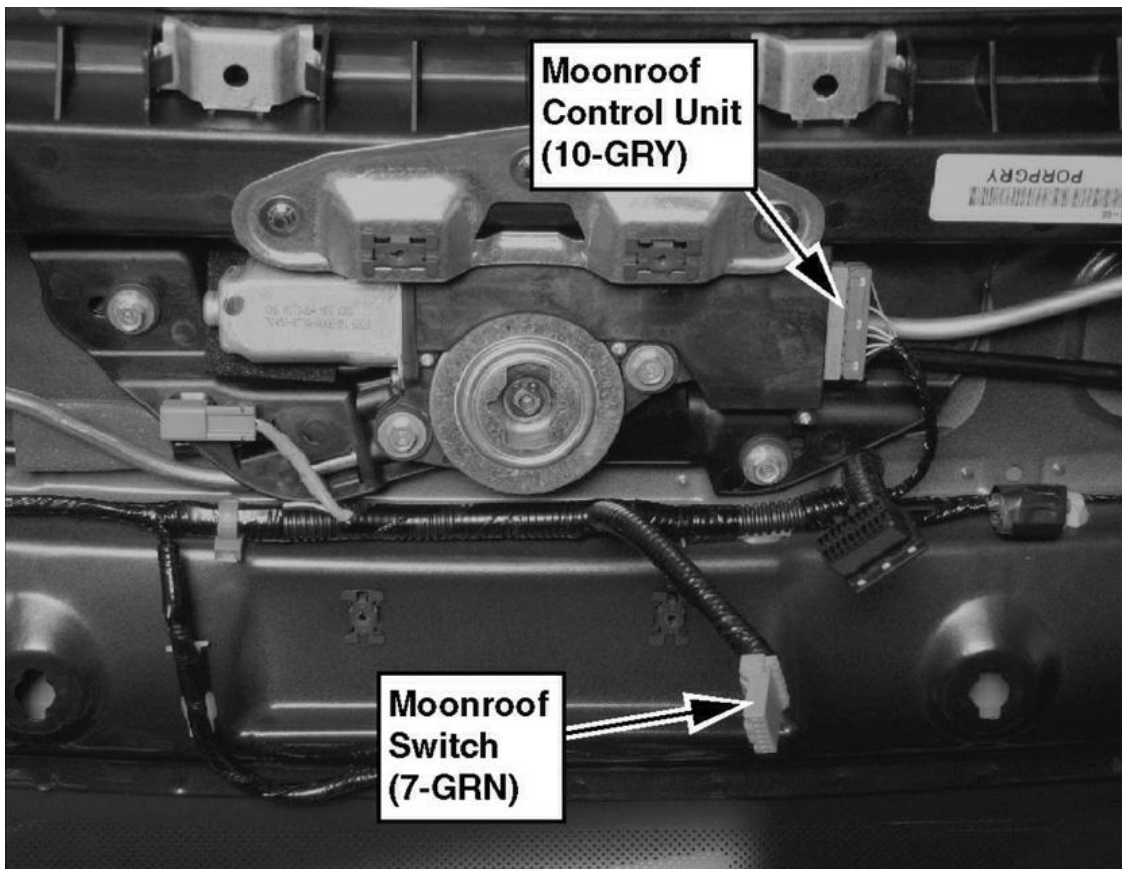


Fig. 35: Center Front Of Roof

Courtesy of AMERICAN HONDA MOTOR CO., INC.

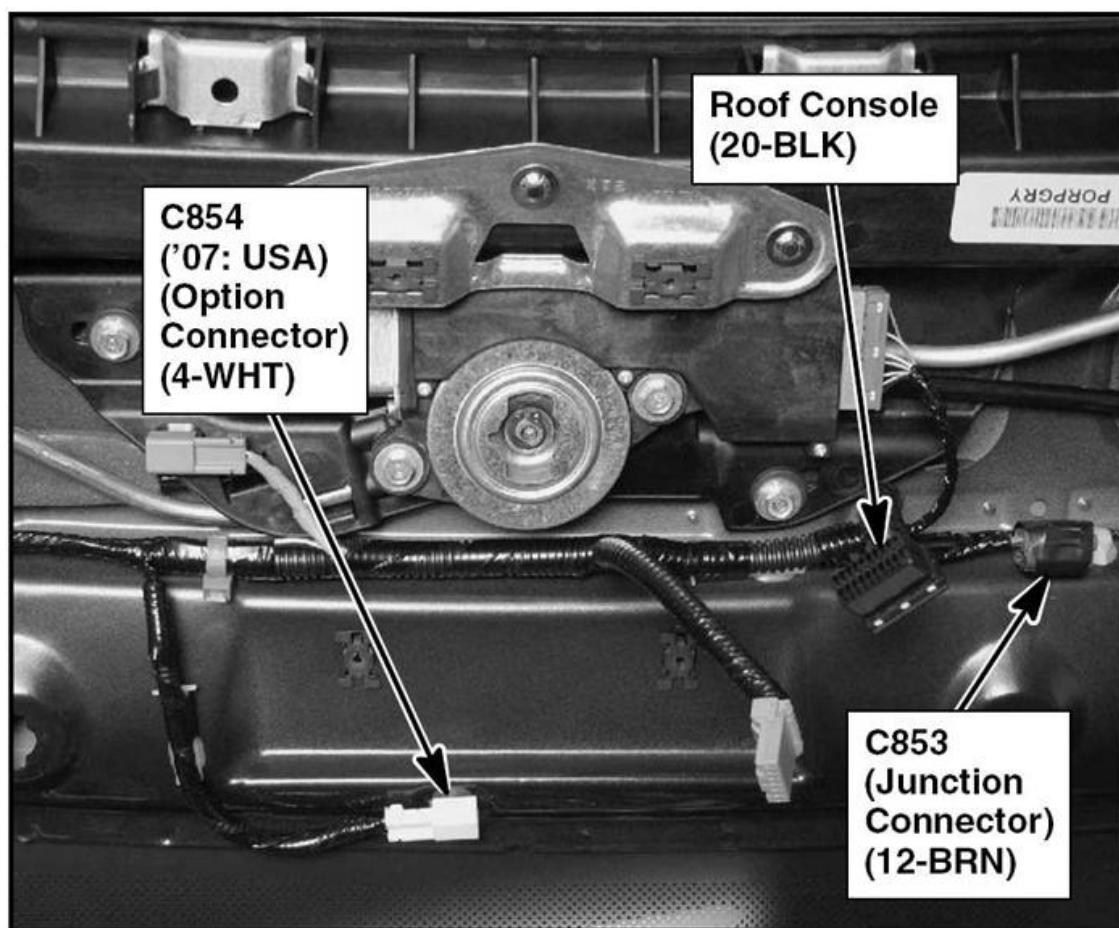


Fig. 36: Center Front Of Roof
Courtesy of AMERICAN HONDA MOTOR CO., INC.

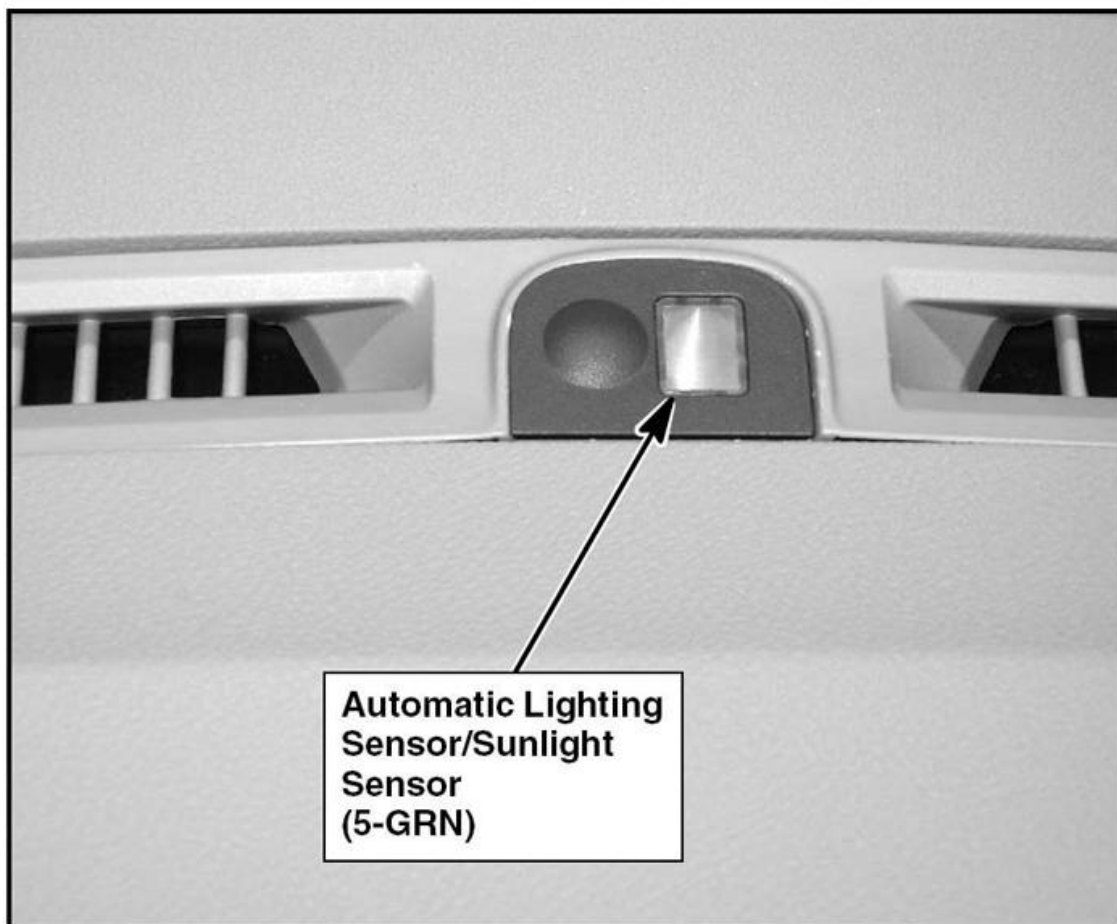


Fig. 37: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

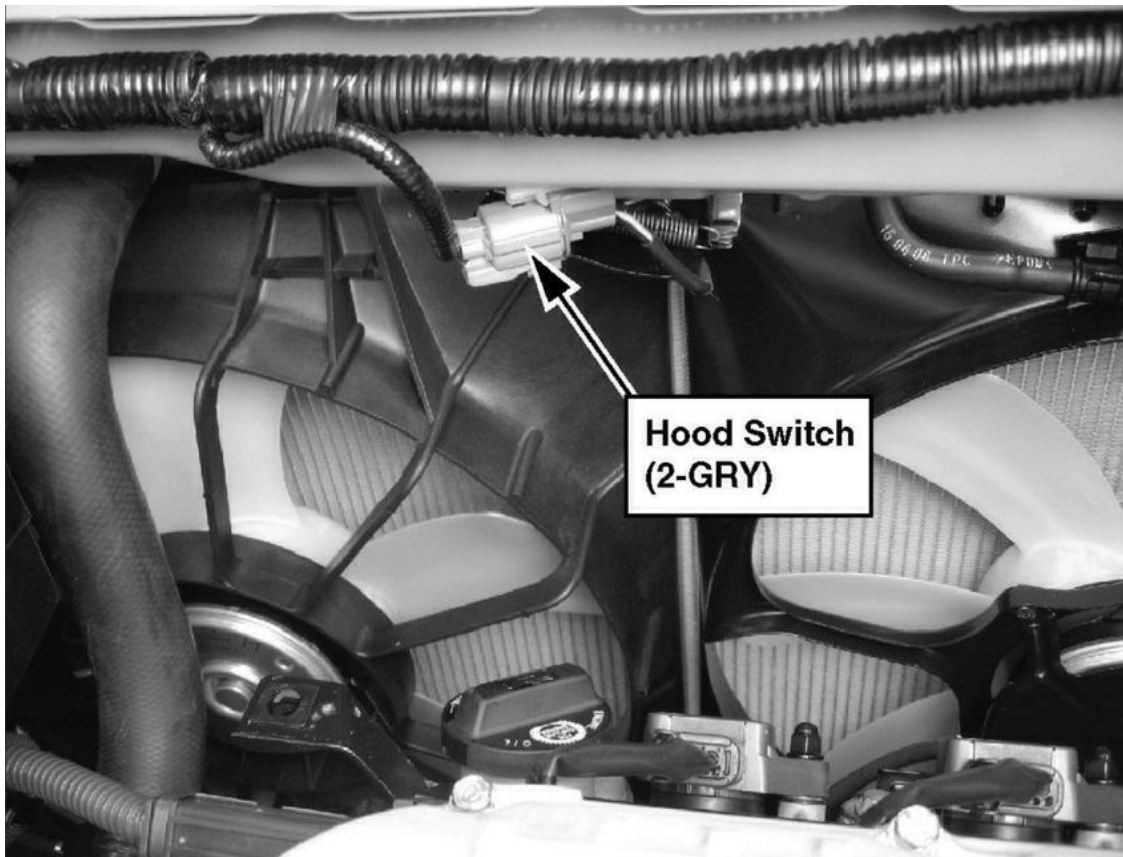


Fig. 38: Front Of Engine Compartment

Courtesy of AMERICAN HONDA MOTOR CO., INC.

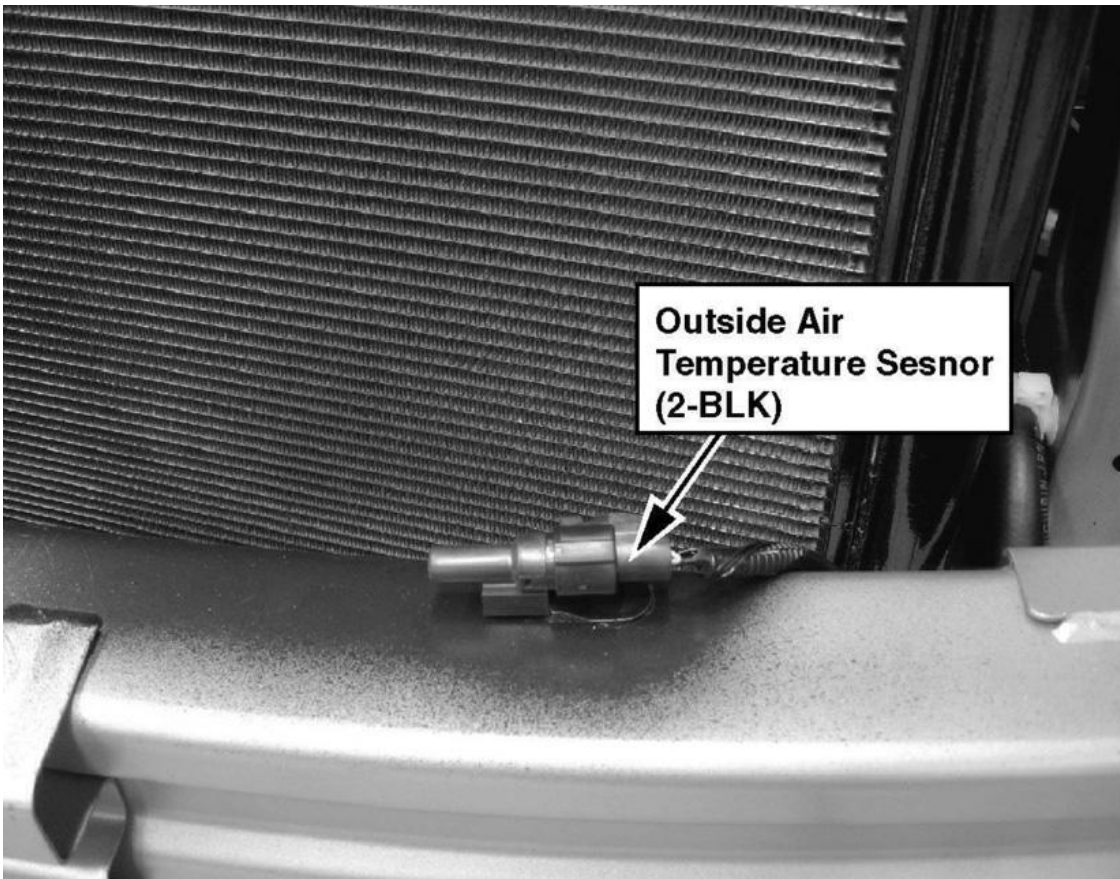


Fig. 39: Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

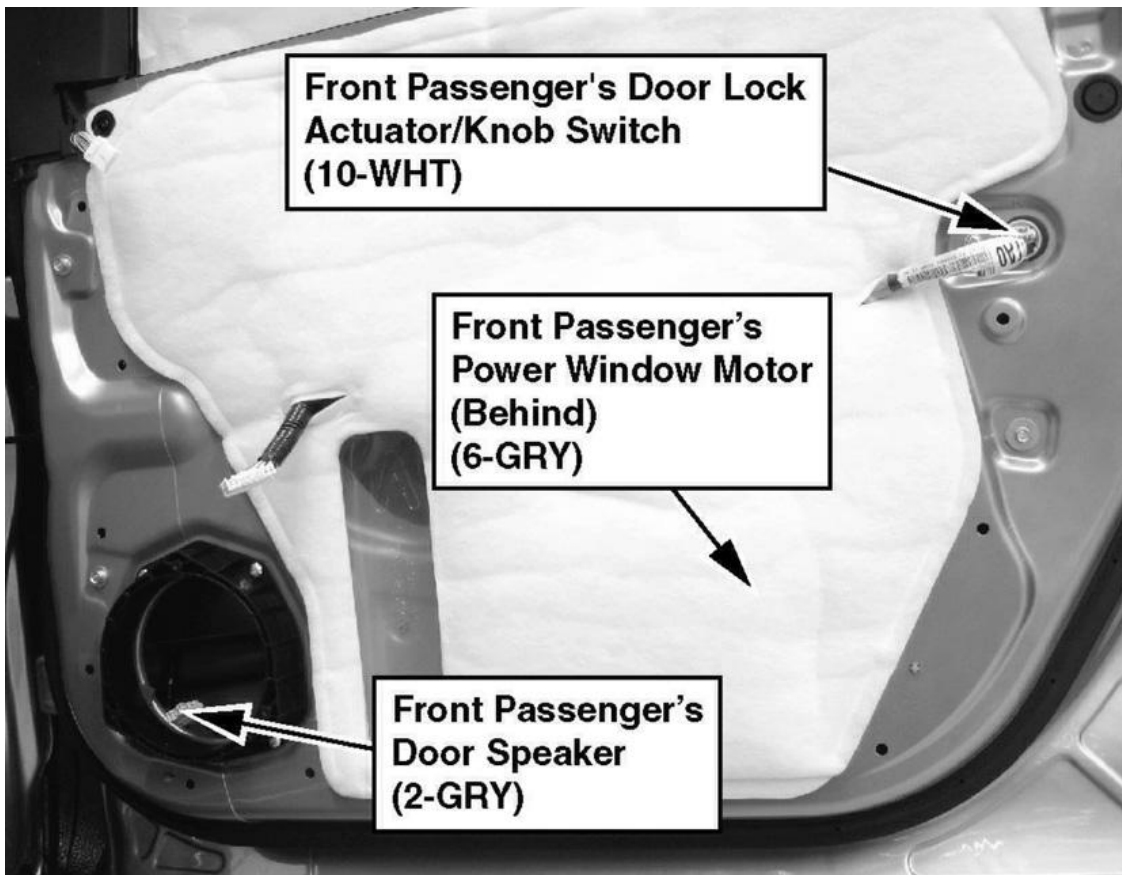


Fig. 40: Front Passenger's Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

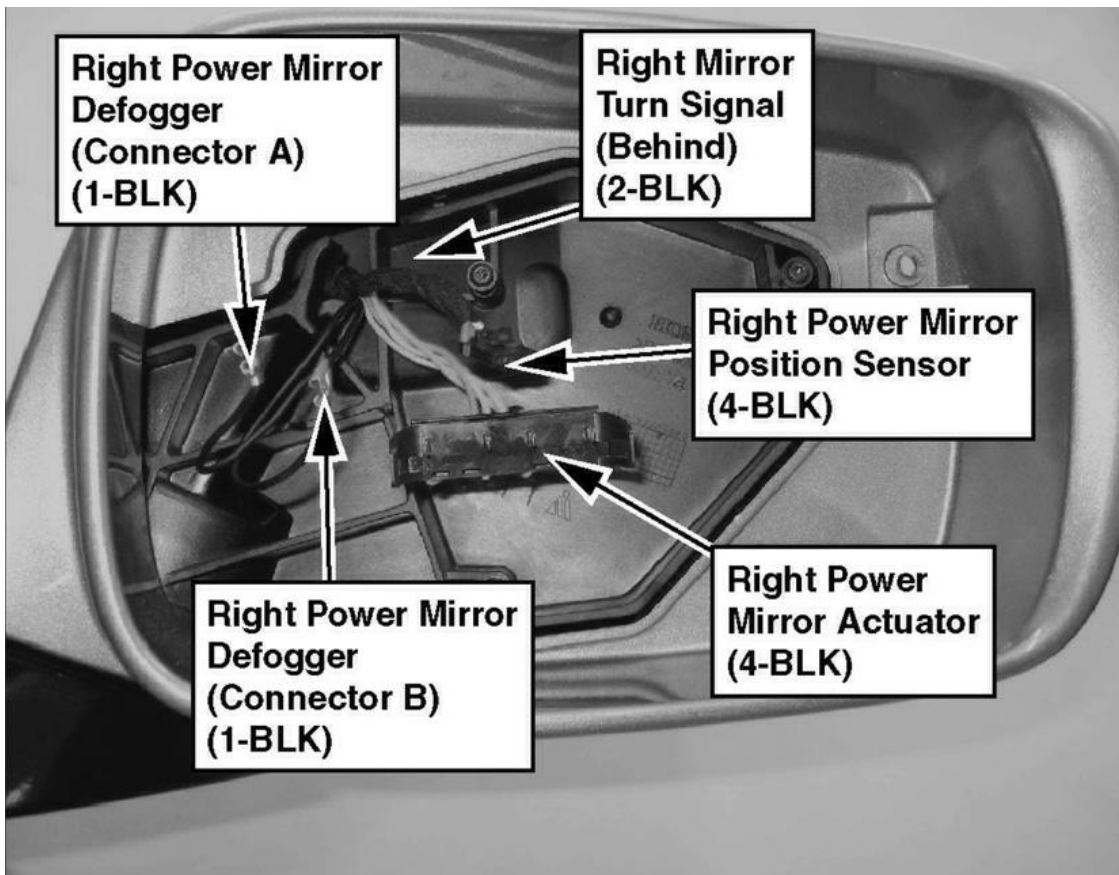


Fig. 41: Front Passenger's Door Mirror

Courtesy of AMERICAN HONDA MOTOR CO., INC.

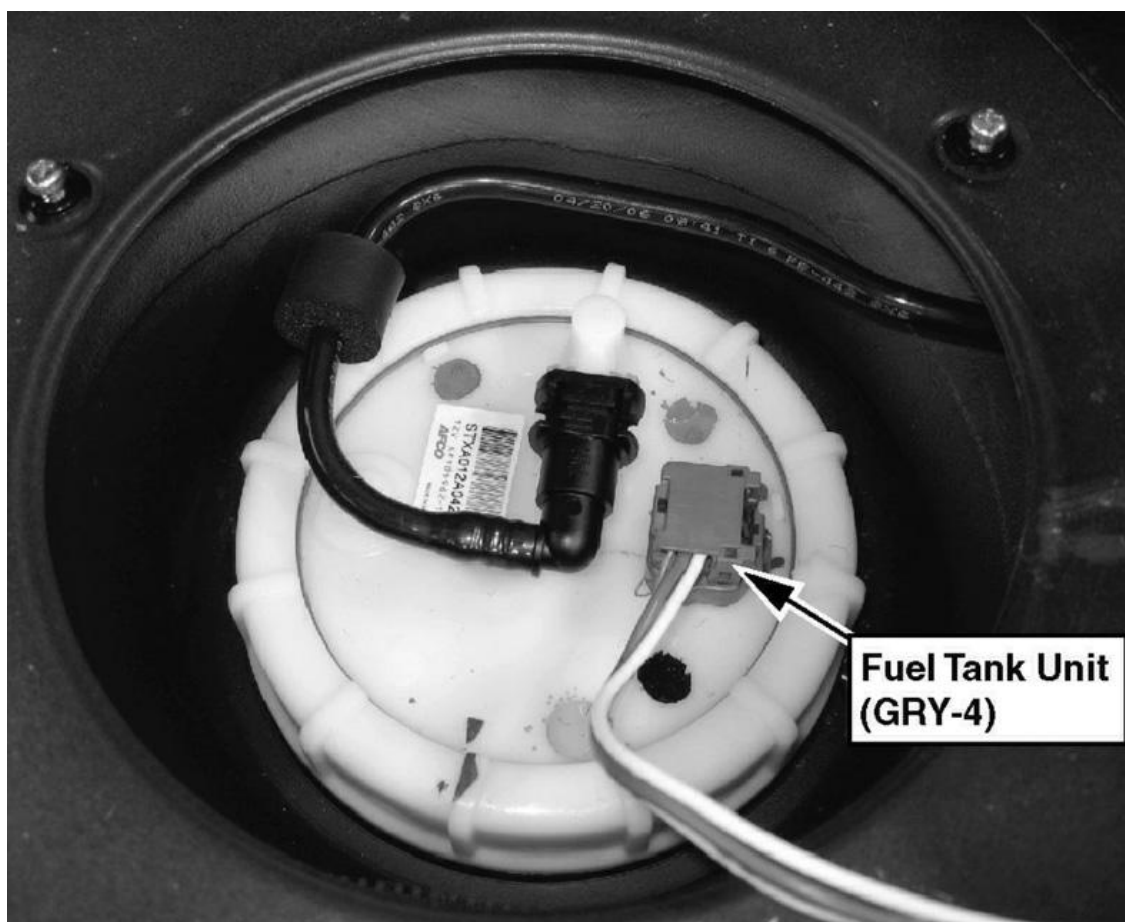


Fig. 42: Top Of Fuel Tank

Courtesy of AMERICAN HONDA MOTOR CO., INC.

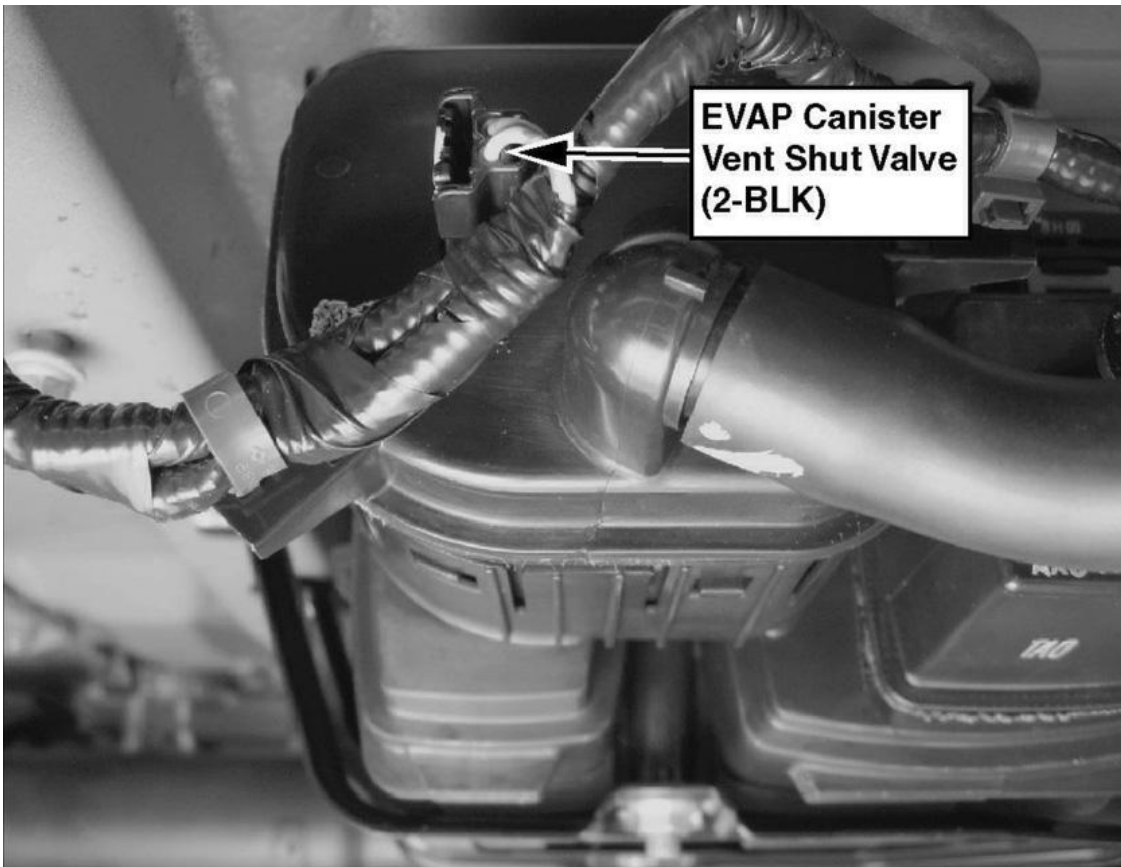


Fig. 43: Under Rear Of Vehicle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

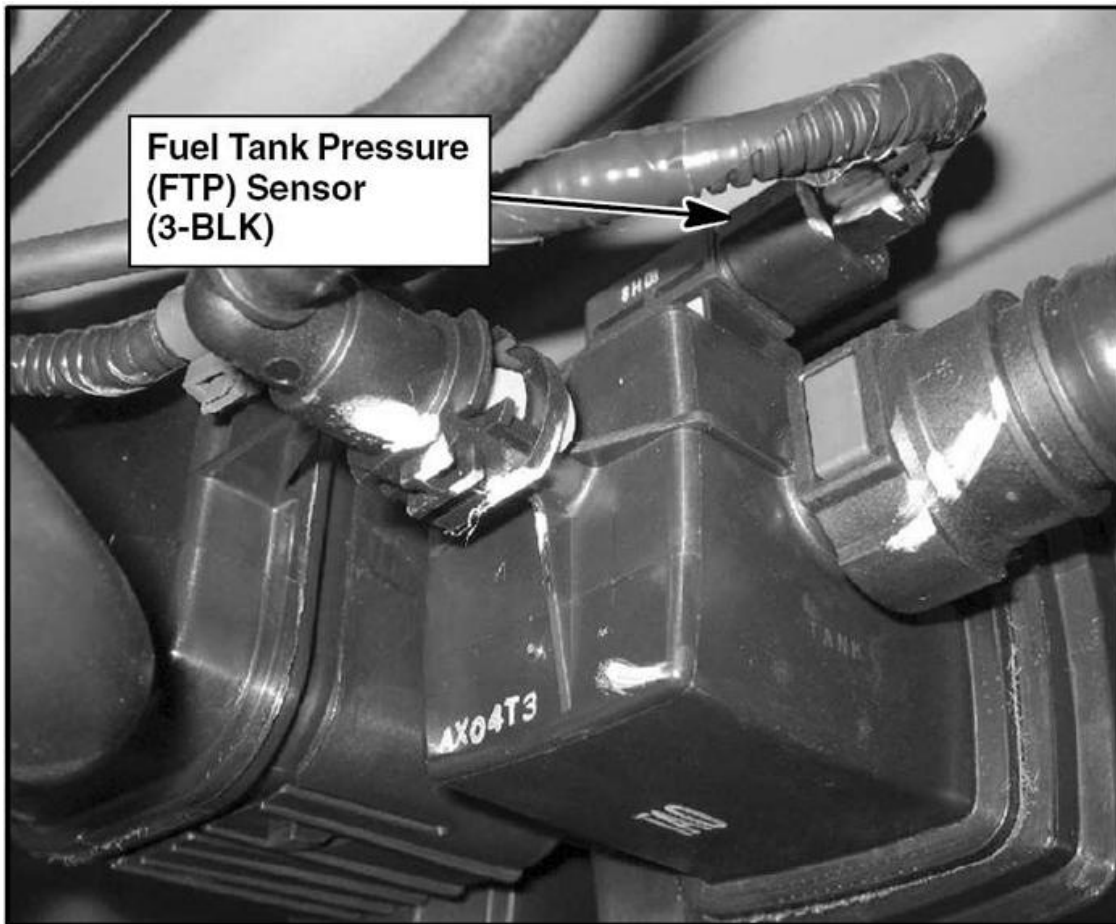


Fig. 44: Under Rear Of Vehicle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

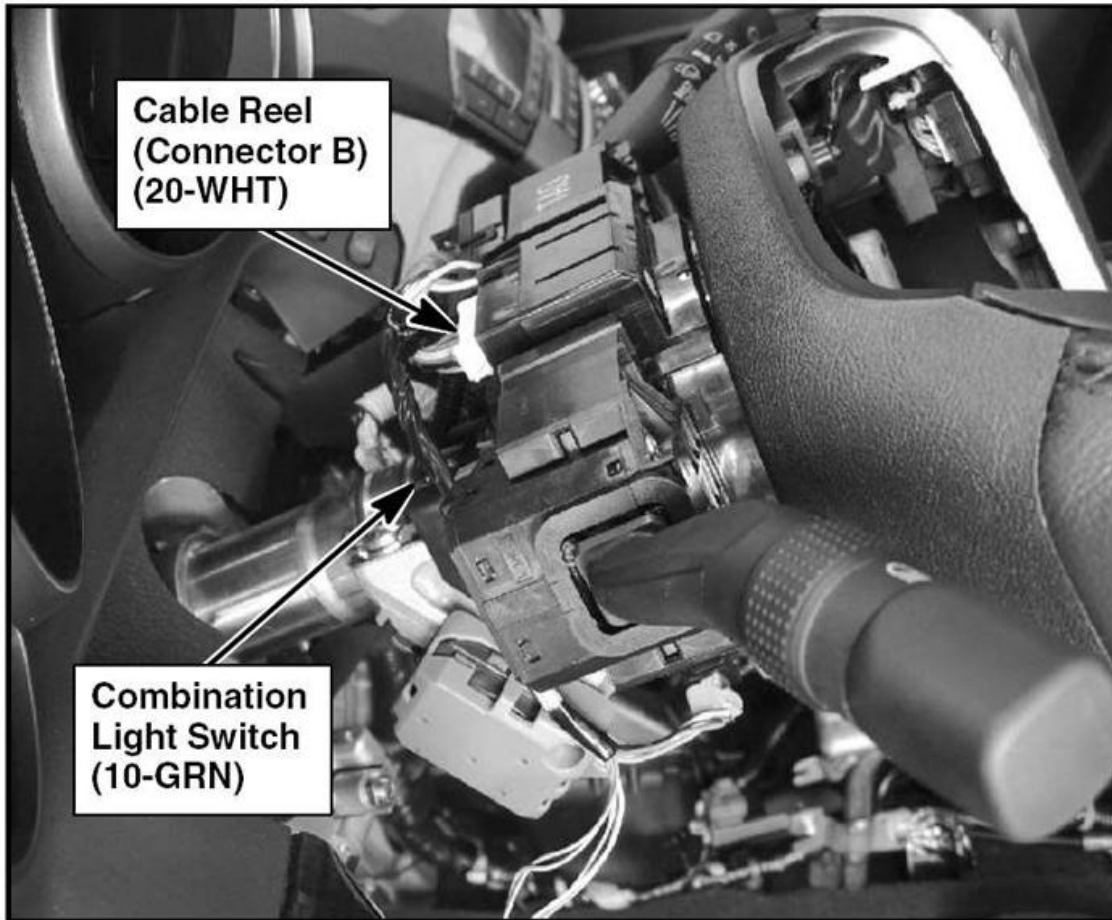


Fig. 45: Steering Column

Courtesy of AMERICAN HONDA MOTOR CO., INC.

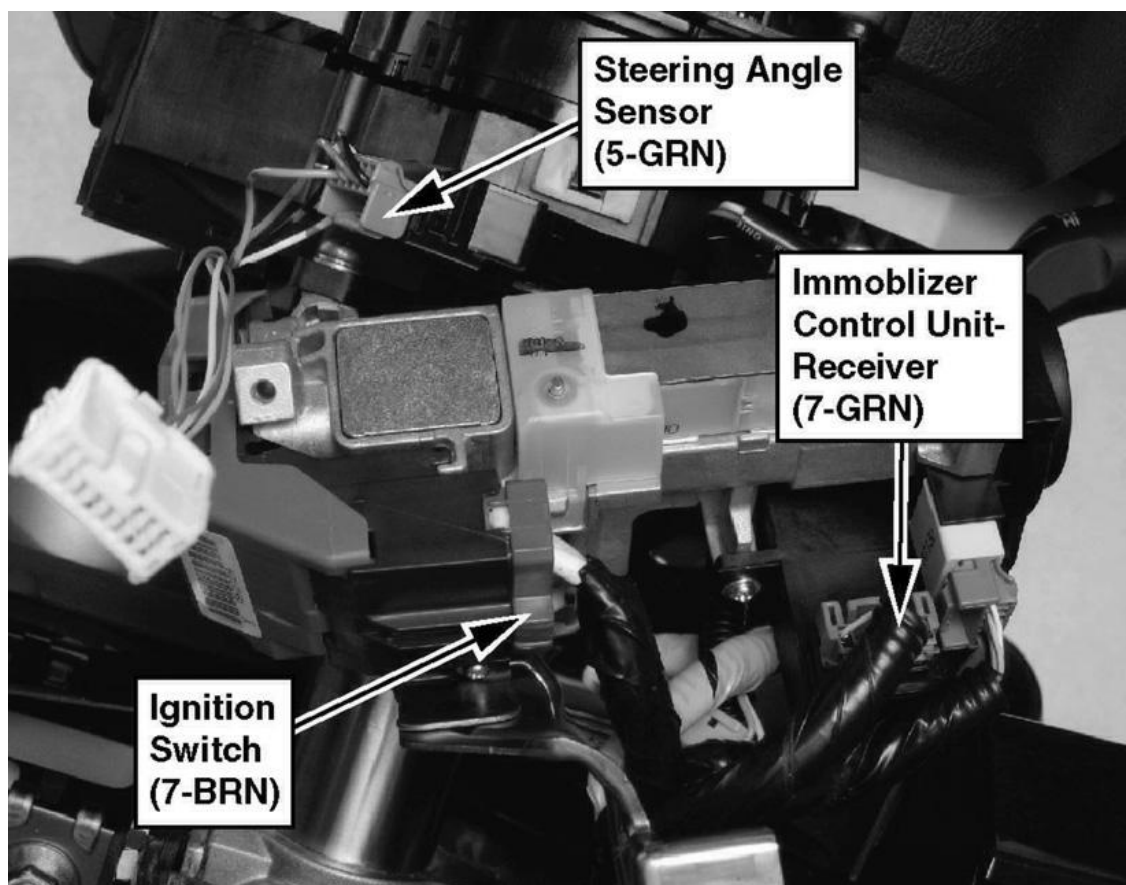


Fig. 46: Steering Column

Courtesy of AMERICAN HONDA MOTOR CO., INC.

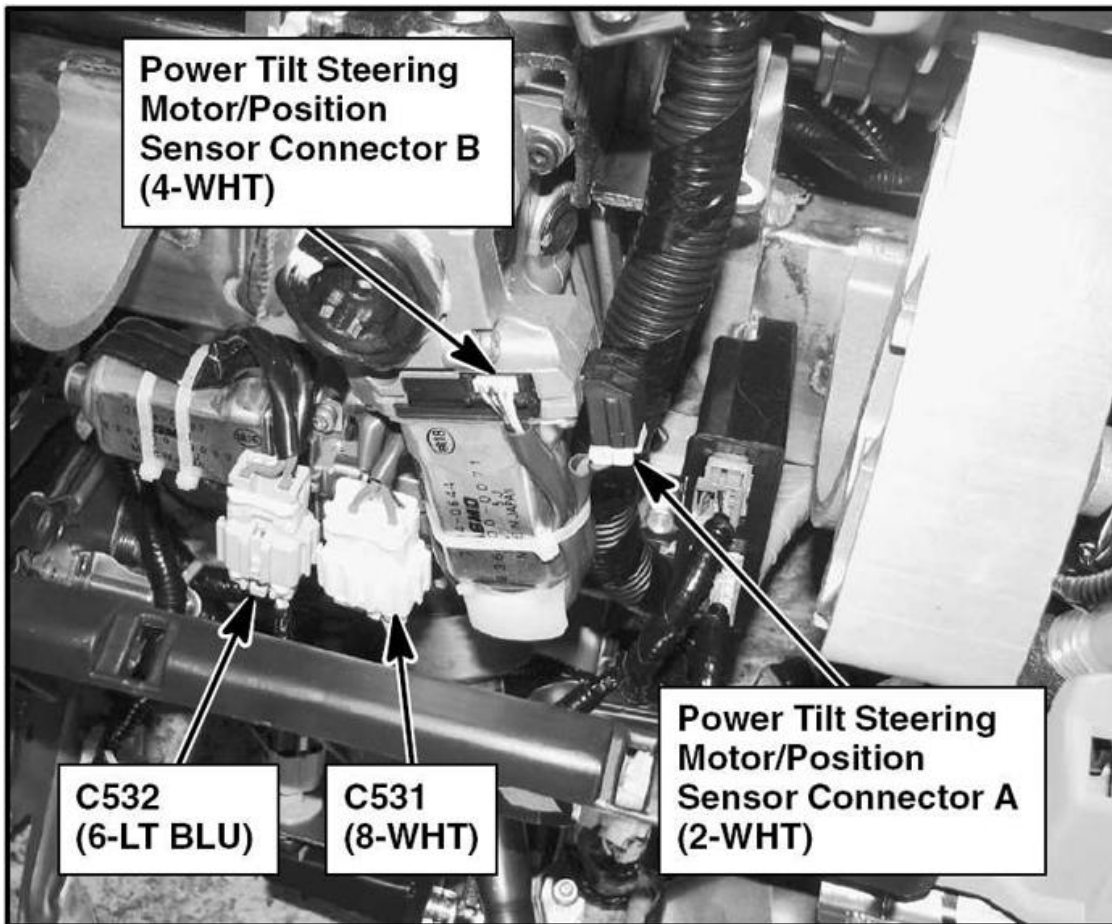


Fig. 47: Steering Column

Courtesy of AMERICAN HONDA MOTOR CO., INC.

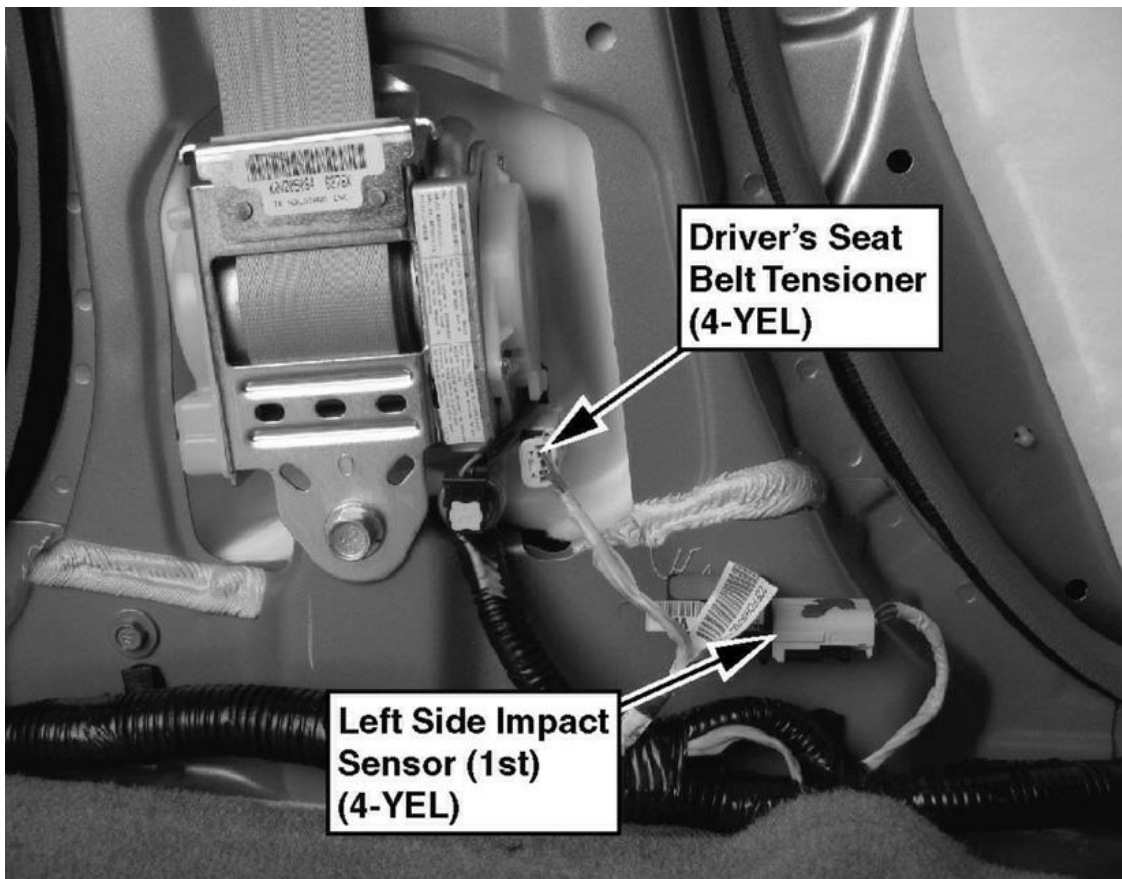


Fig. 48: Left "B" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

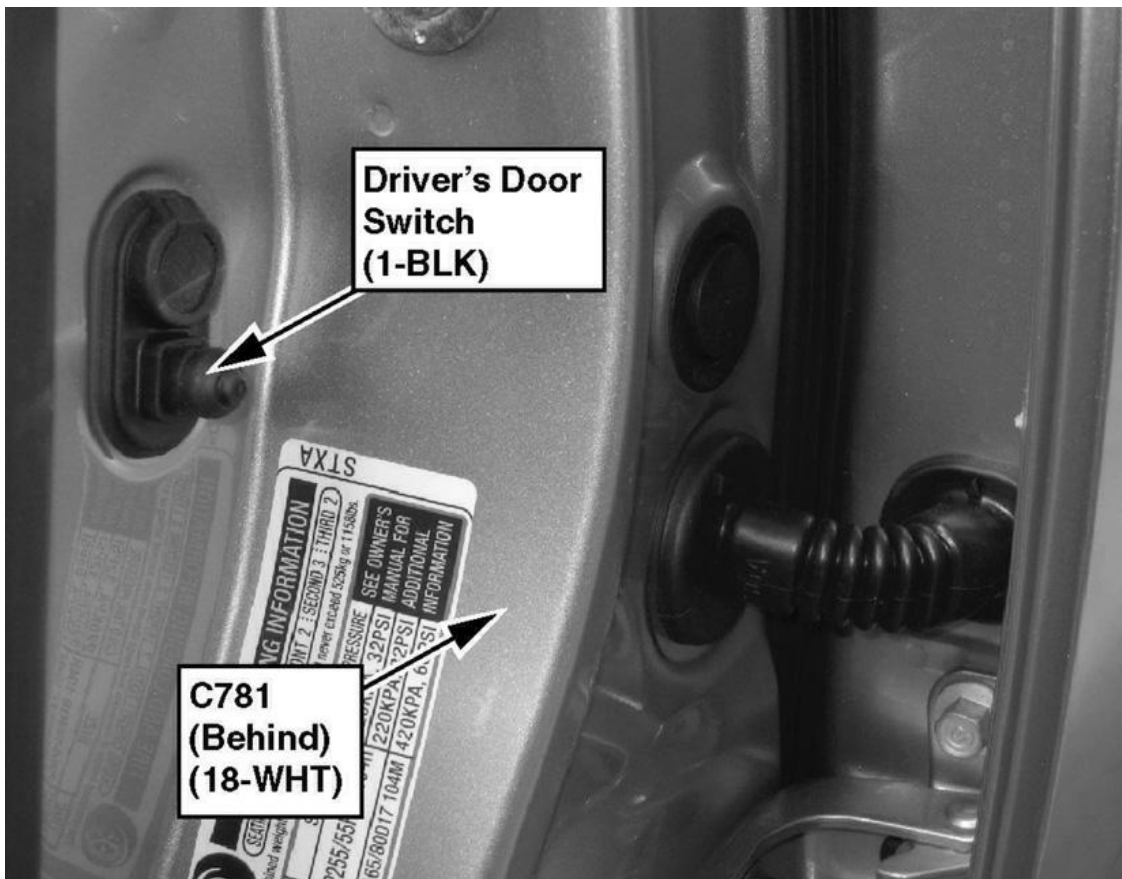


Fig. 49: Left "B" Pillar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

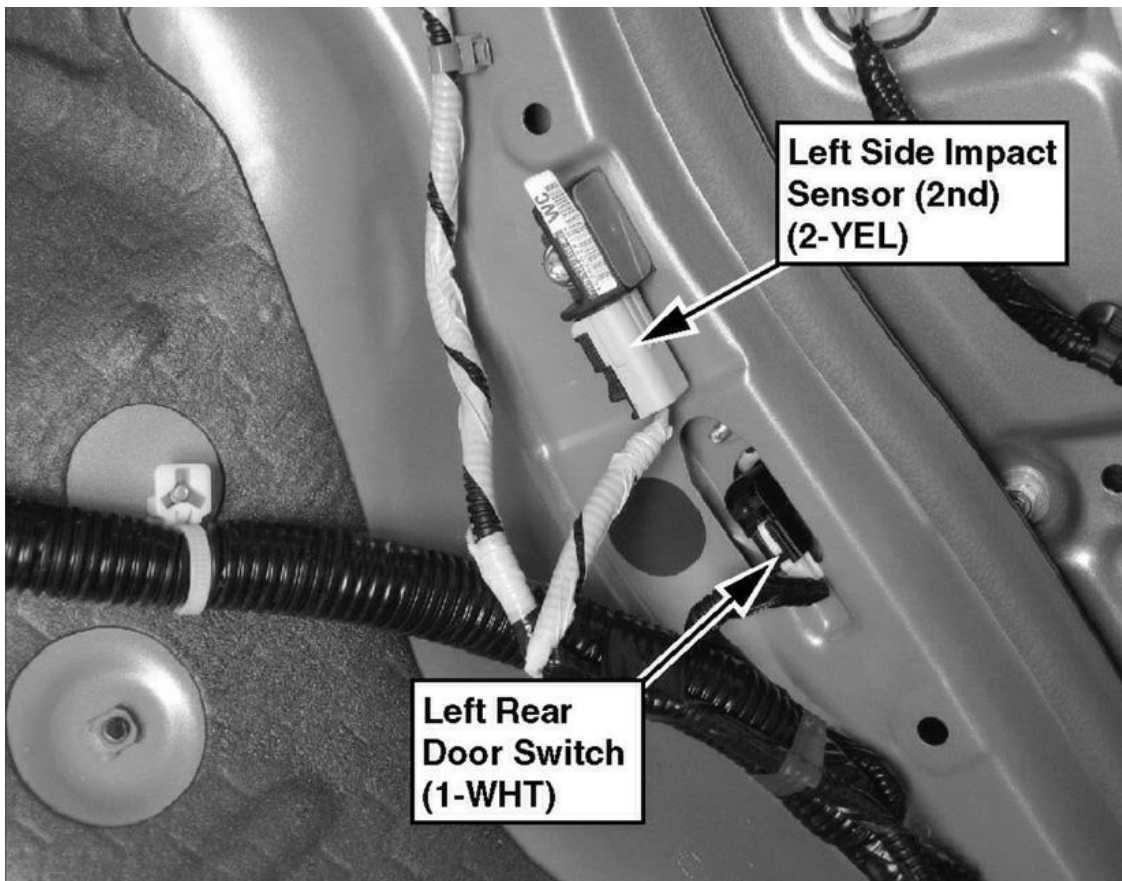


Fig. 50: Left "C" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

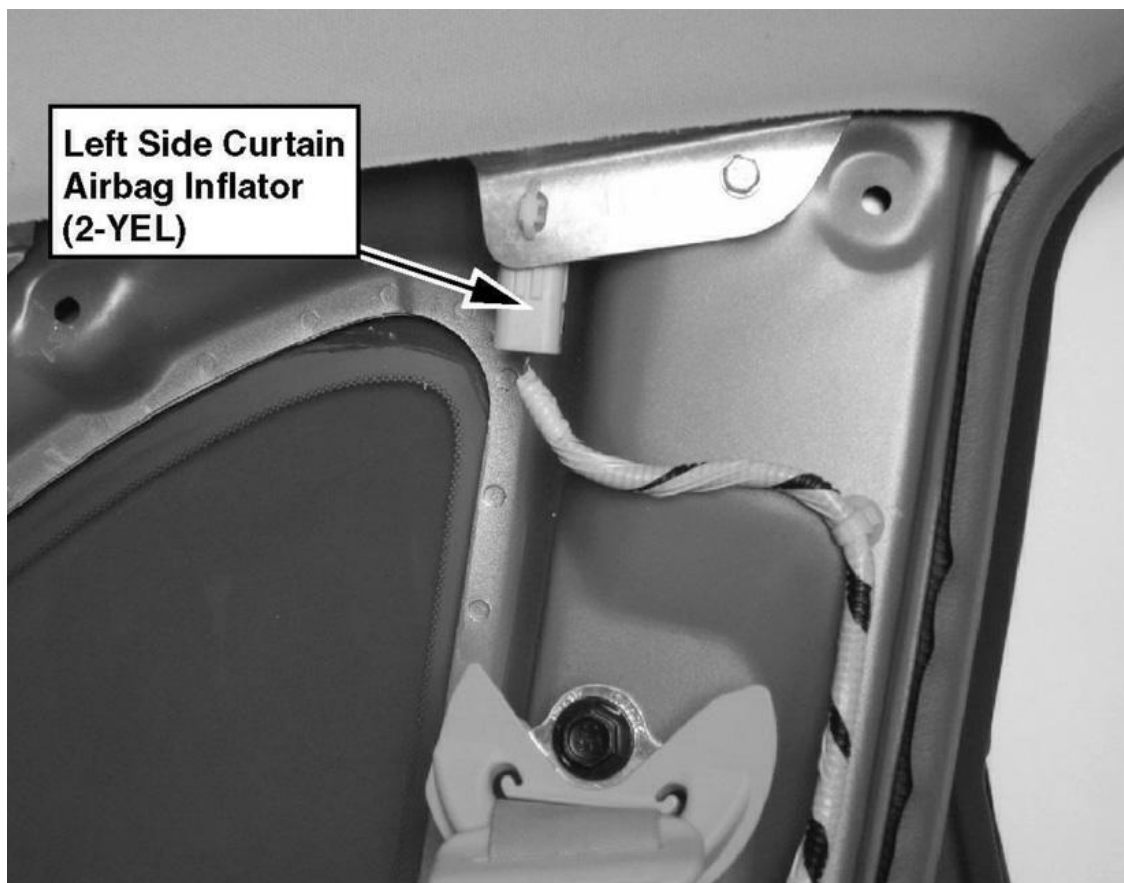


Fig. 51: Left "C" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

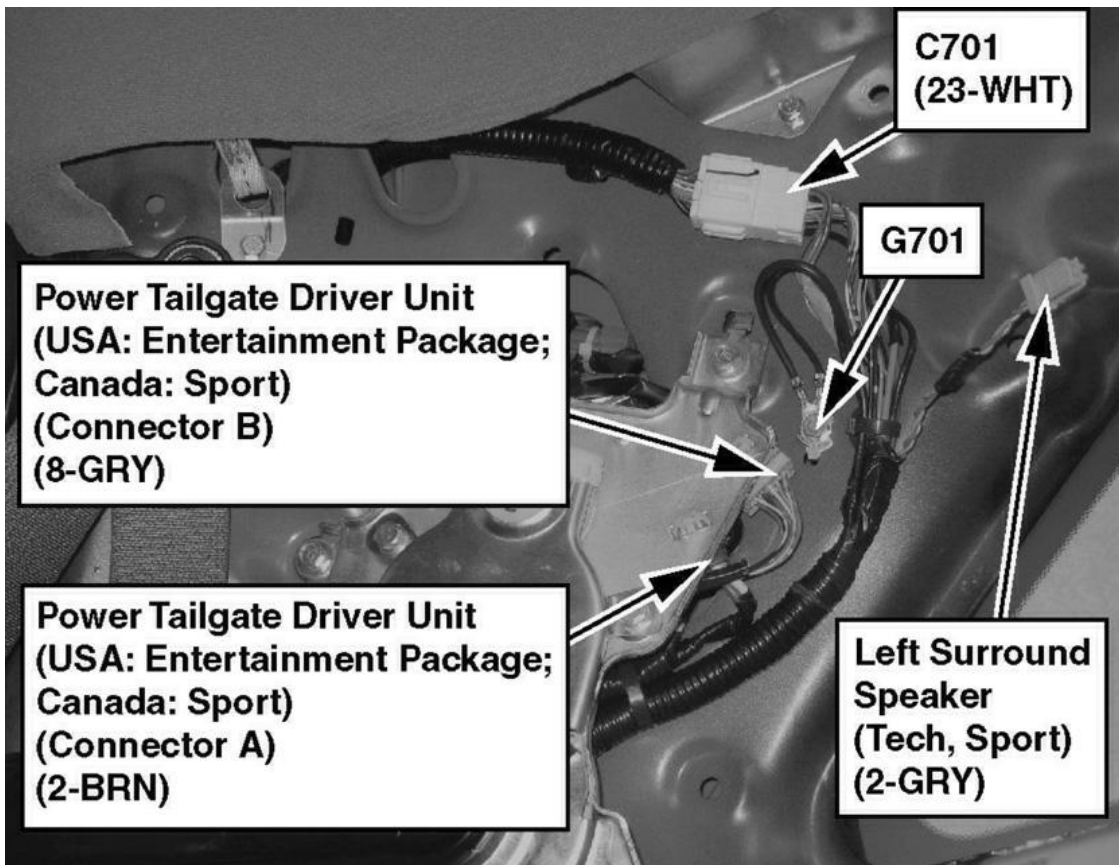


Fig. 52: Left "D" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

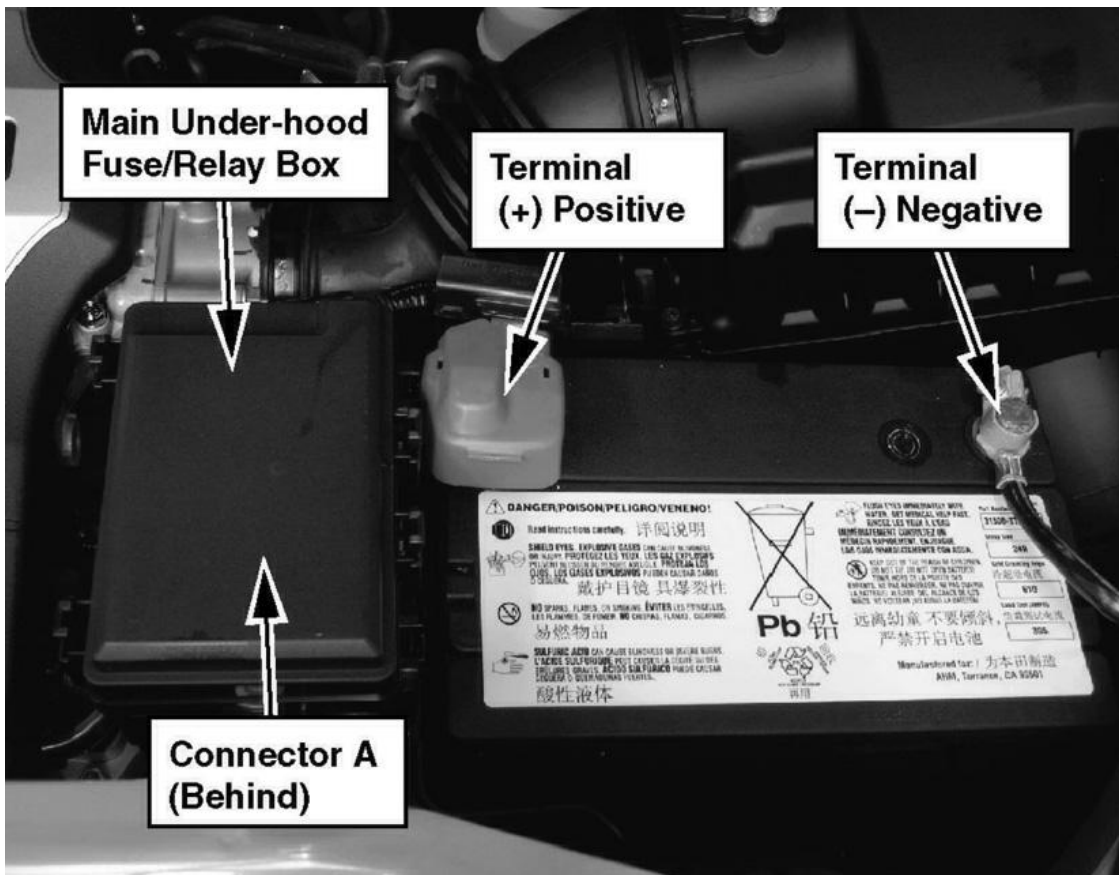


Fig. 53: Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

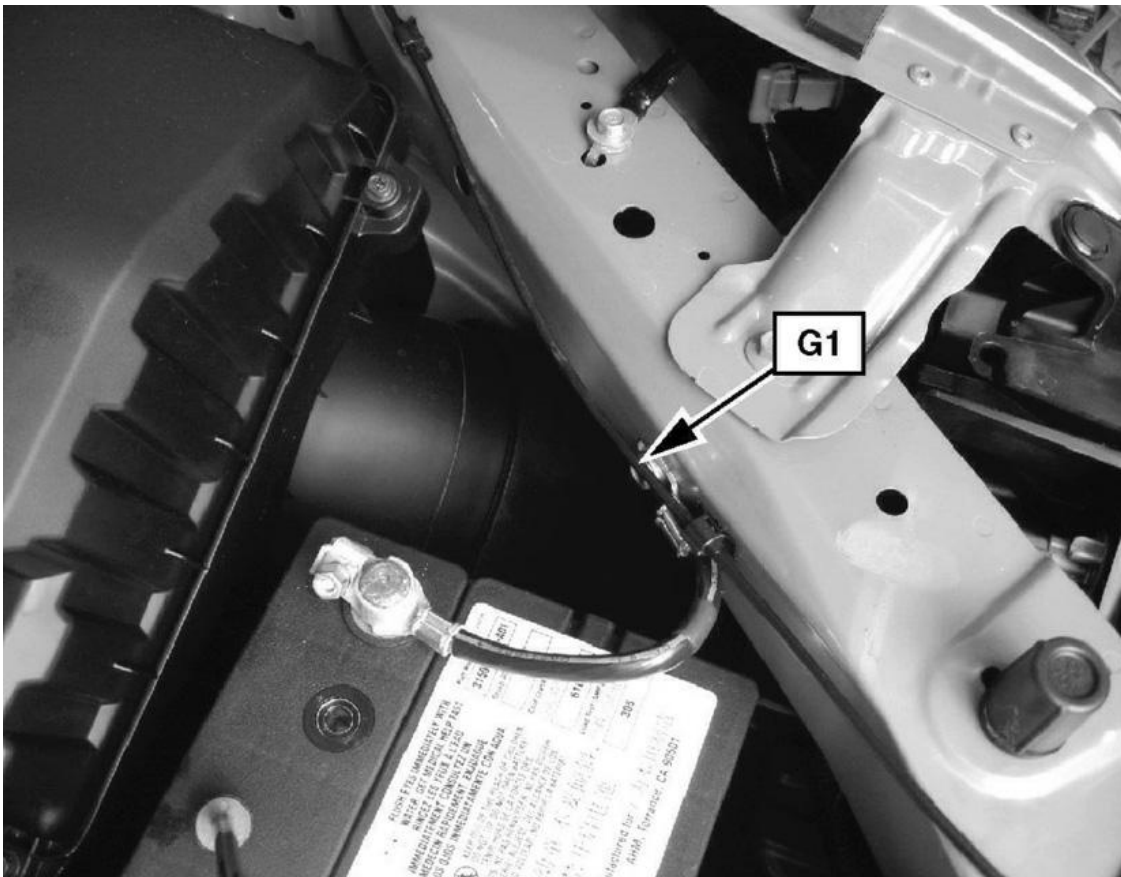


Fig. 54: Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

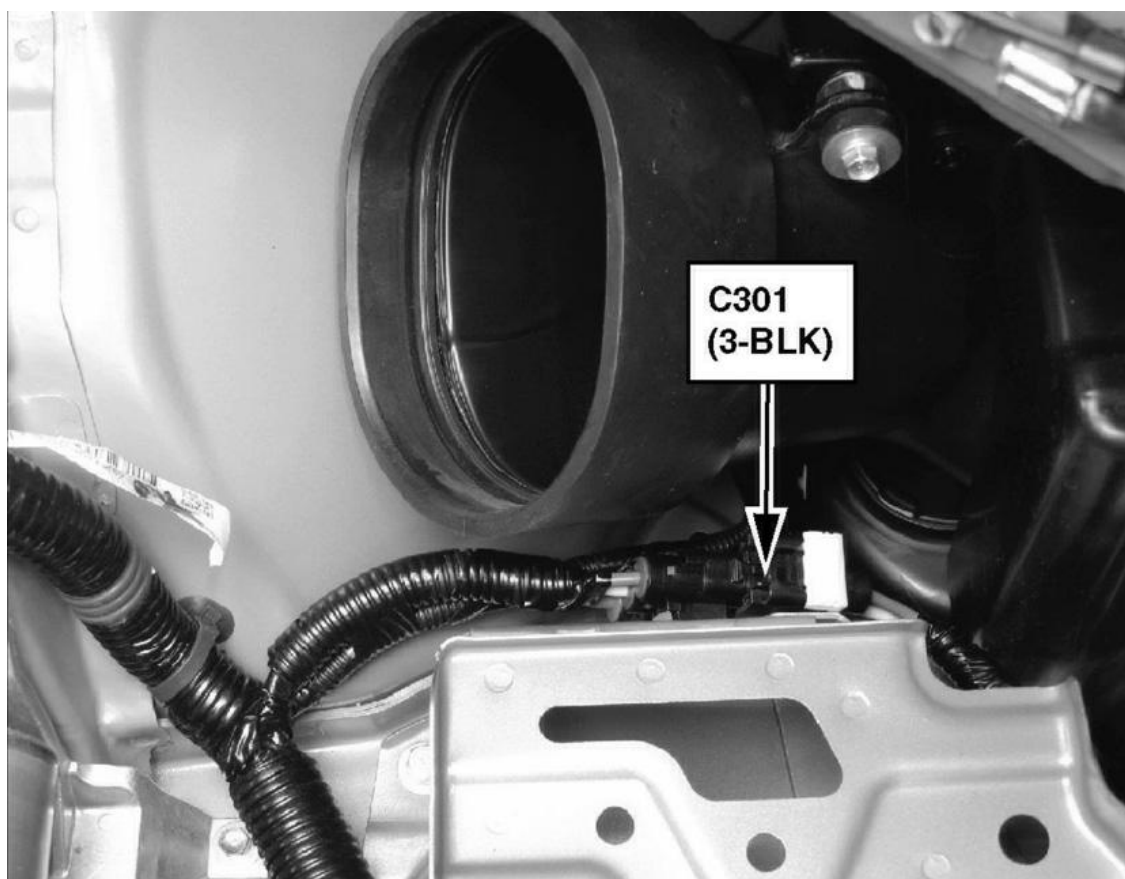


Fig. 55: Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

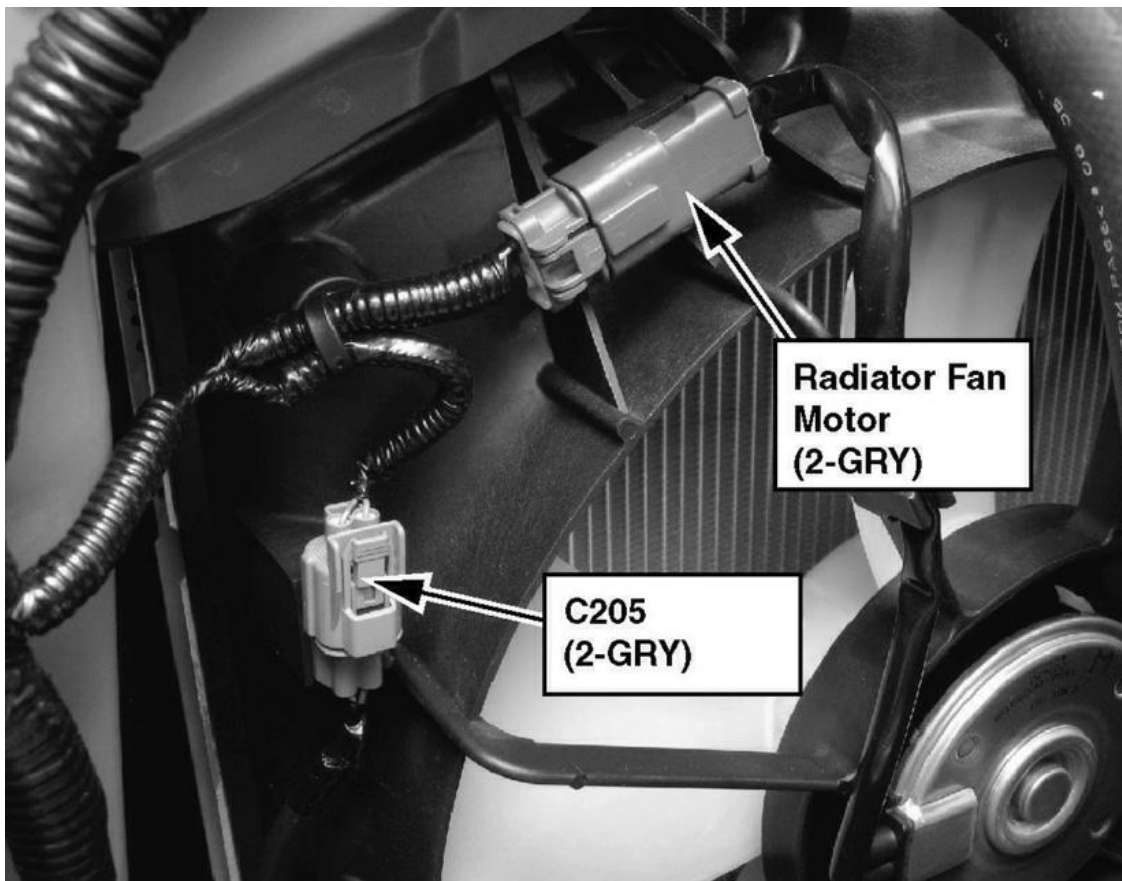


Fig. 56: Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

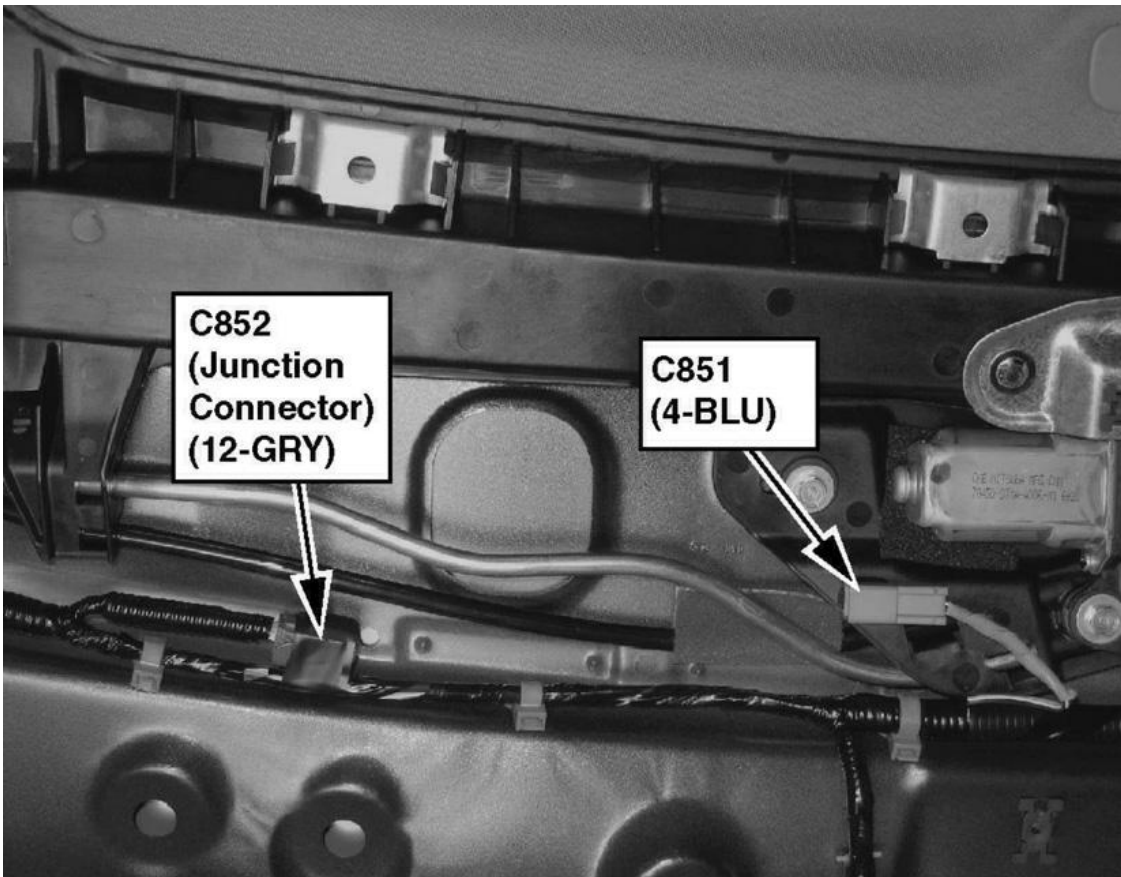


Fig. 57: Left Front Of Roof

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 58: Left Front Suspension (Sport)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

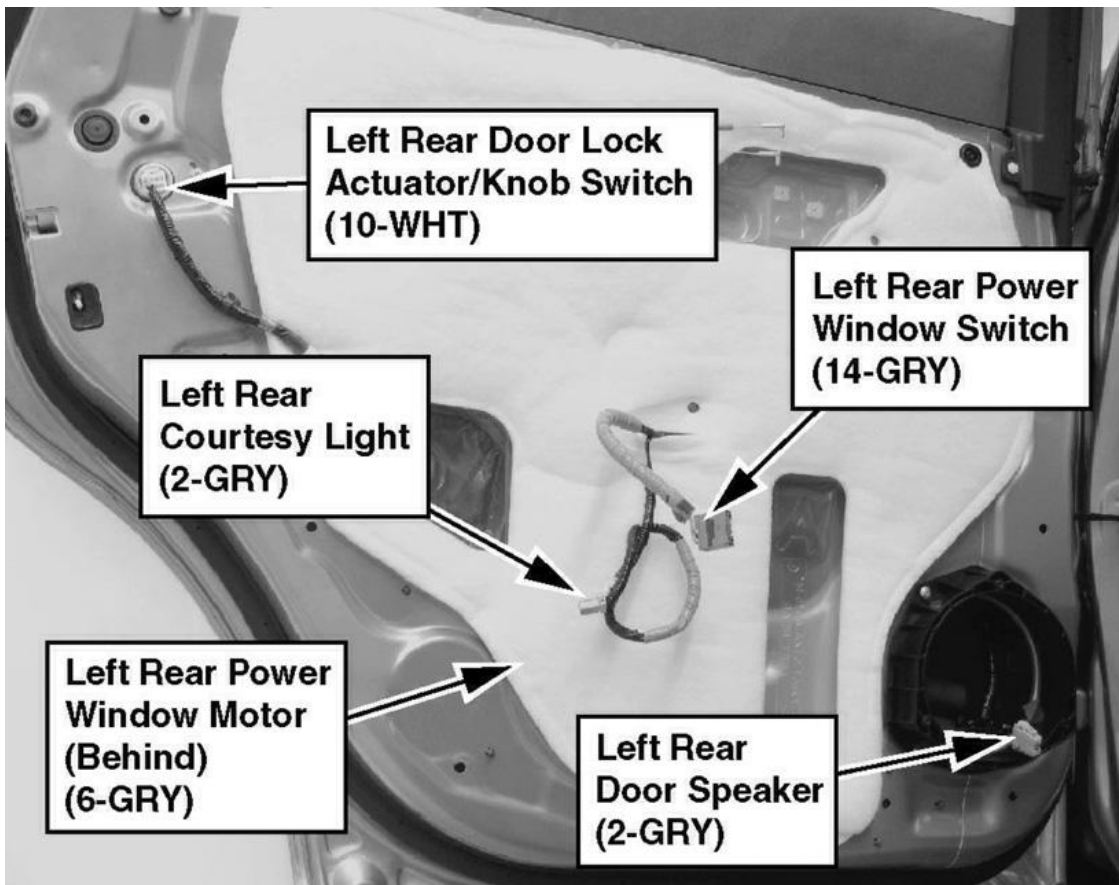


Fig. 59: Left Rear Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

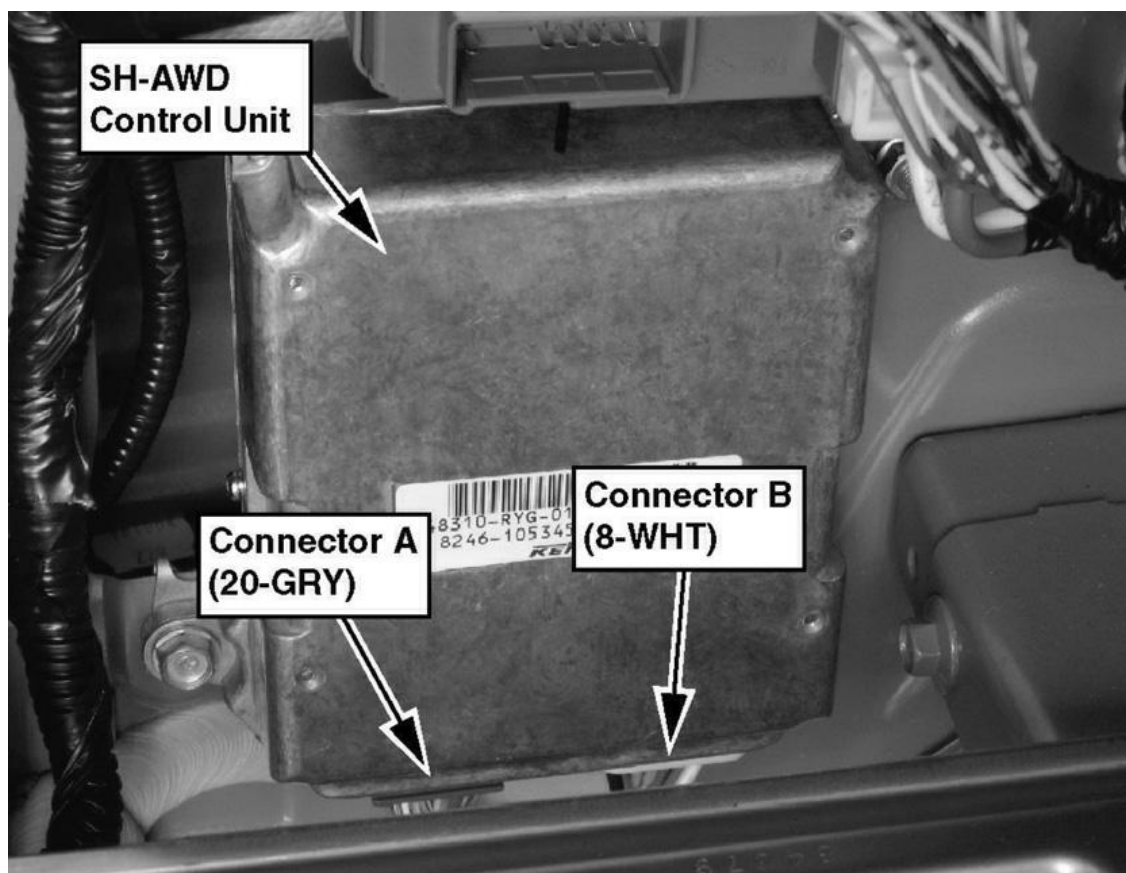


Fig. 60: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

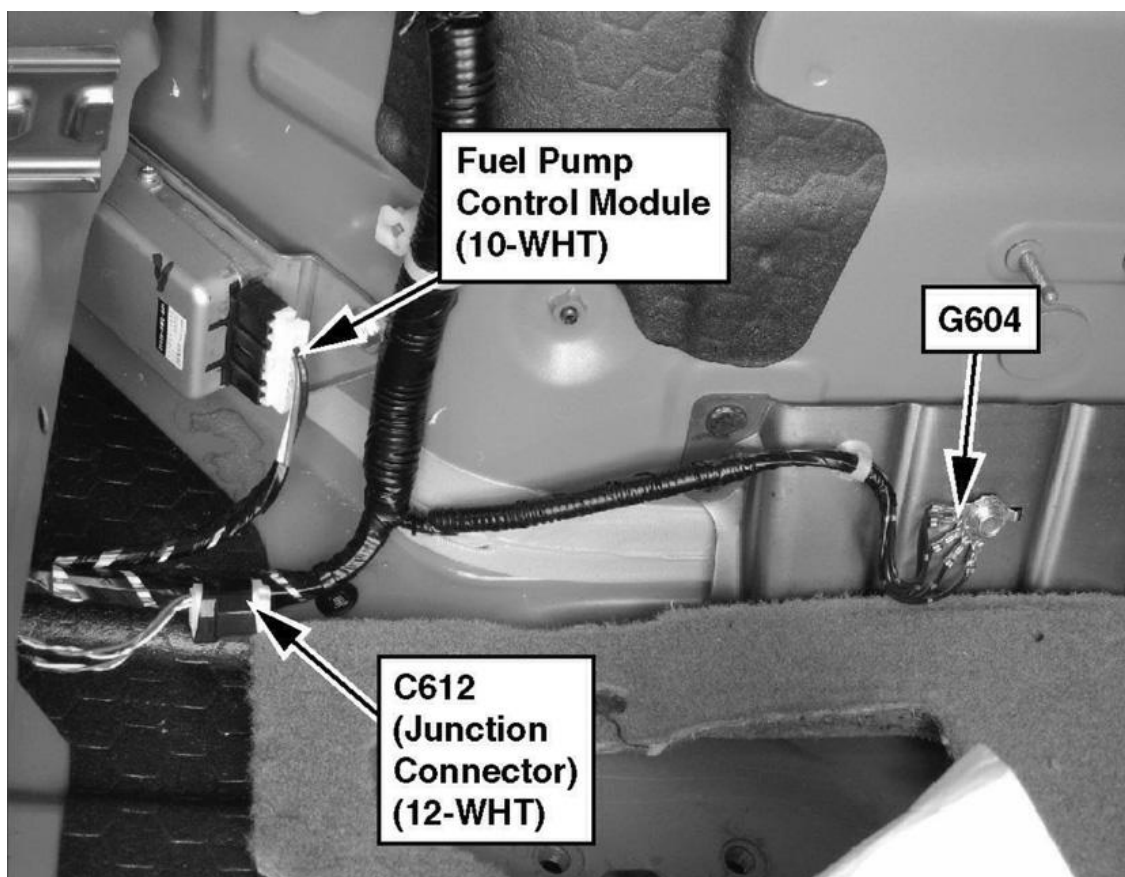


Fig. 61: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

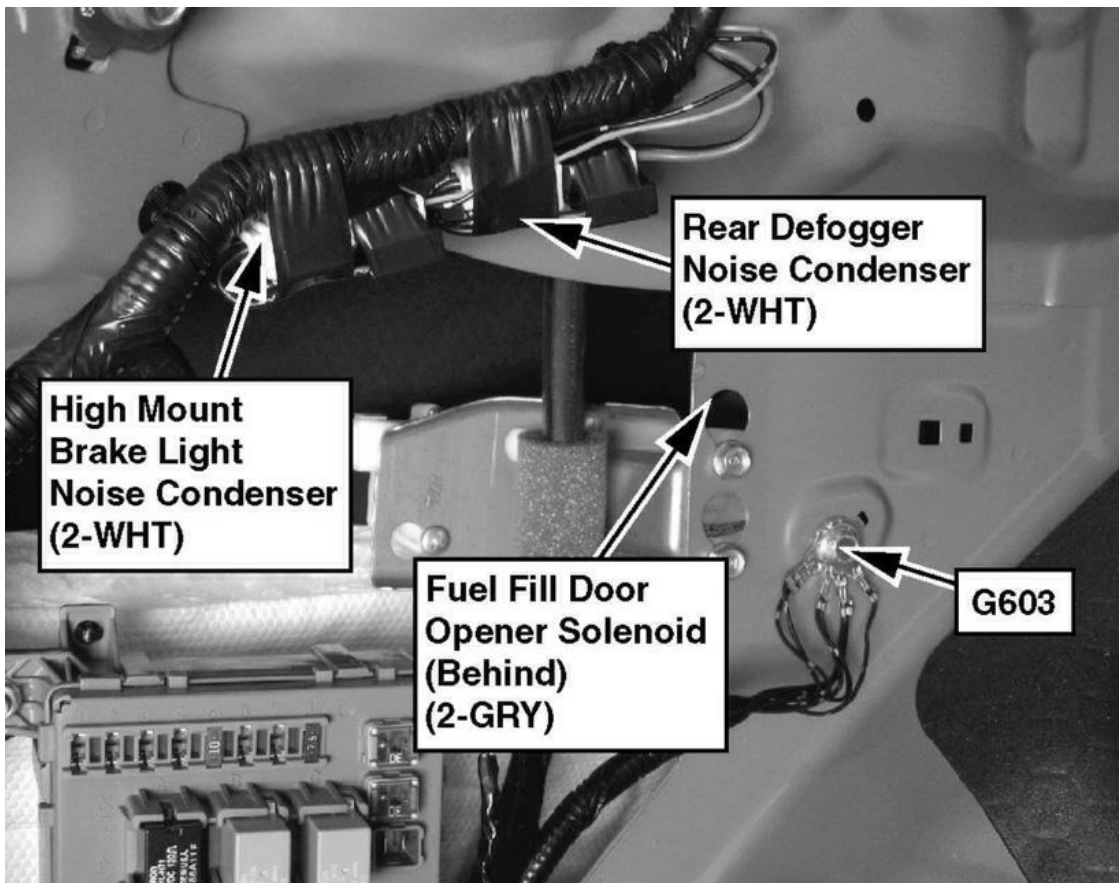


Fig. 62: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

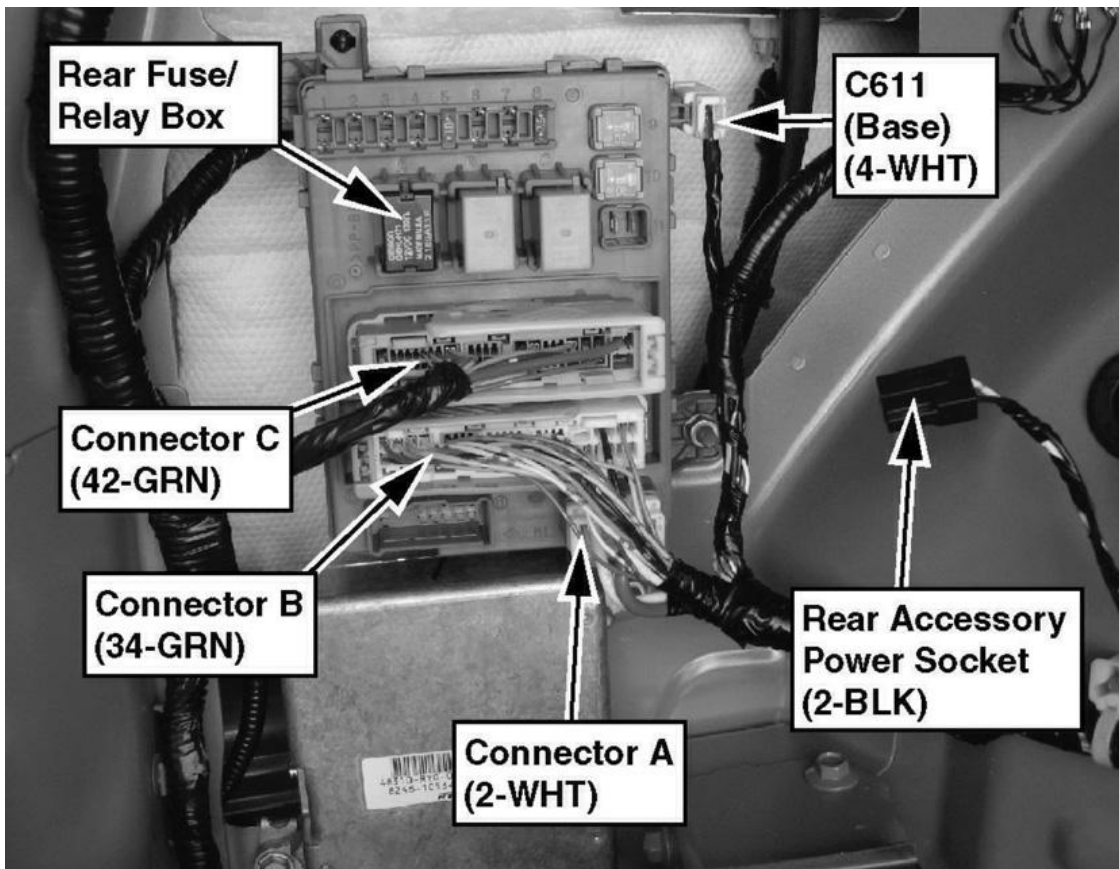


Fig. 63: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

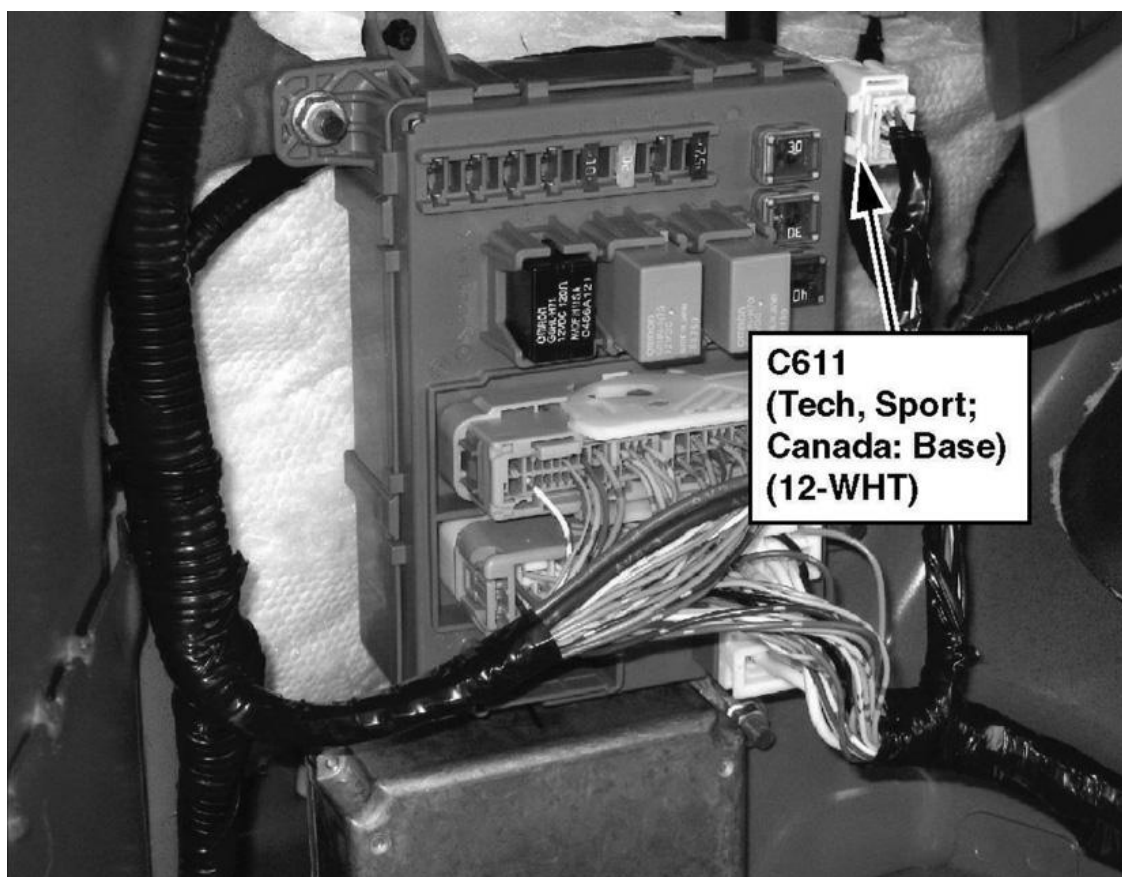


Fig. 64: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

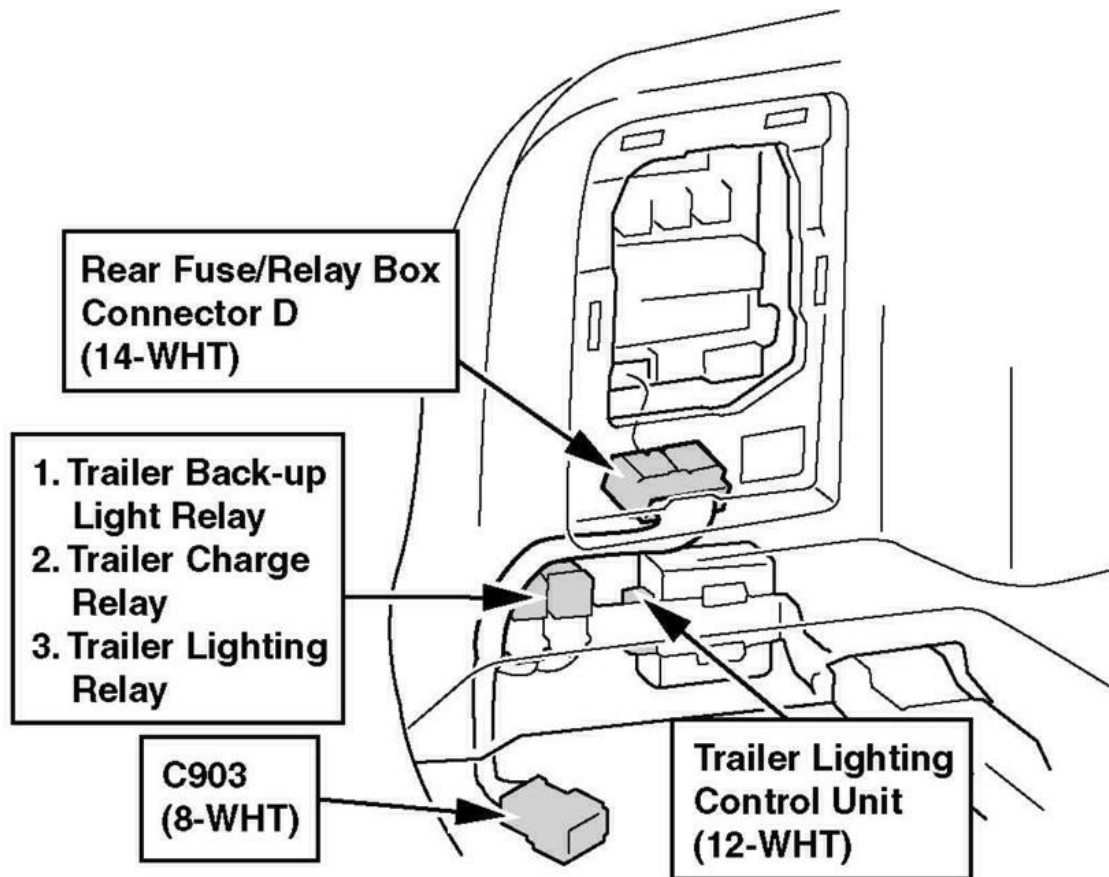


Fig. 65: Left Side Of Cargo Area (Acura Accessory)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

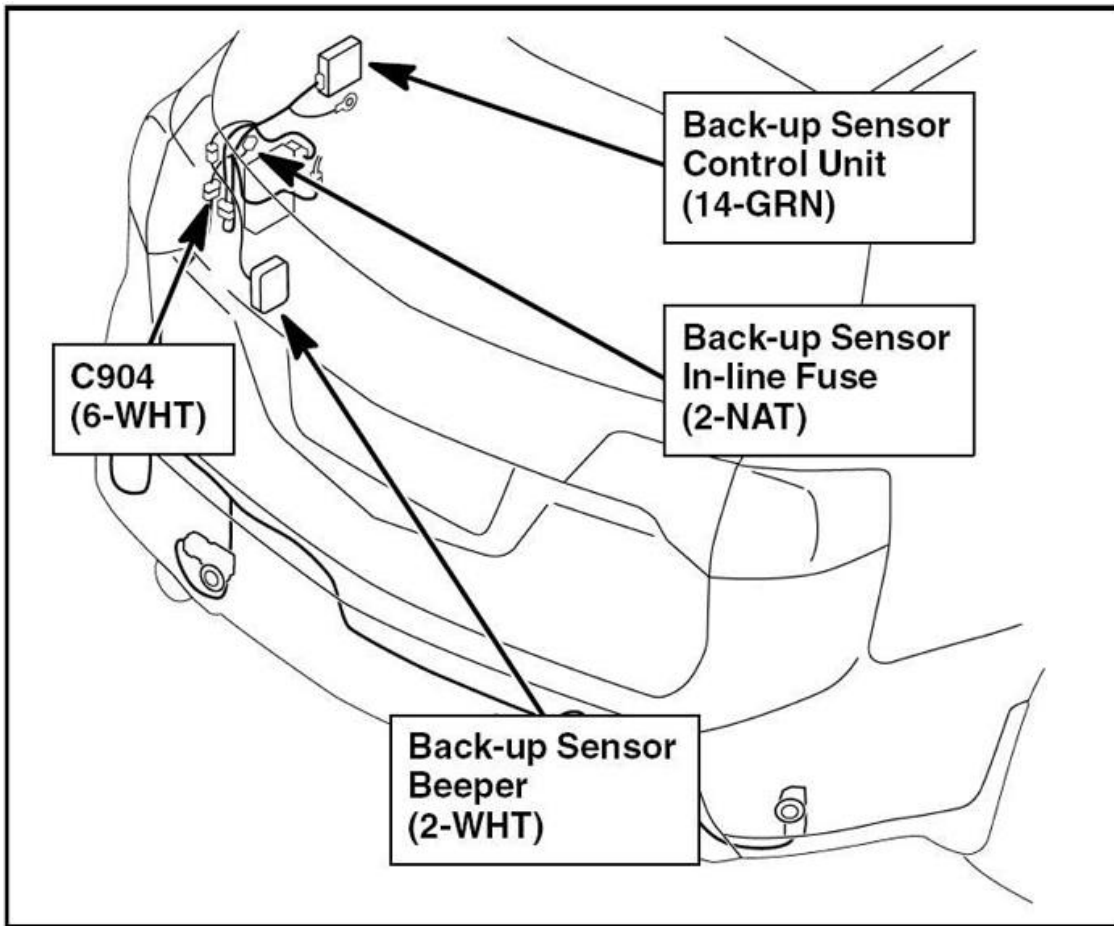


Fig. 66: Left Side Of Cargo Area (Acura Accessory)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

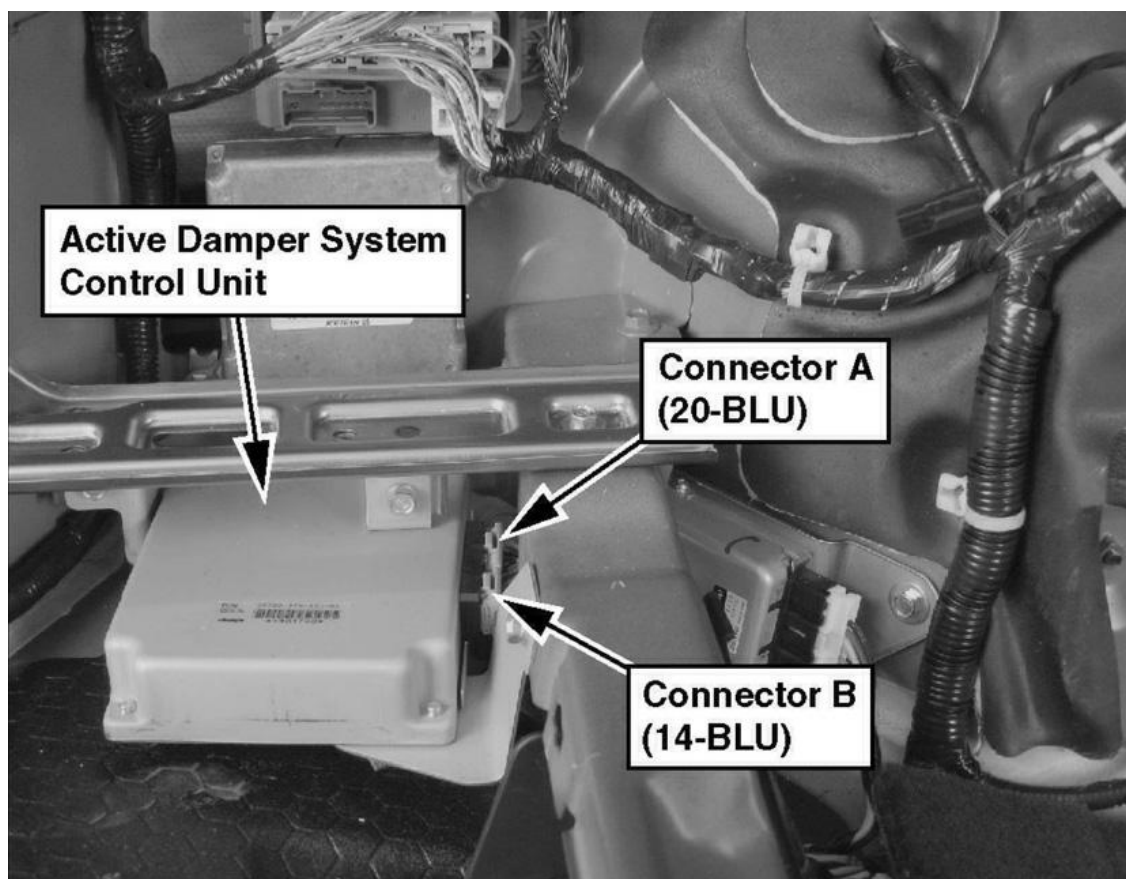


Fig. 67: Left Side Of Cargo Area (Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

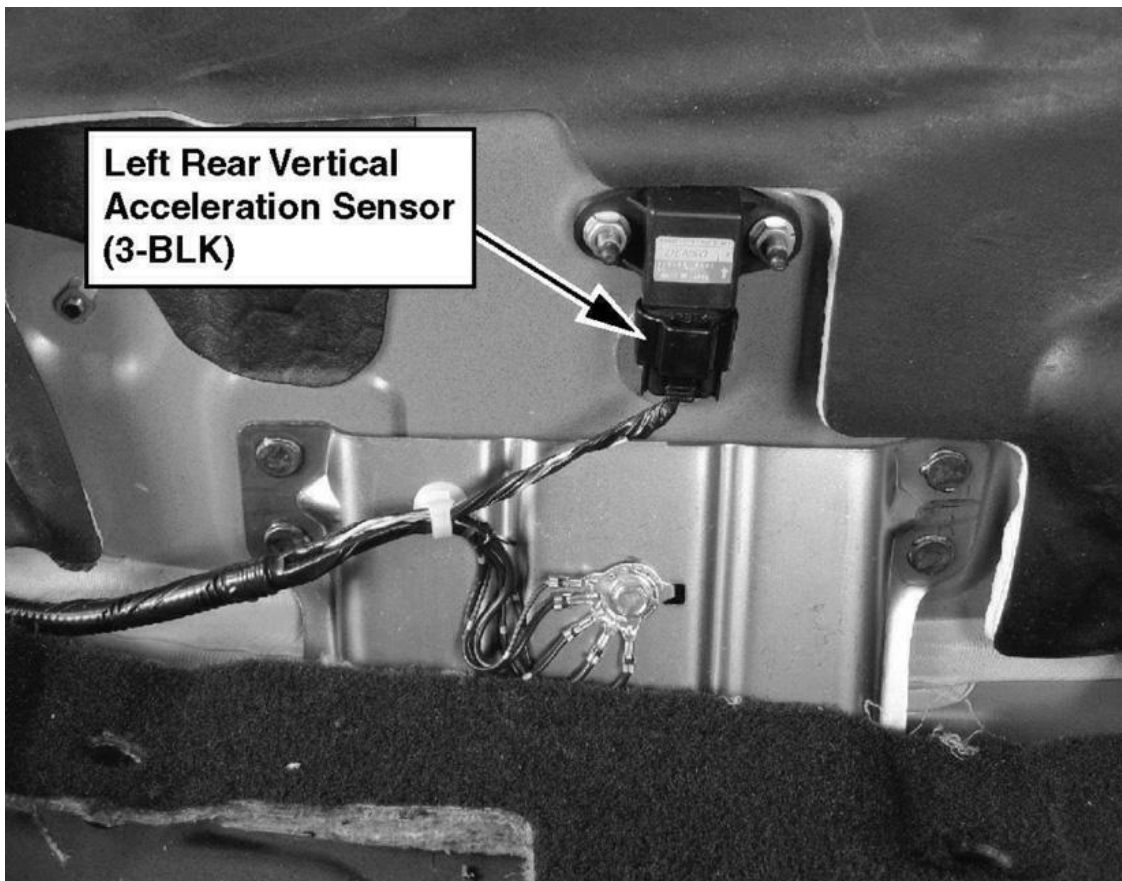


Fig. 68: Left Side Of Cargo Area (Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

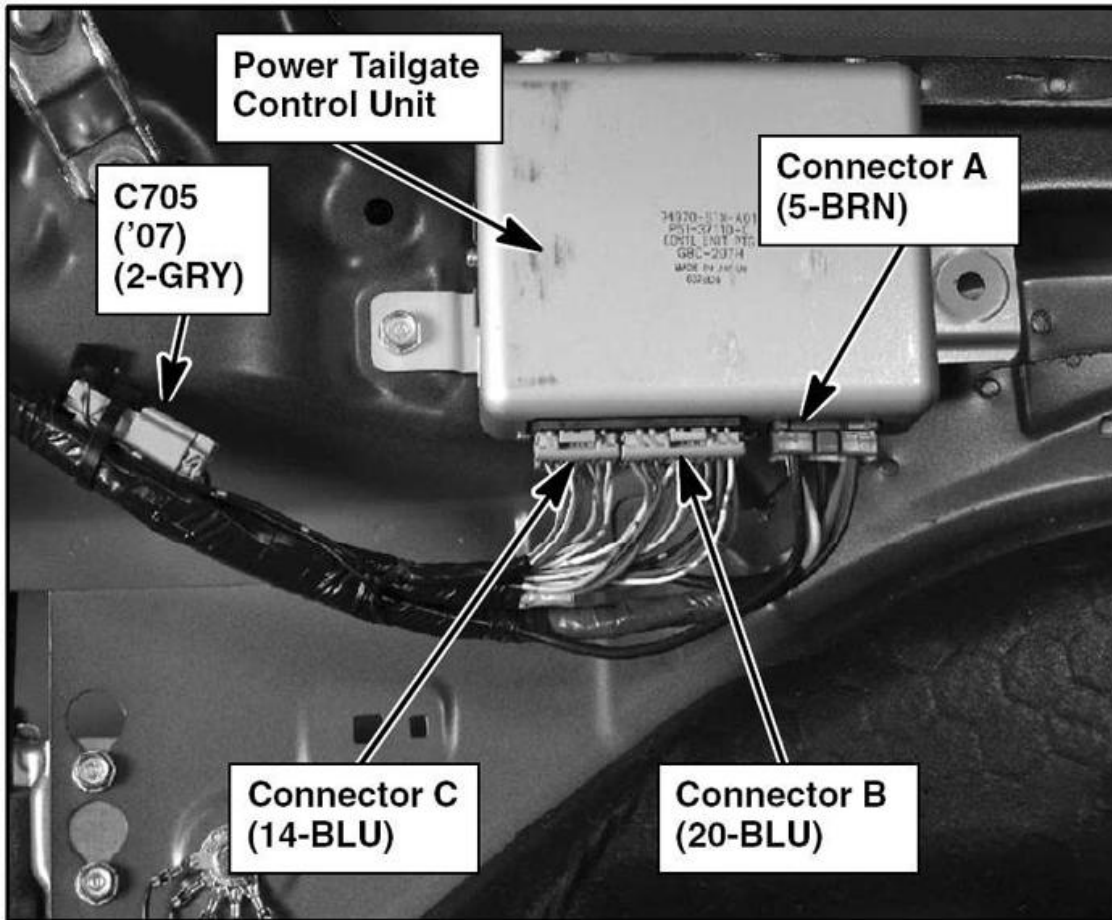


Fig. 69: Left Side Of Cargo Area (USA: Entertainment Package; Canada: Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

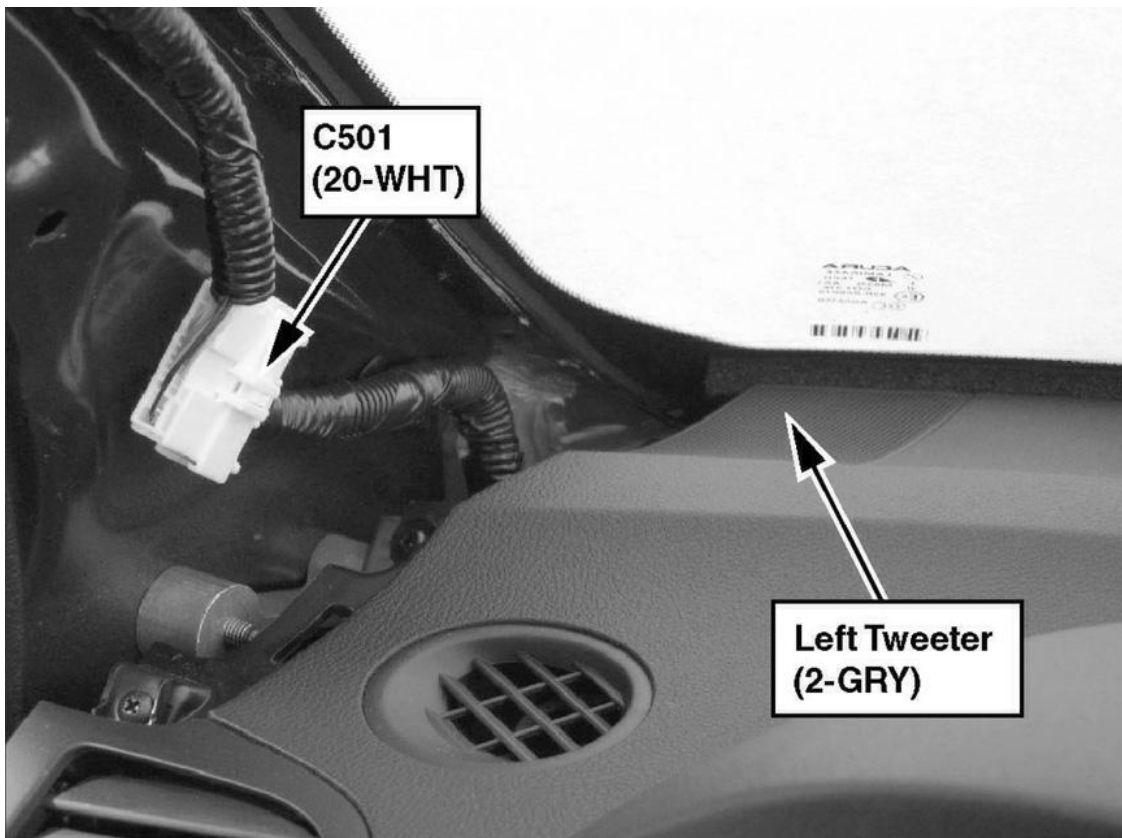


Fig. 70: Left "A" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

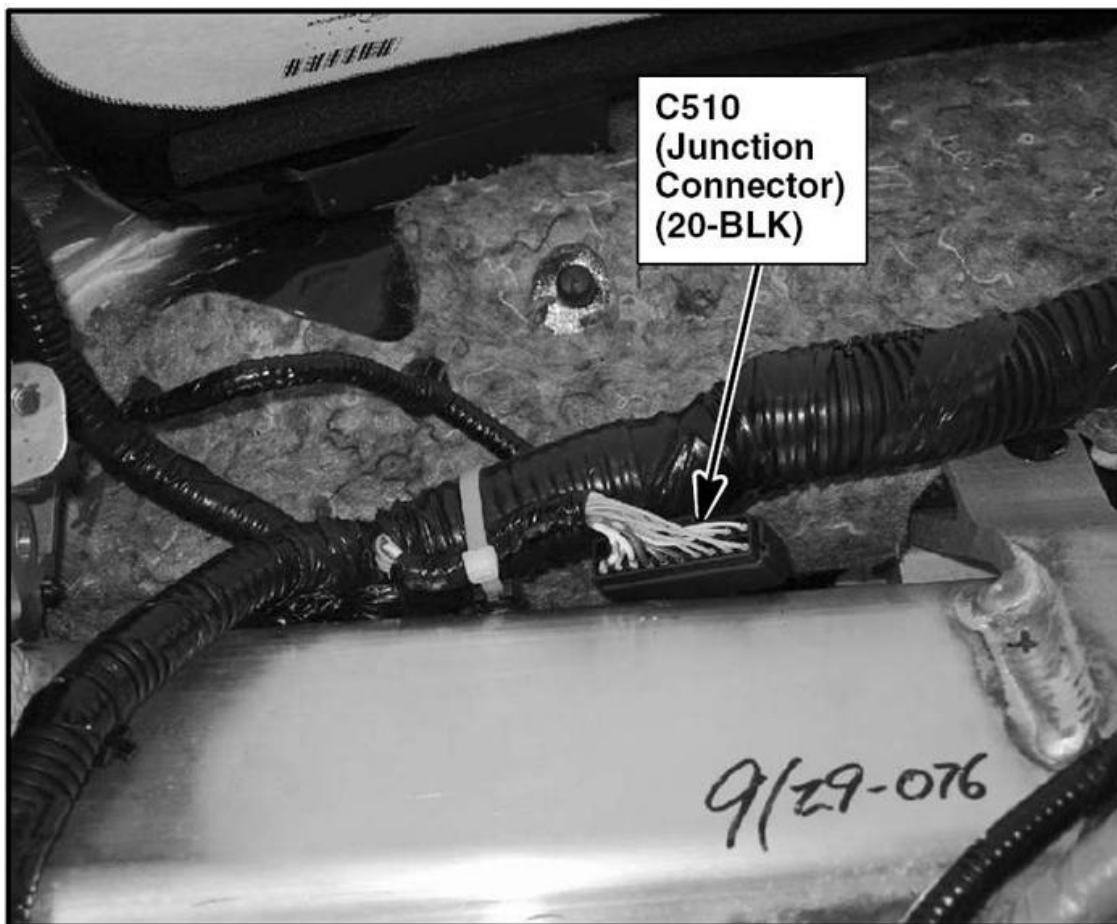


Fig. 71: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

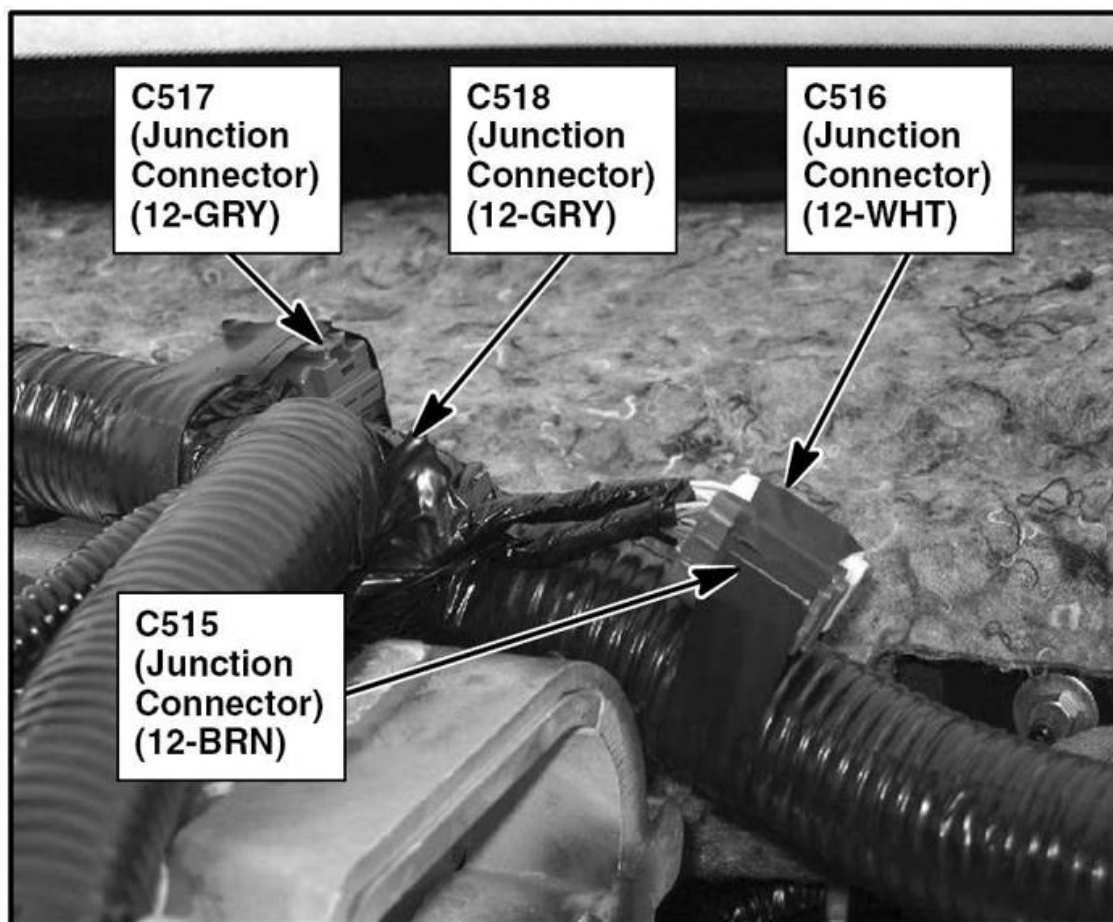


Fig. 72: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

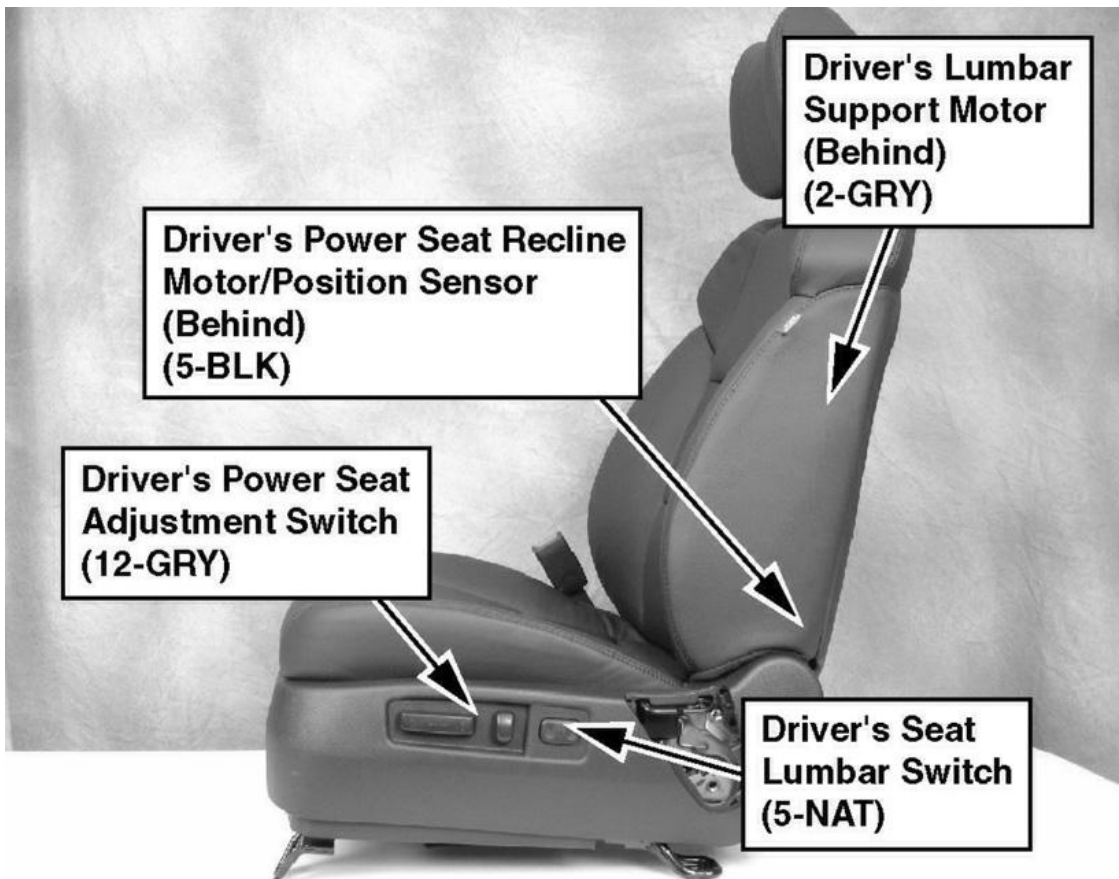


Fig. 73: Driver's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

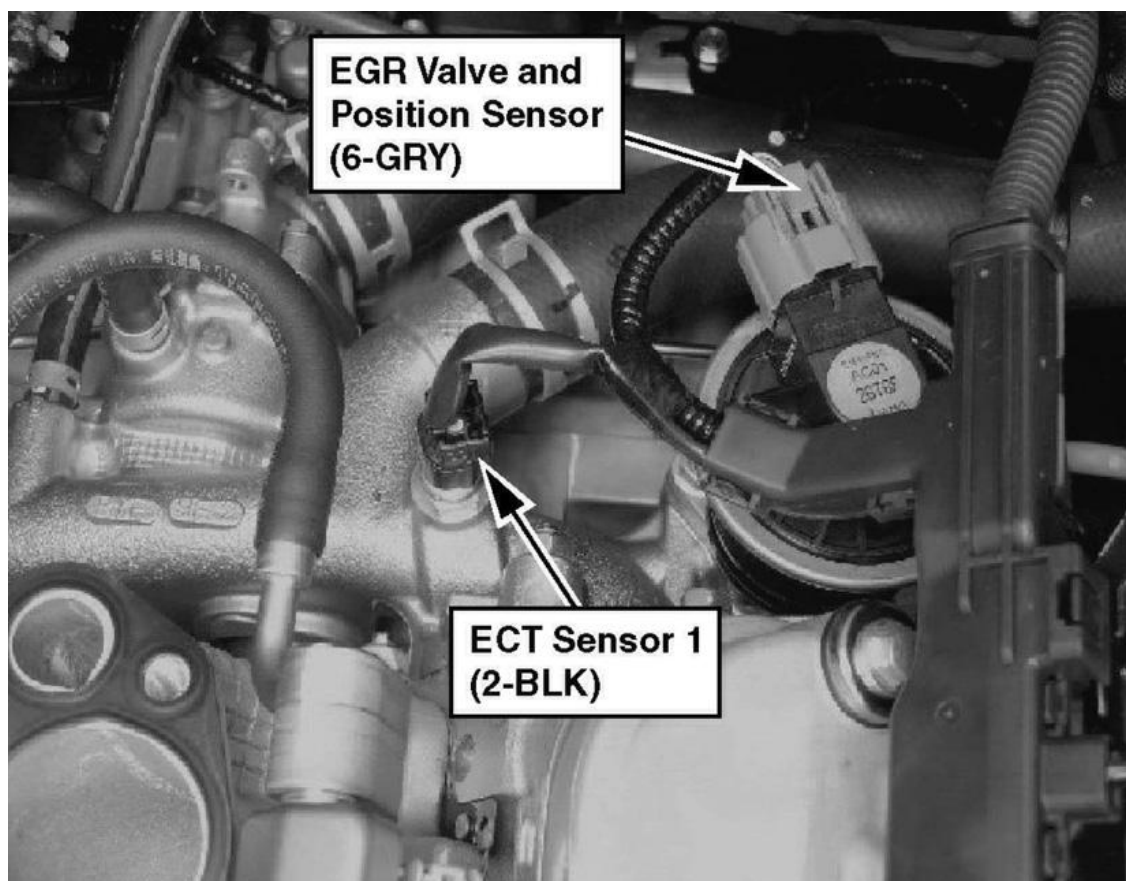


Fig. 74: Rear Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

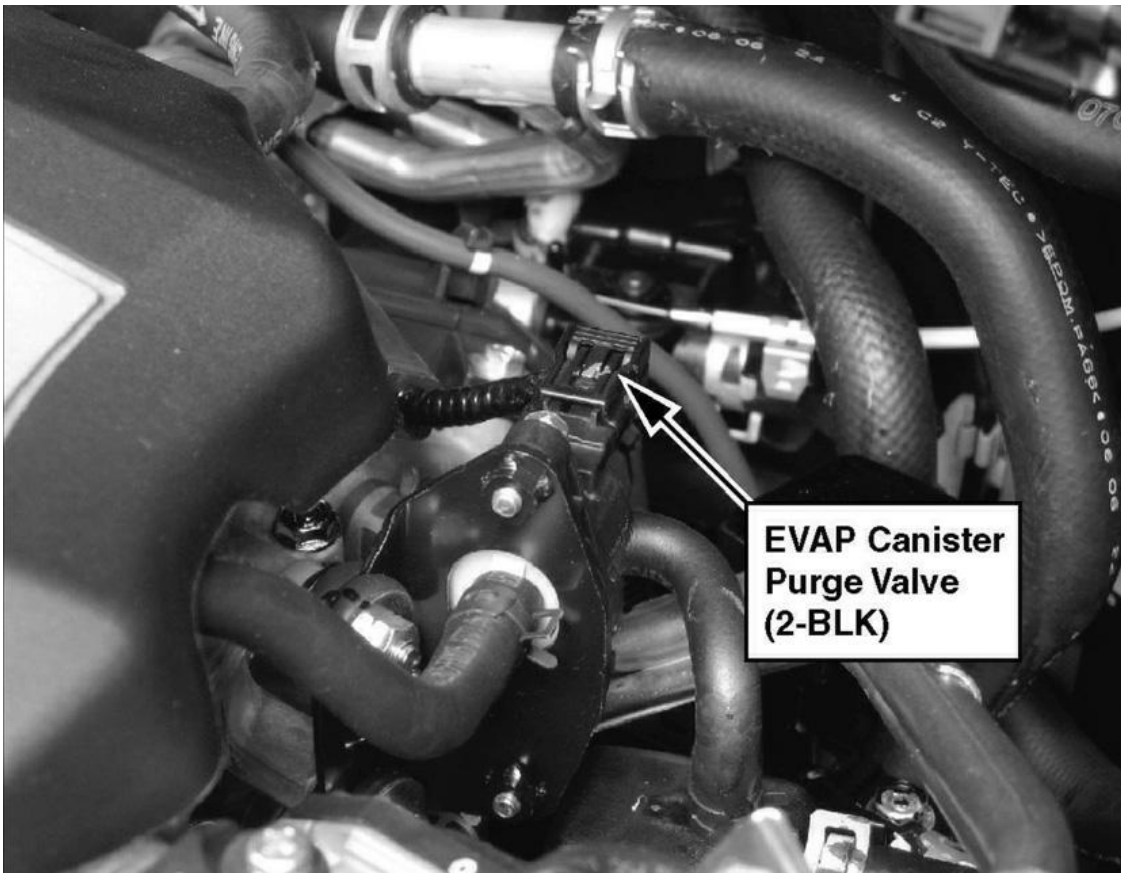


Fig. 75: Rear Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

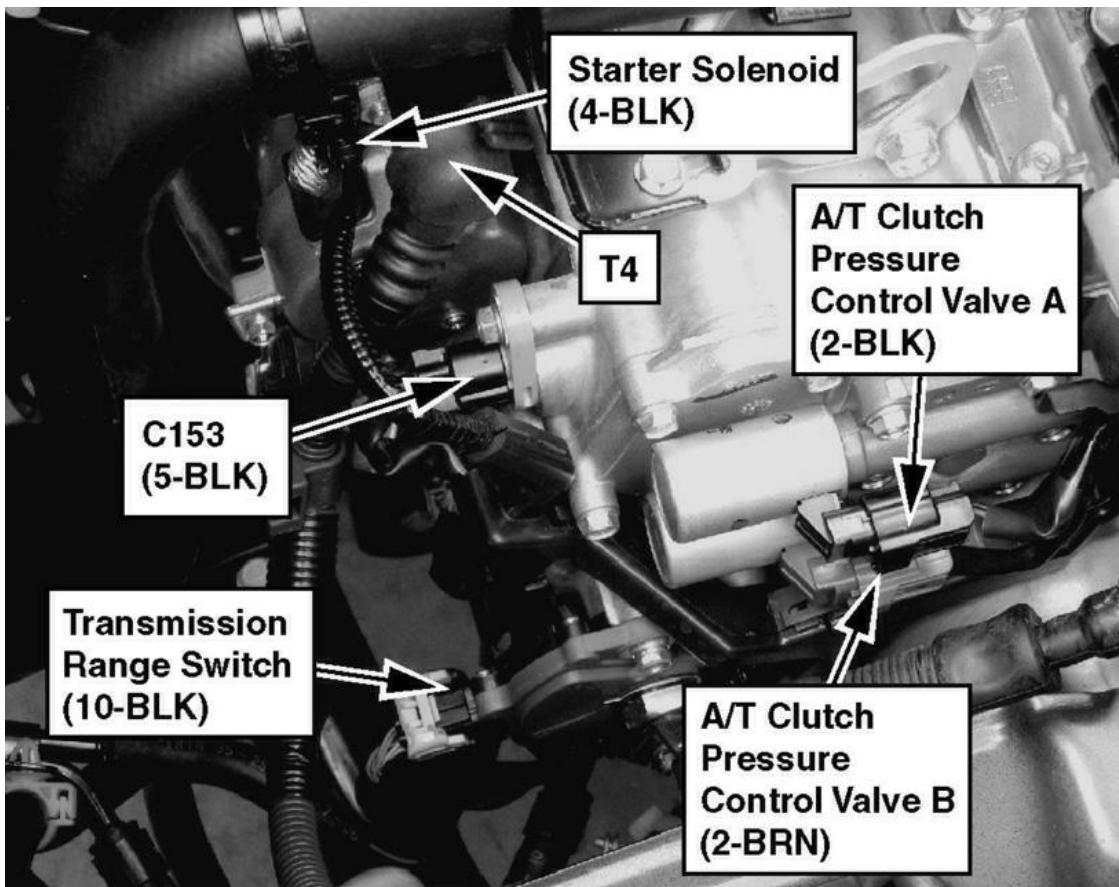


Fig. 76: Rear Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

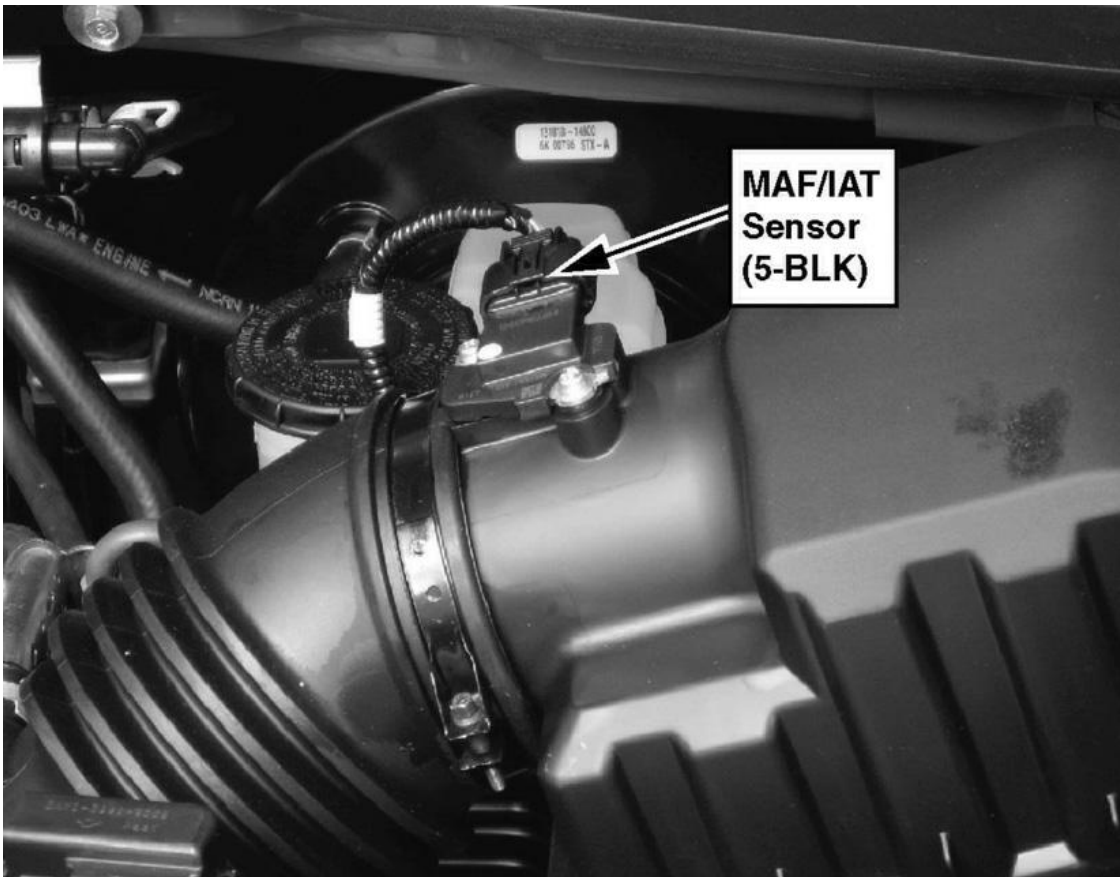


Fig. 77: Left Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

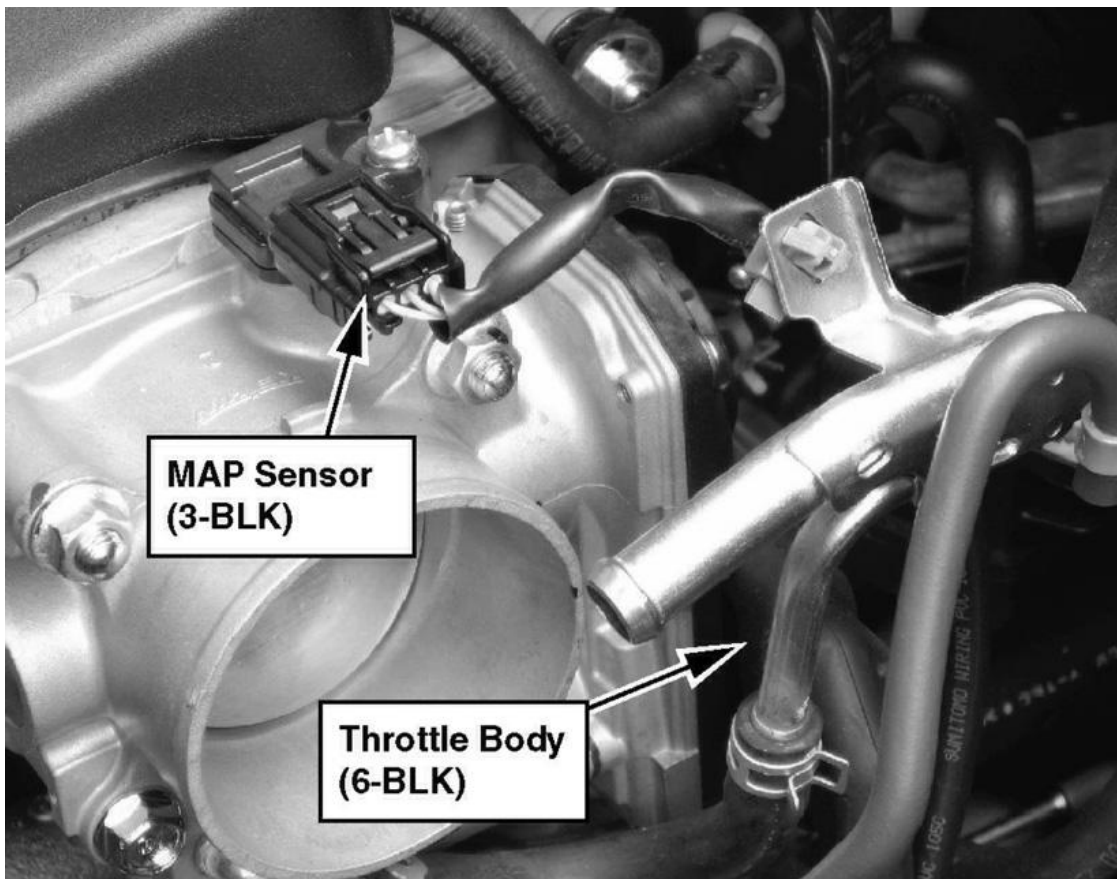


Fig. 78: Right Side Of Engine
Courtesy of AMERICAN HONDA MOTOR CO., INC.

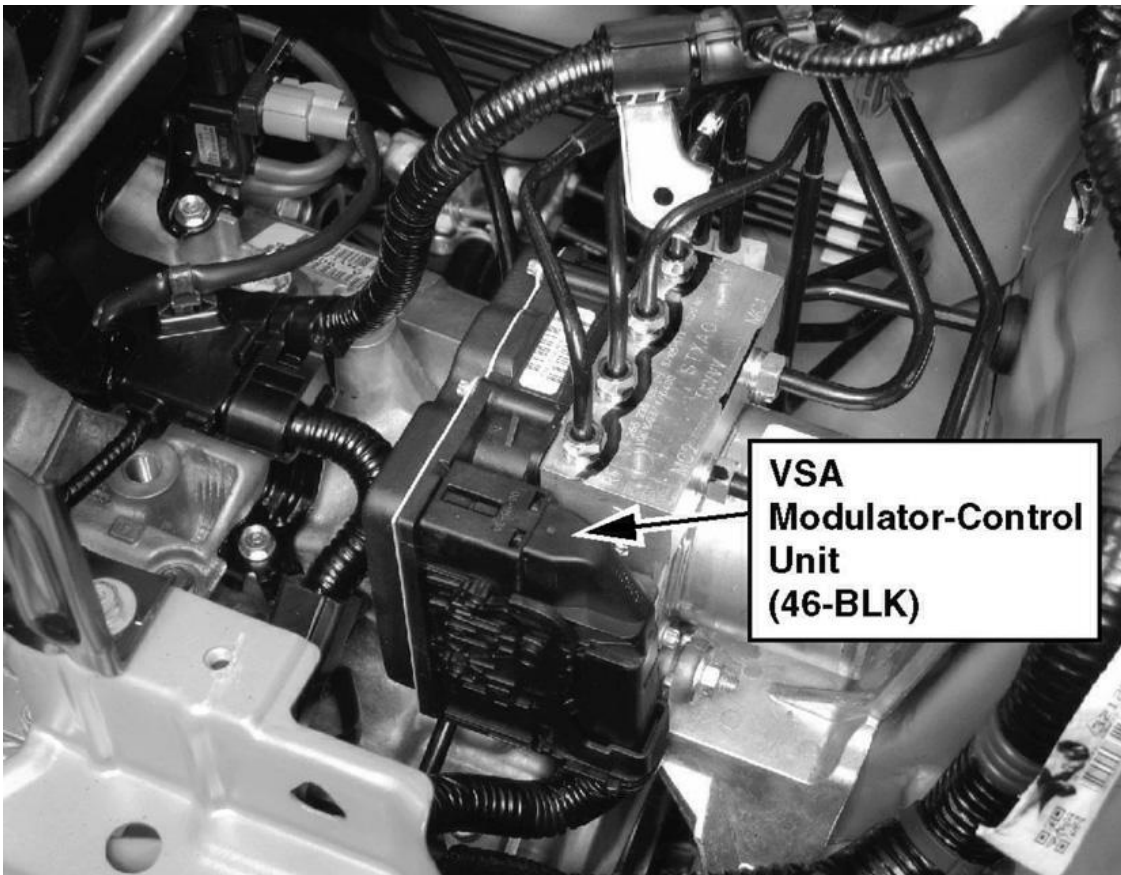


Fig. 79: Left Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

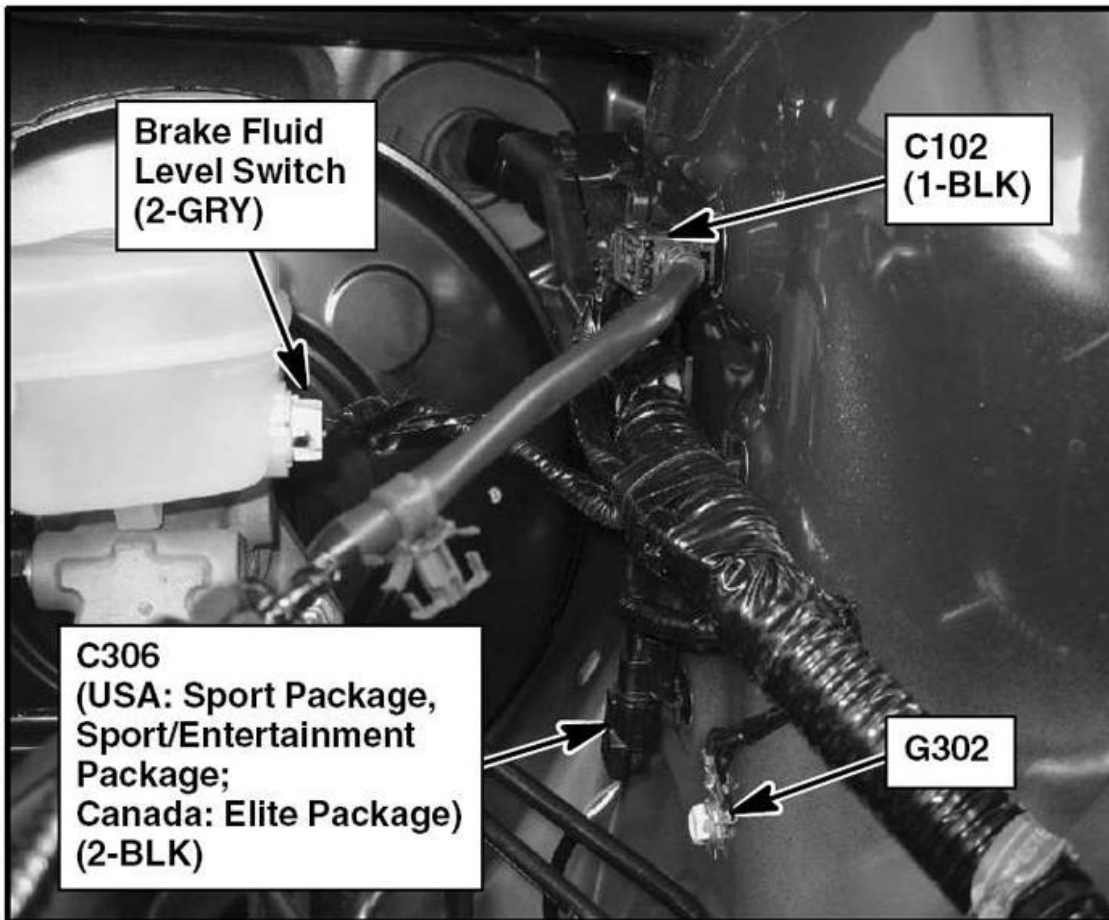


Fig. 80: Left Rear Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

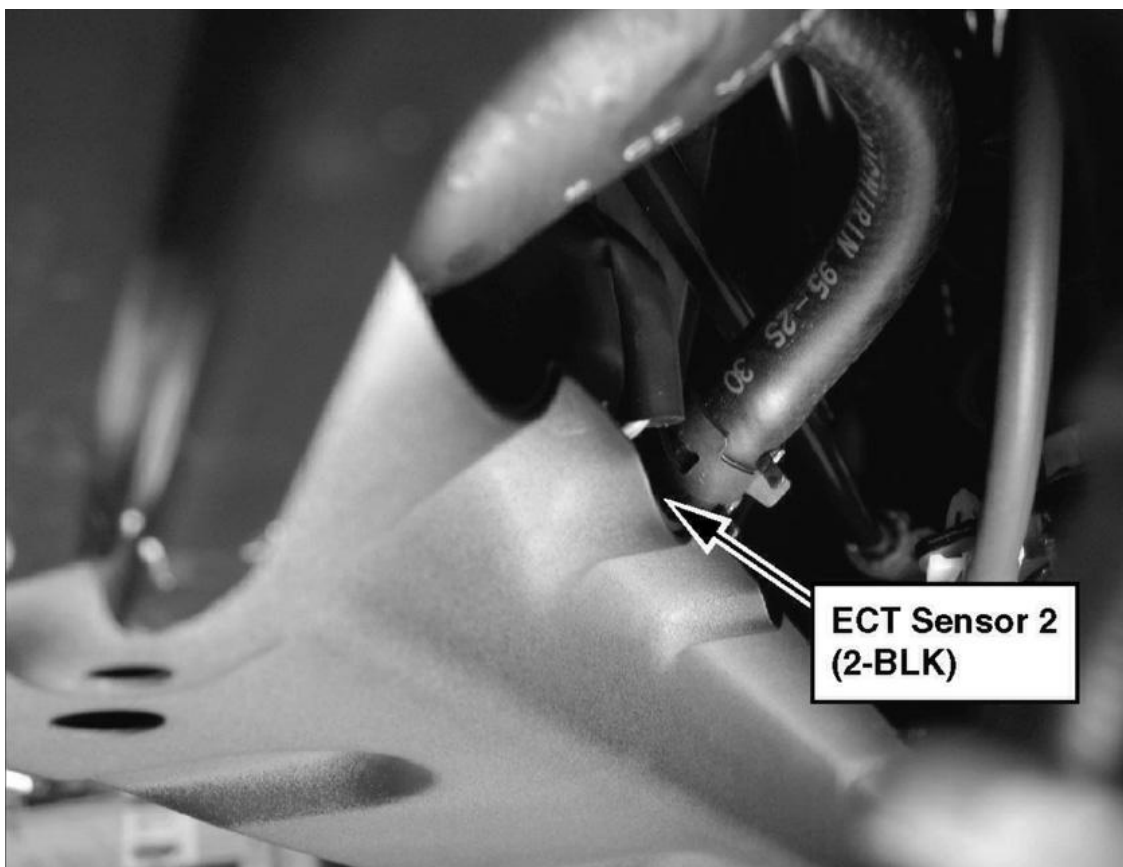


Fig. 81: Left Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

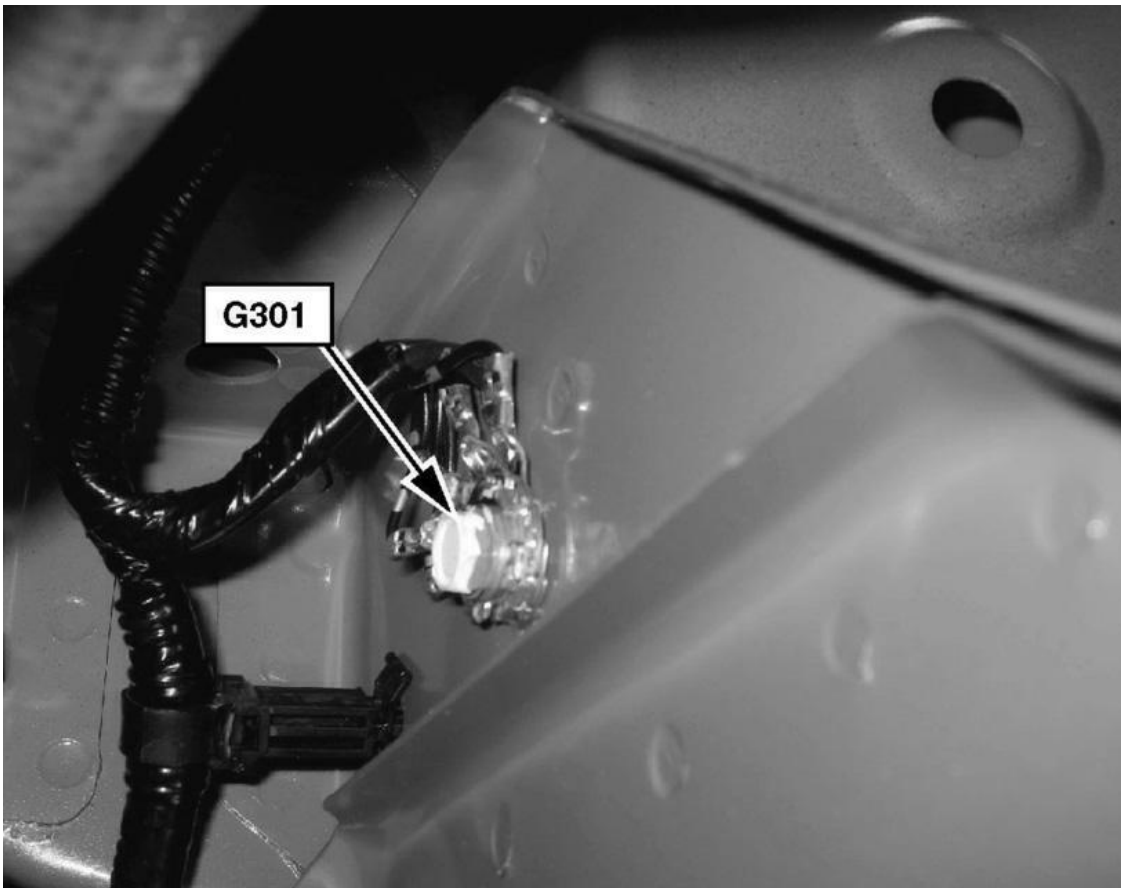


Fig. 82: Left Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

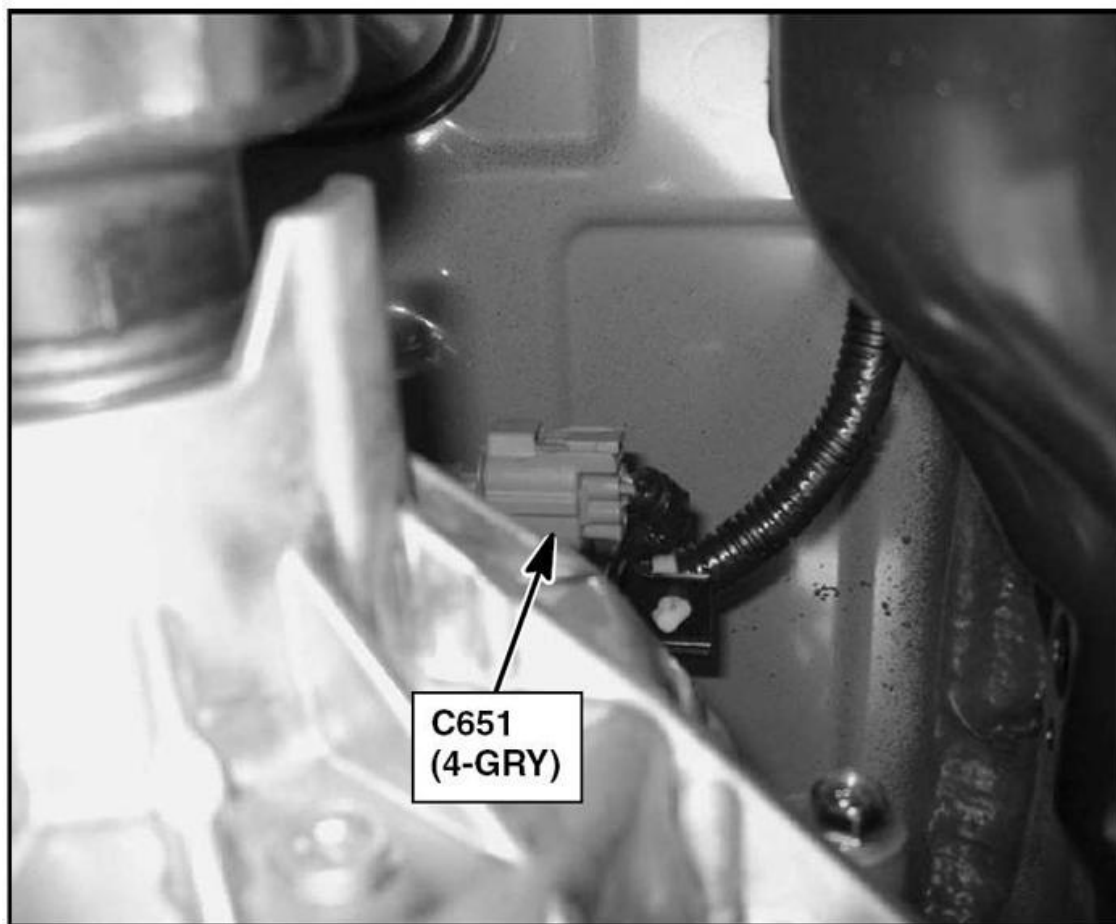


Fig. 83: Under Rear Of Vehicle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

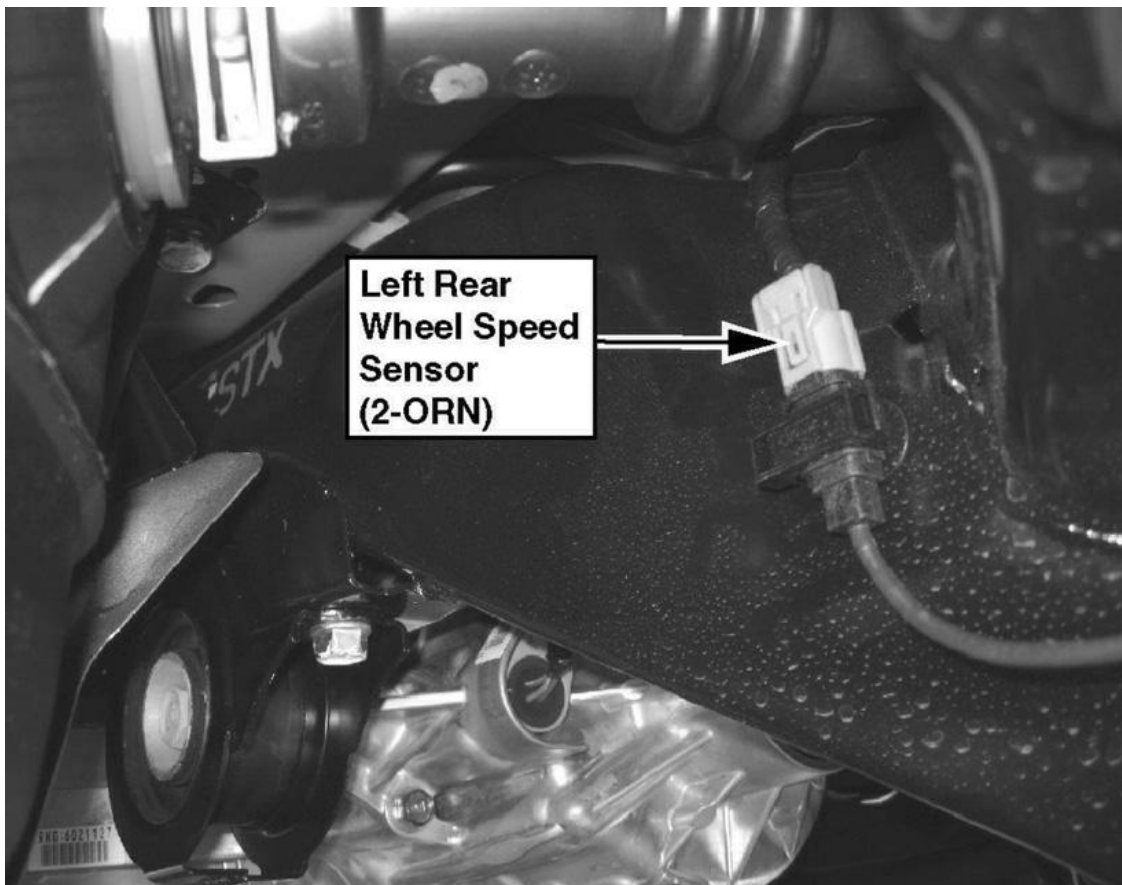


Fig. 84: Left Side Of Rear Subframe

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 85: Left Side Of Rear Subframe (Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

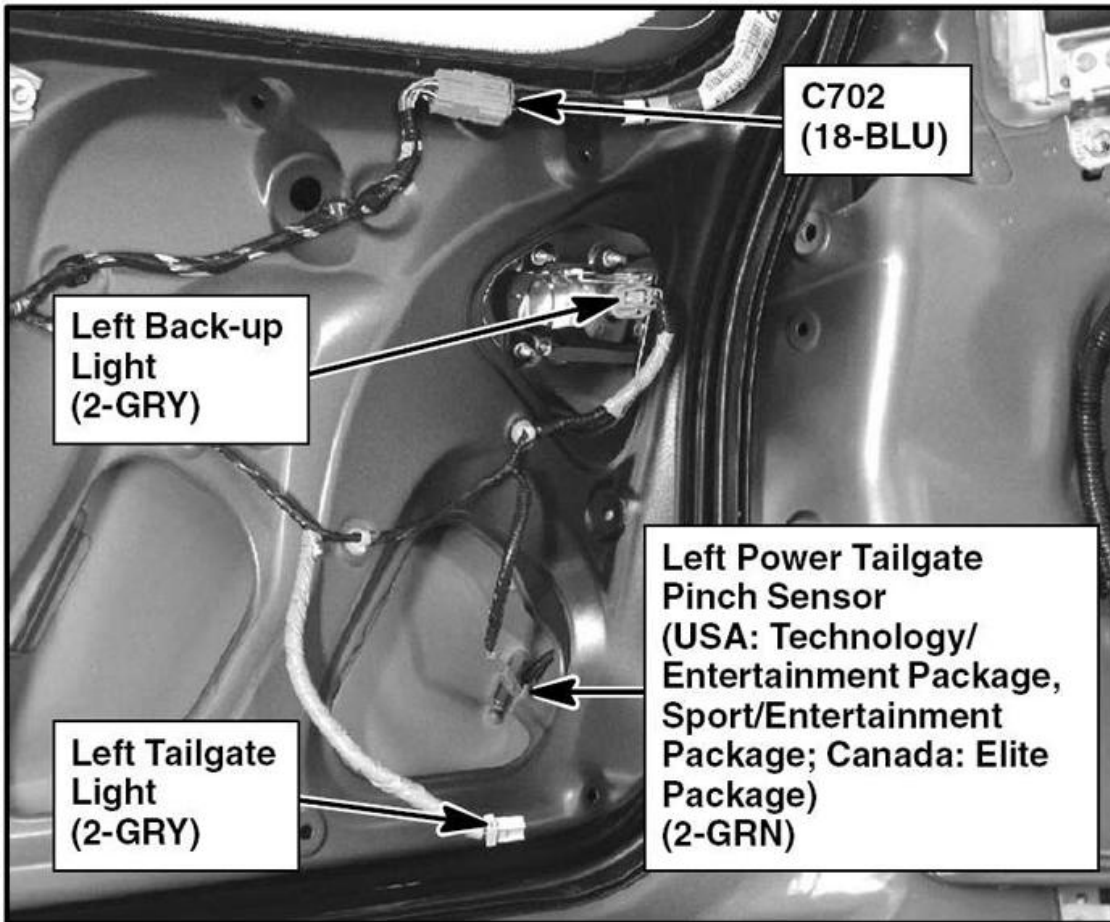


Fig. 86: Left Side Of Tailgate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

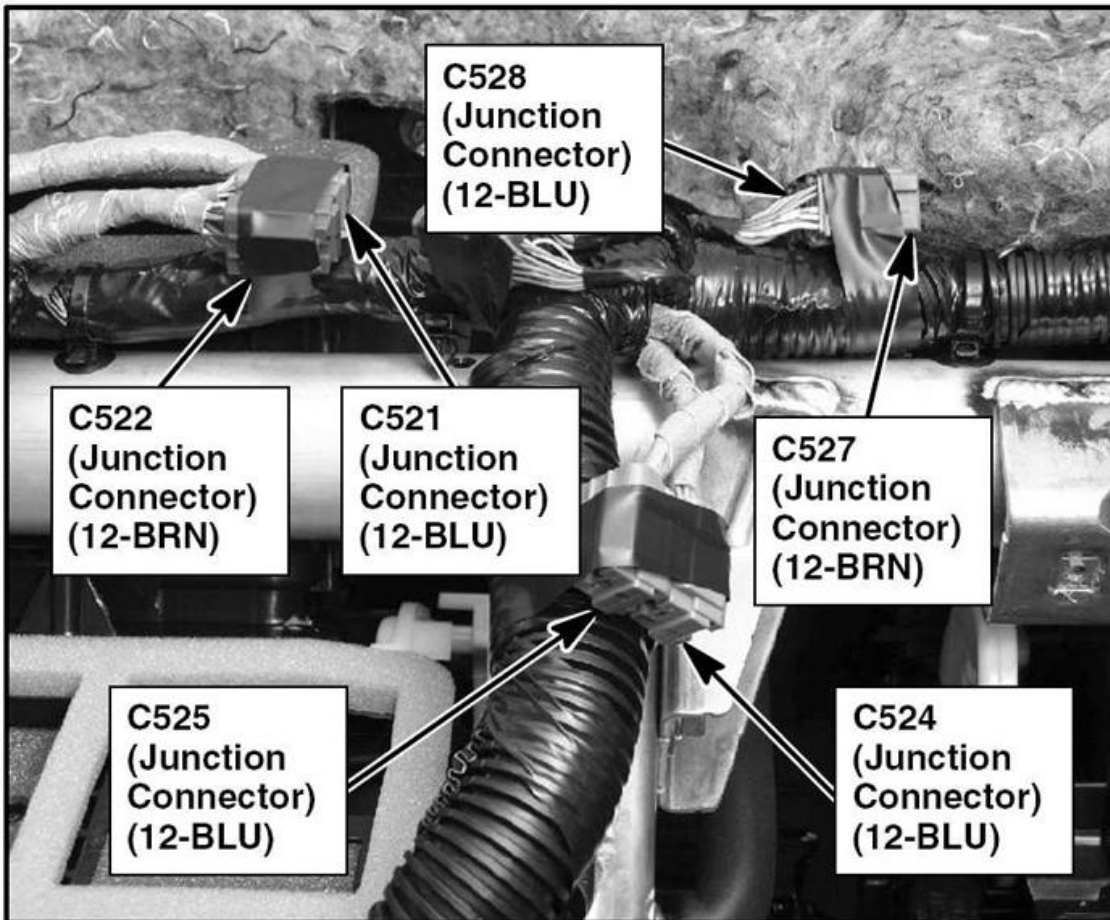


Fig. 87: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

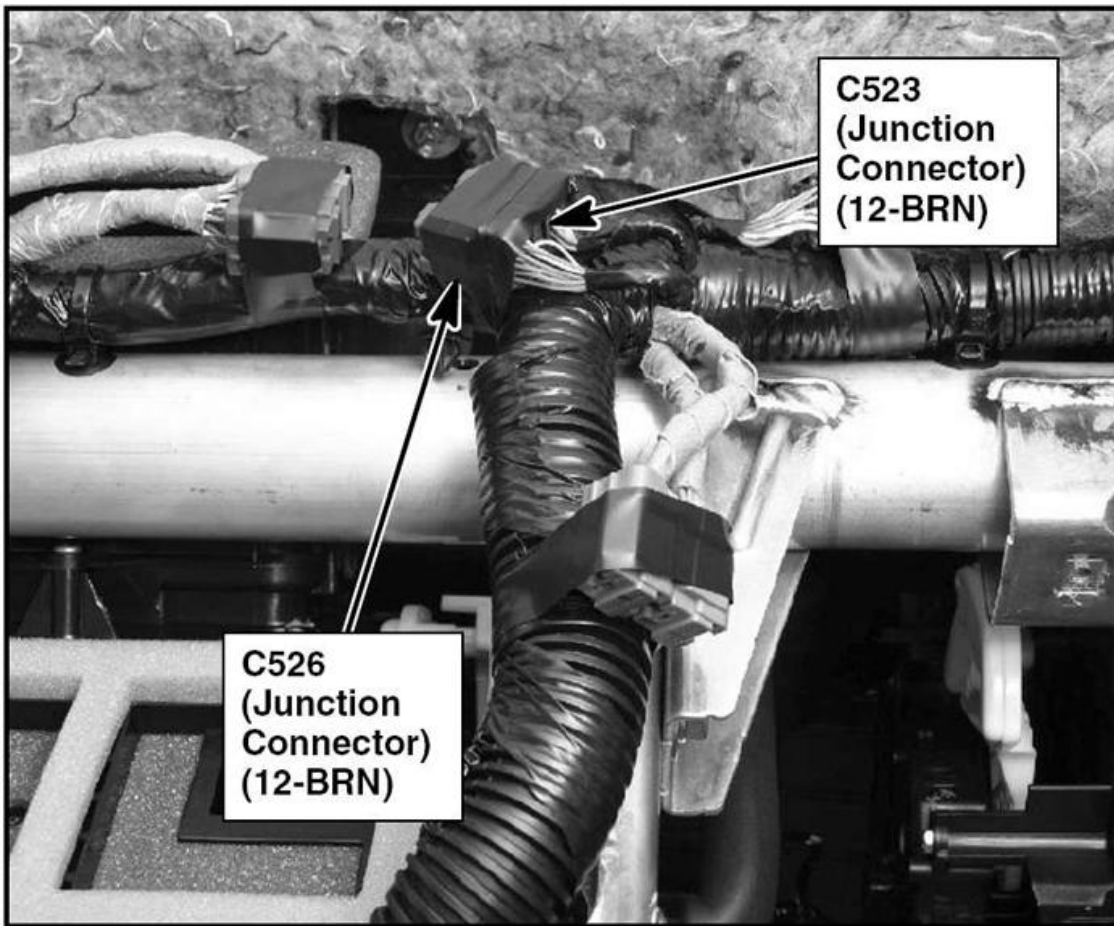


Fig. 88: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

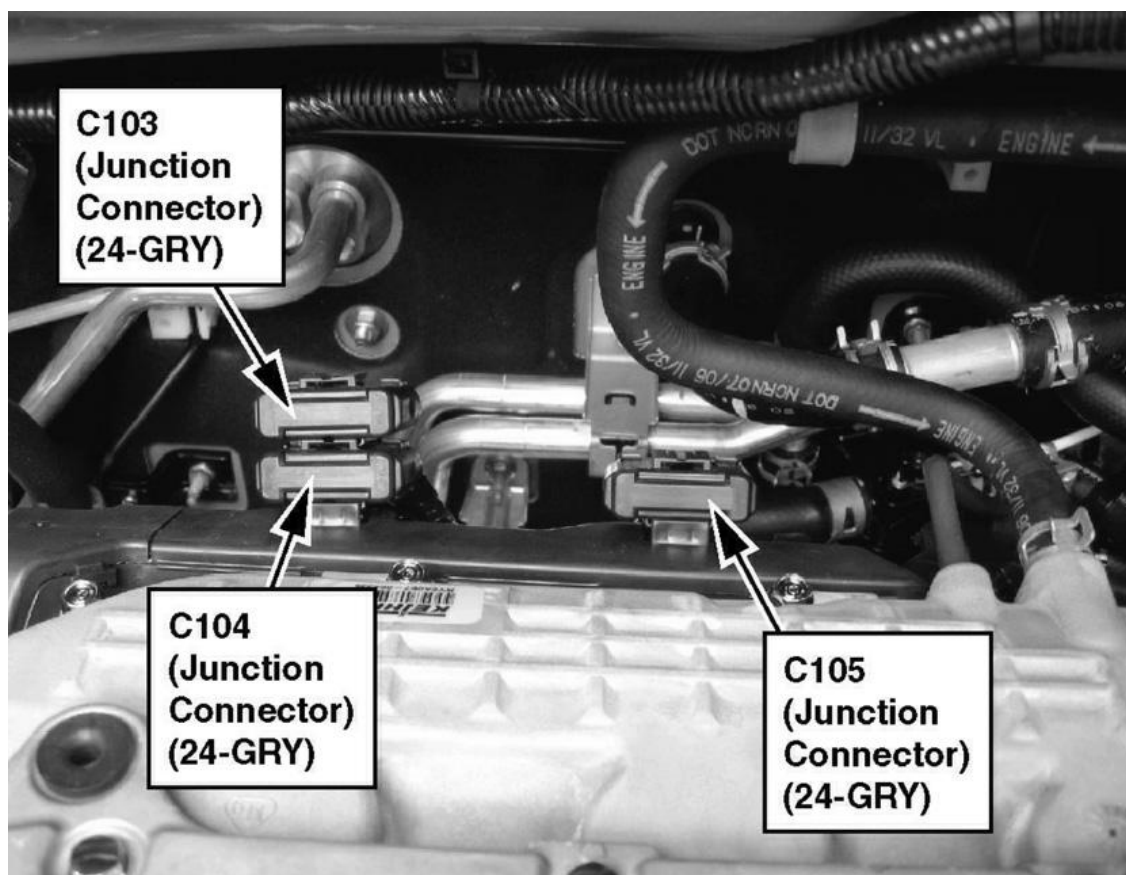


Fig. 89: Right Side Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

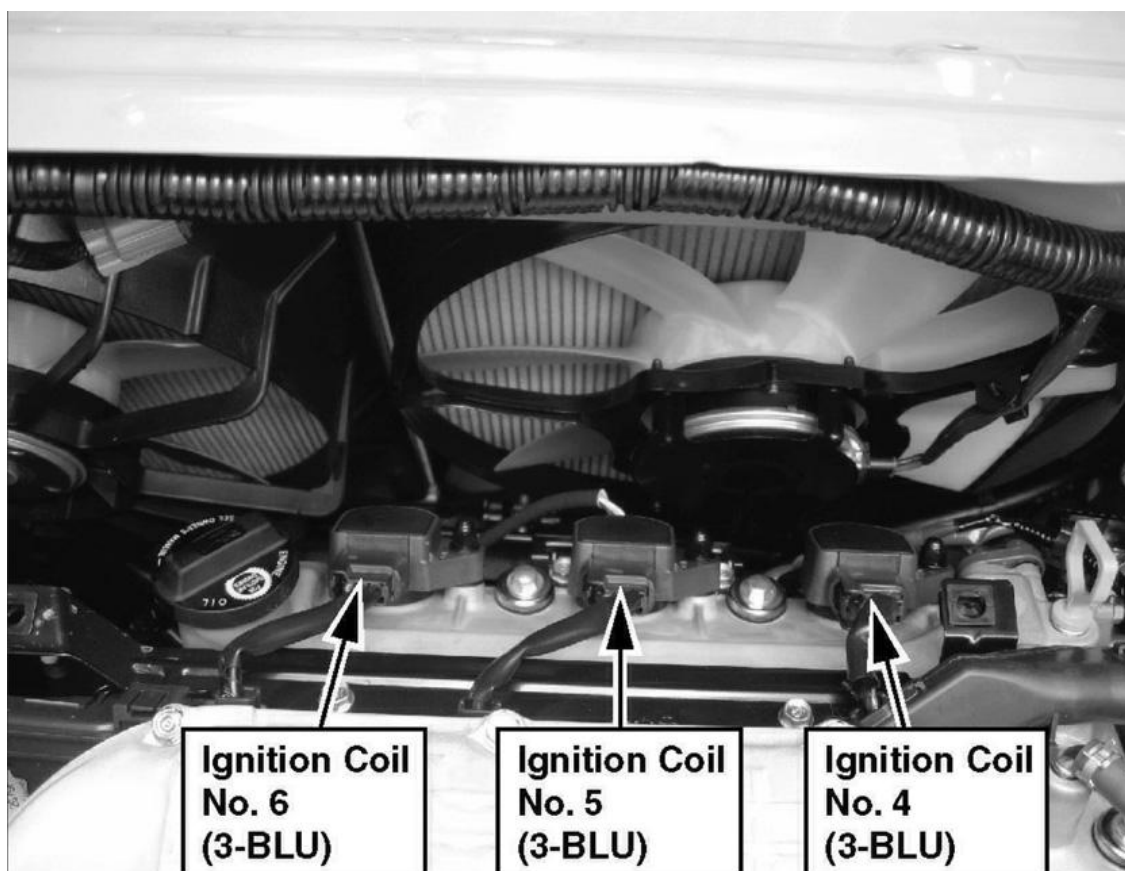


Fig. 90: Top Left Side Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

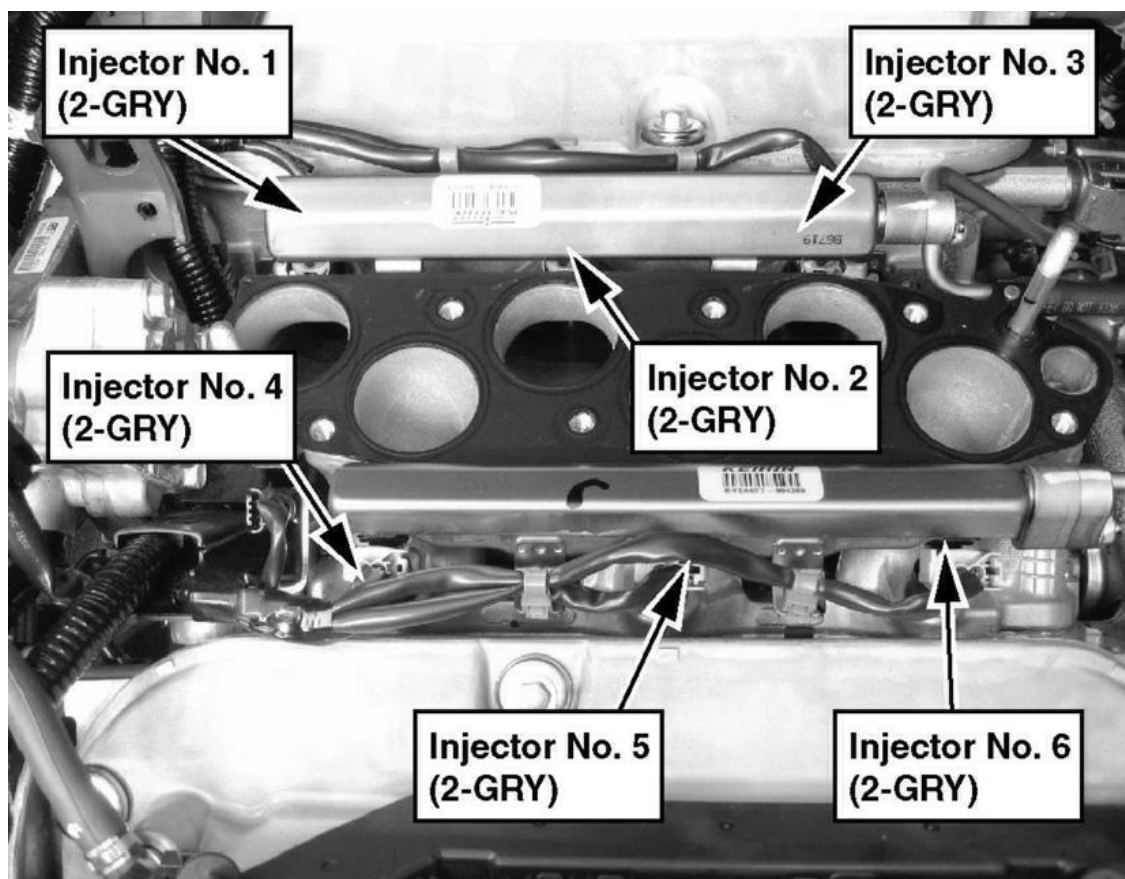


Fig. 91: Top Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

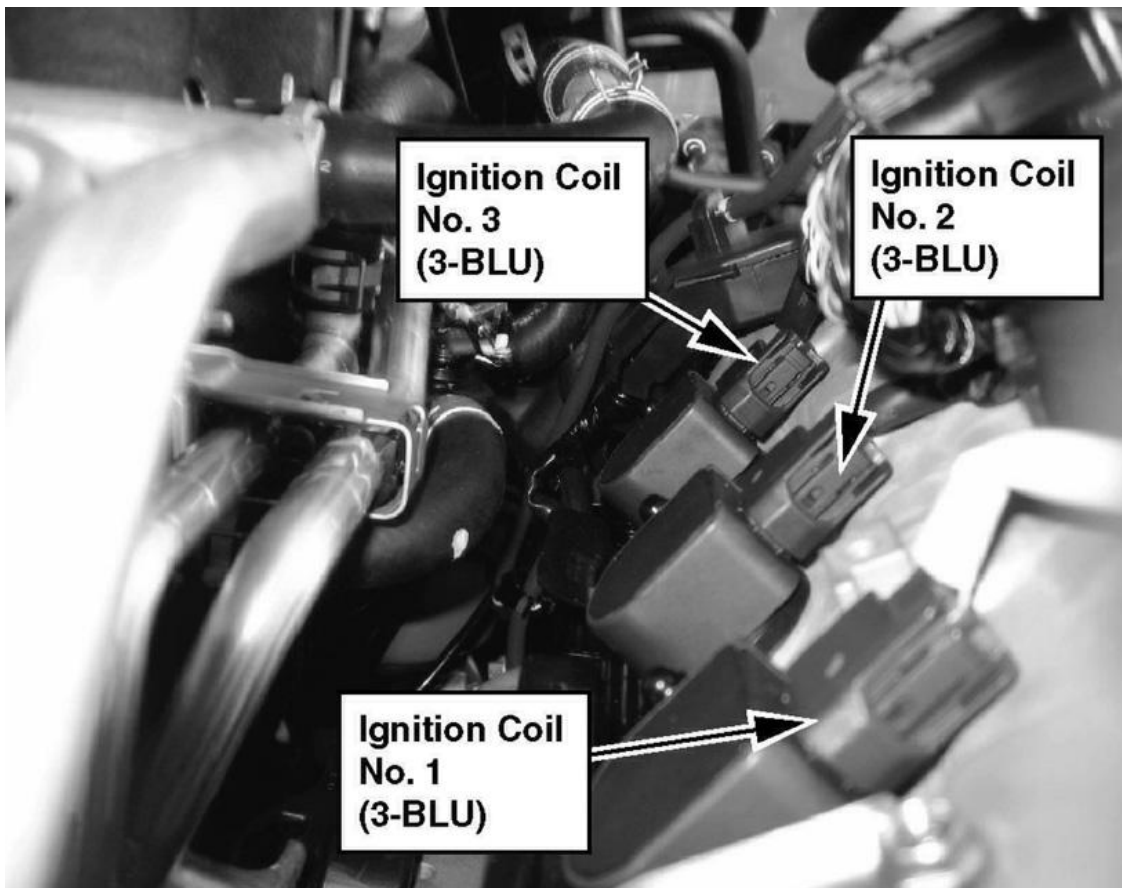


Fig. 92: Top Right Side Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

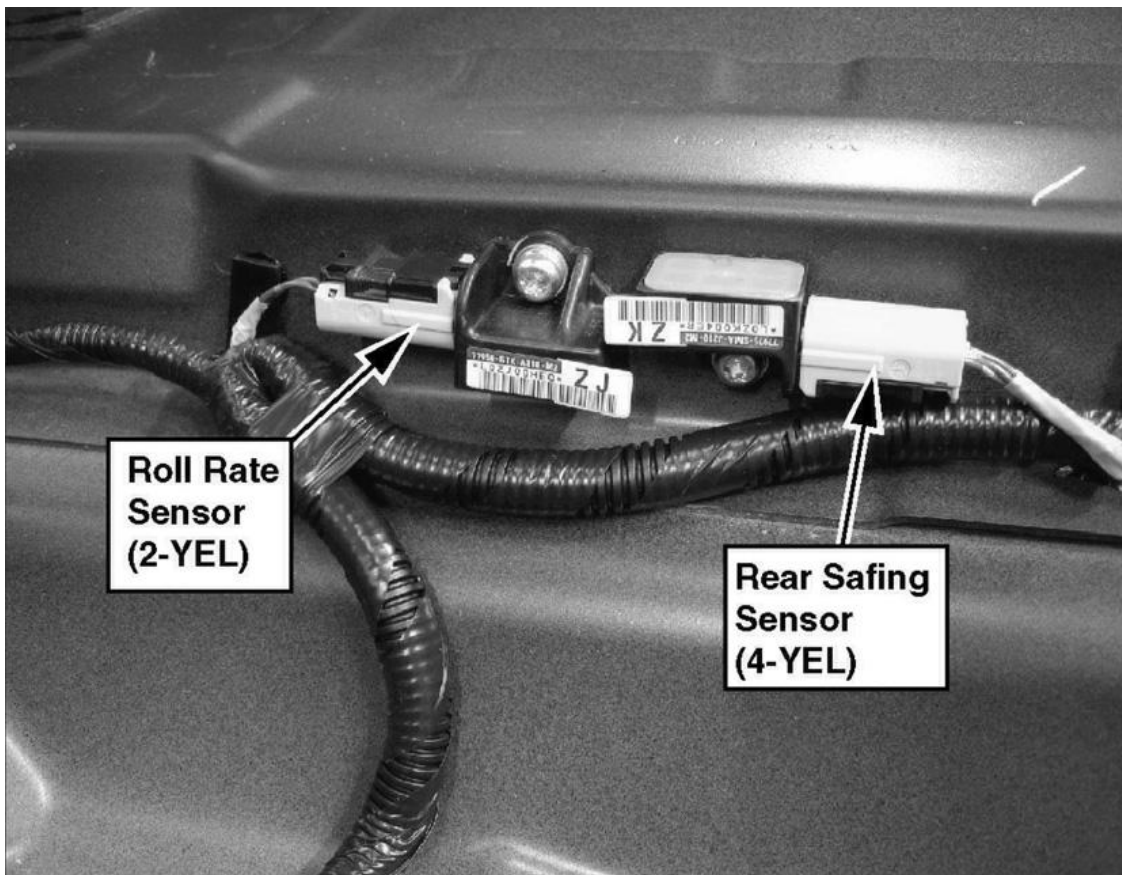


Fig. 93: Middle Of Floor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

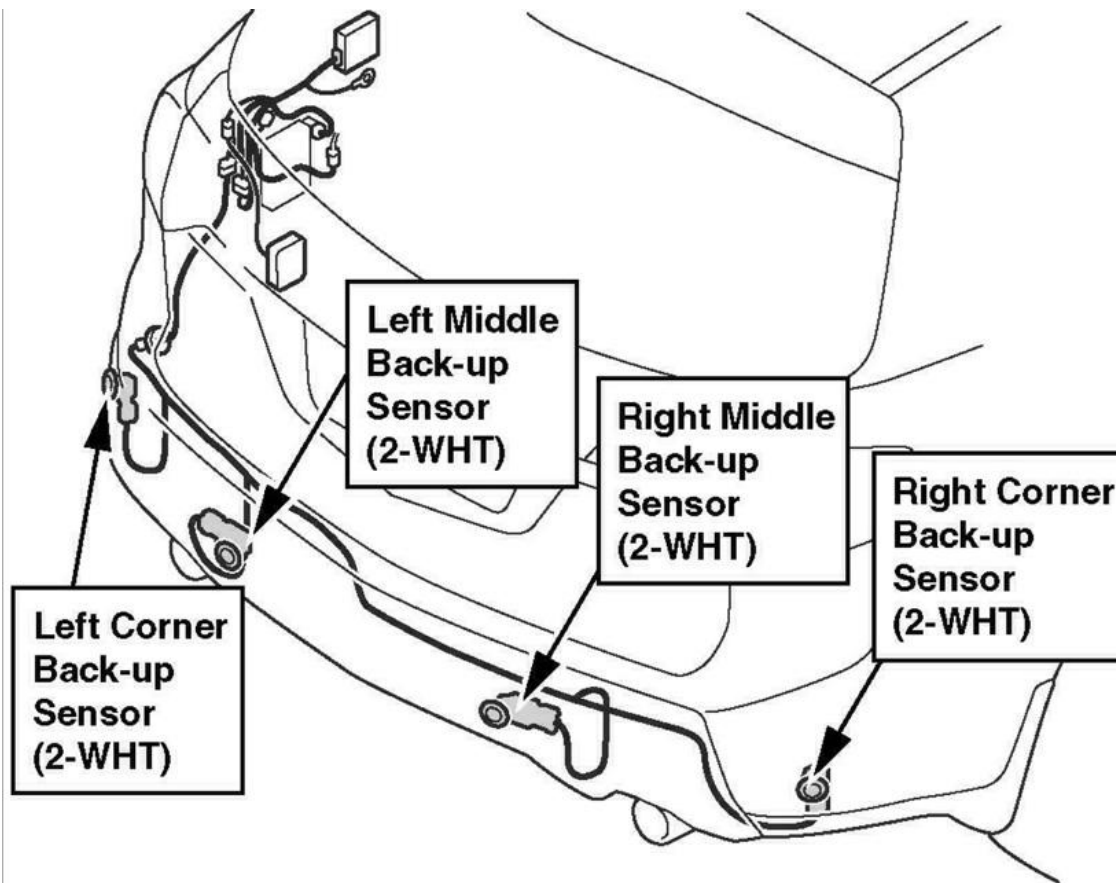


Fig. 94: Rear Bumper

Courtesy of AMERICAN HONDA MOTOR CO., INC.

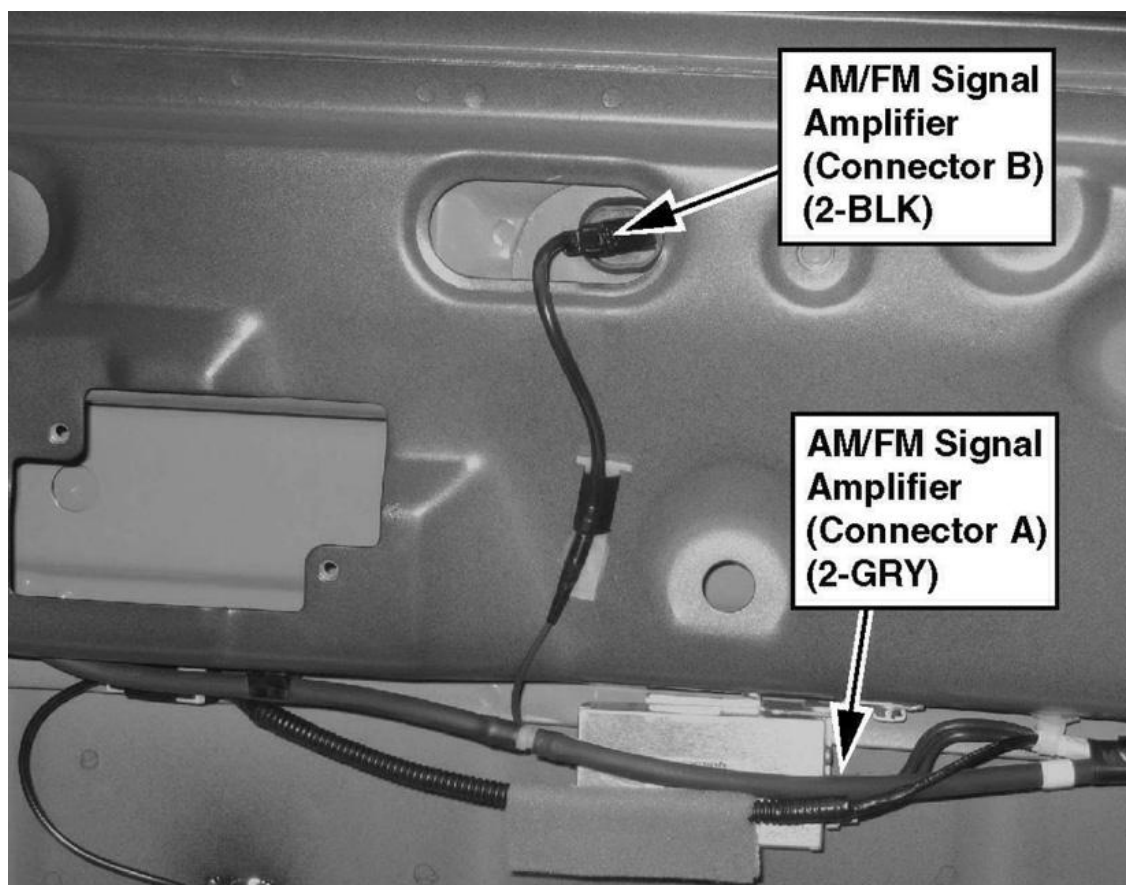


Fig. 95: Rear Of Roof

Courtesy of AMERICAN HONDA MOTOR CO., INC.

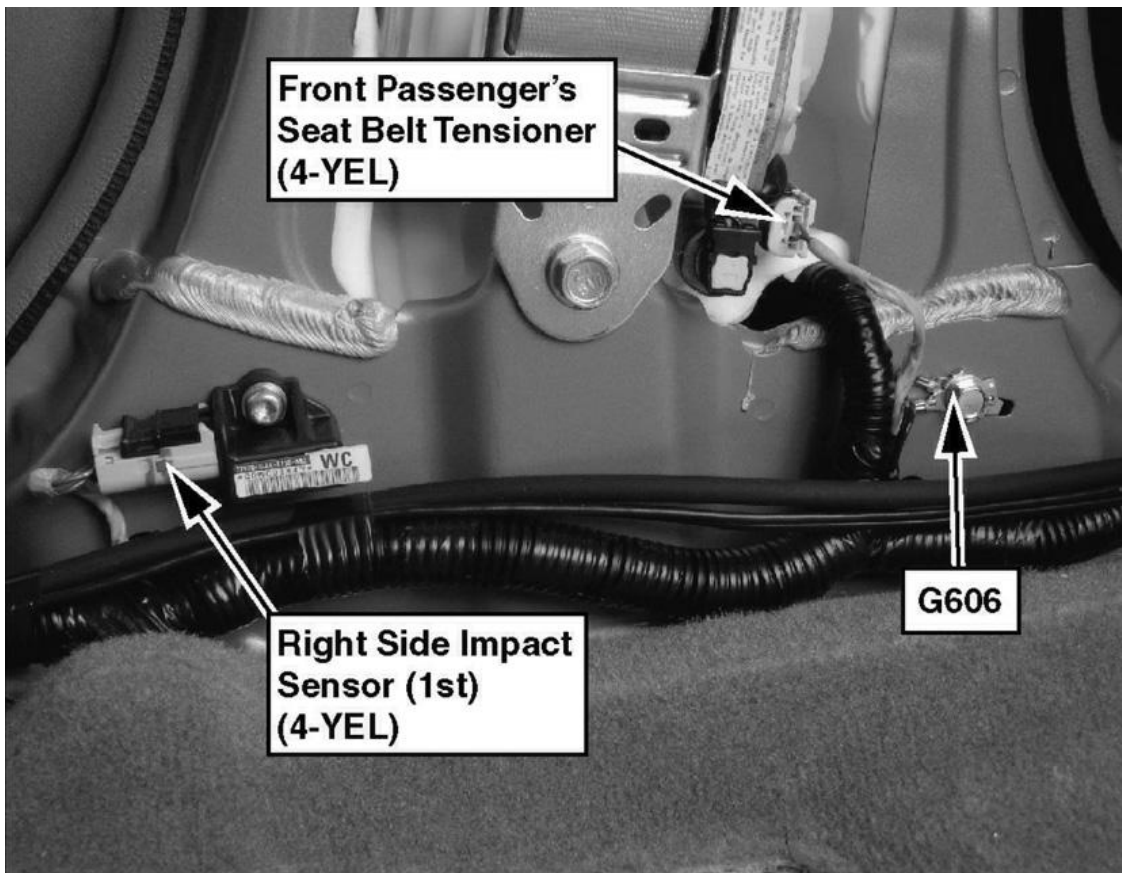


Fig. 96: Right "B" Pillar
Courtesy of AMERICAN HONDA MOTOR CO., INC.

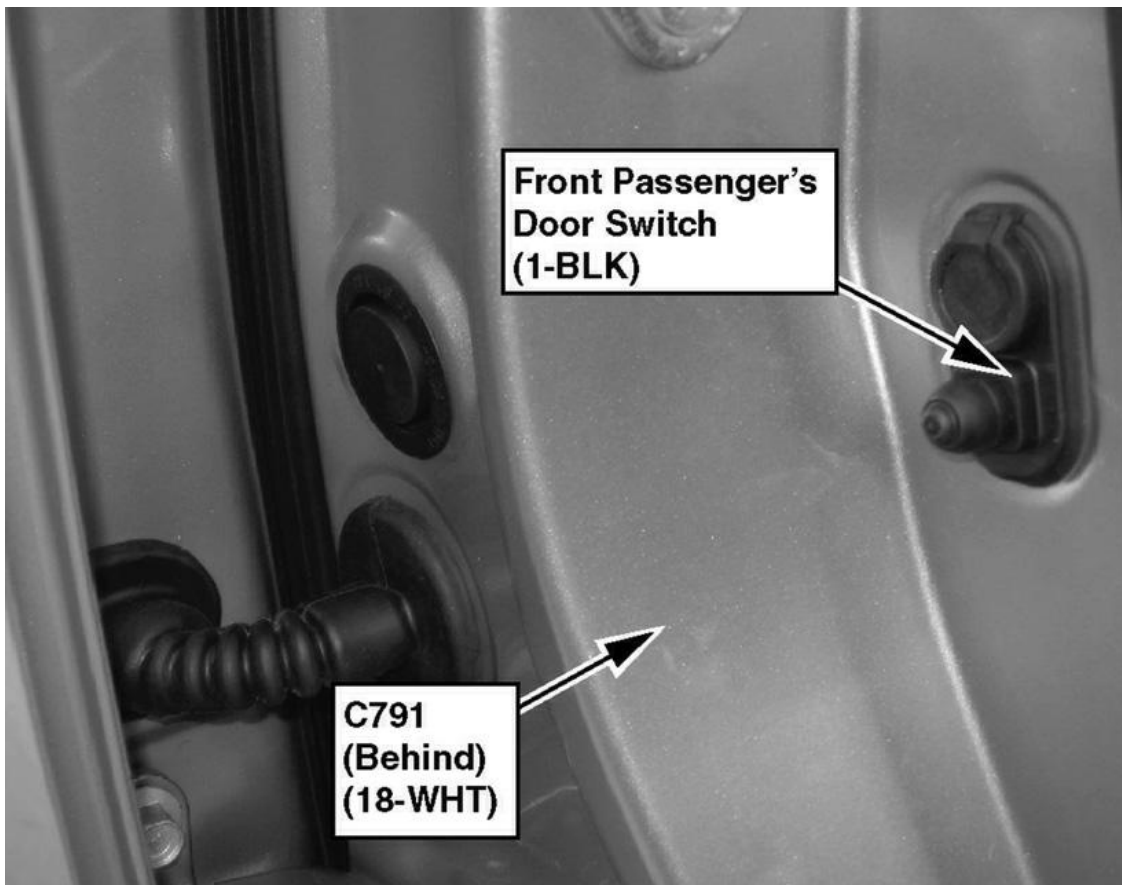


Fig. 97: Right "B" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

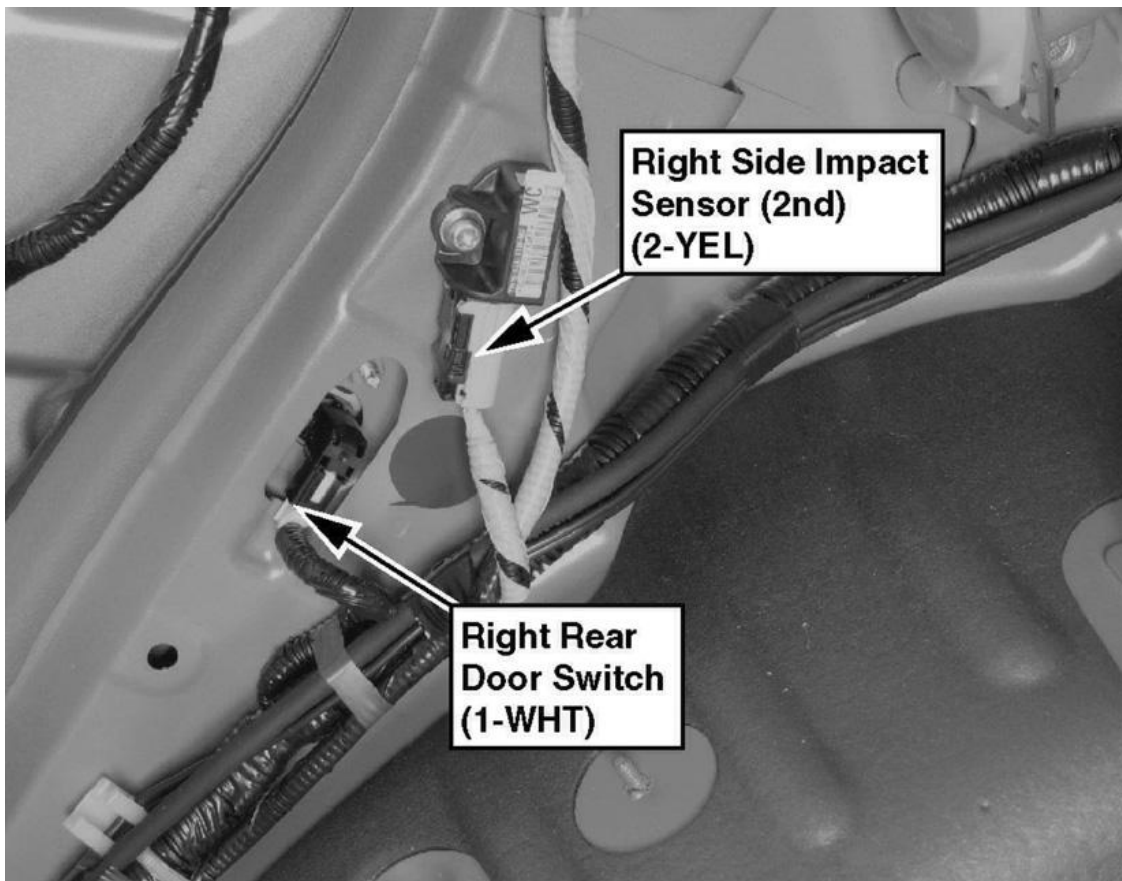


Fig. 98: Right "C" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

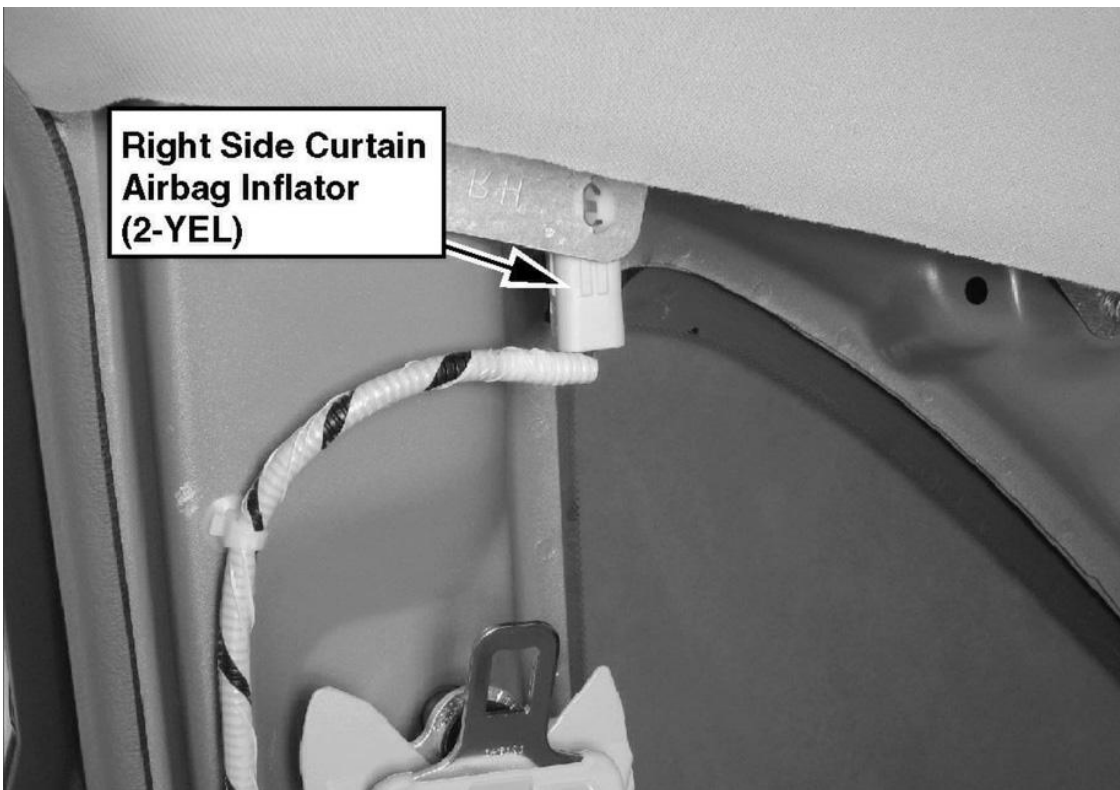


Fig. 99: Right "C" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

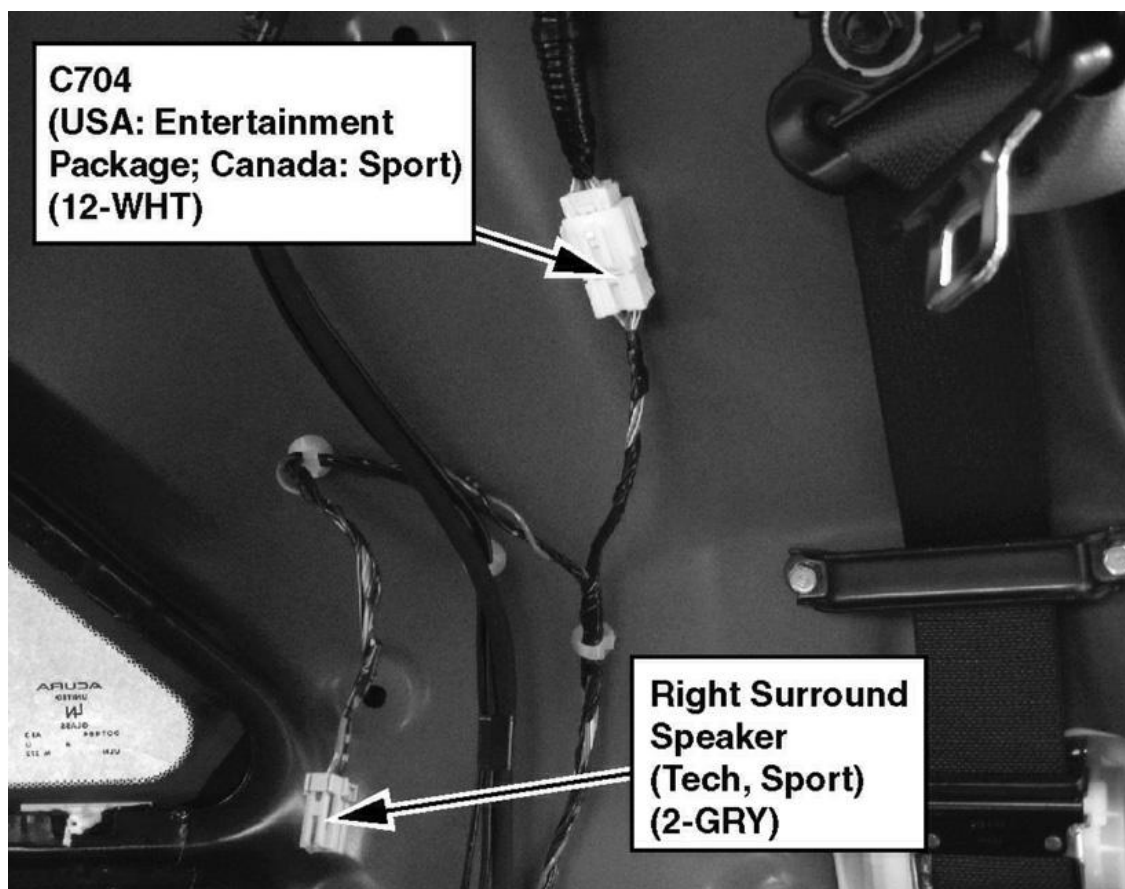


Fig. 100: Right "D" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

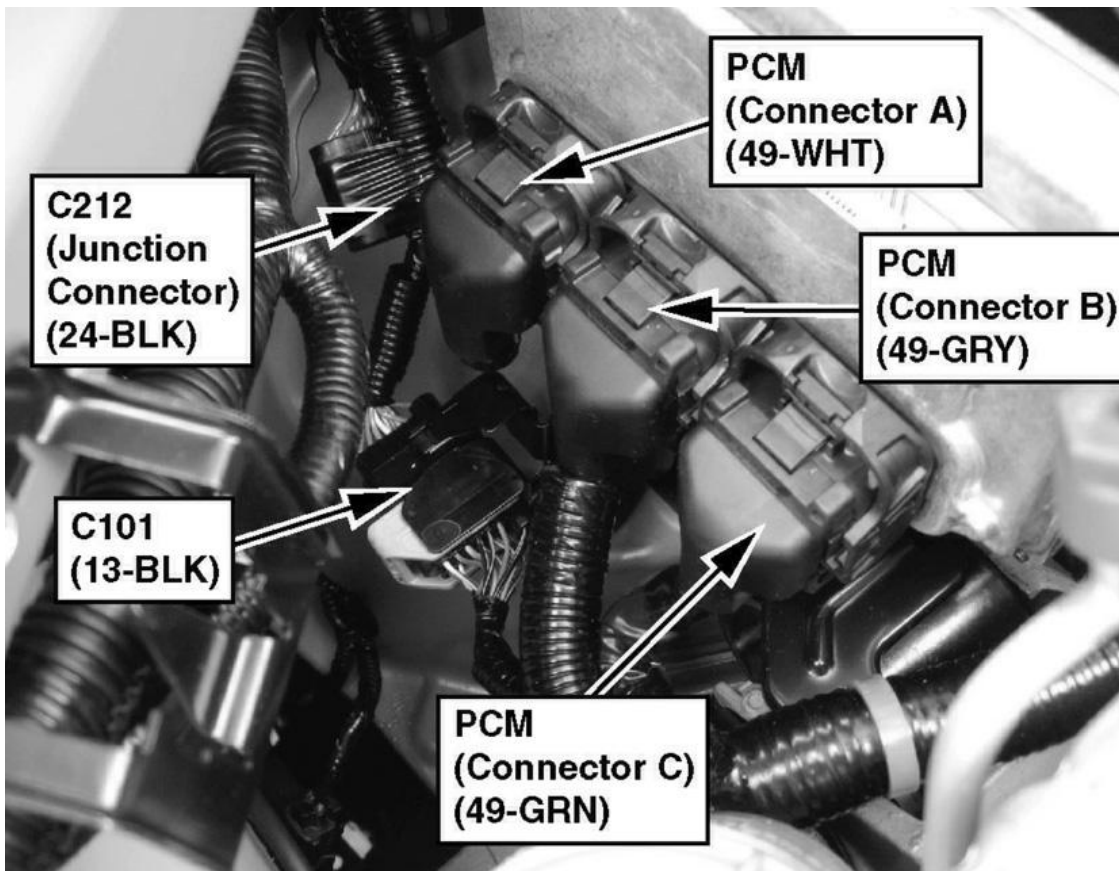


Fig. 101: Right Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

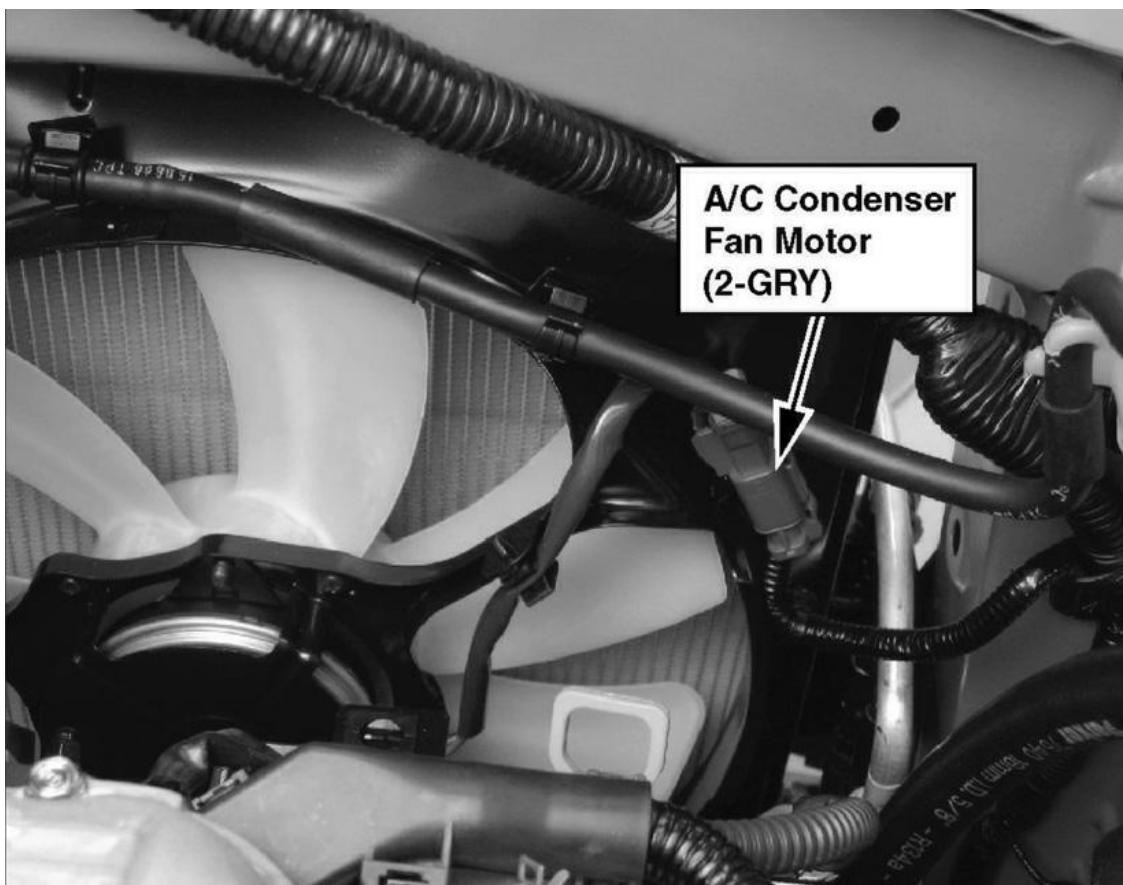


Fig. 102: Right Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

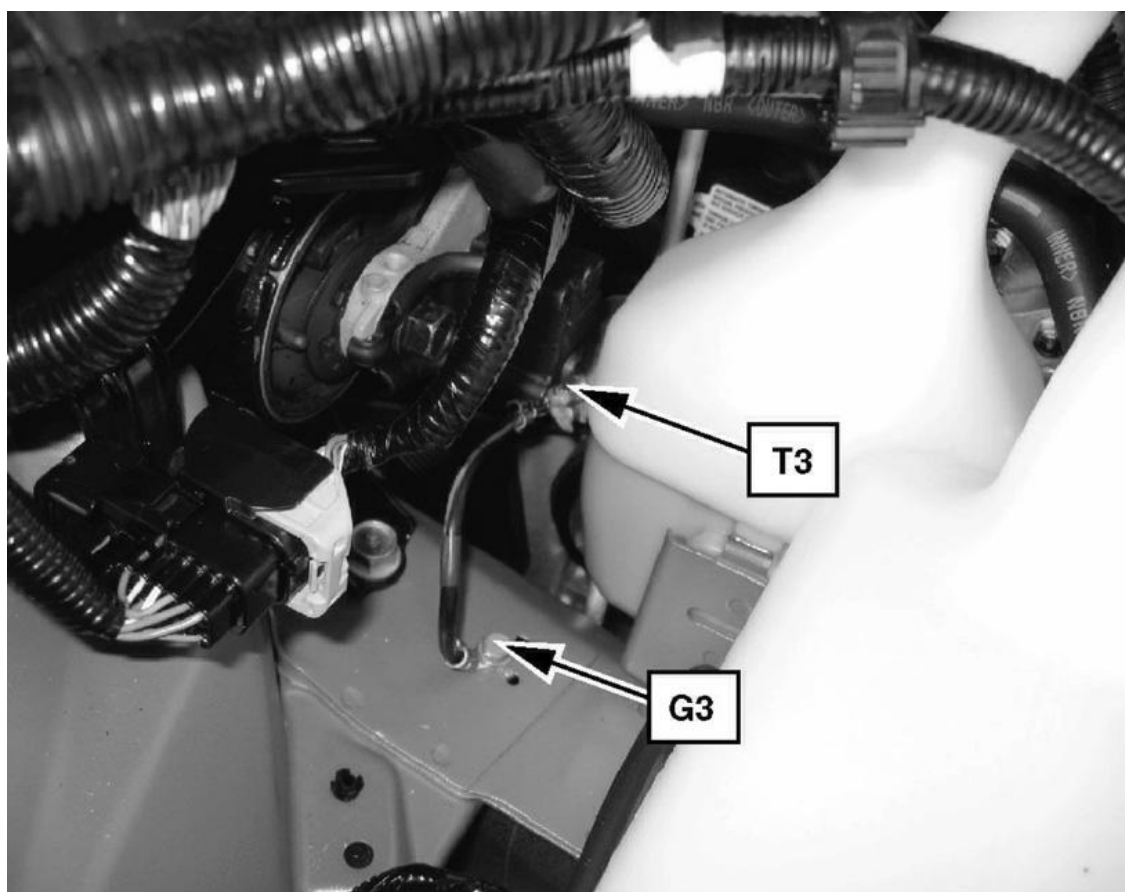


Fig. 103: Right Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

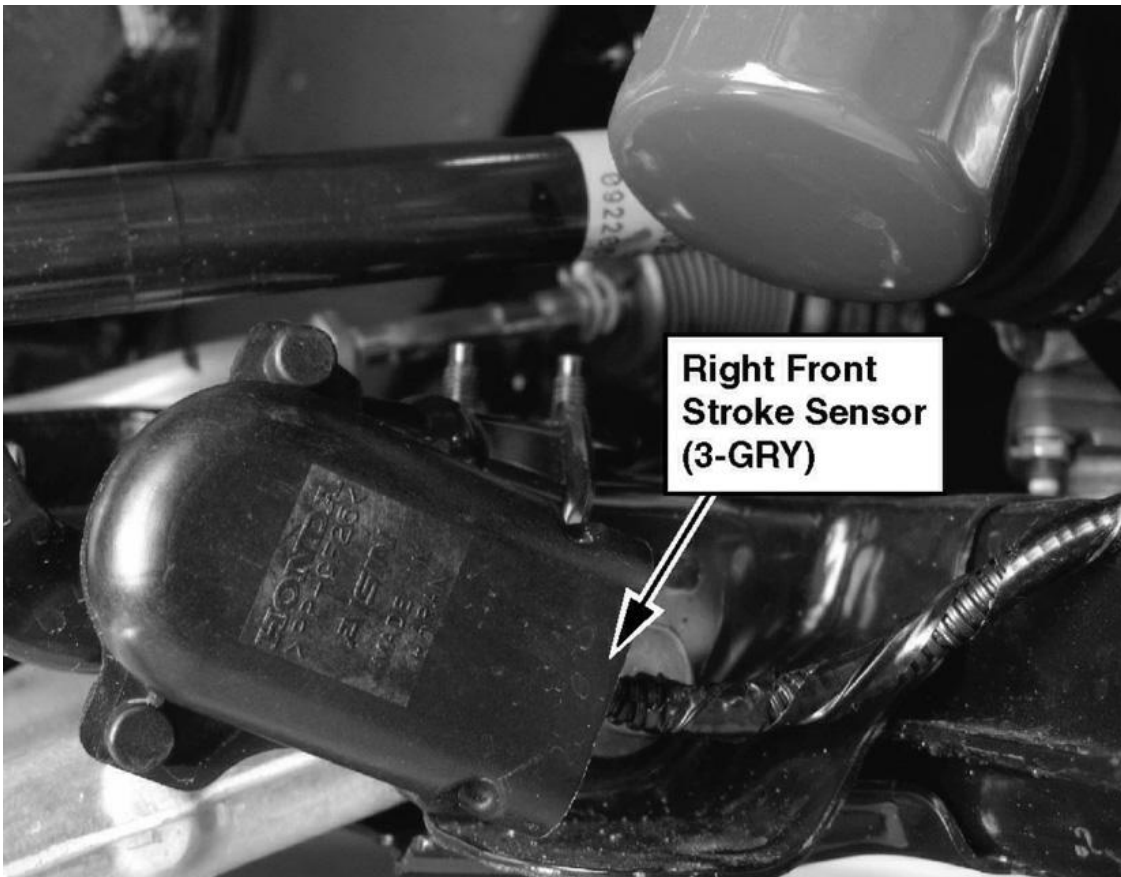


Fig. 104: Right Front Suspension (Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

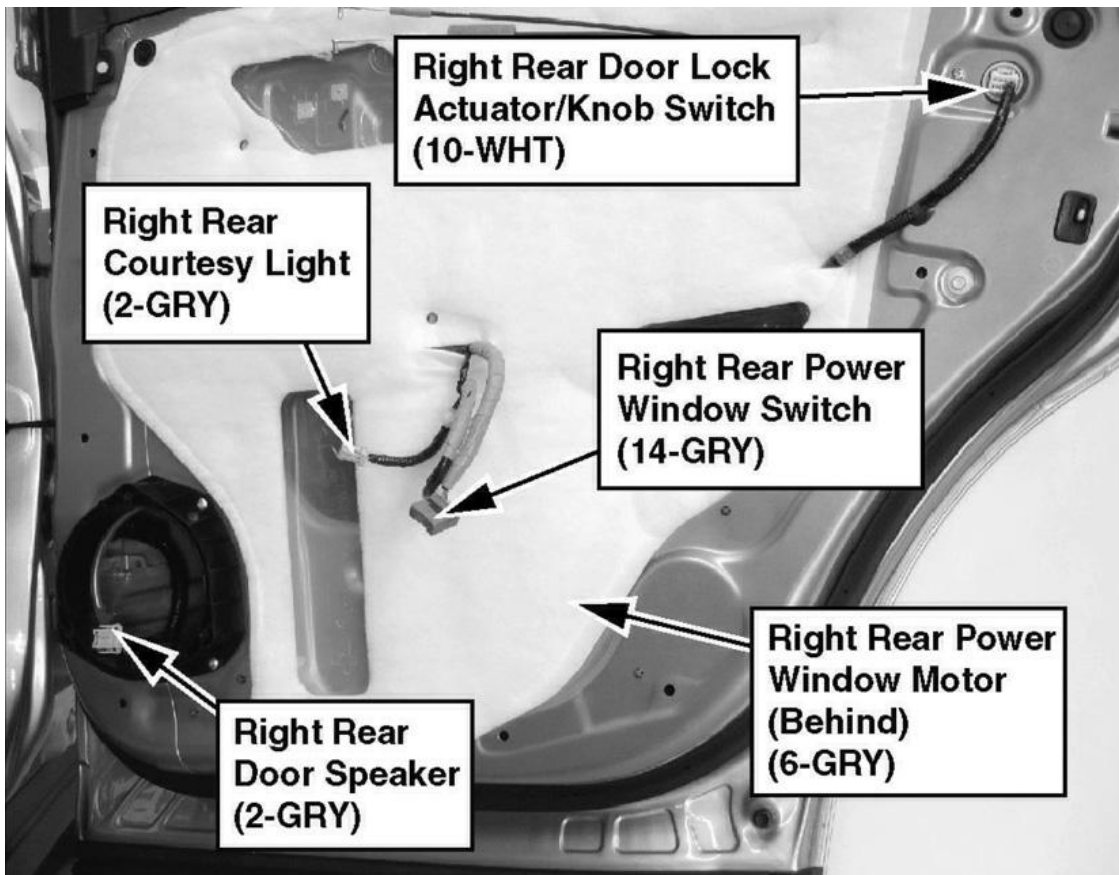


Fig. 105: Right Rear Door

Courtesy of AMERICAN HONDA MOTOR CO., INC.

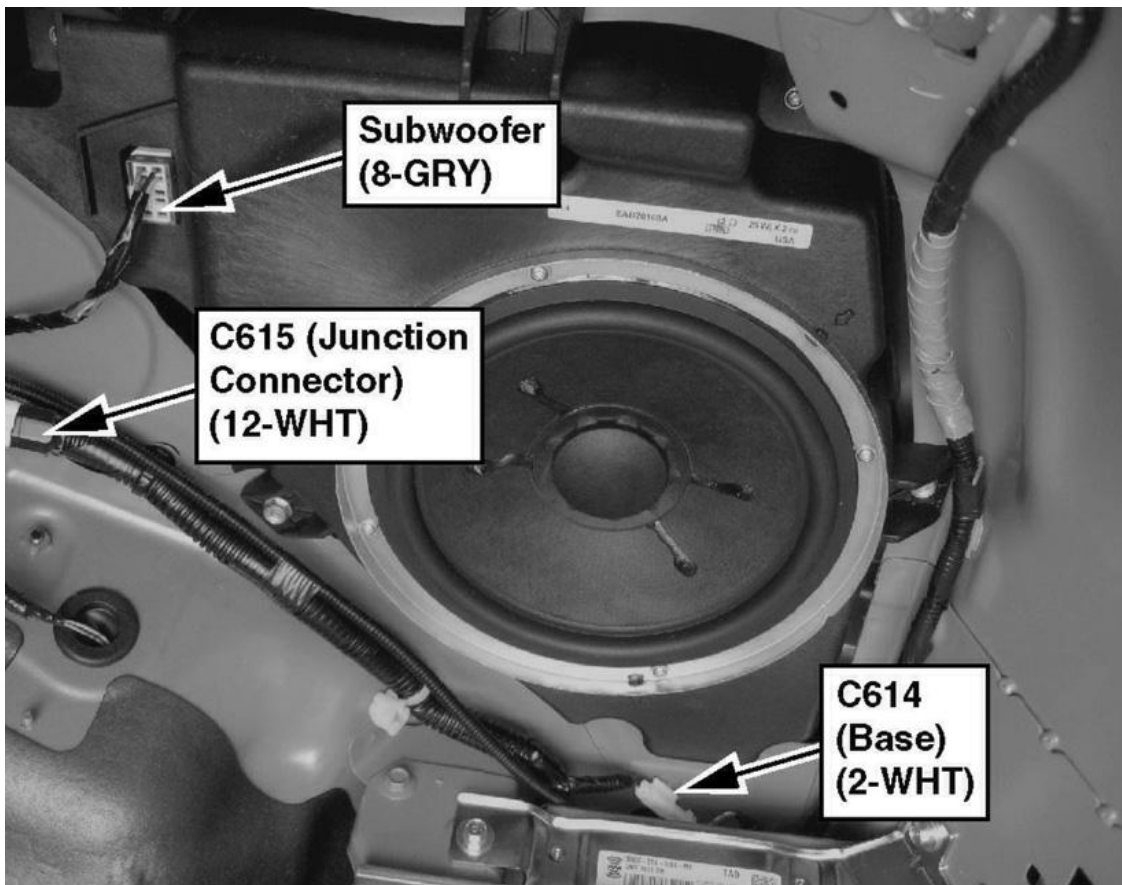


Fig. 106: Right Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

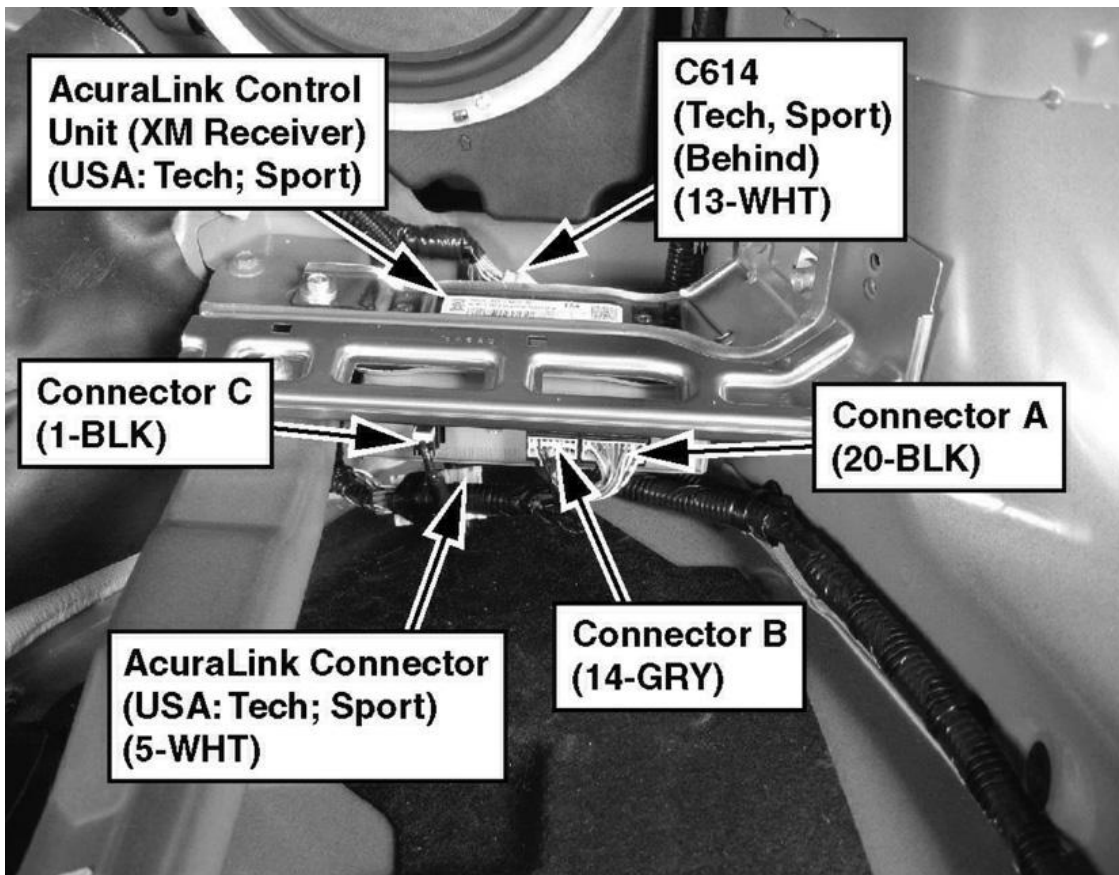
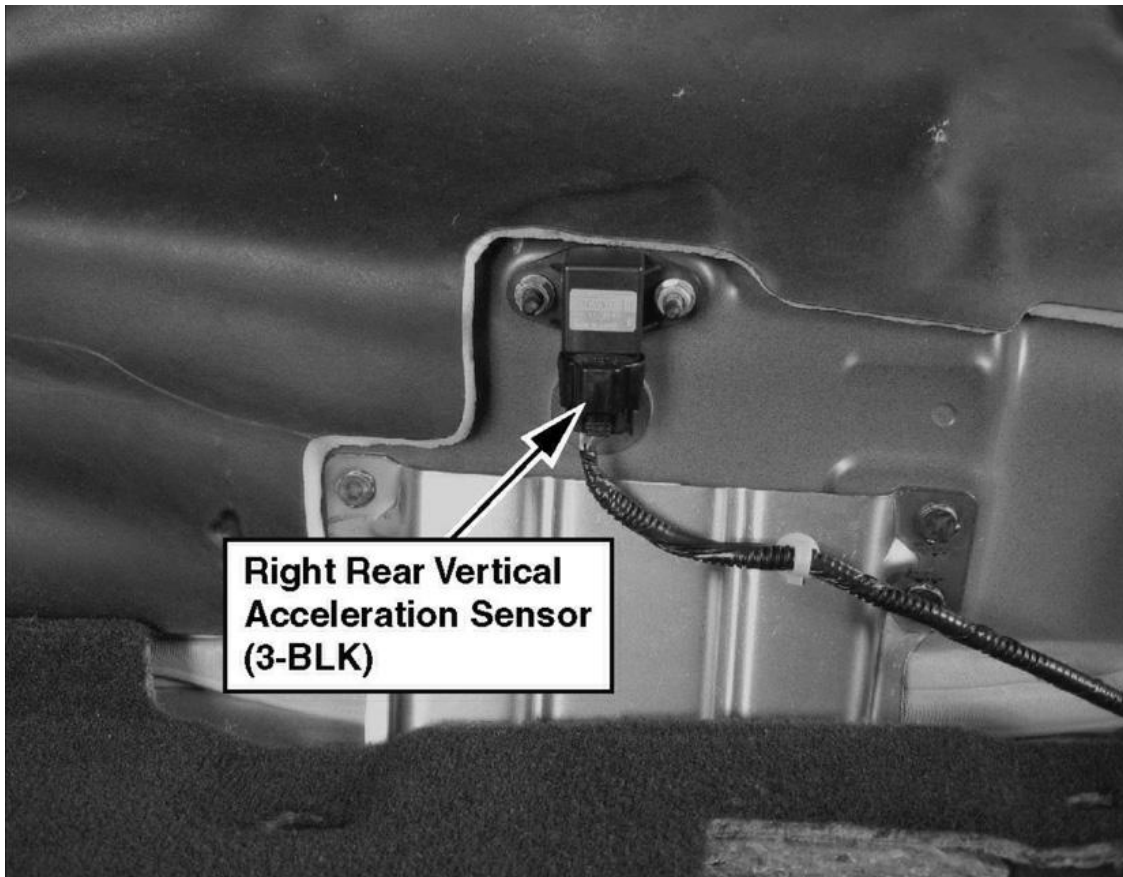


Fig. 107: Right Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.



**Right Rear Vertical
Acceleration Sensor
(3-BLK)**

Fig. 108: Right Side Of Cargo Area (Sport)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

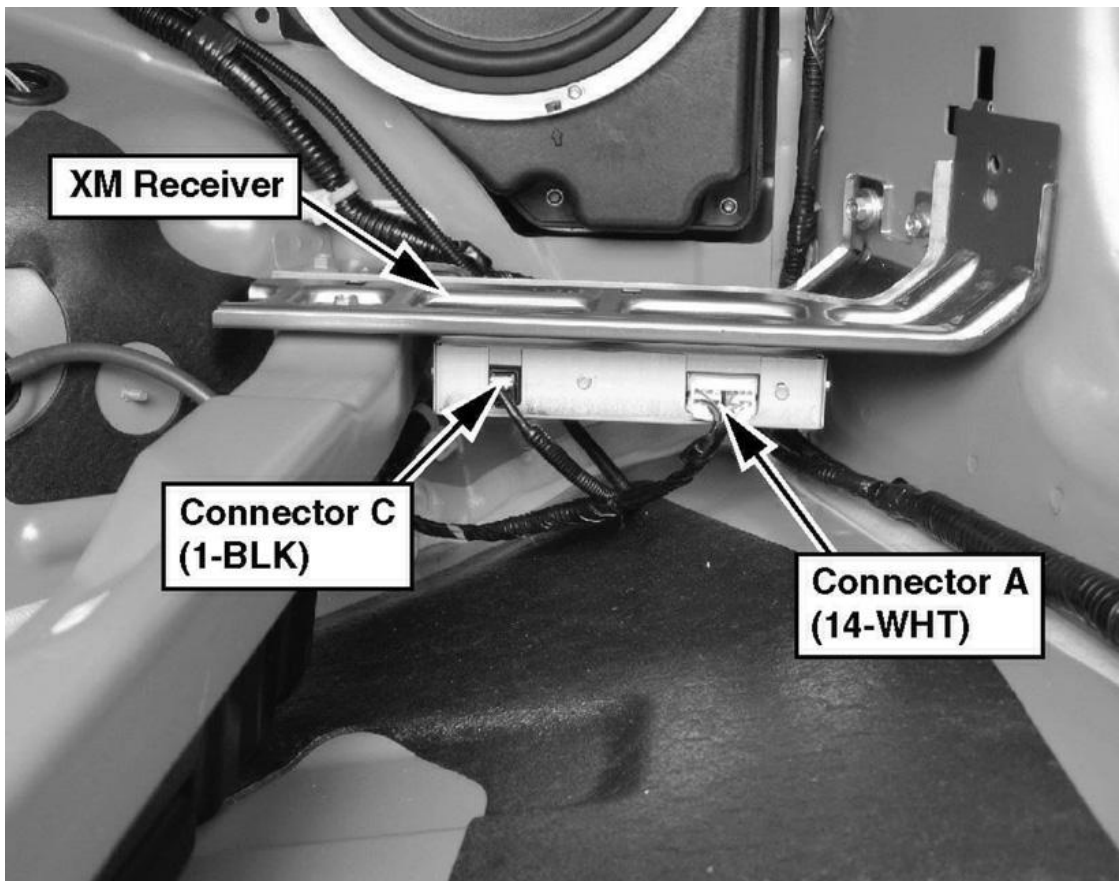


Fig. 109: Right Side Of Cargo Area (USA: Base; Canada)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

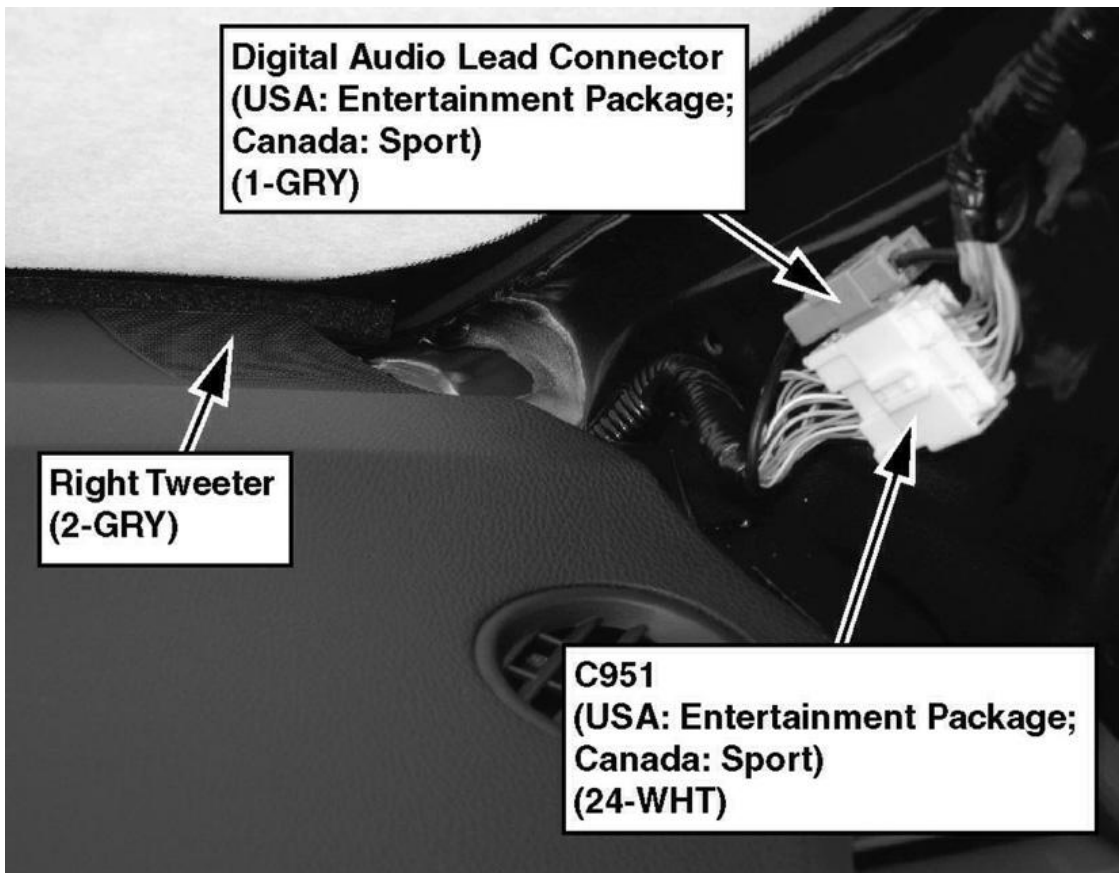


Fig. 110: Right "A" Pillar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

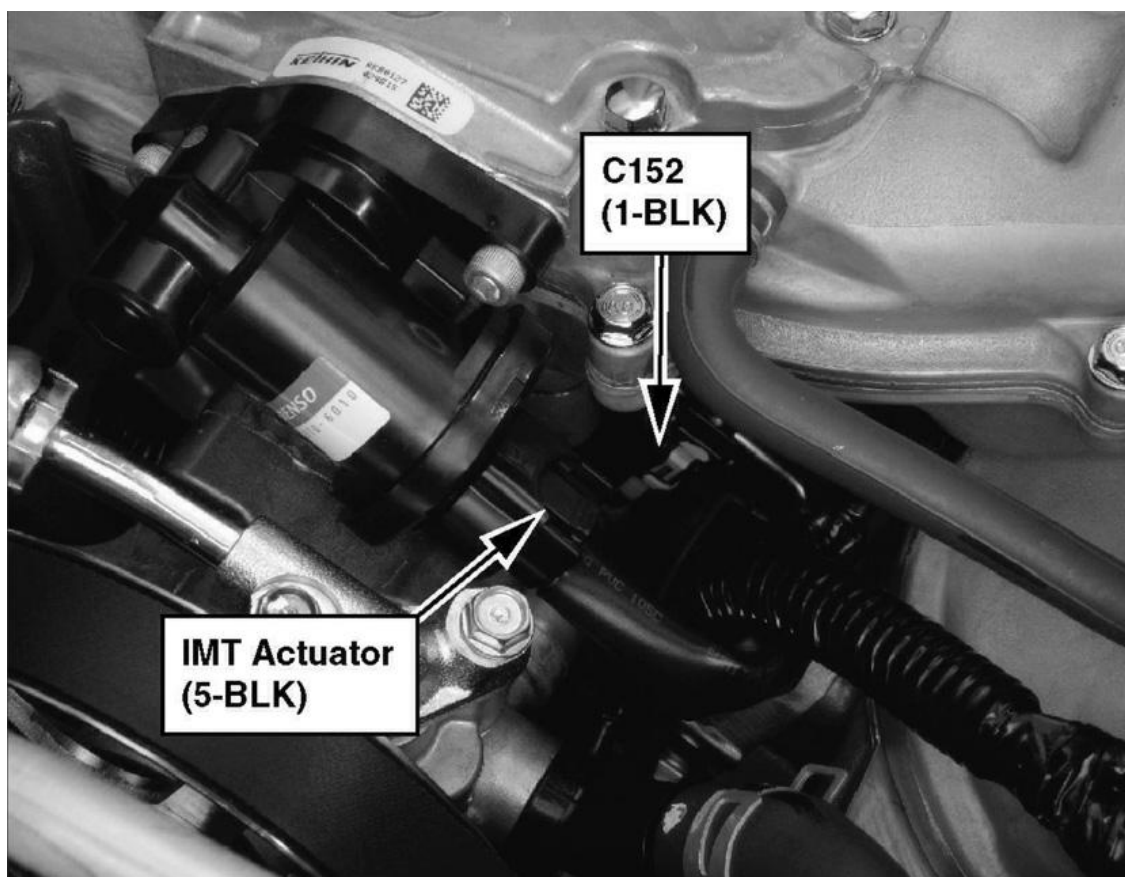


Fig. 111: Front Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

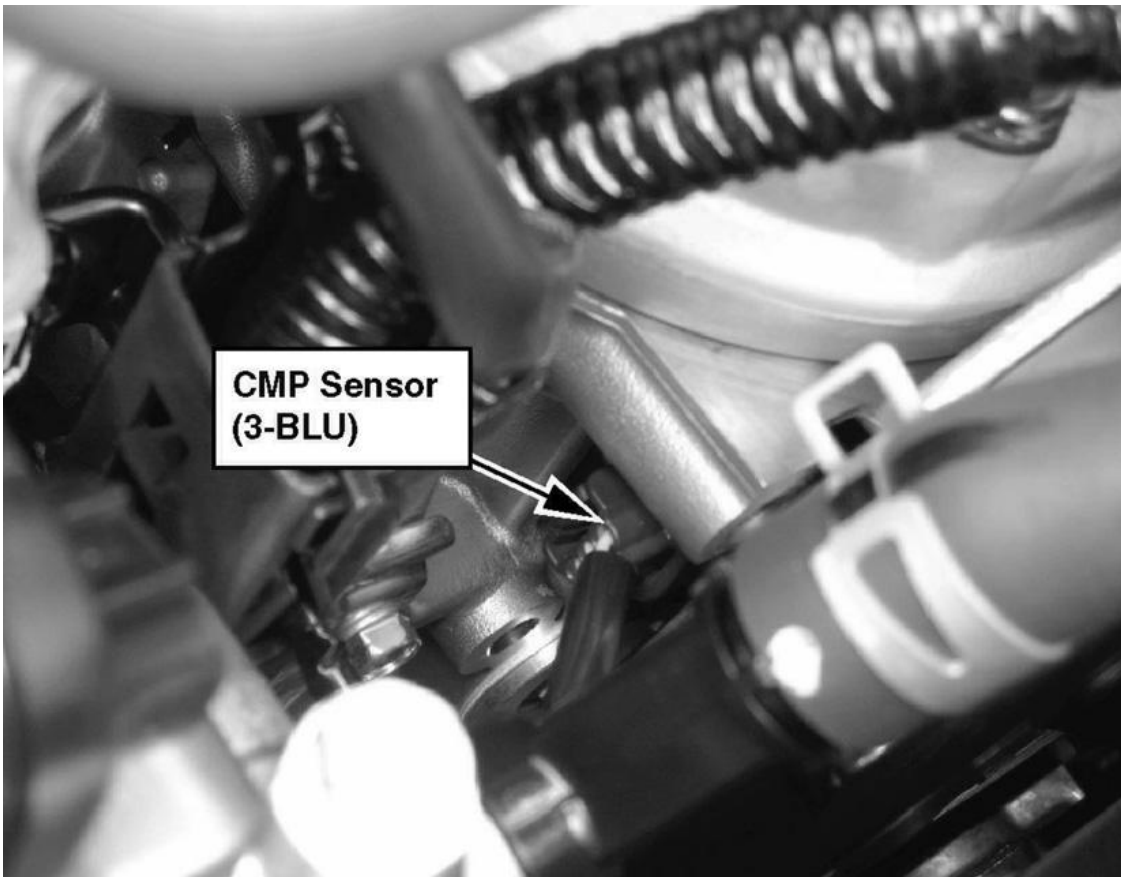


Fig. 112: Front Of Engine

Courtesy of AMERICAN HONDA MOTOR CO., INC.

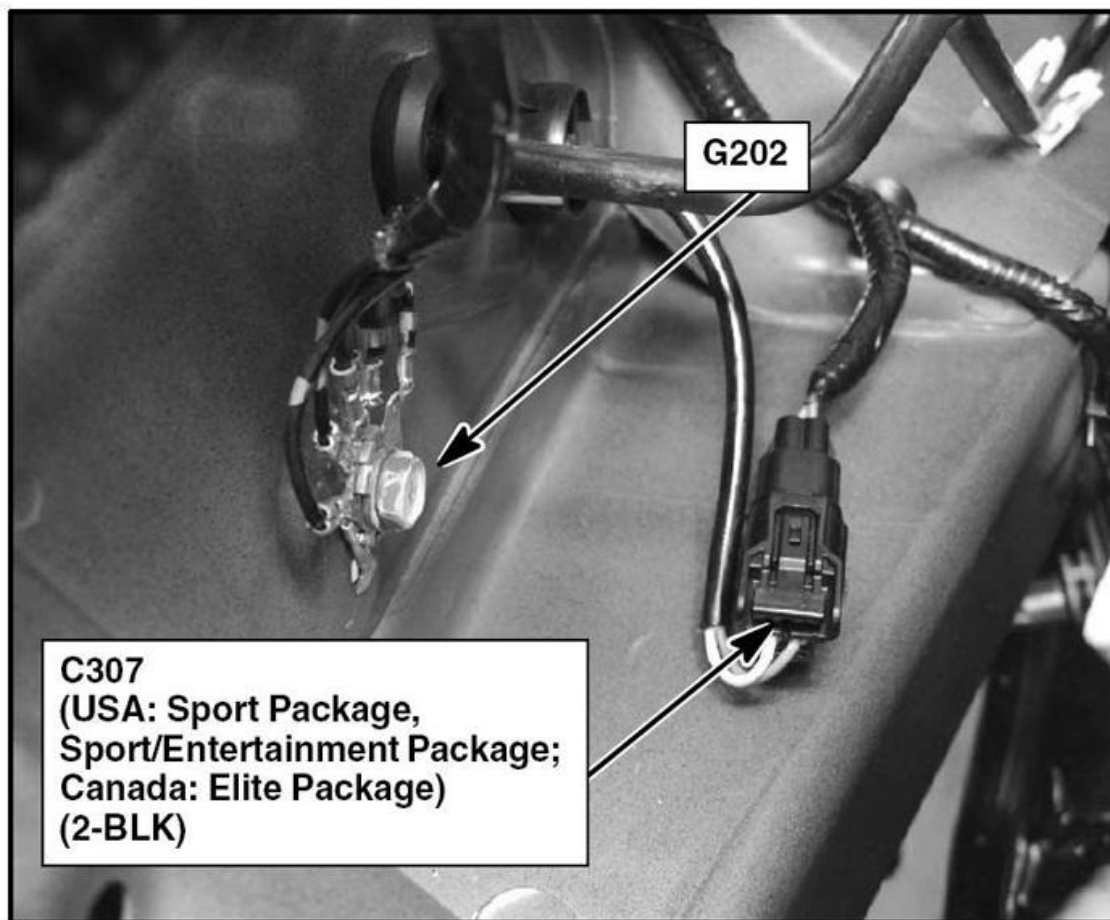


Fig. 113: Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

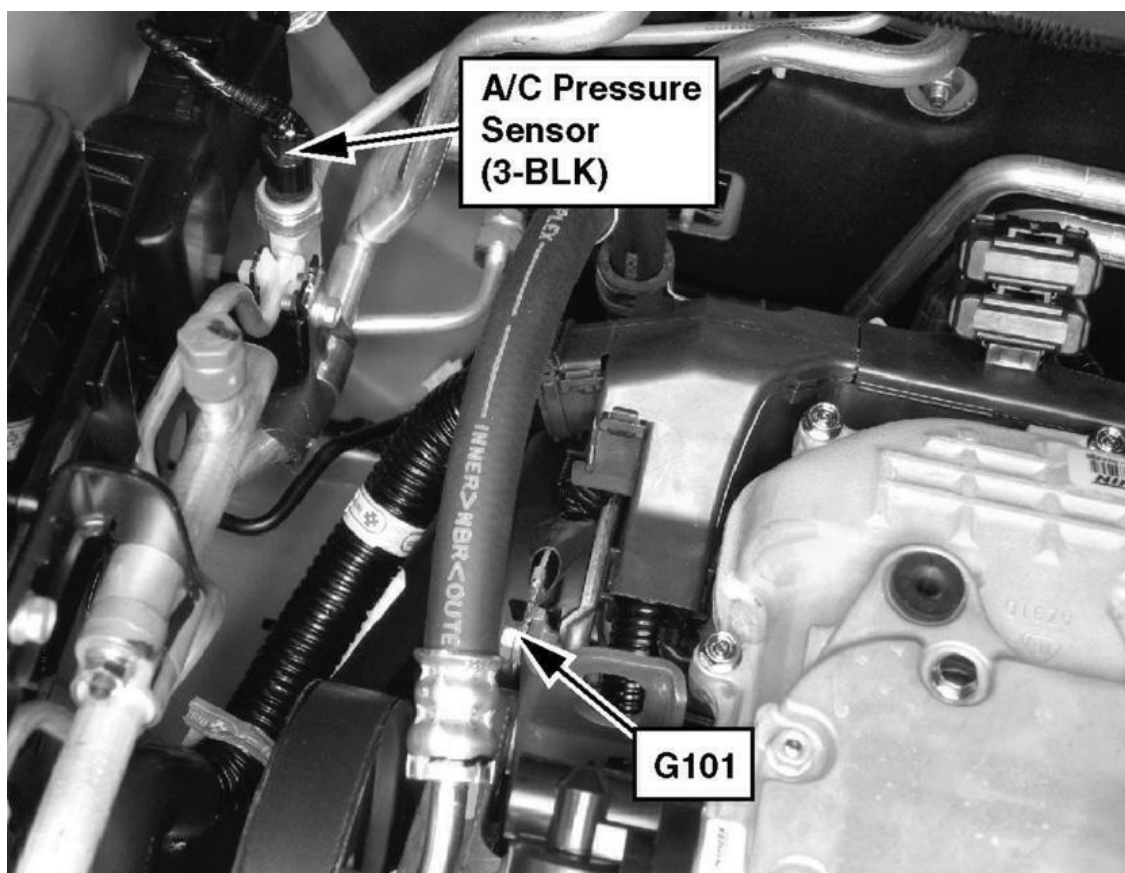


Fig. 114: Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

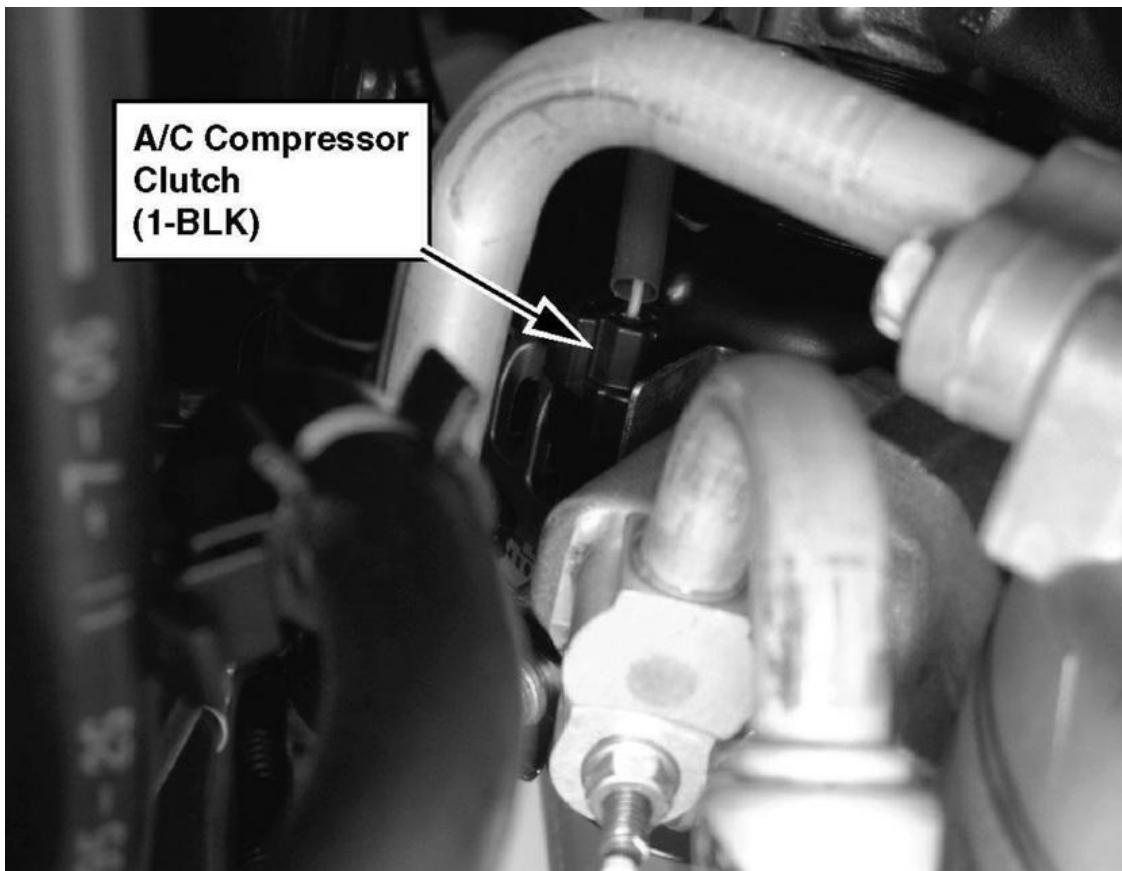


Fig. 115: Front Of Engine
Courtesy of AMERICAN HONDA MOTOR CO., INC.

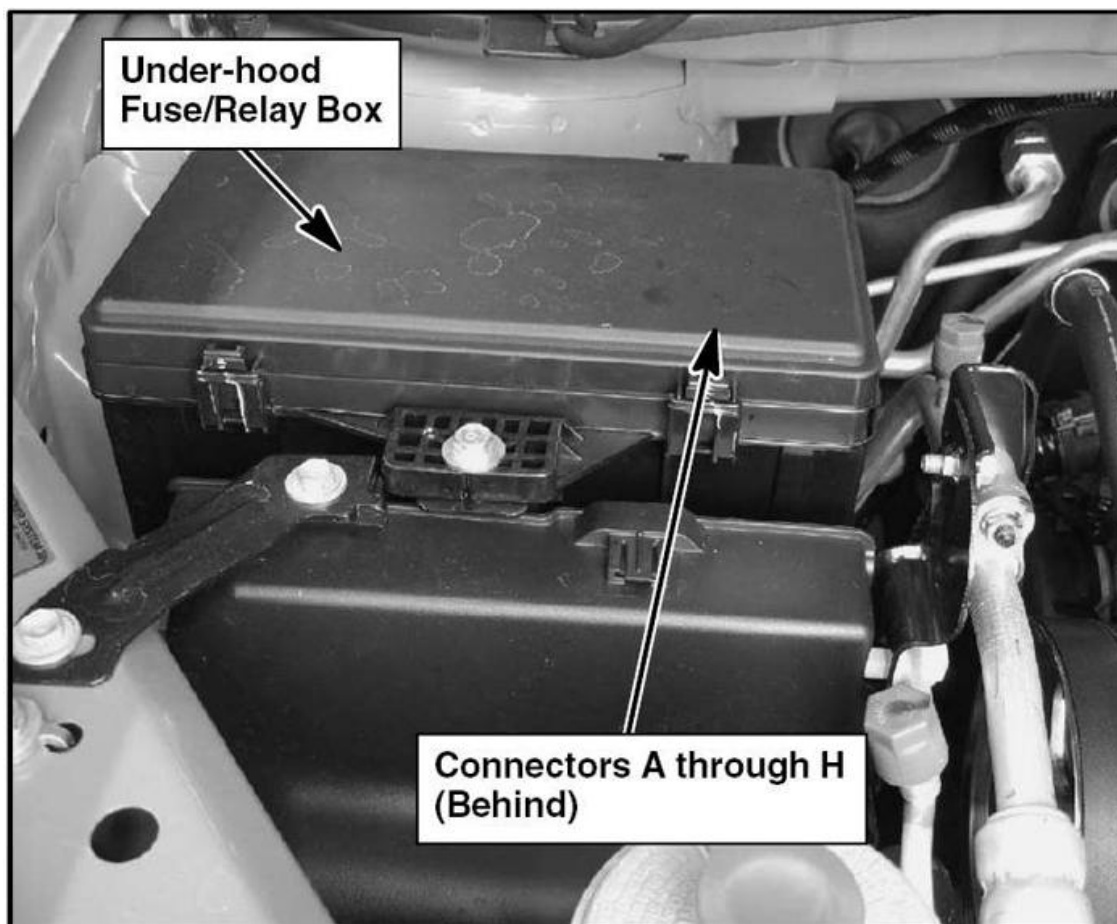


Fig. 116: Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

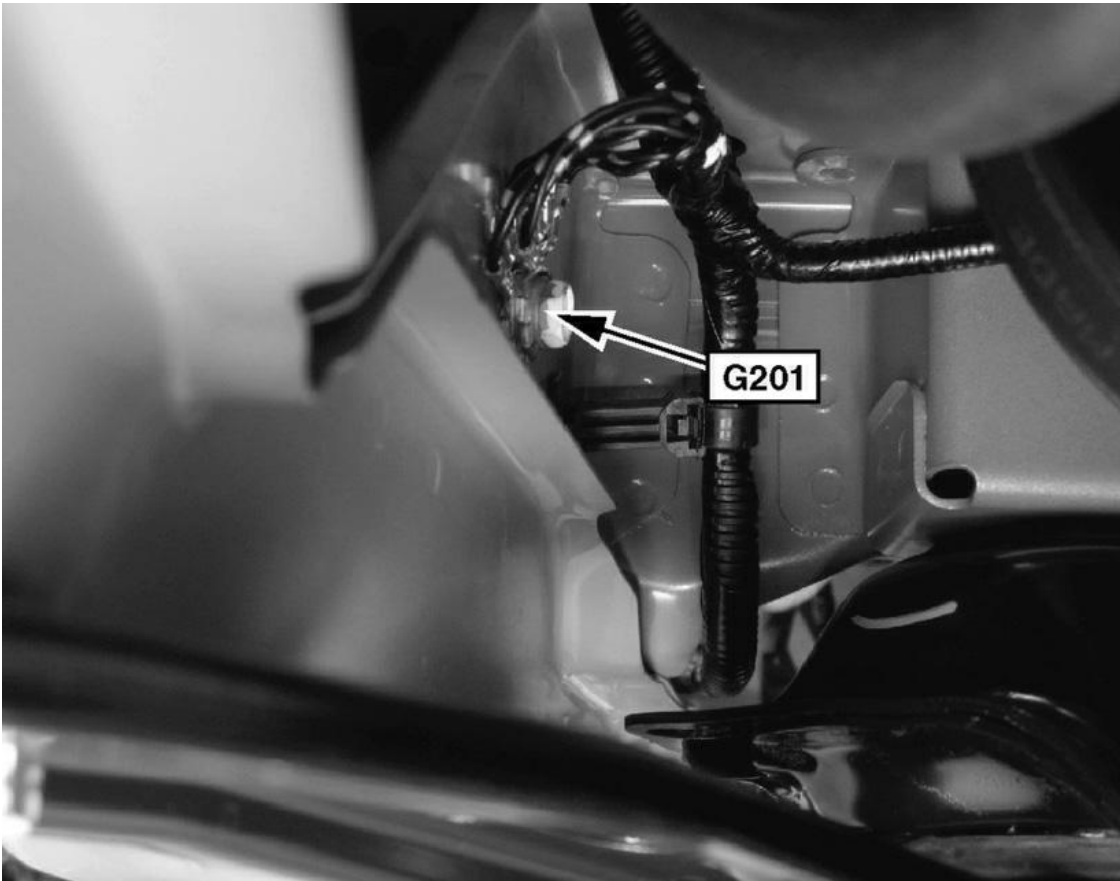


Fig. 117: Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

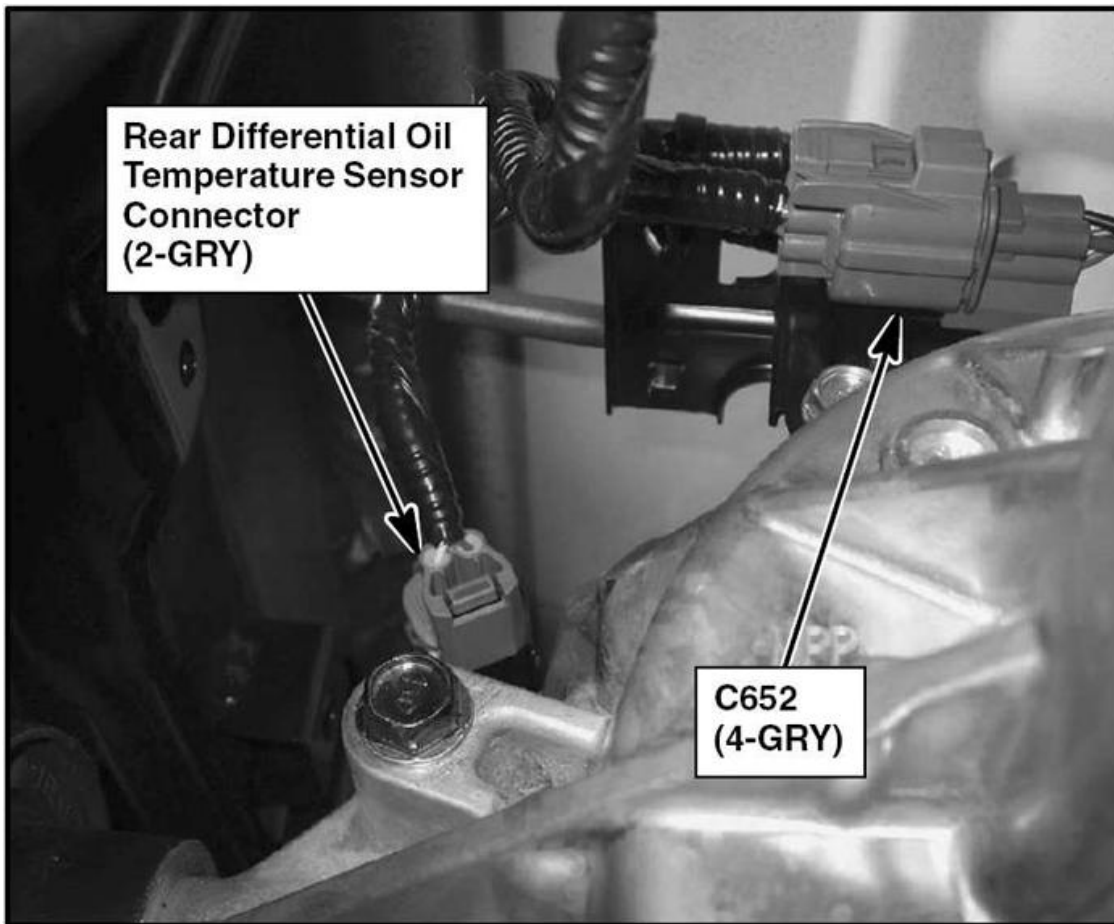


Fig. 118: Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

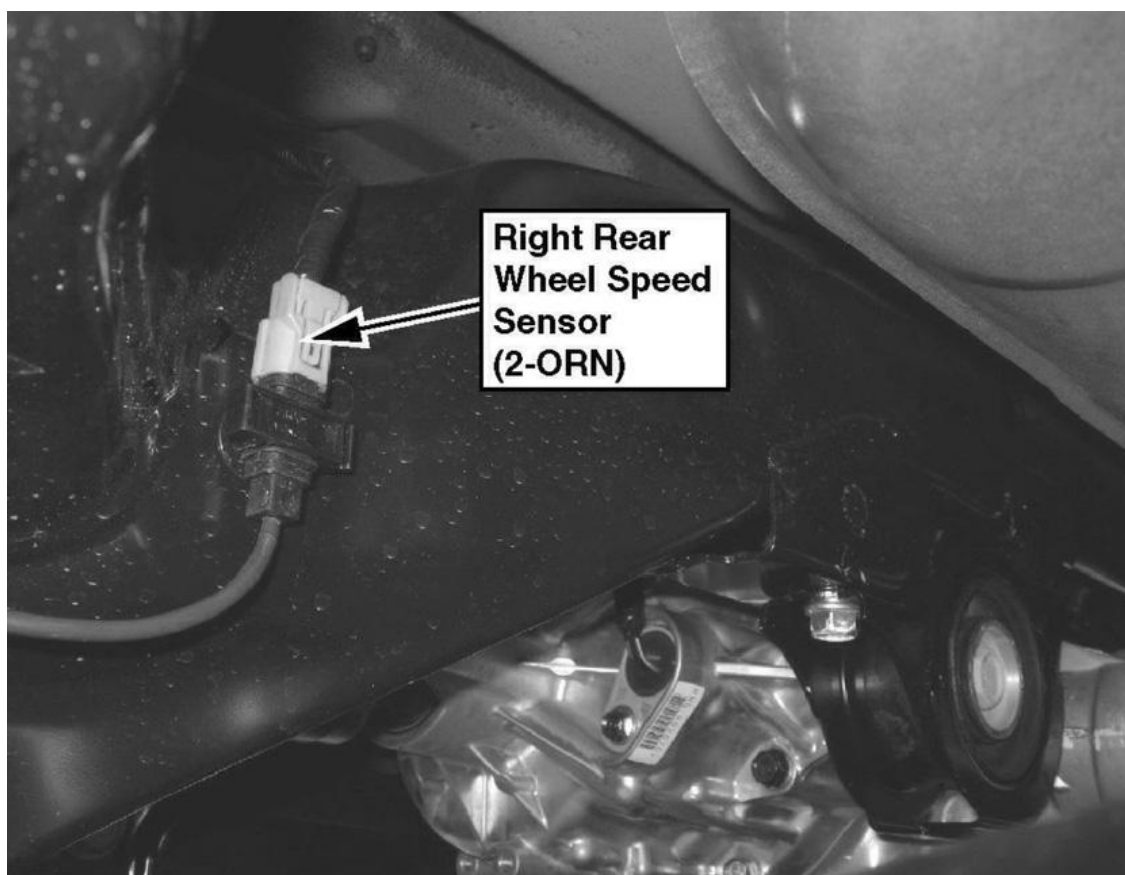


Fig. 119: Right Side Of Rear Subframe

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 120: Right Rear Subframe (Sport)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

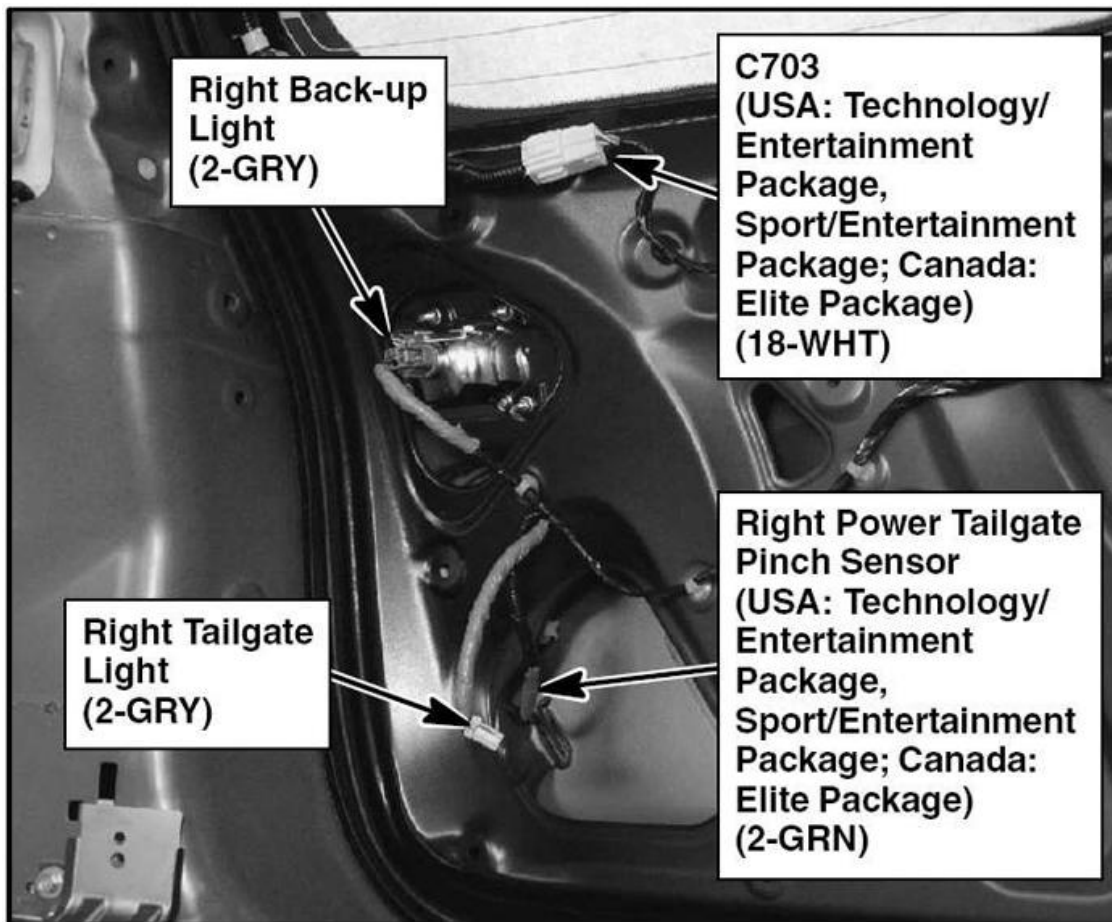


Fig. 121: Right Side Of Tailgate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

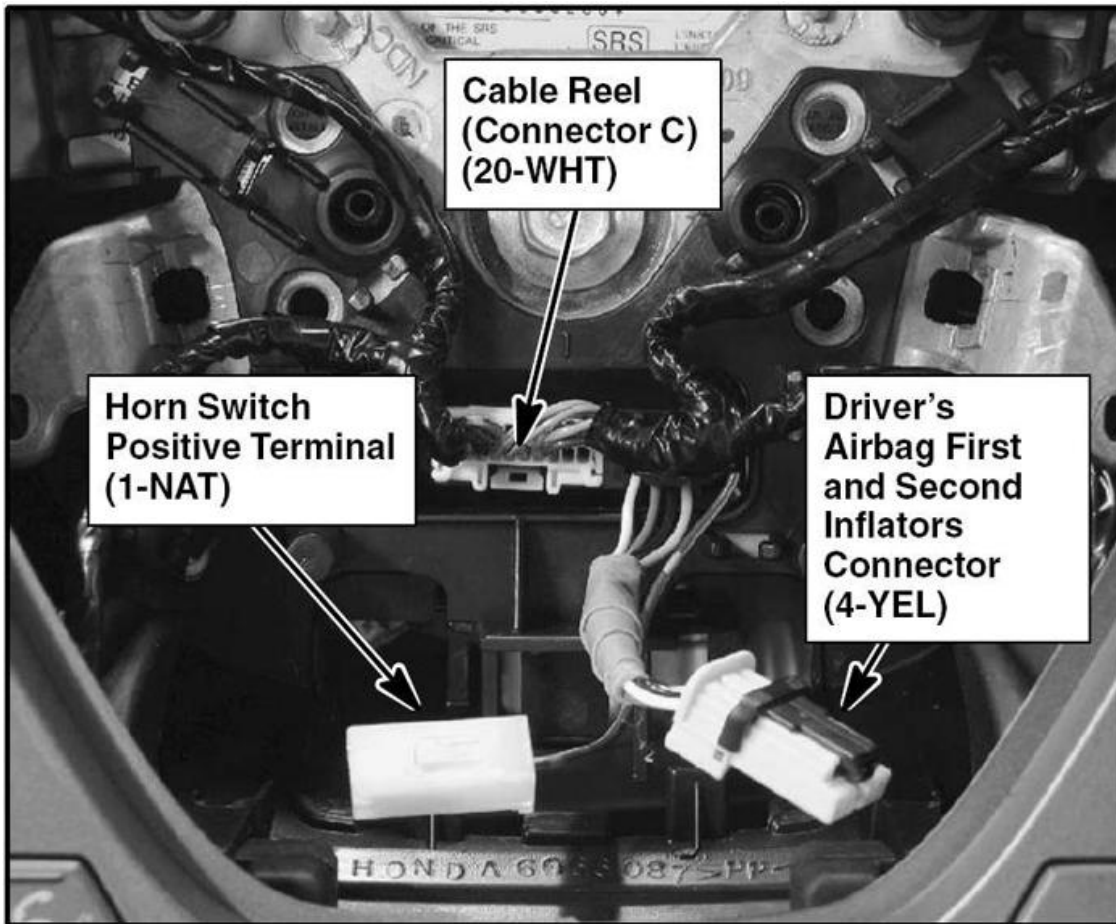


Fig. 122: Steering Wheel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

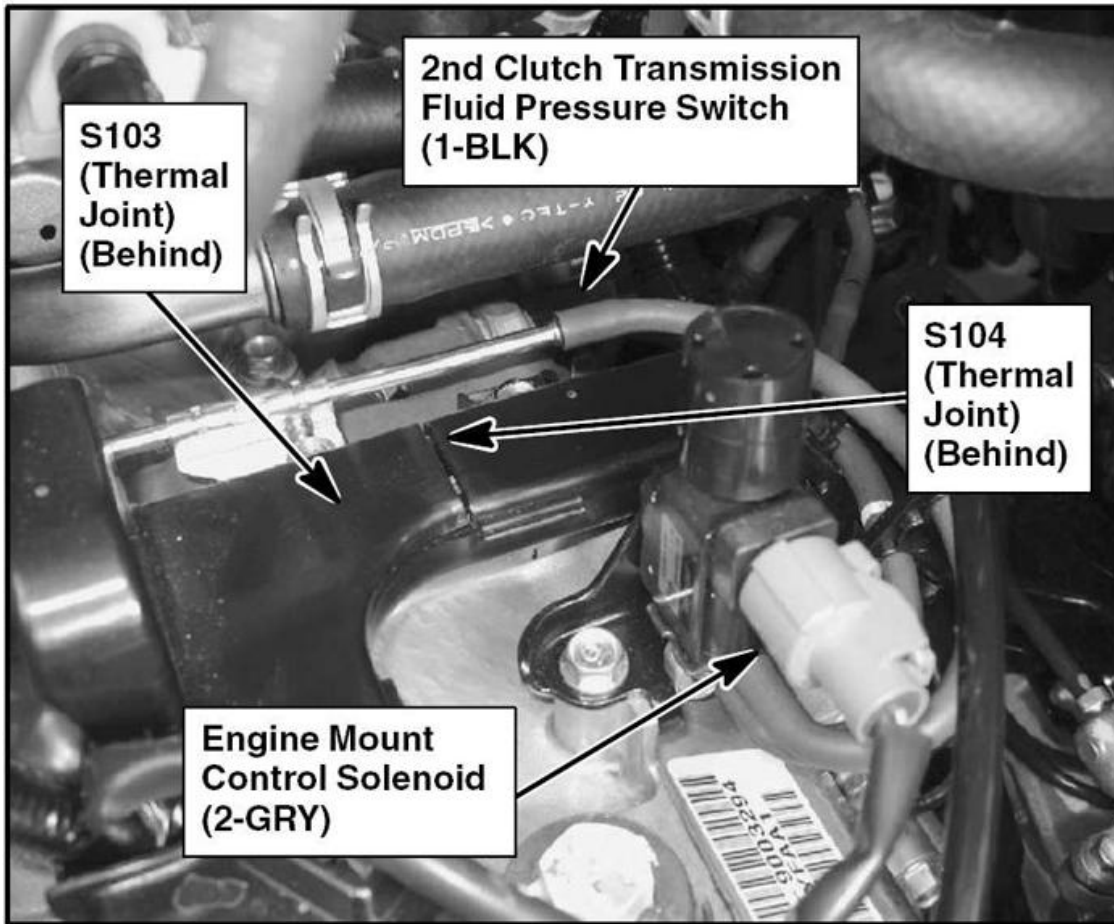


Fig. 123: Transmission Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

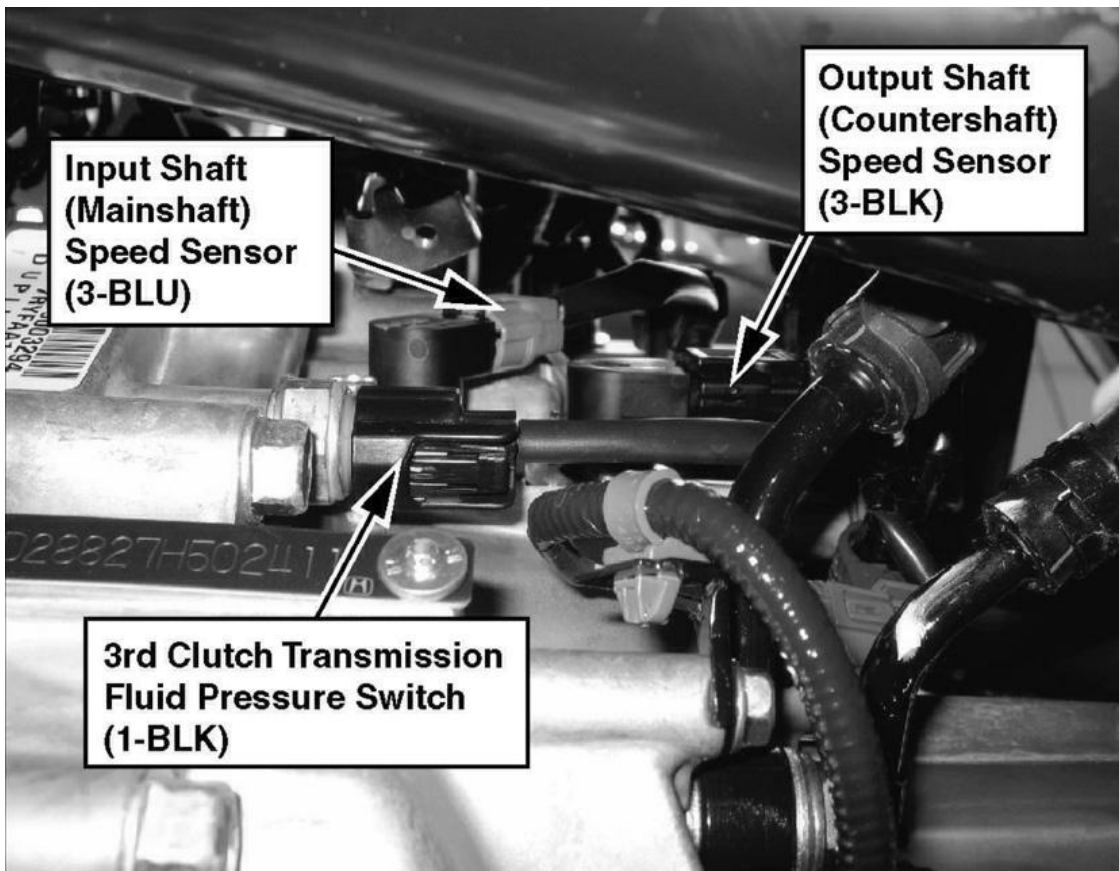


Fig. 124: Transmission Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

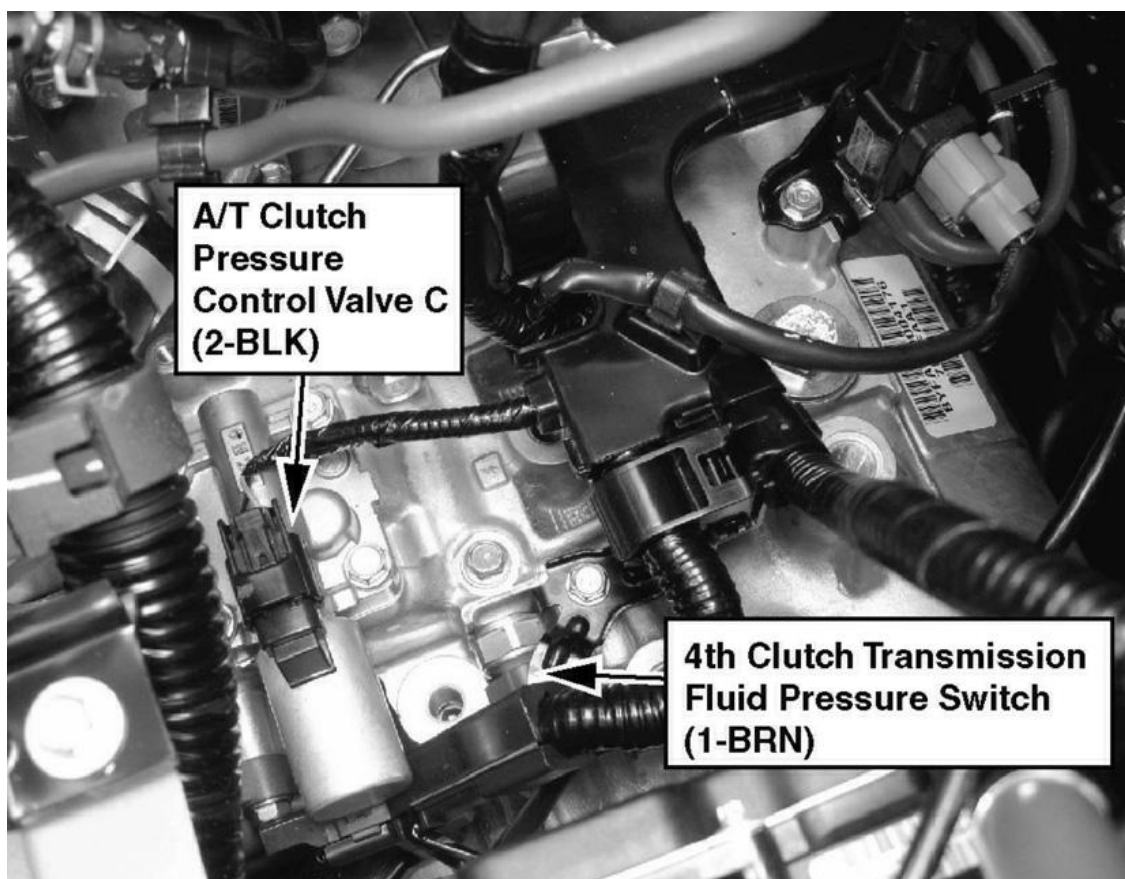


Fig. 125: Transmission Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

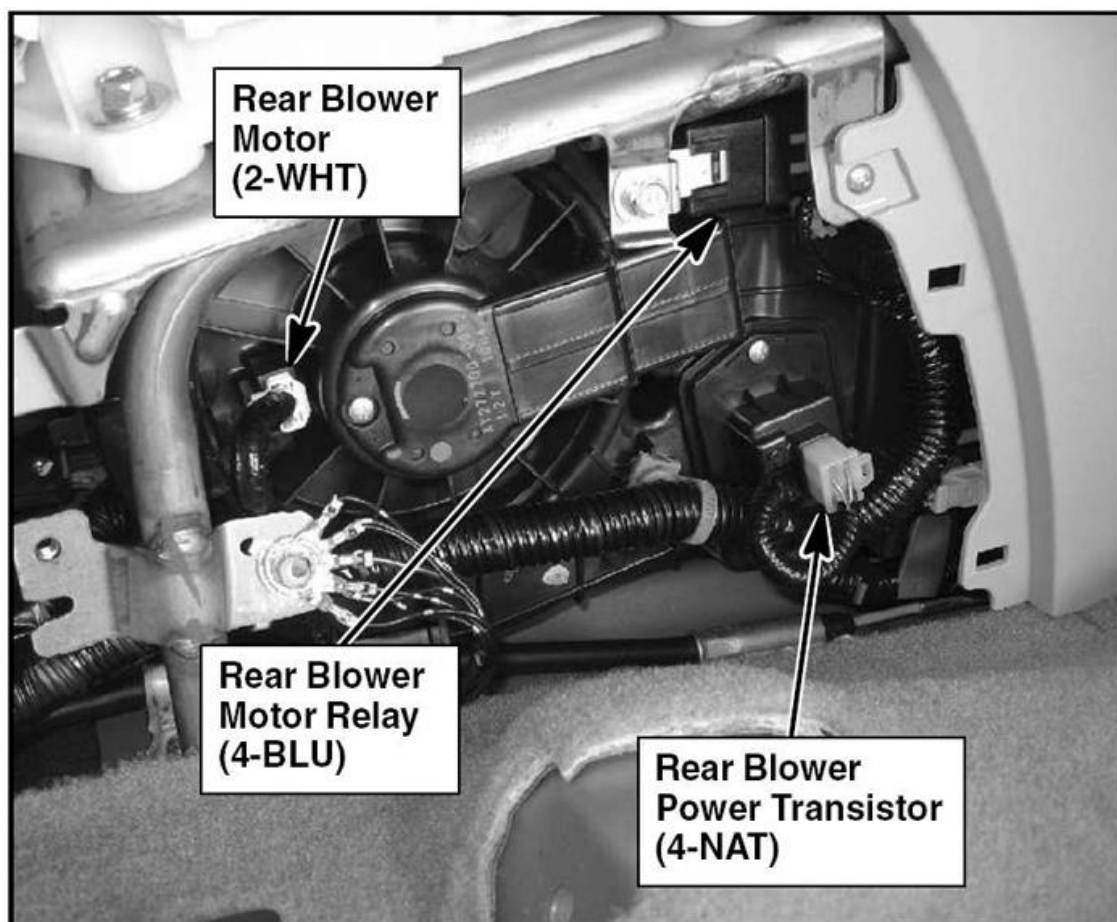


Fig. 126: Under Center Console

Courtesy of AMERICAN HONDA MOTOR CO., INC.

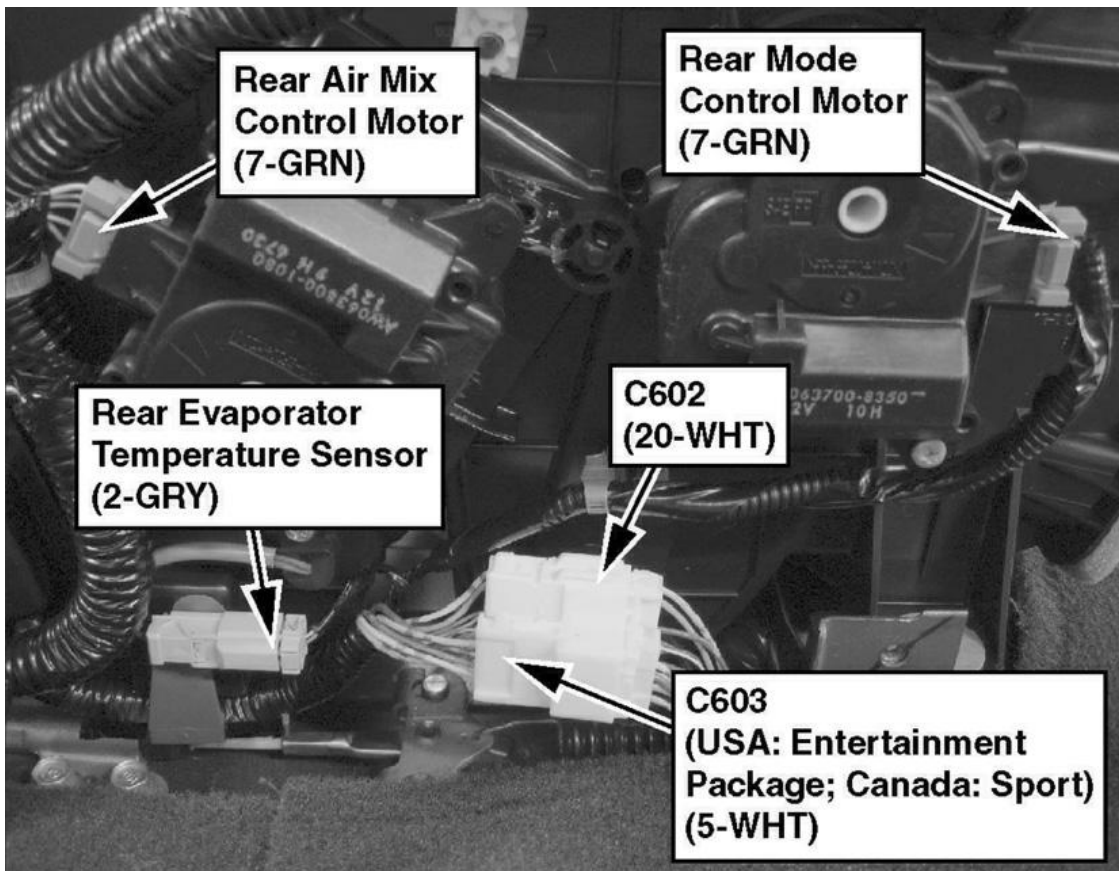


Fig. 127: Under Center Console

Courtesy of AMERICAN HONDA MOTOR CO., INC.

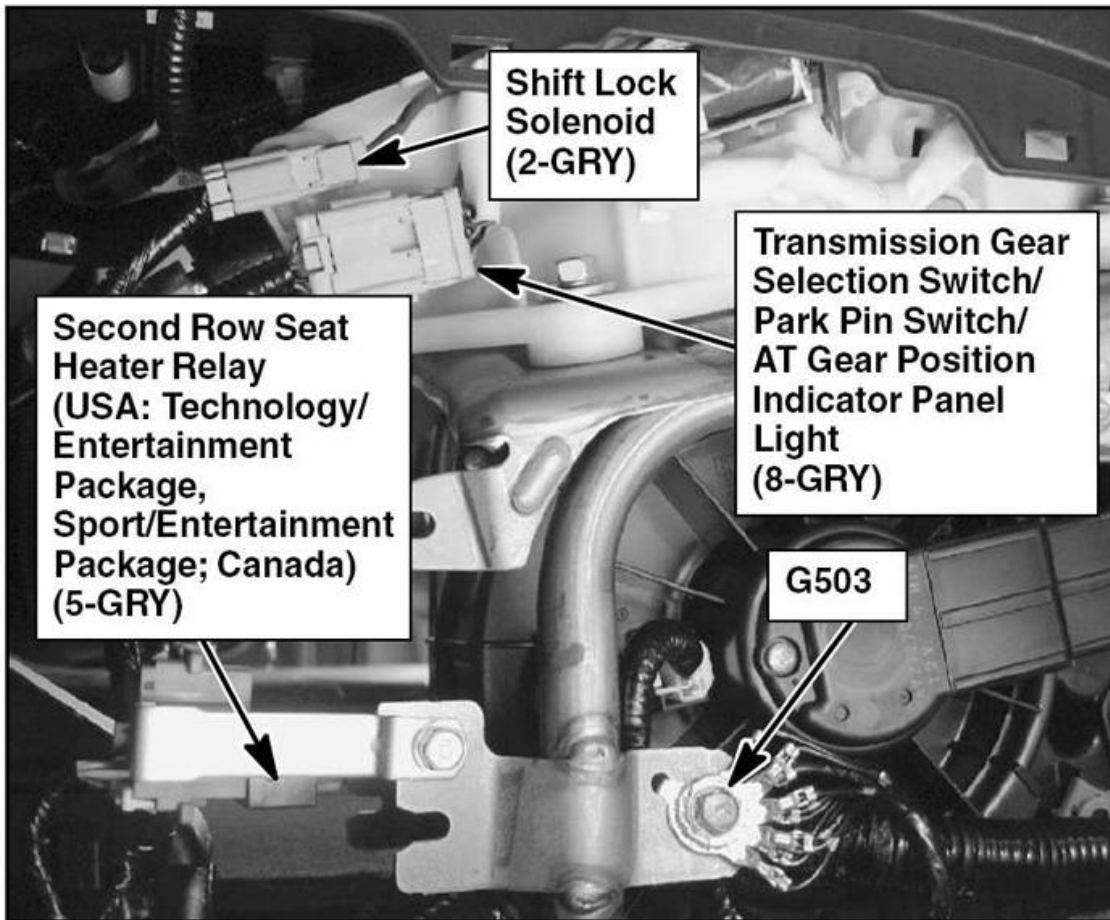


Fig. 128: Under Center Console

Courtesy of AMERICAN HONDA MOTOR CO., INC.

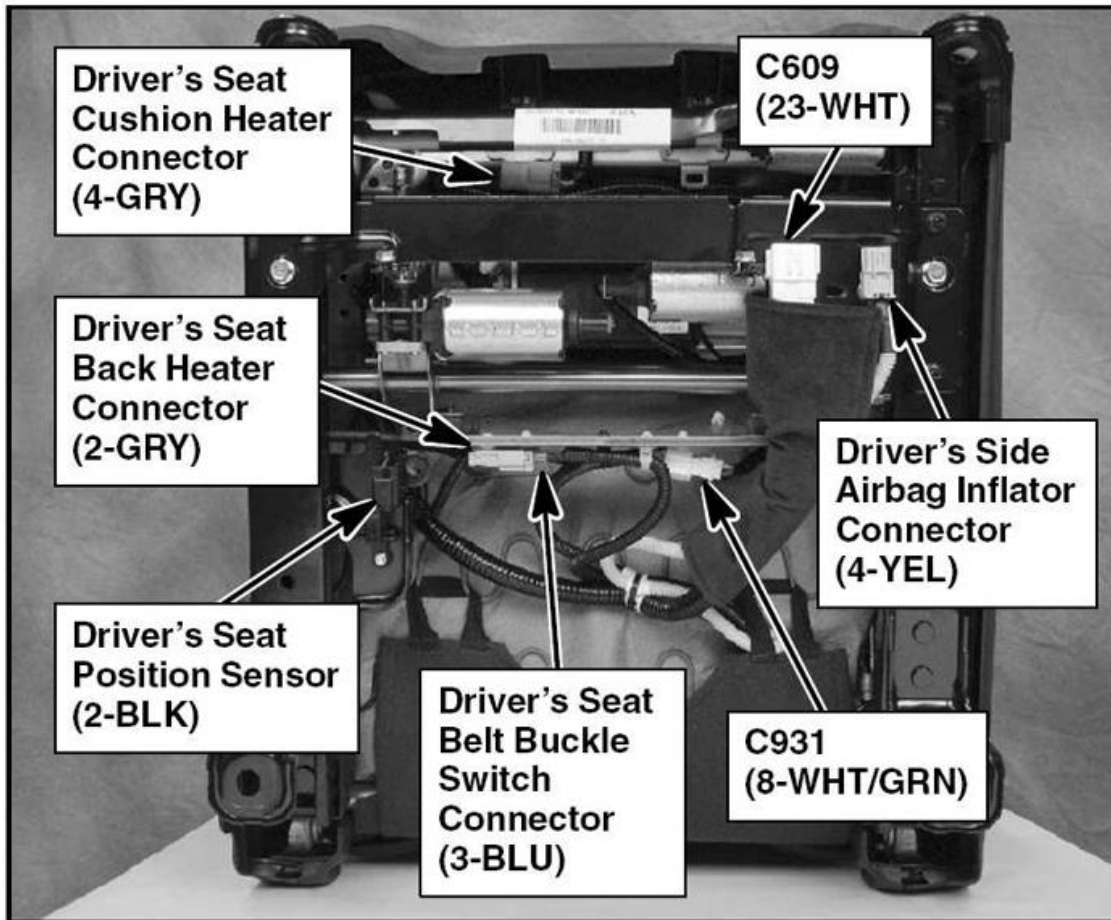


Fig. 129: Under Driver's Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

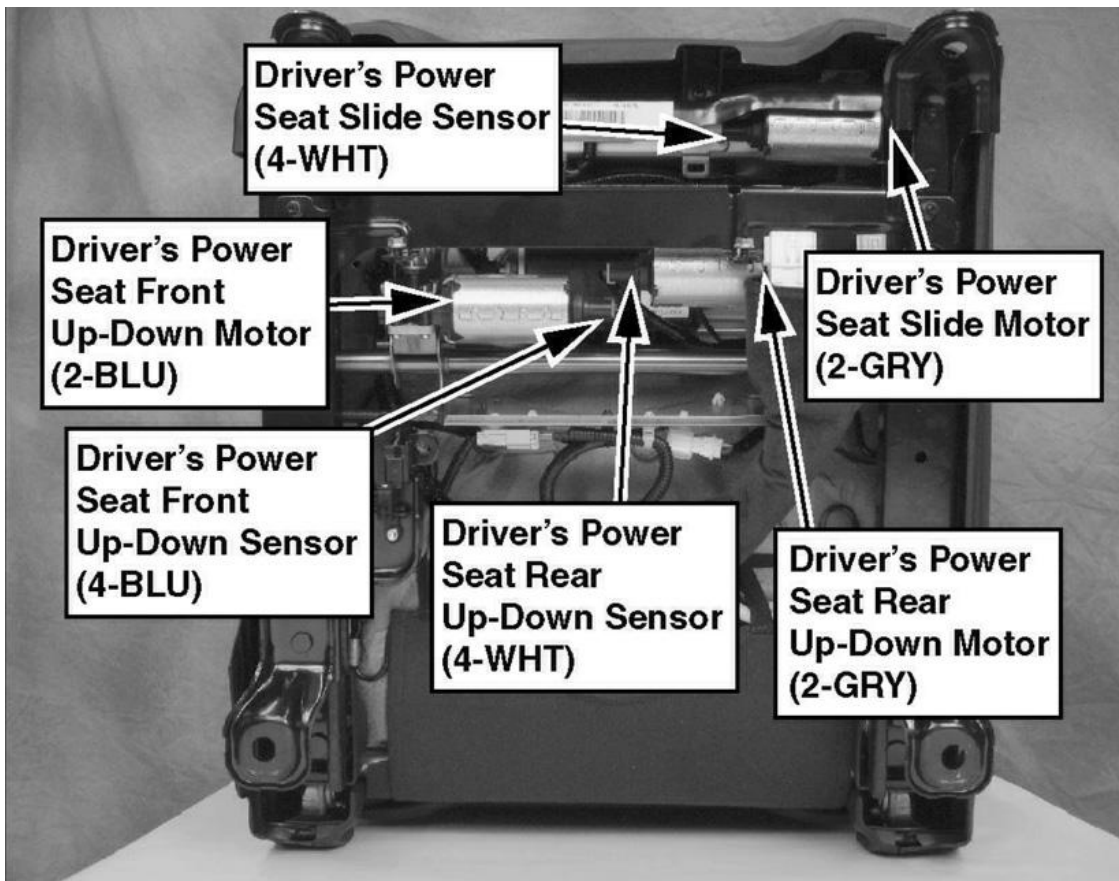


Fig. 130: Under Driver's Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

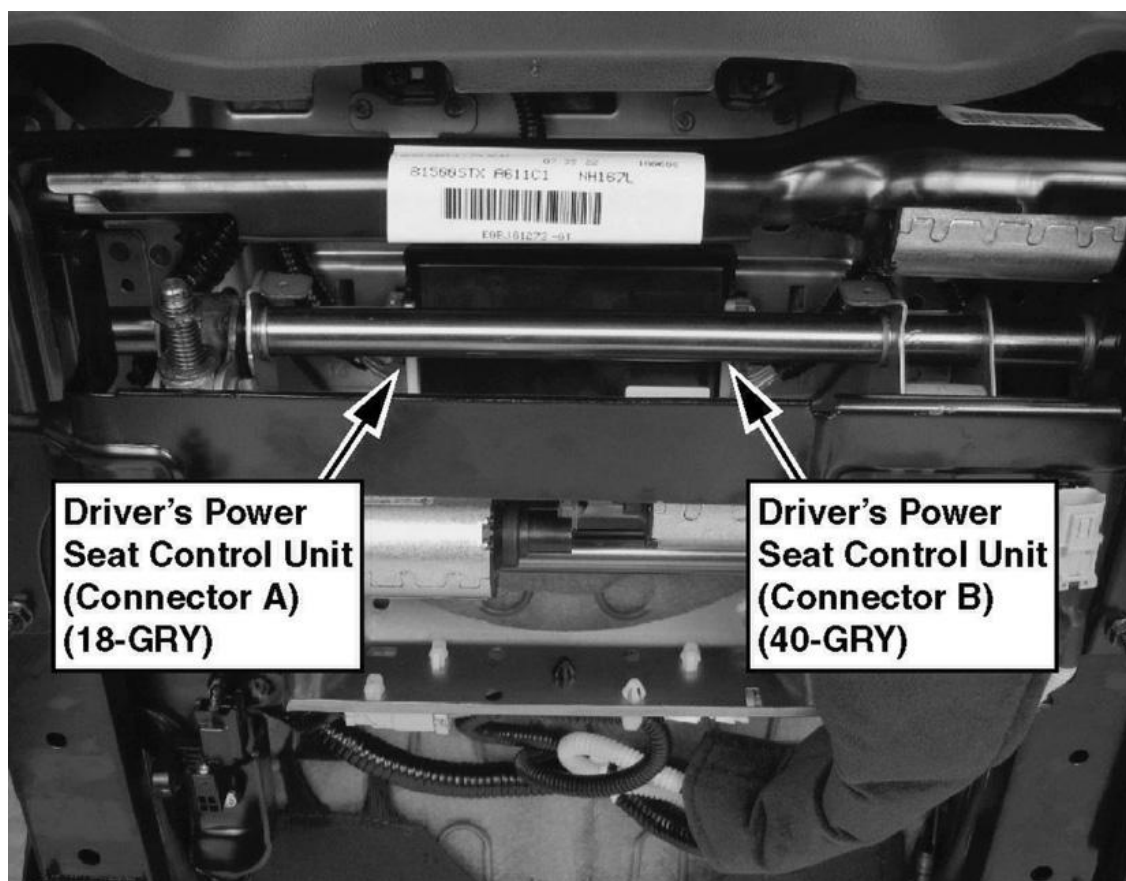


Fig. 131: Under Driver's Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

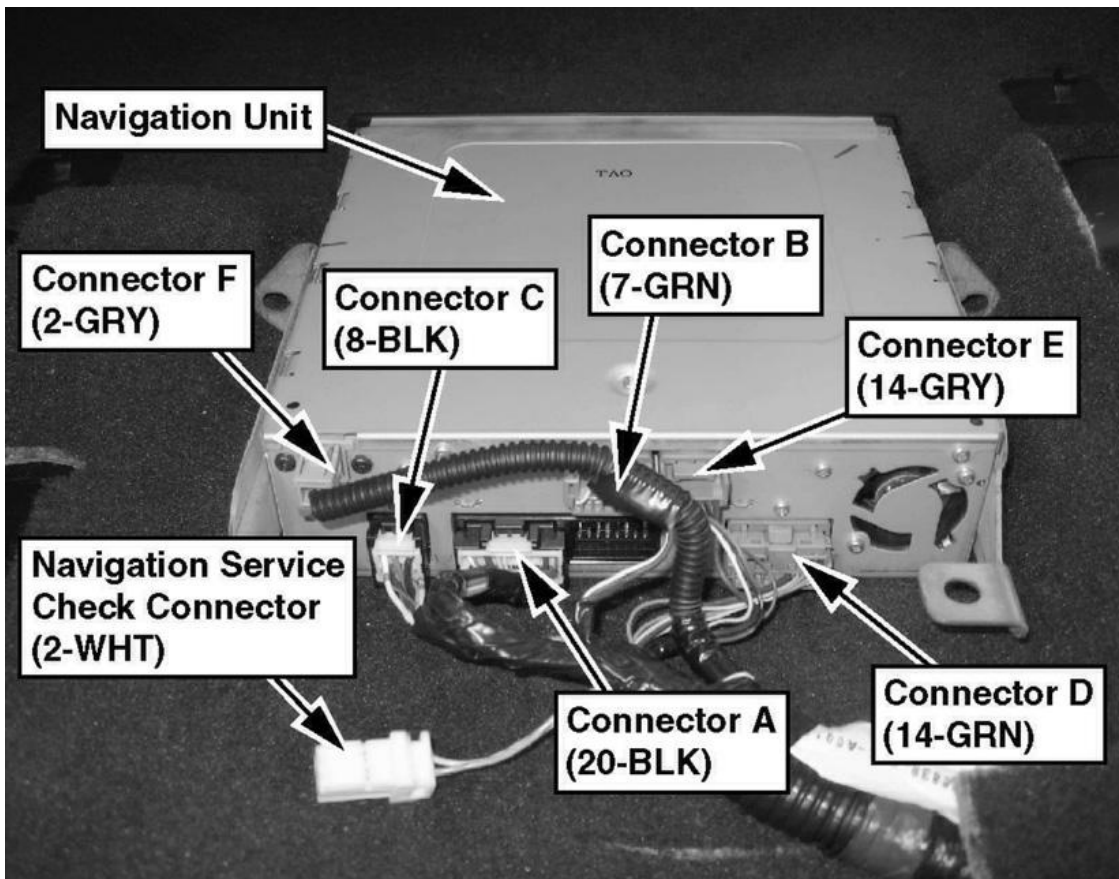


Fig. 132: Under Driver's Seat (Tech, Sport)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

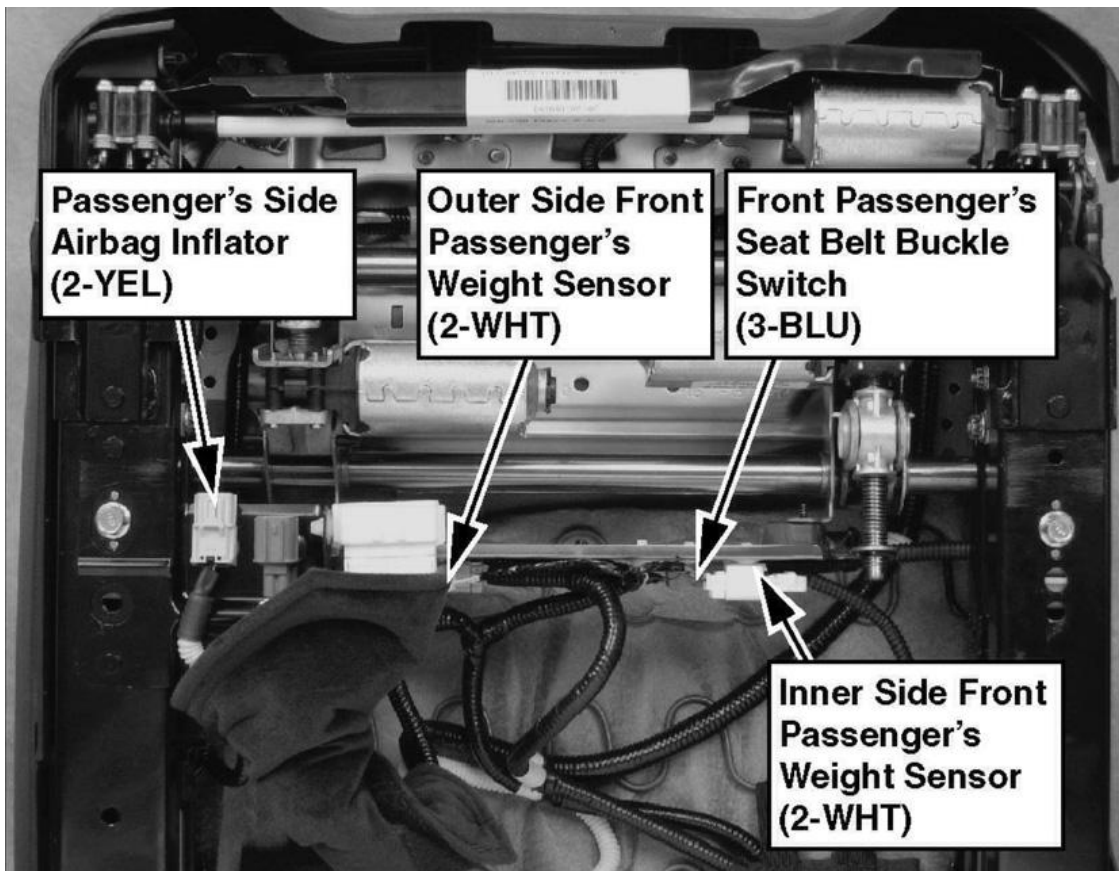


Fig. 133: Under Front Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

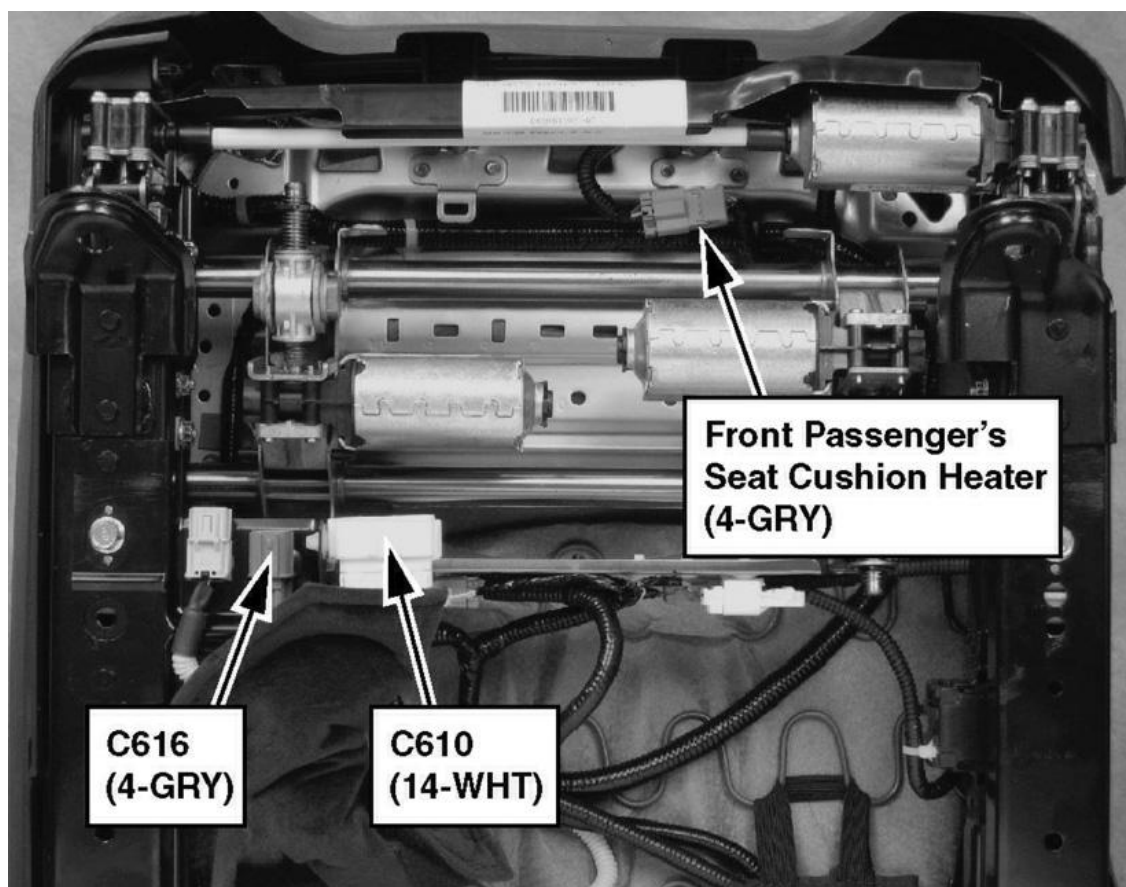


Fig. 134: Under Front Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

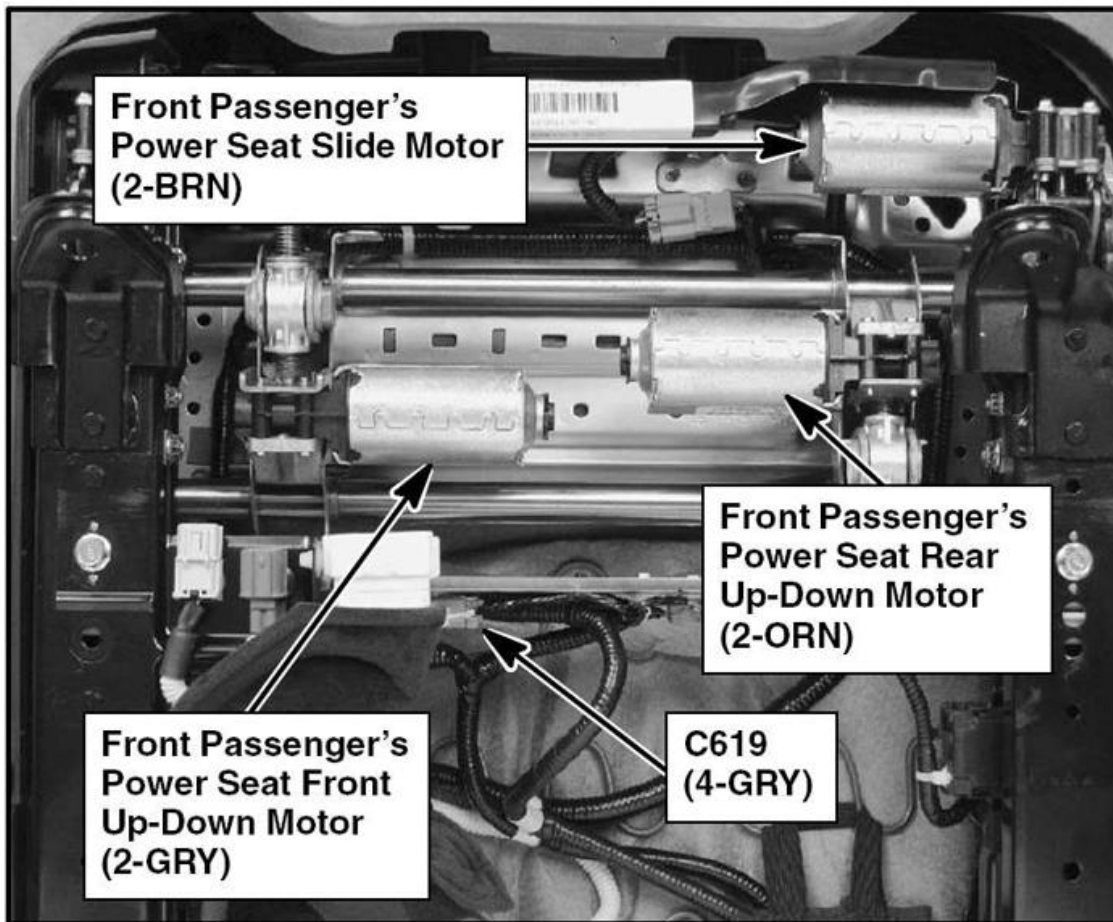


Fig. 135: Under Front Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

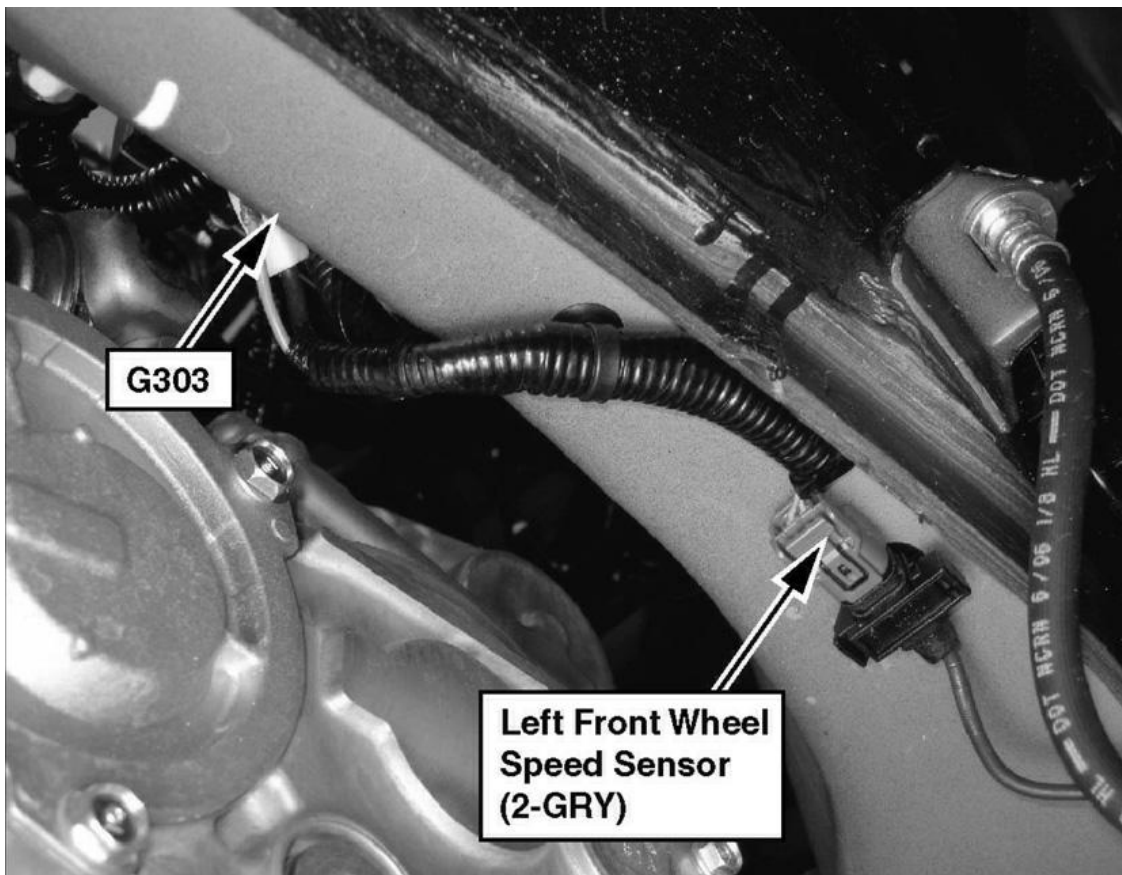


Fig. 136: Lower Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

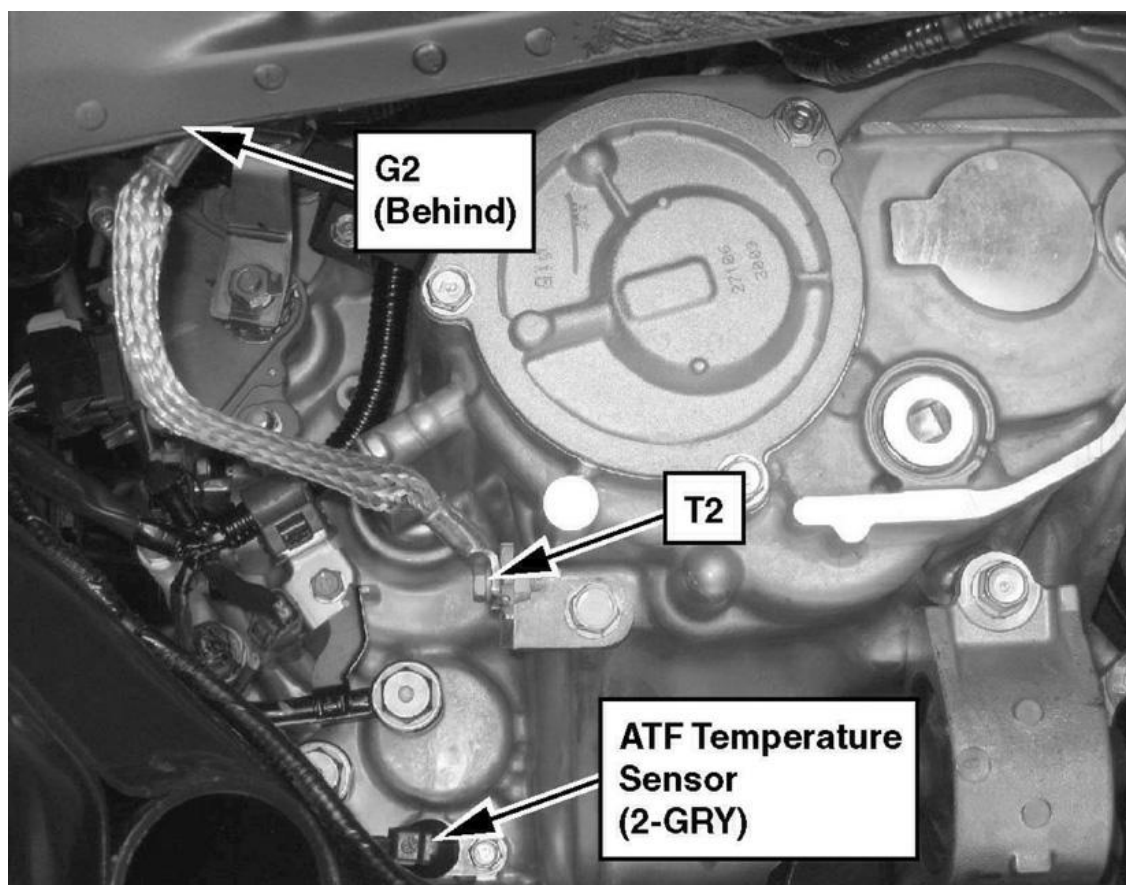


Fig. 137: Lower Left Front Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

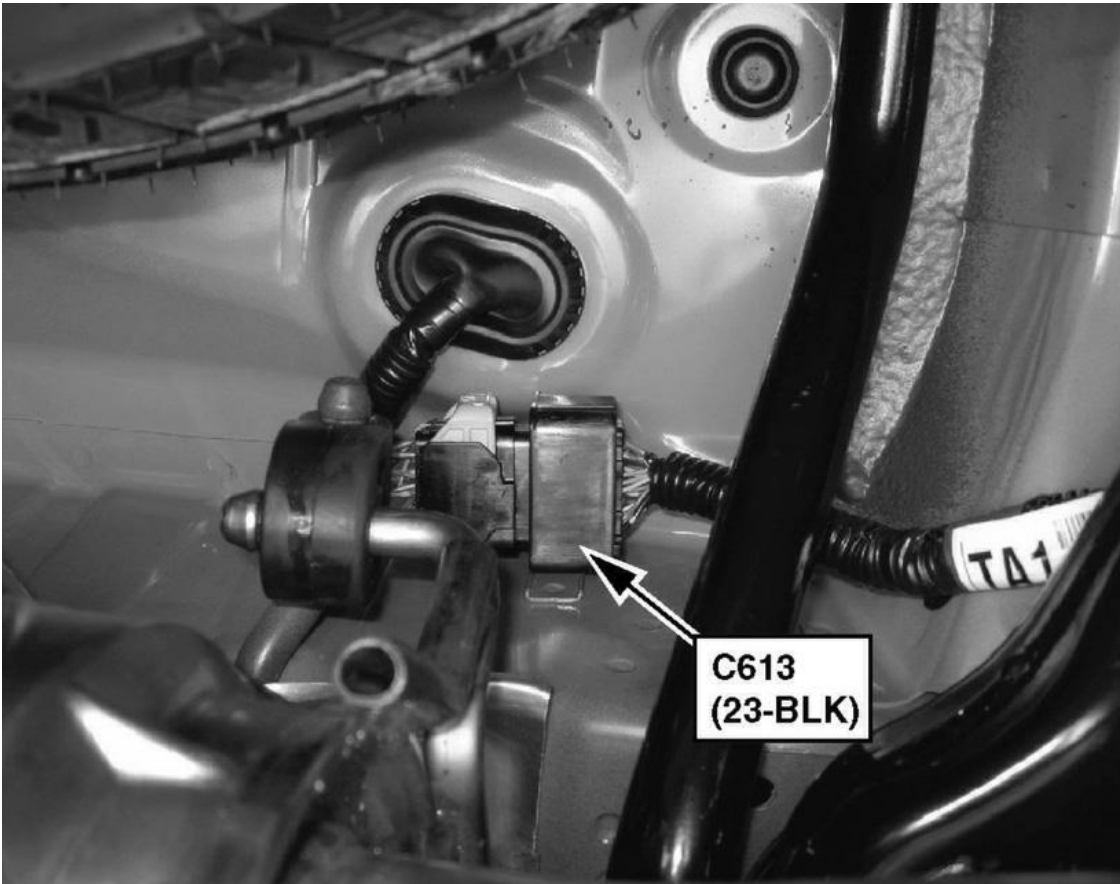


Fig. 138: Under Left Rear Of Vehicle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

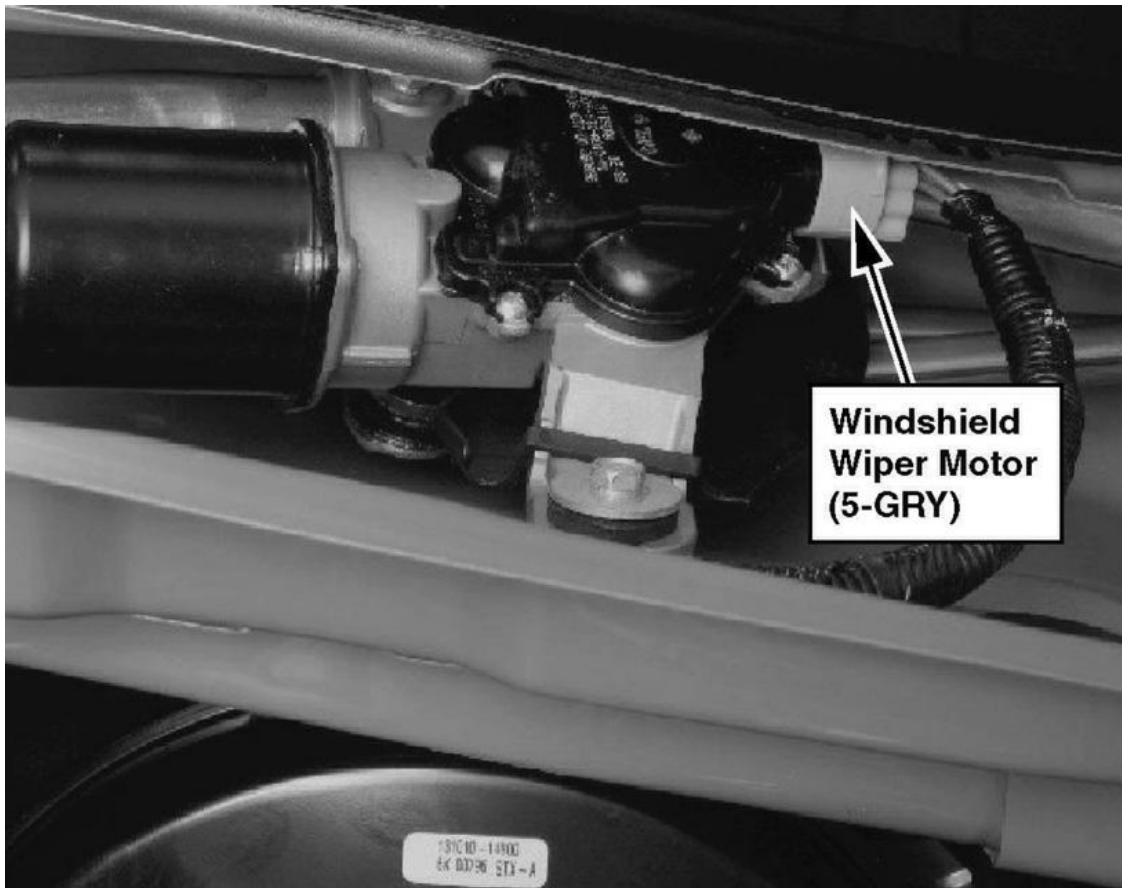


Fig. 139: Left Rear Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

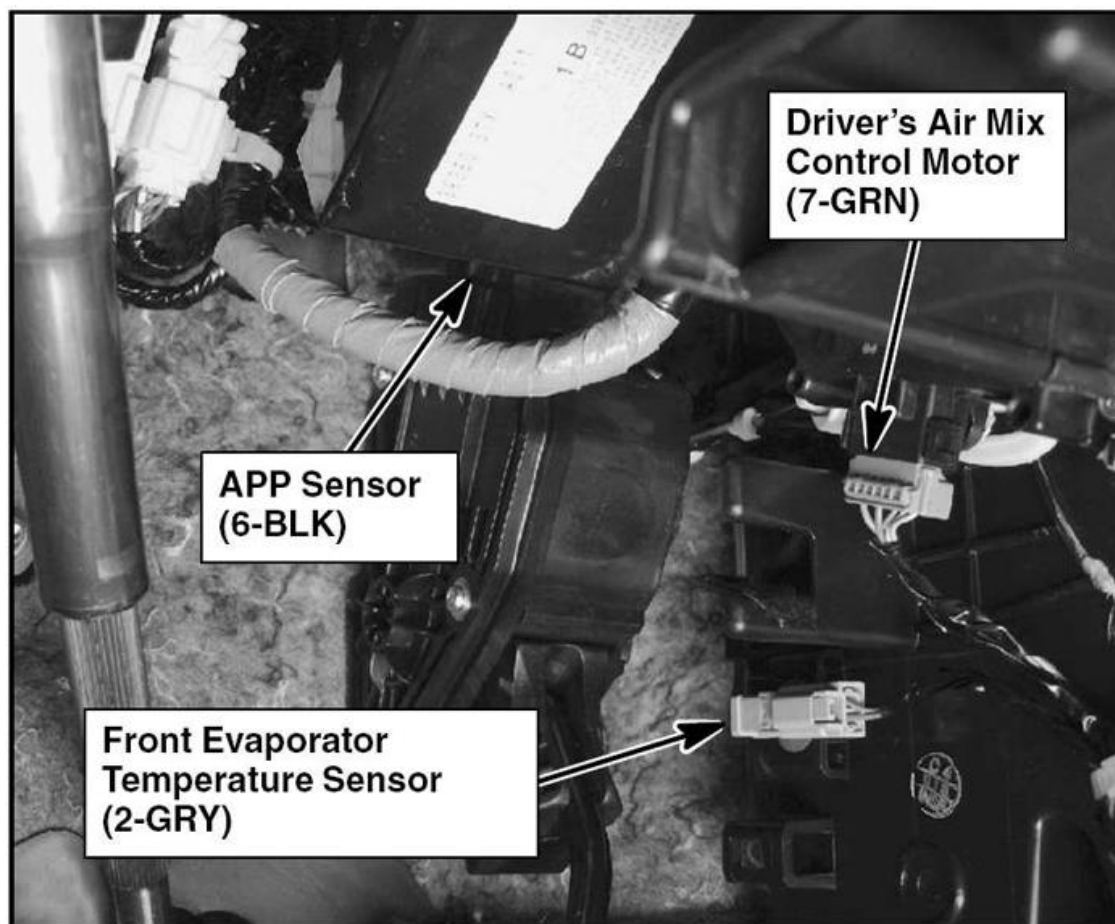


Fig. 140: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

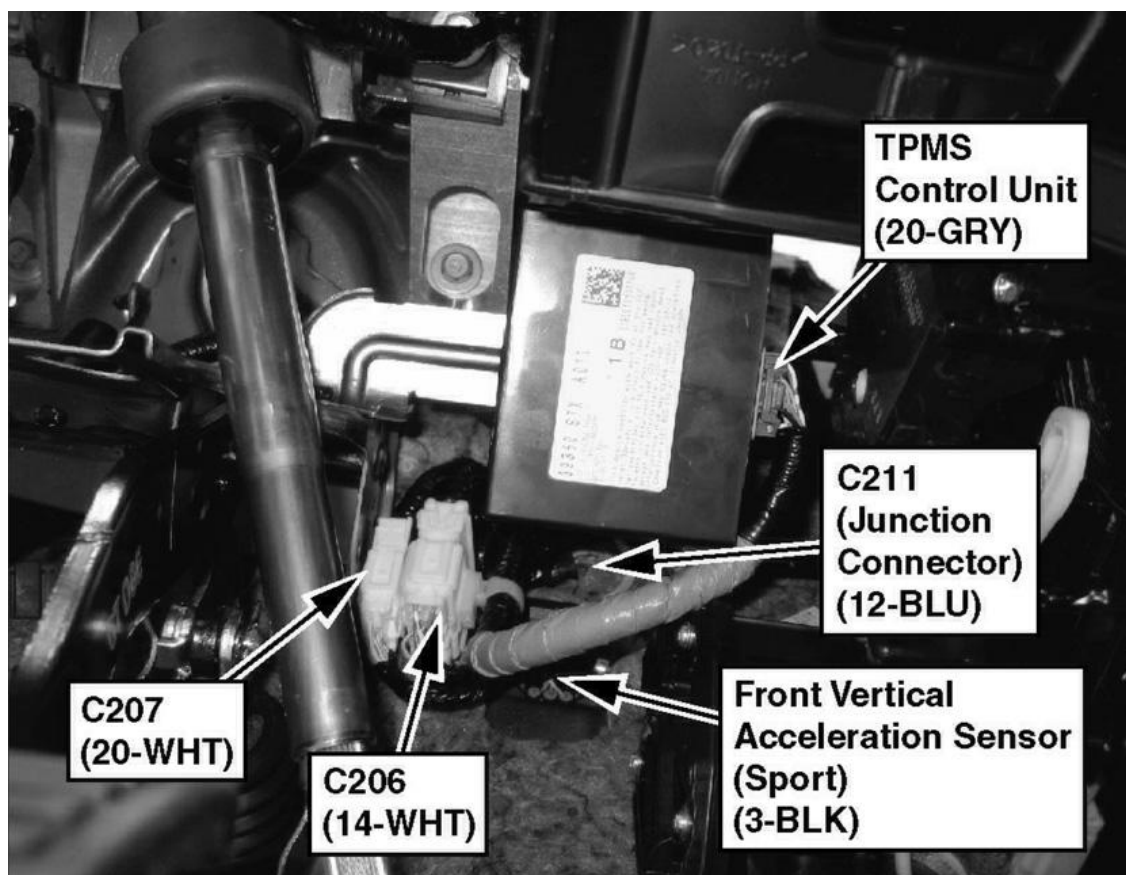


Fig. 141: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

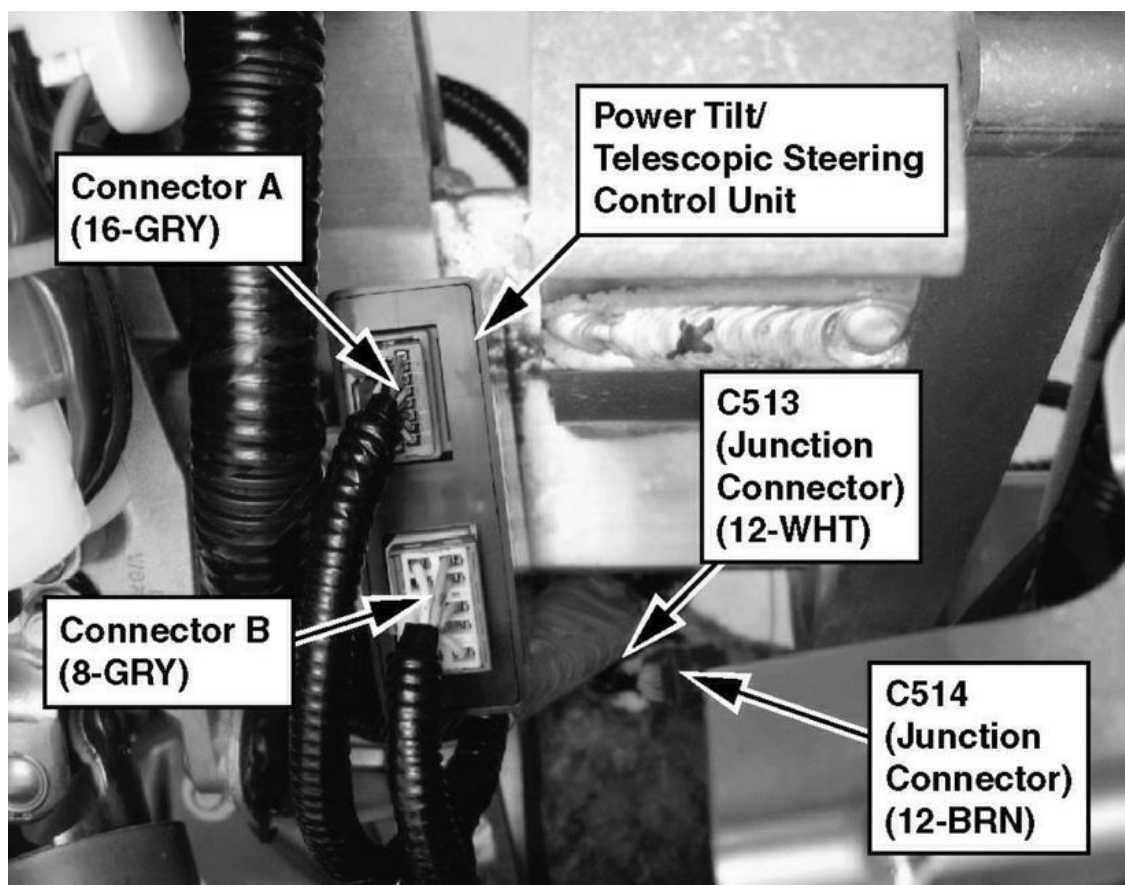


Fig. 142: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

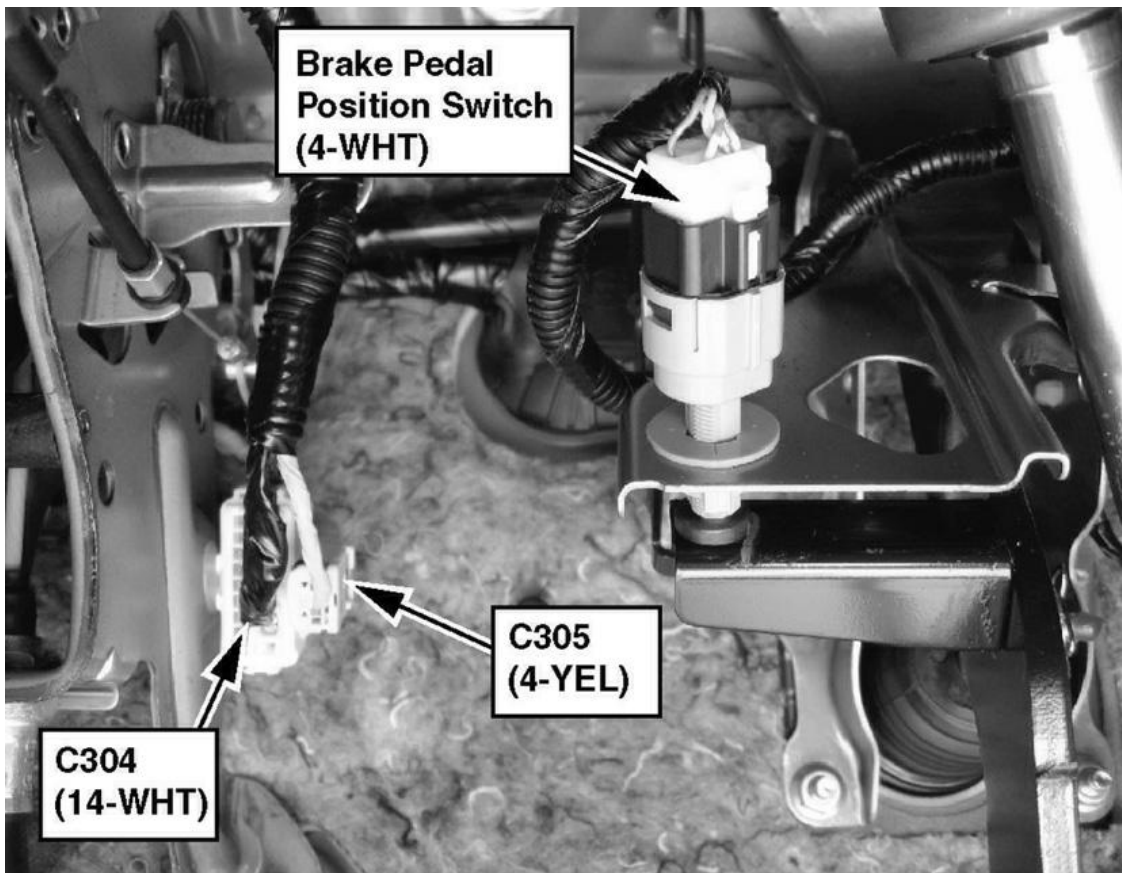


Fig. 143: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

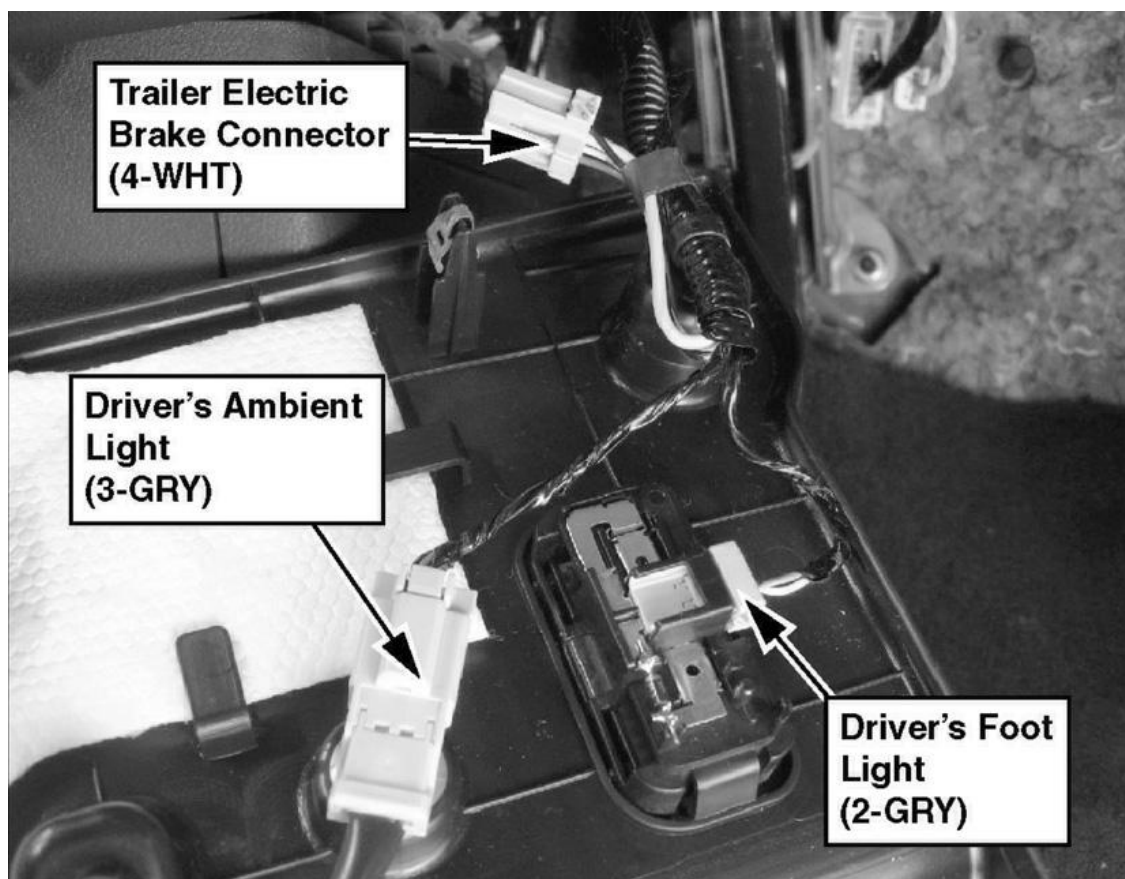


Fig. 144: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

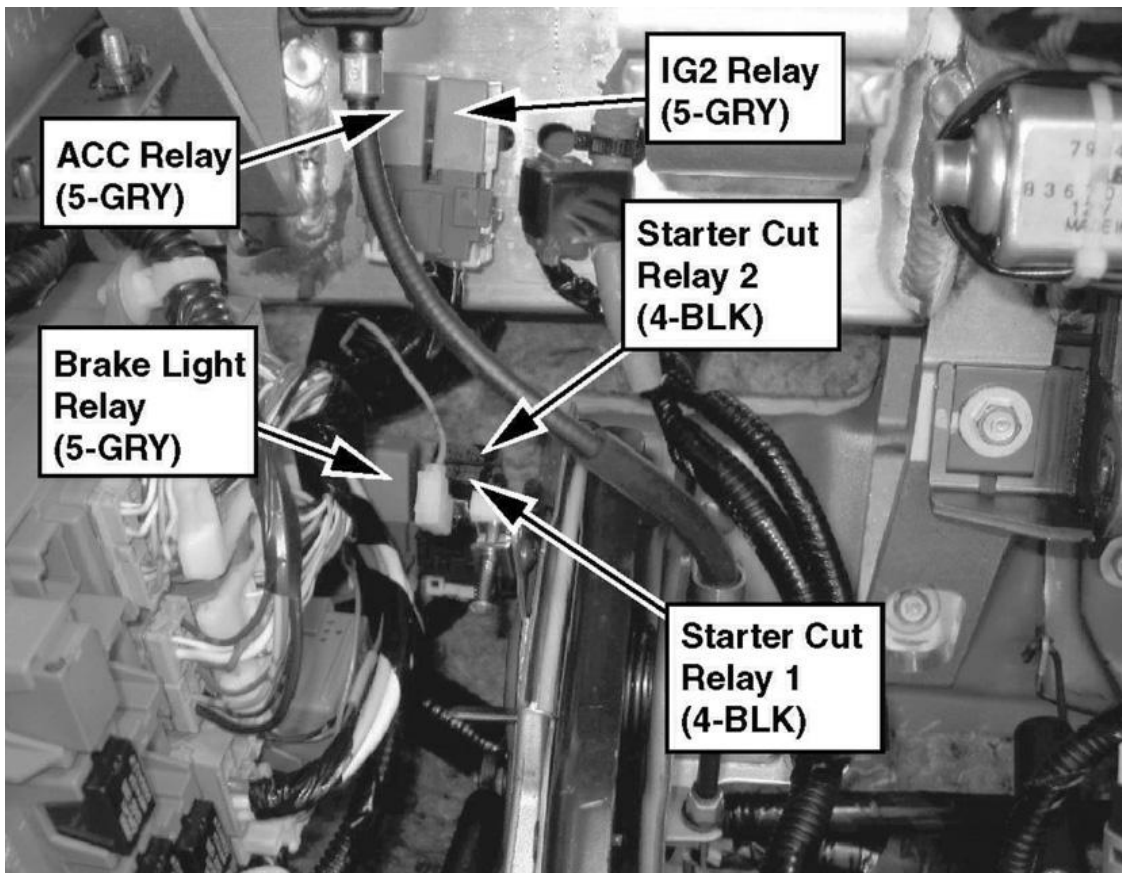


Fig. 145: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

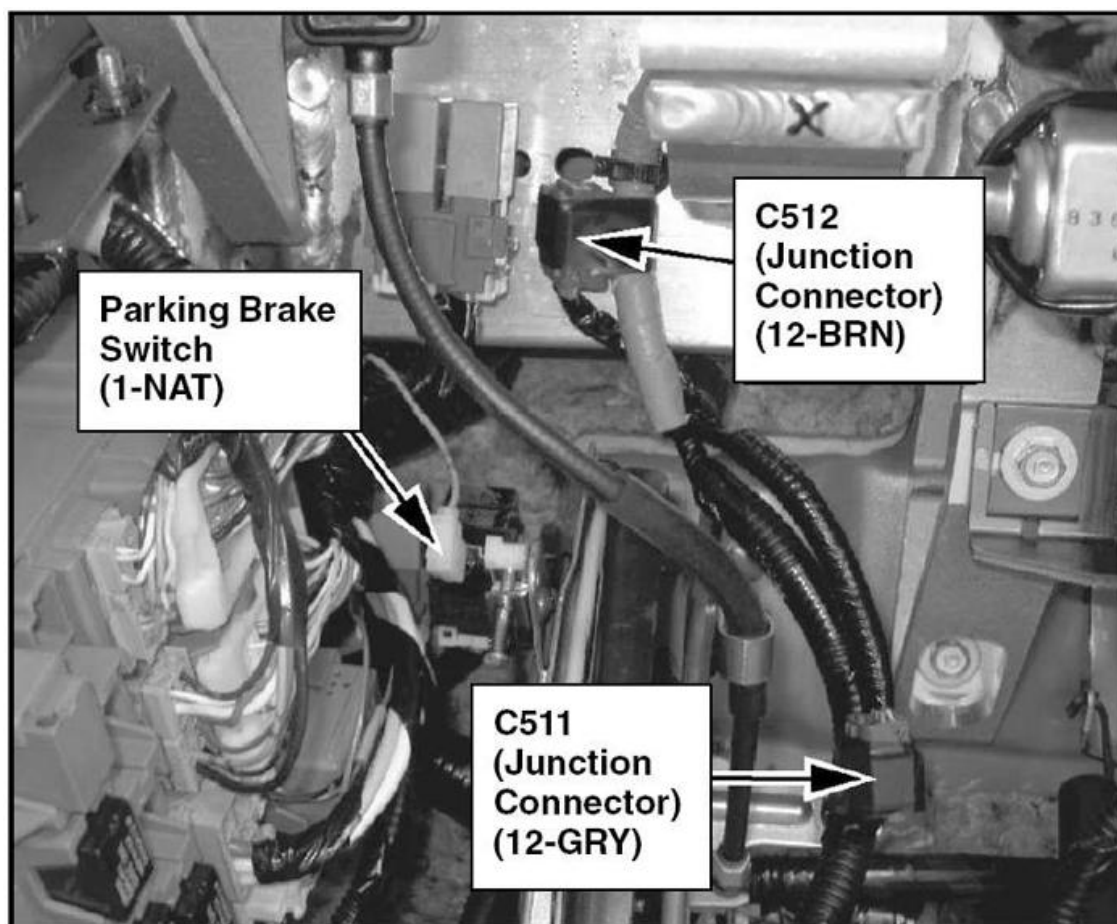


Fig. 146: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

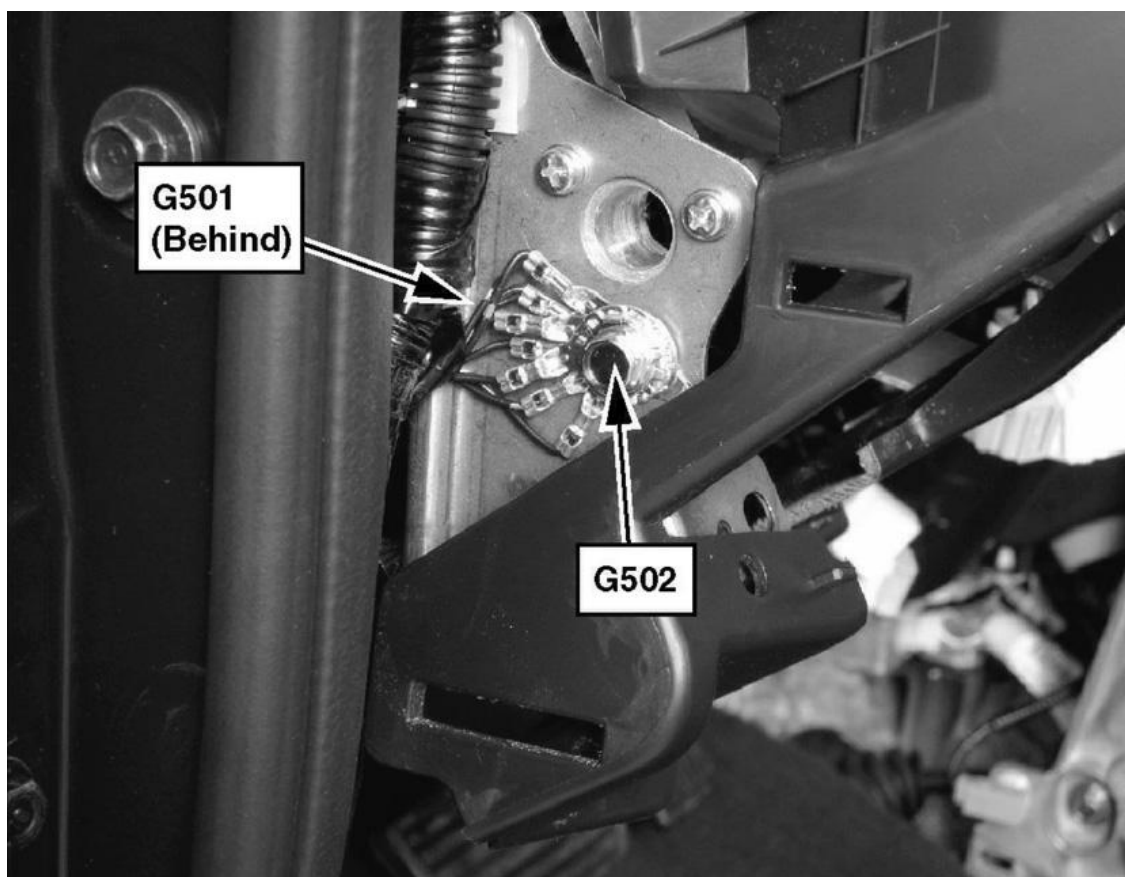


Fig. 147: Left Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

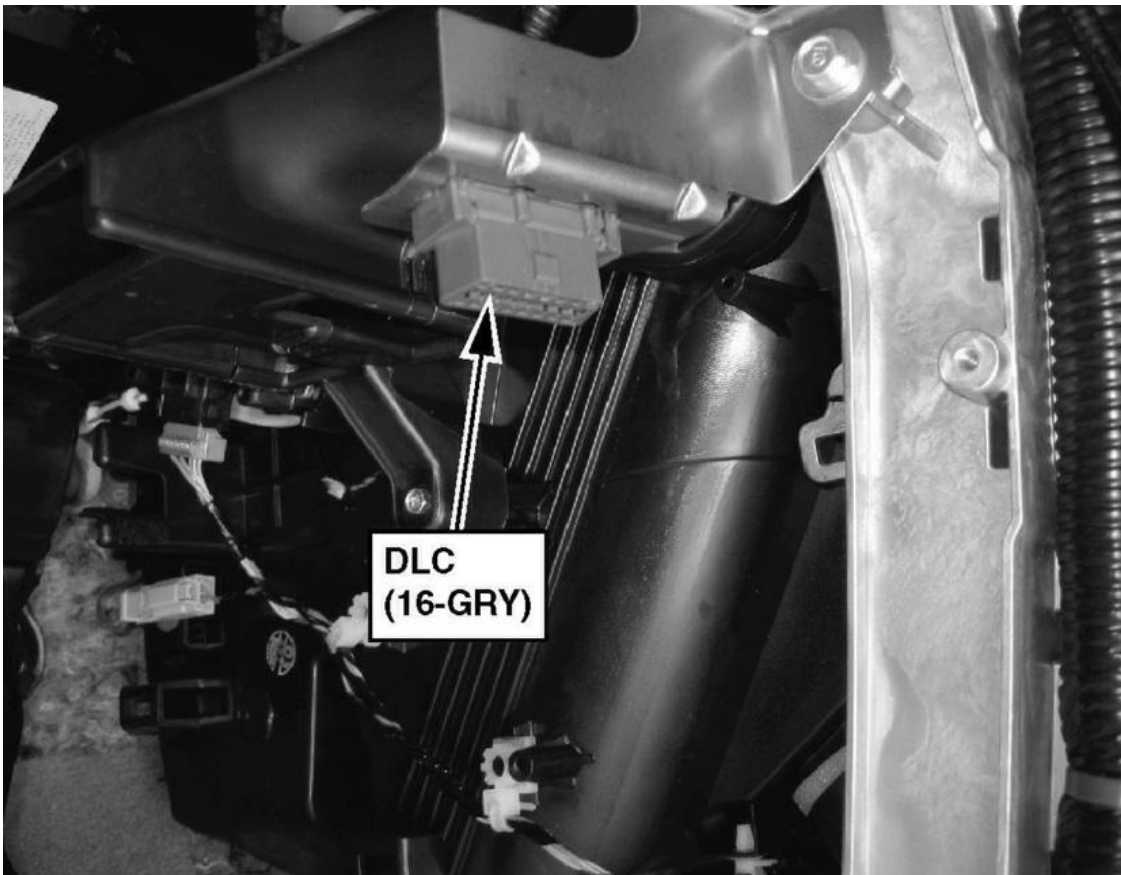


Fig. 148: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

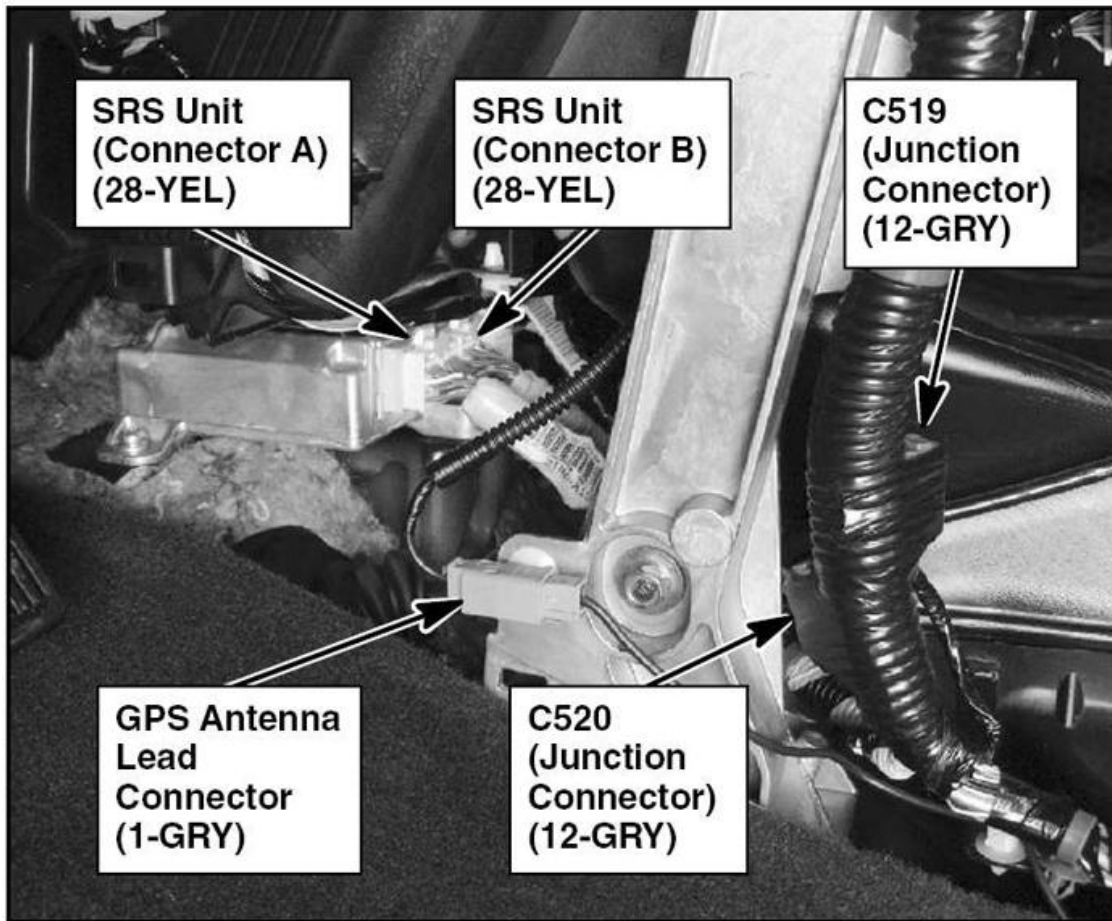


Fig. 149: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

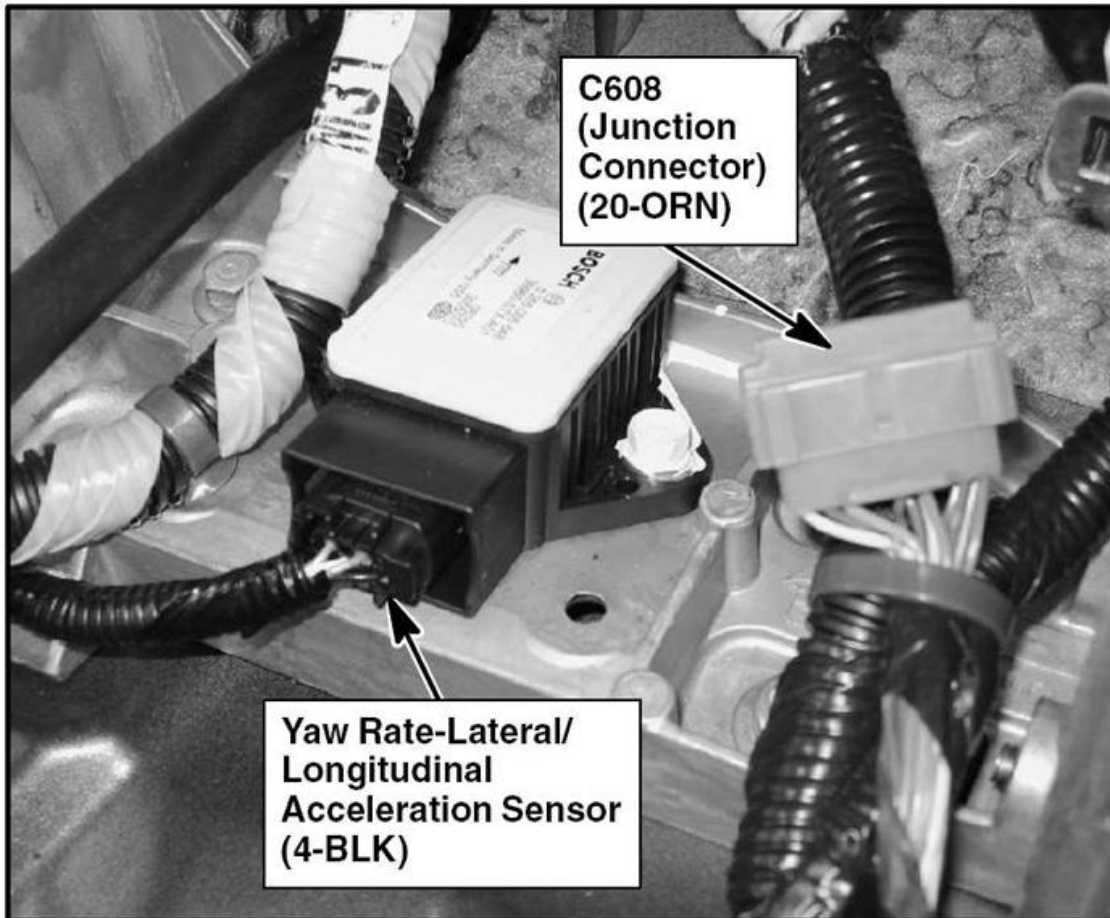


Fig. 150: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

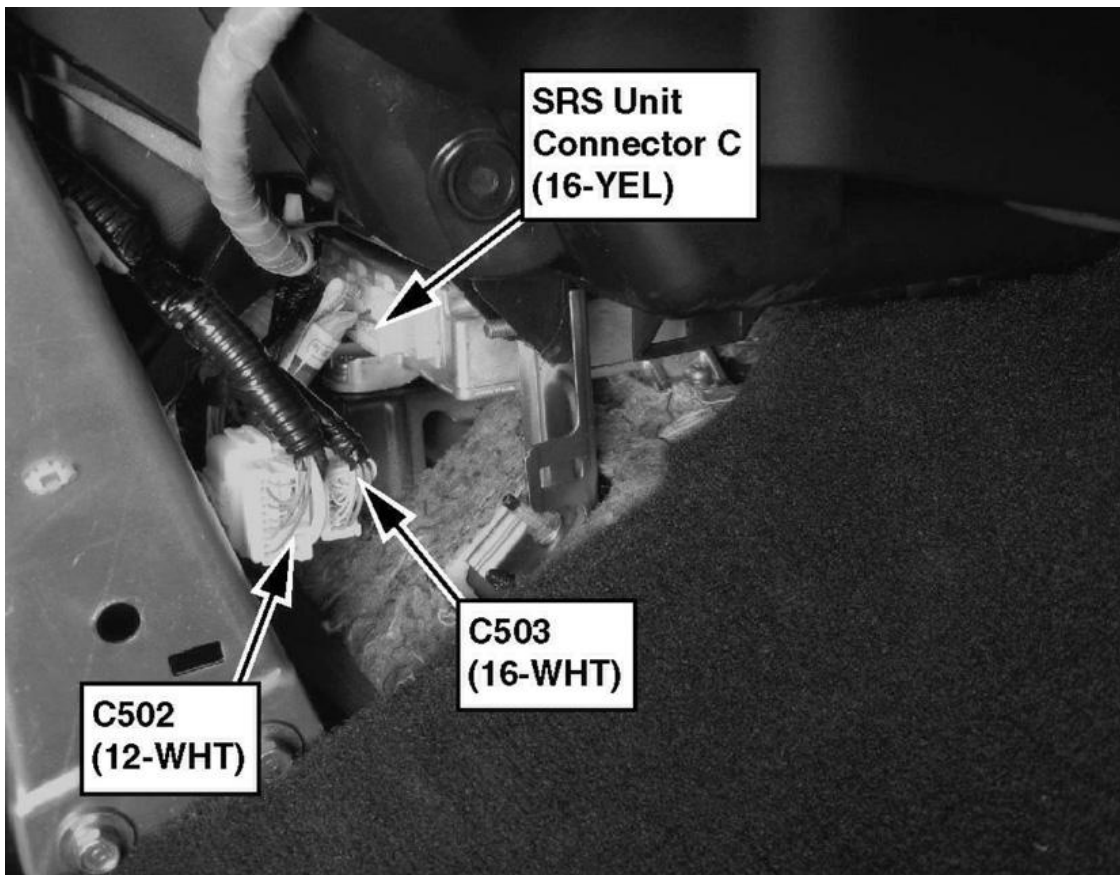


Fig. 151: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

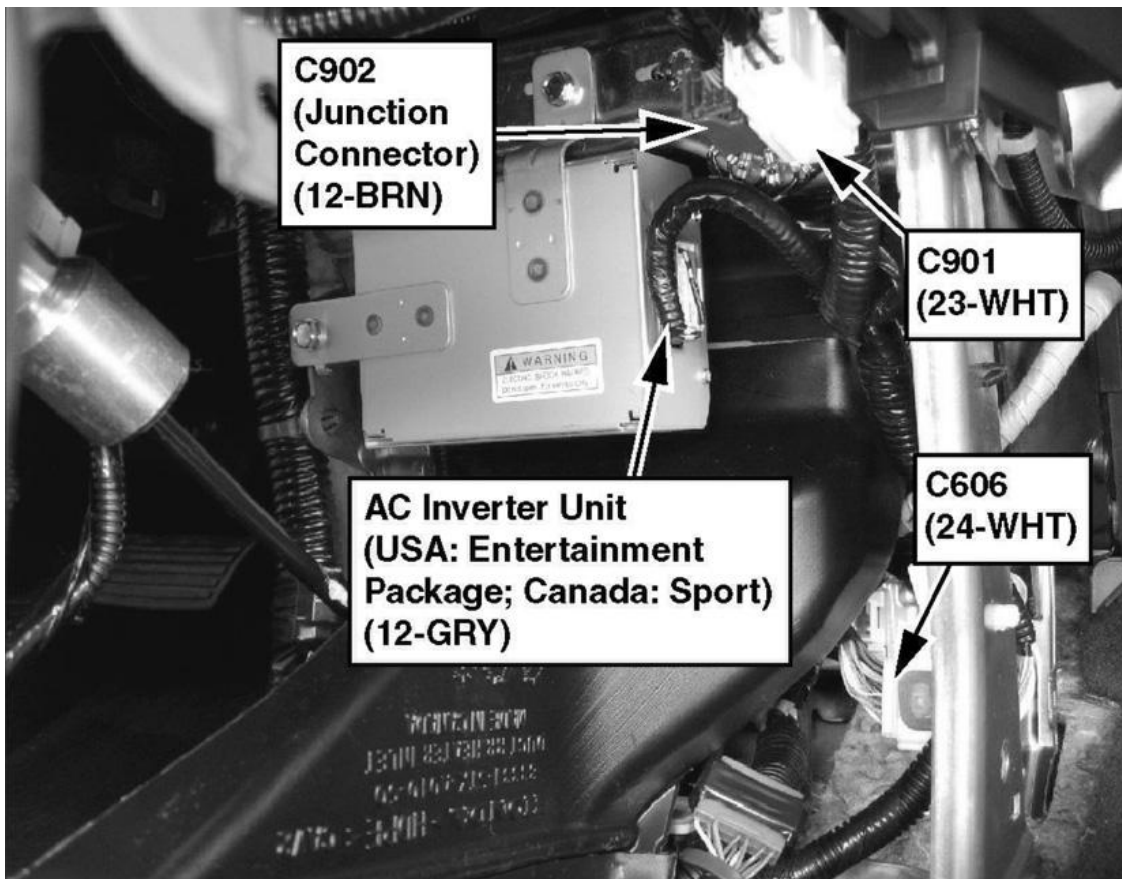


Fig. 152: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

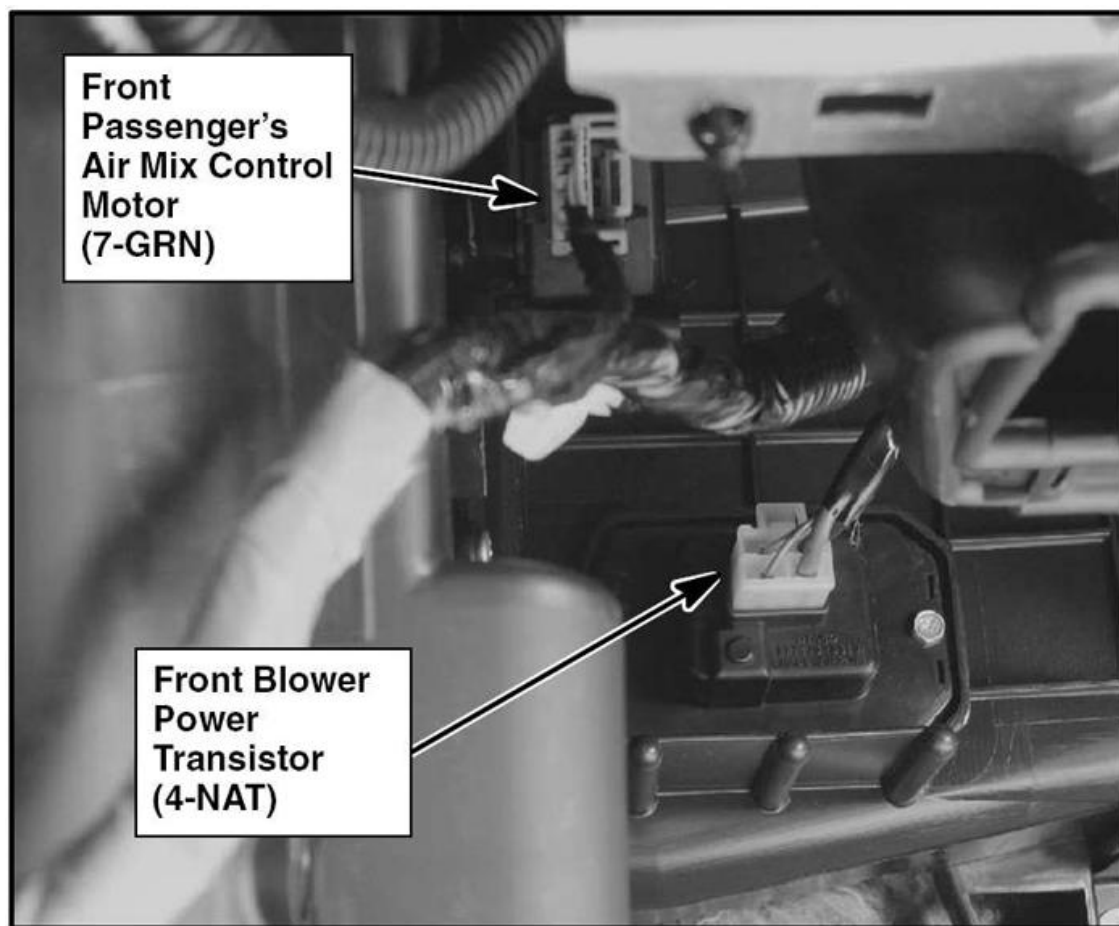


Fig. 153: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

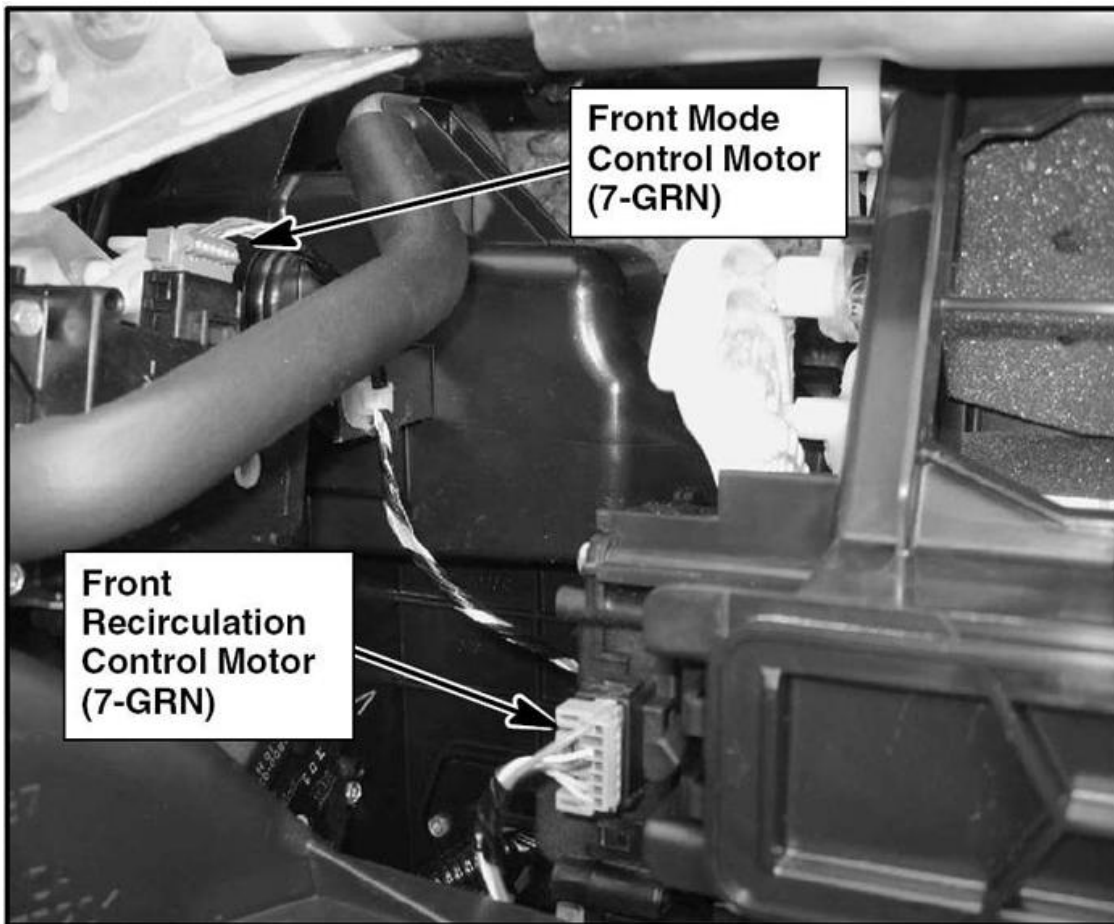


Fig. 154: Middle Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

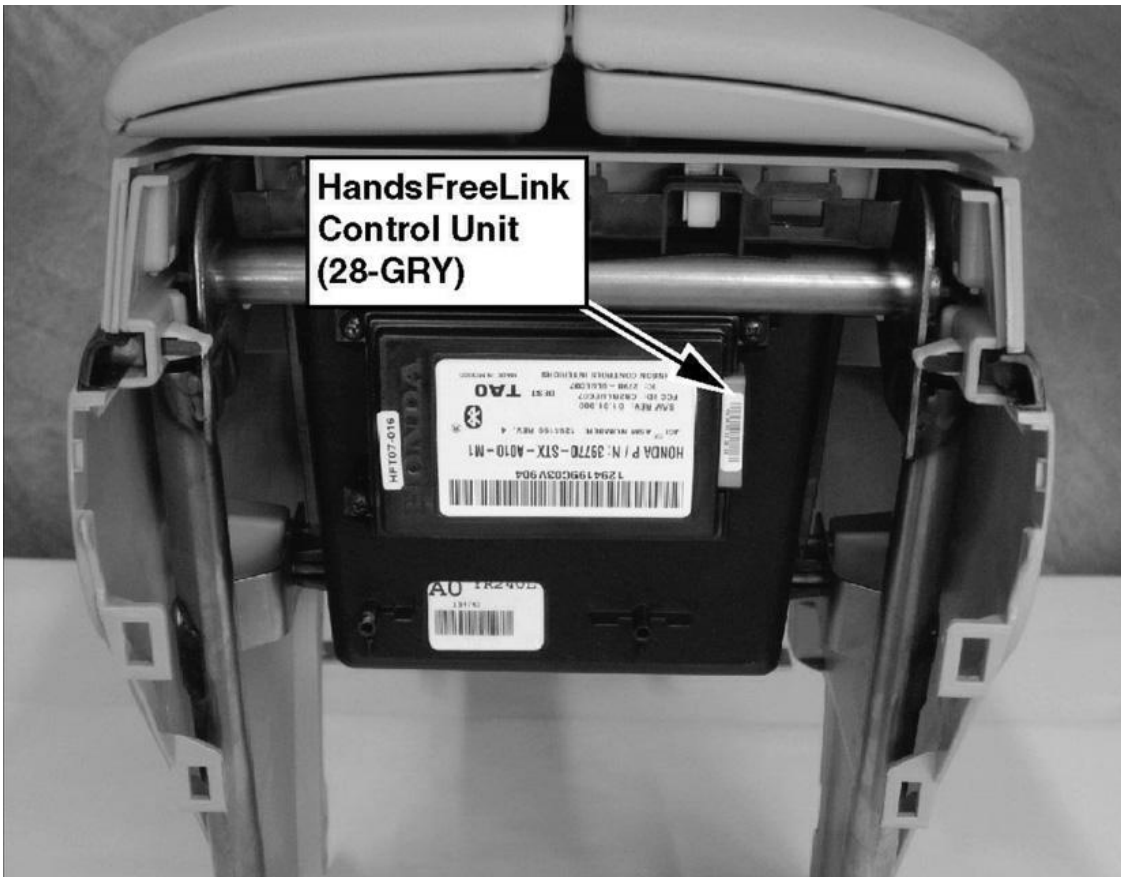


Fig. 155: Under Rear Of Center Console
Courtesy of AMERICAN HONDA MOTOR CO., INC.

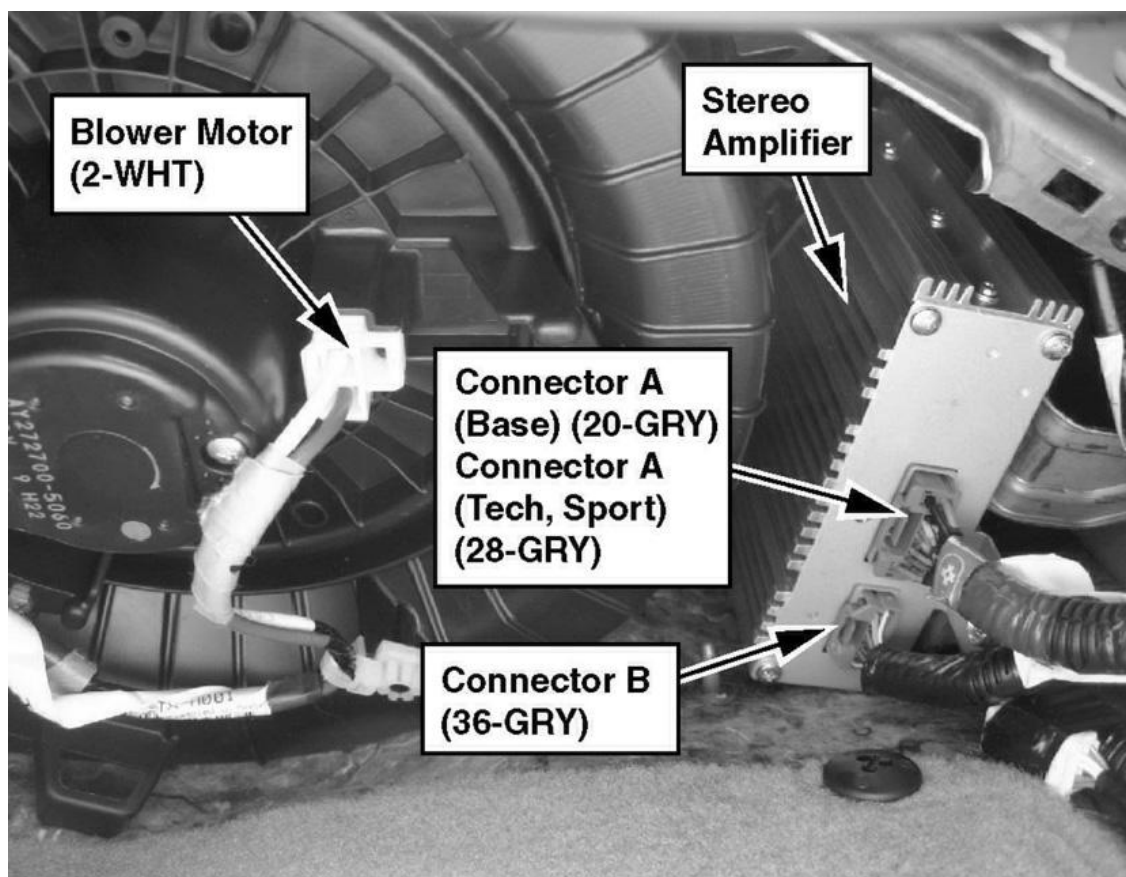


Fig. 156: Right Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

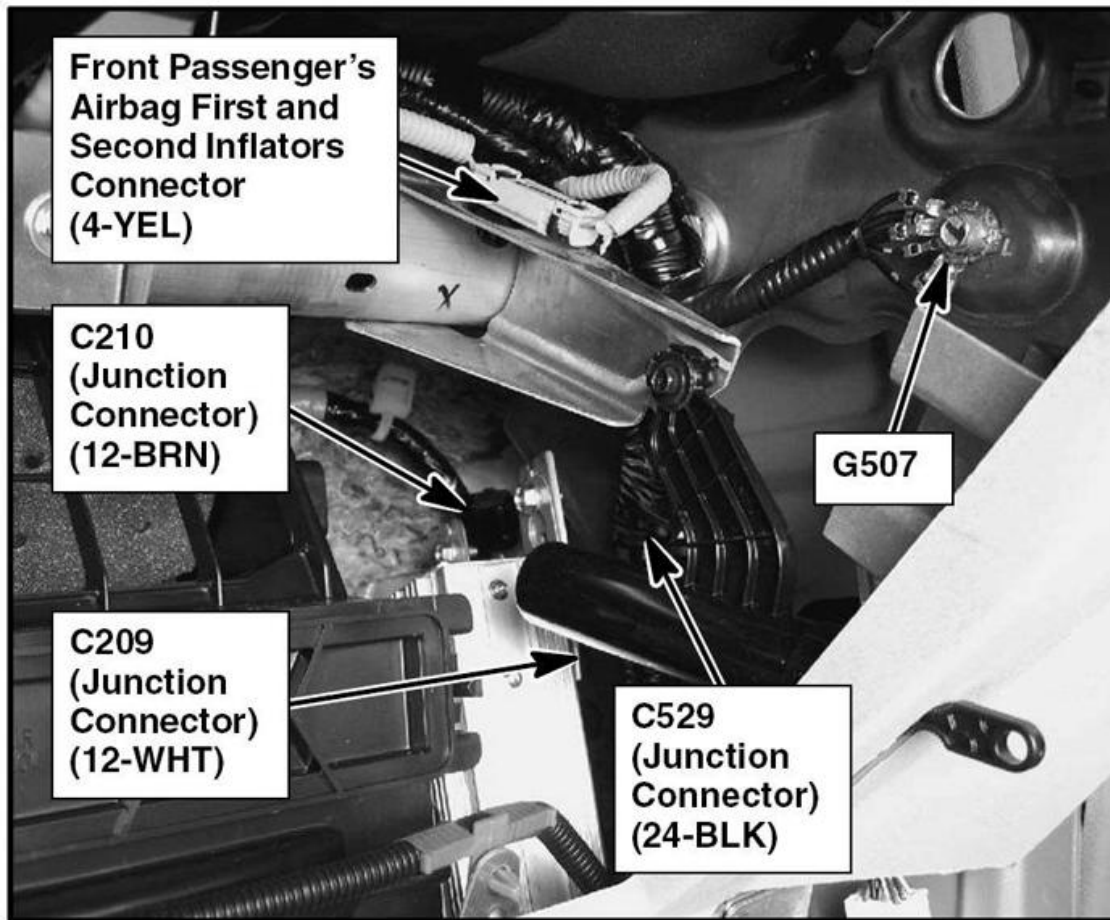


Fig. 157: Right Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

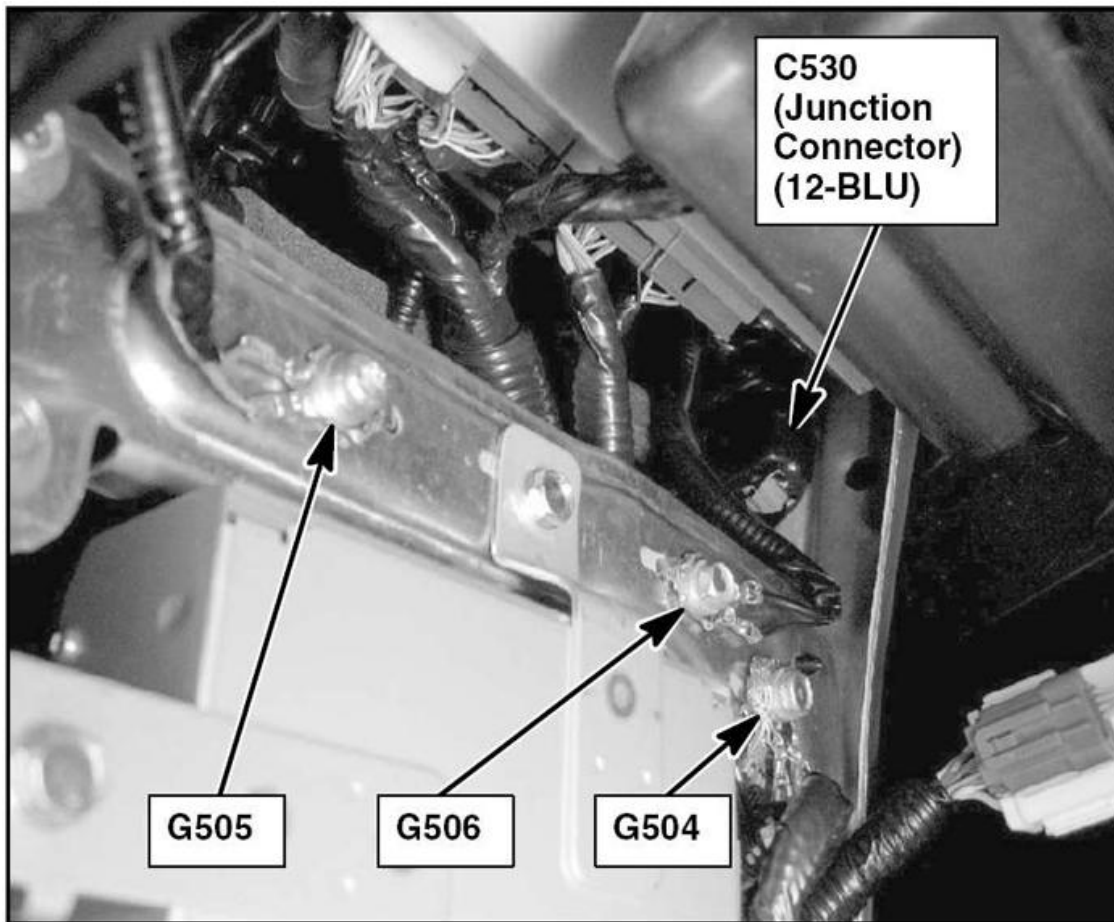


Fig. 158: Right Side Of Dash

Courtesy of AMERICAN HONDA MOTOR CO., INC.

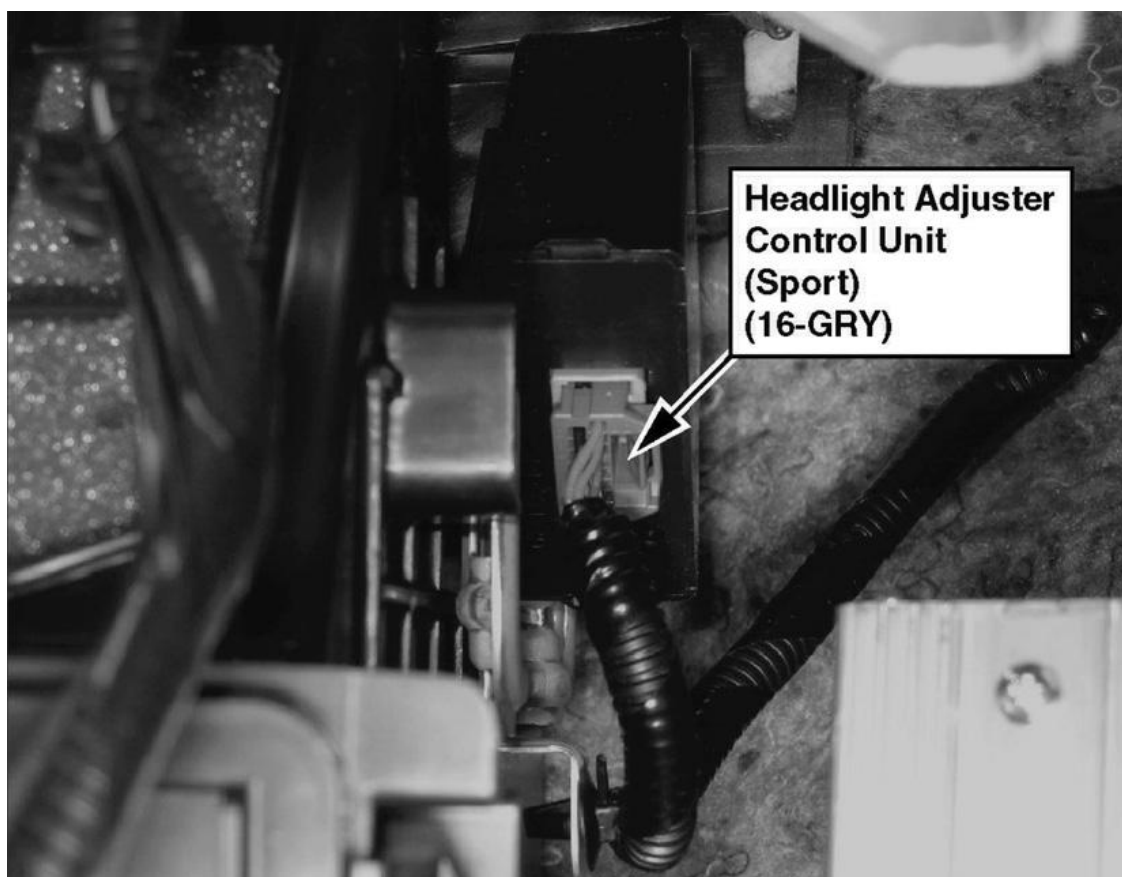


Fig. 159: Right Side Of Dash (Sport)

Courtesy of AMERICAN HONDA MOTOR CO., INC.



Fig. 160: Lower Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

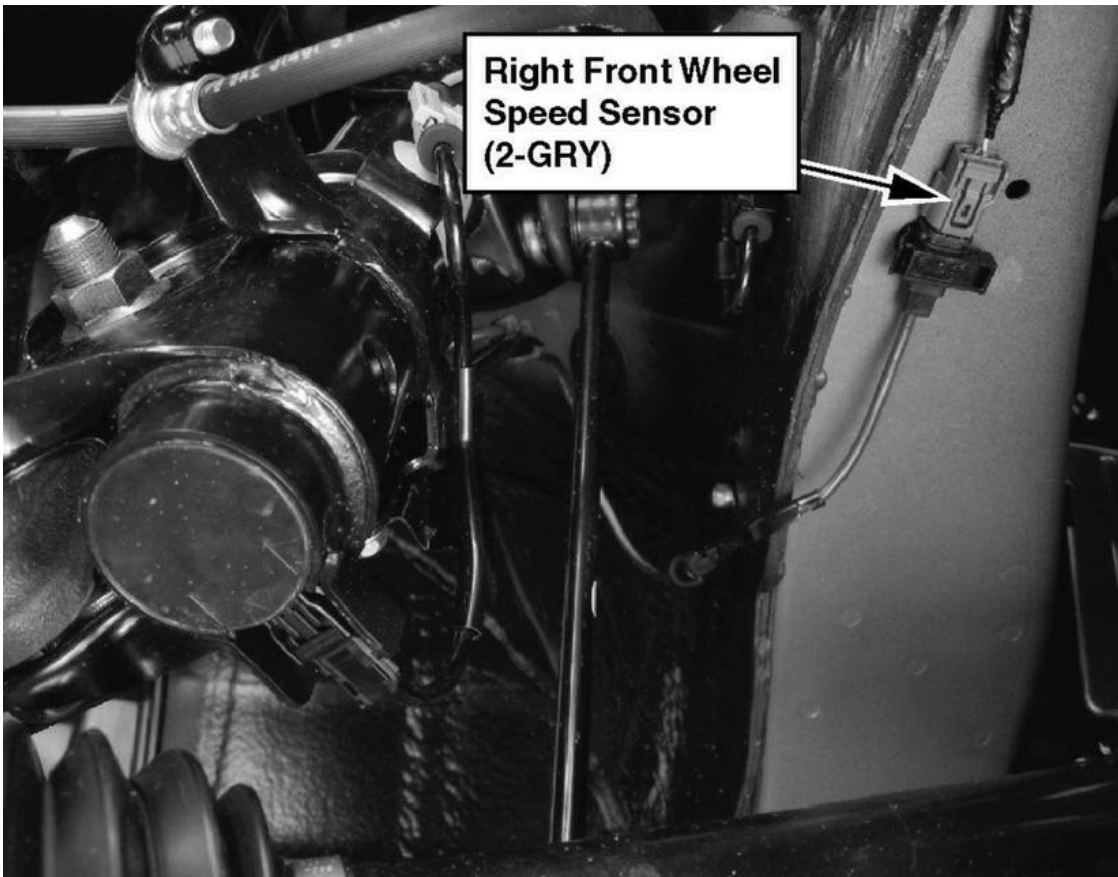


Fig. 161: Lower Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

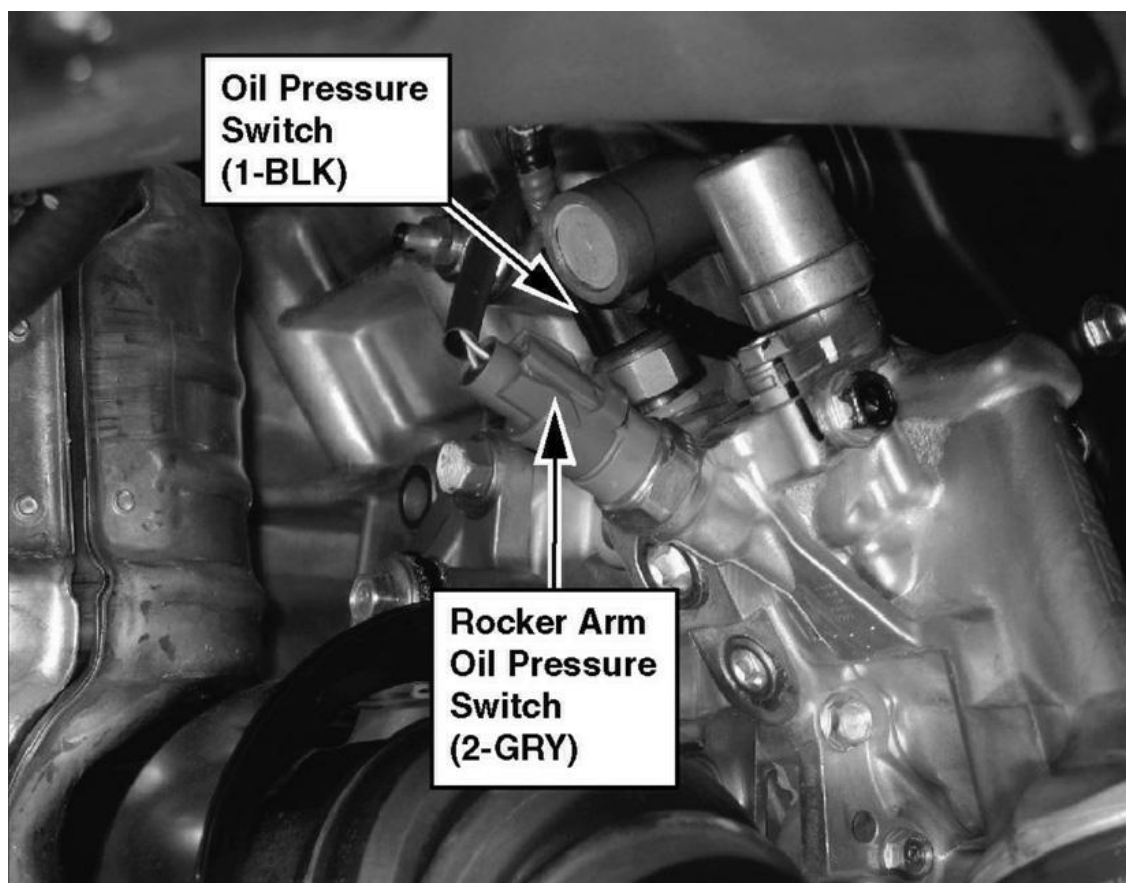


Fig. 162: Lower Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

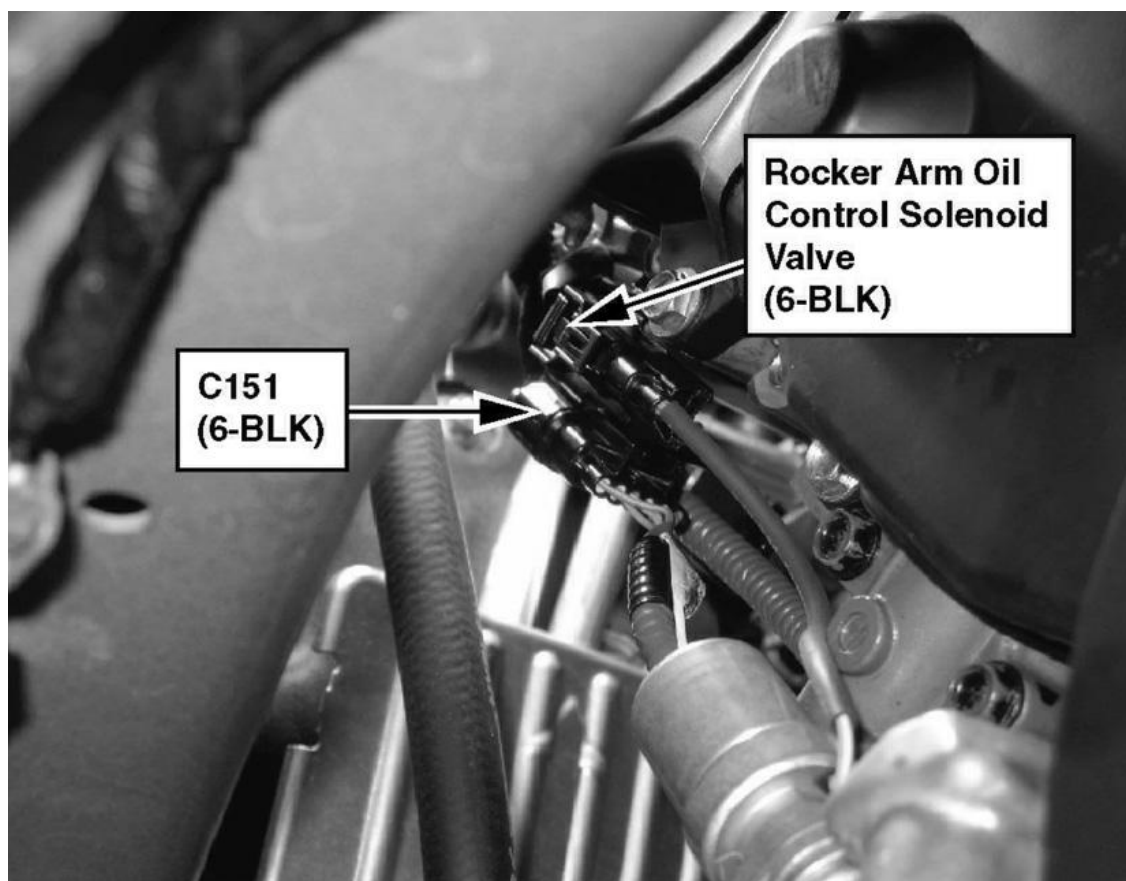


Fig. 163: Lower Right Side Of Engine Compartment
Courtesy of AMERICAN HONDA MOTOR CO., INC.

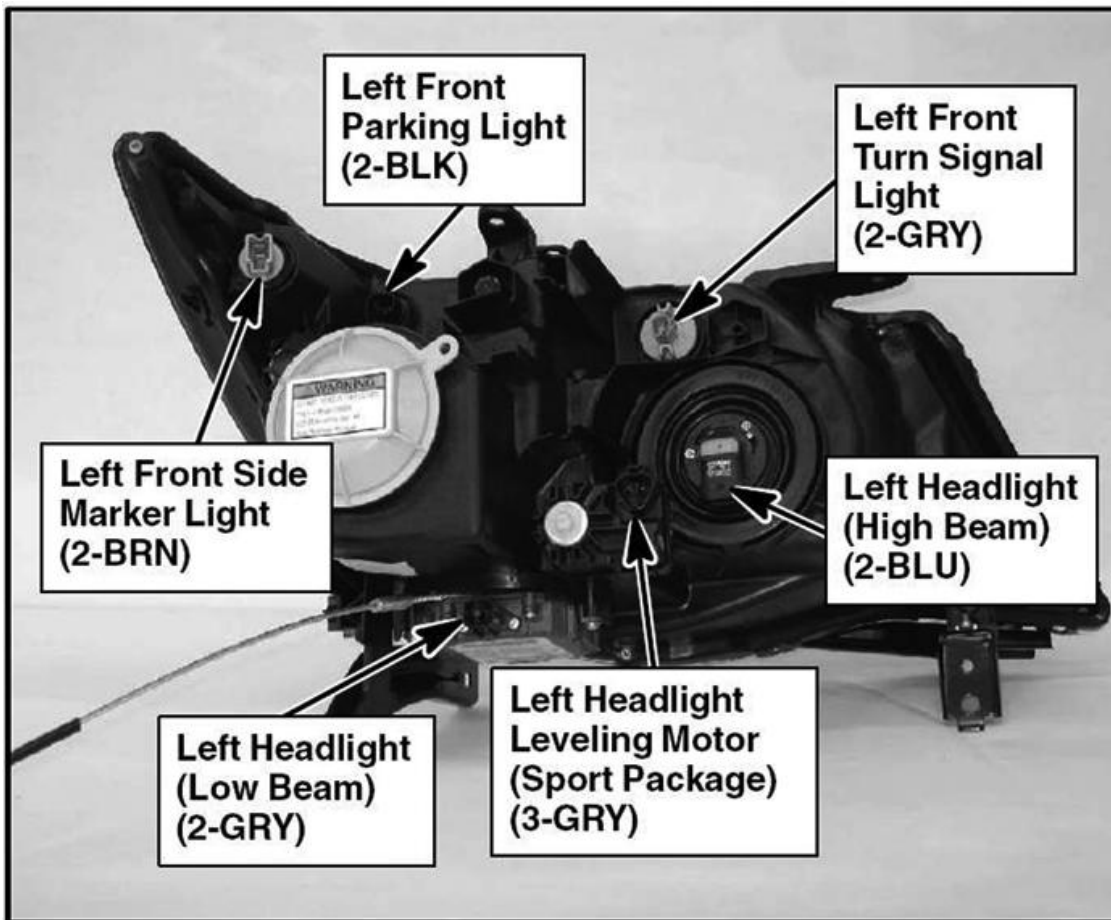


Fig. 164: Left Headlight Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

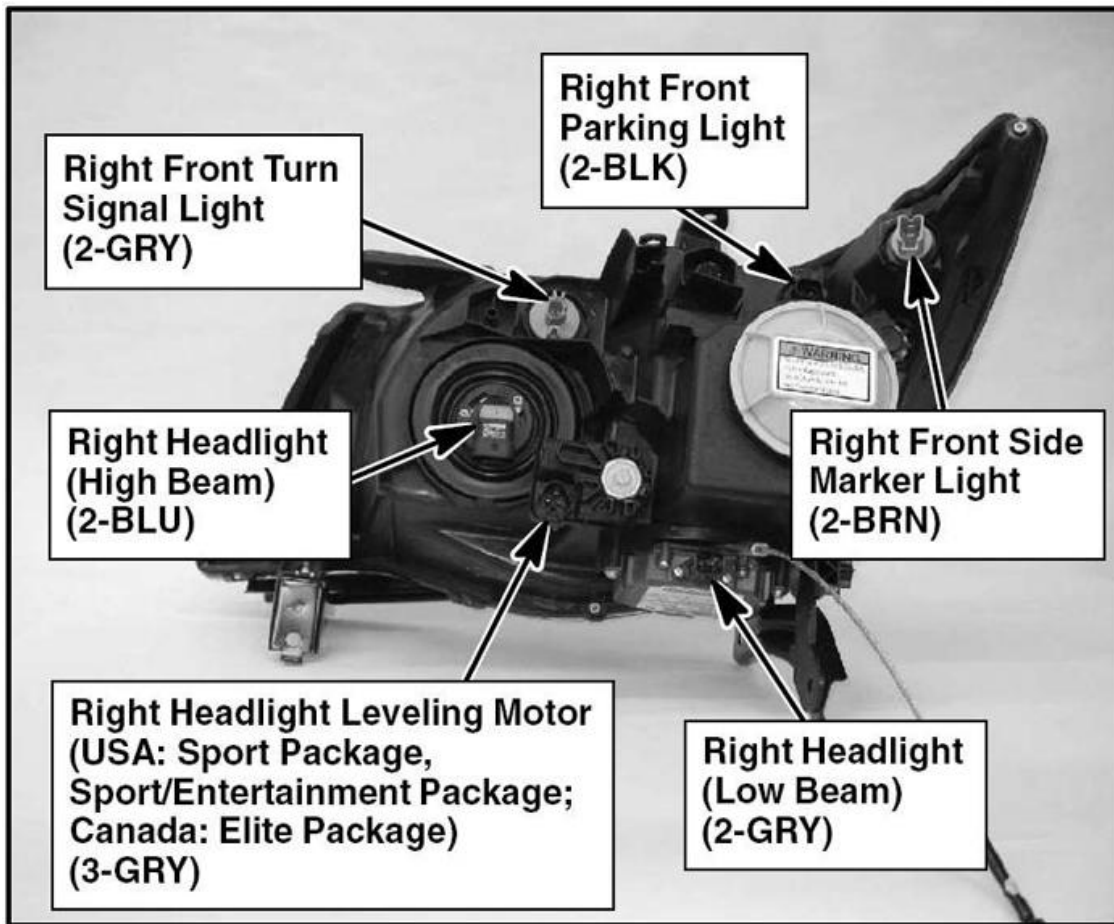


Fig. 165: Right Headlight Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

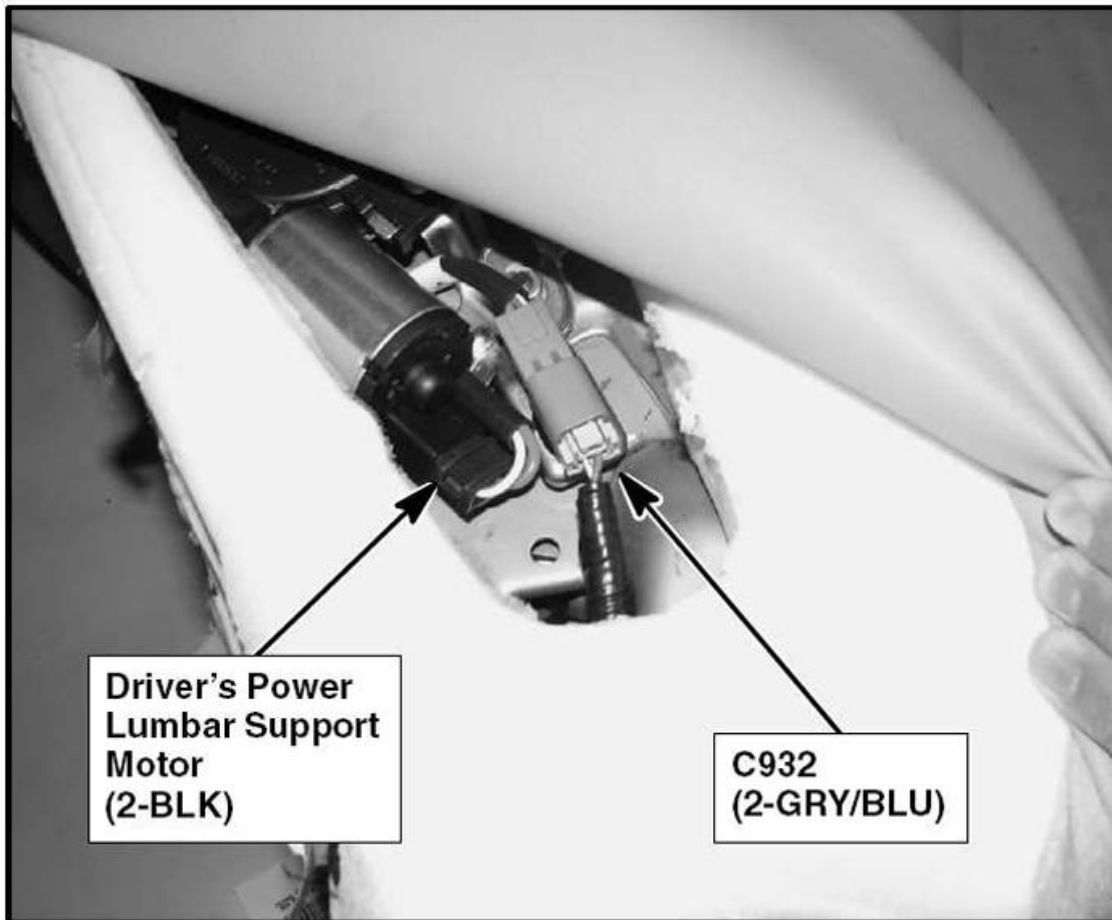


Fig. 166: Driver's Seat

Courtesy of AMERICAN HONDA MOTOR CO., INC.

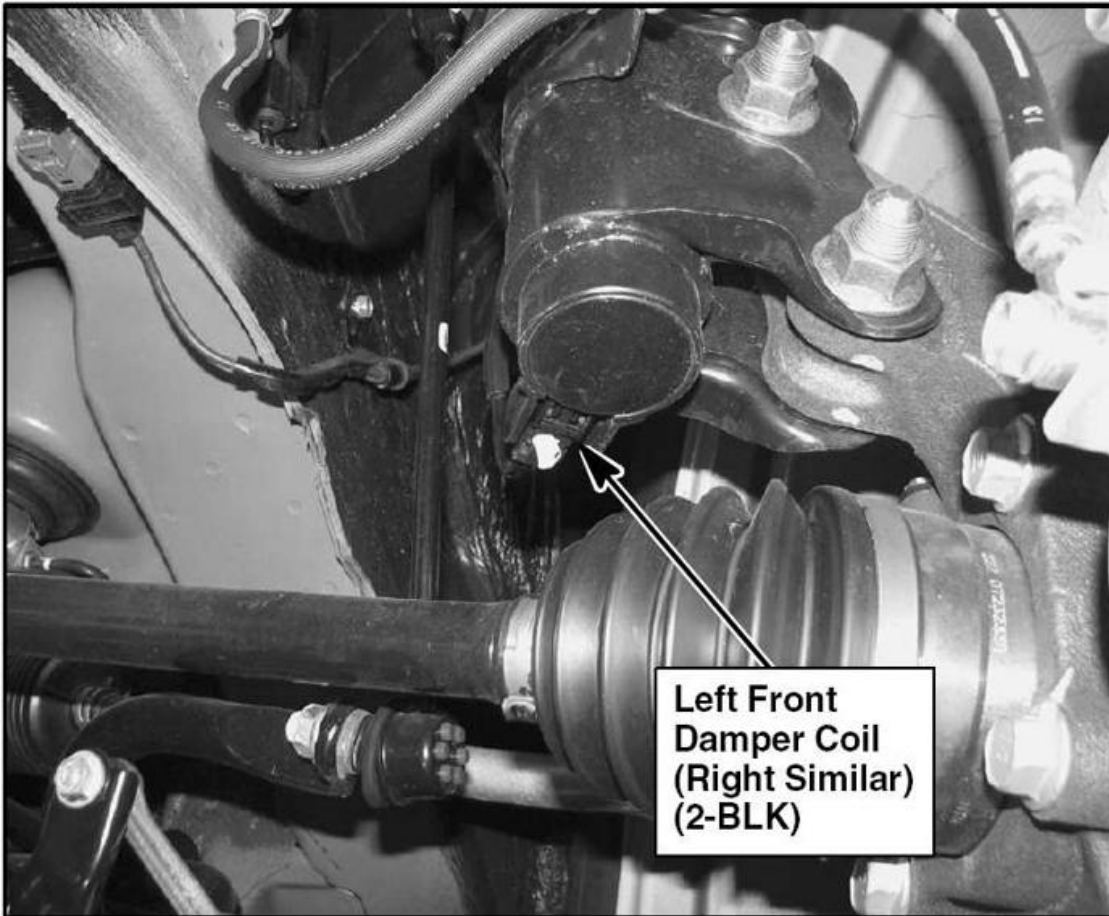


Fig. 167: Behind Left Front Wheel (Right Similar)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

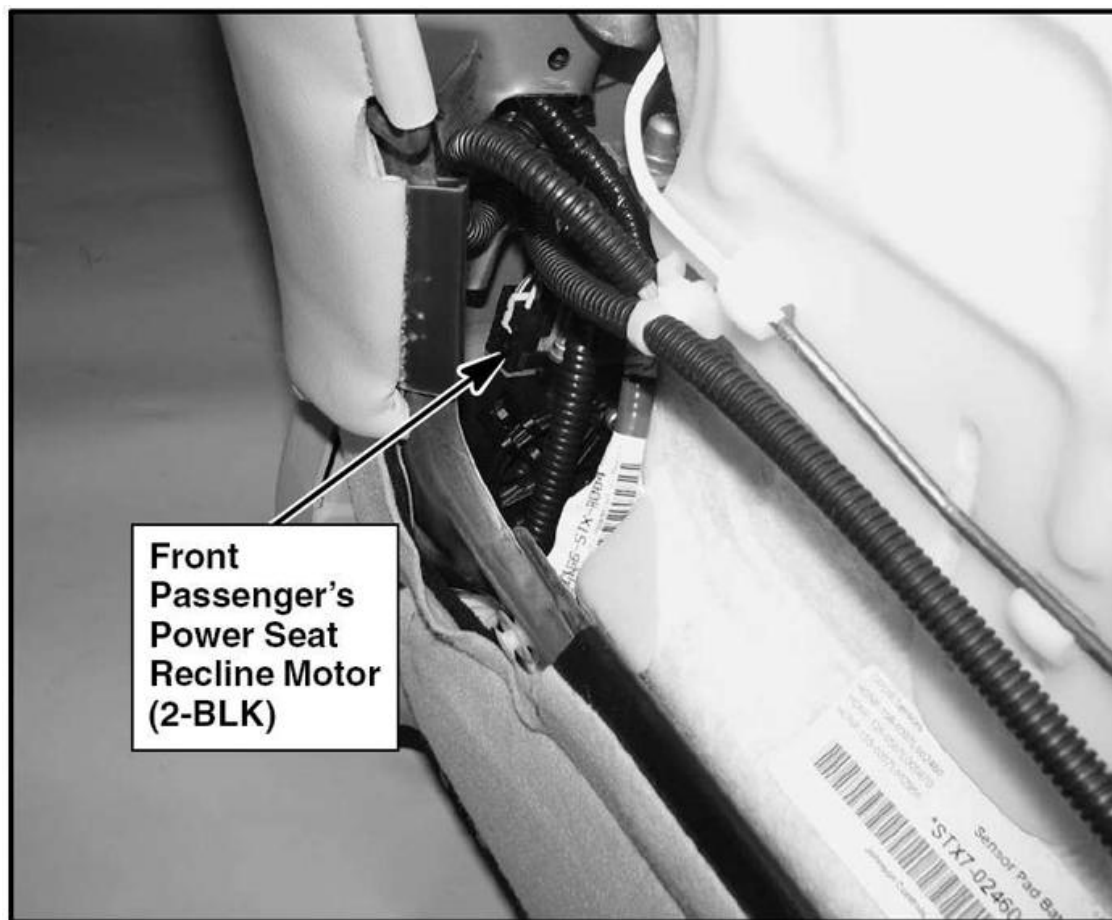


Fig. 168: Front Passenger's Seat
Courtesy of AMERICAN HONDA MOTOR CO., INC.

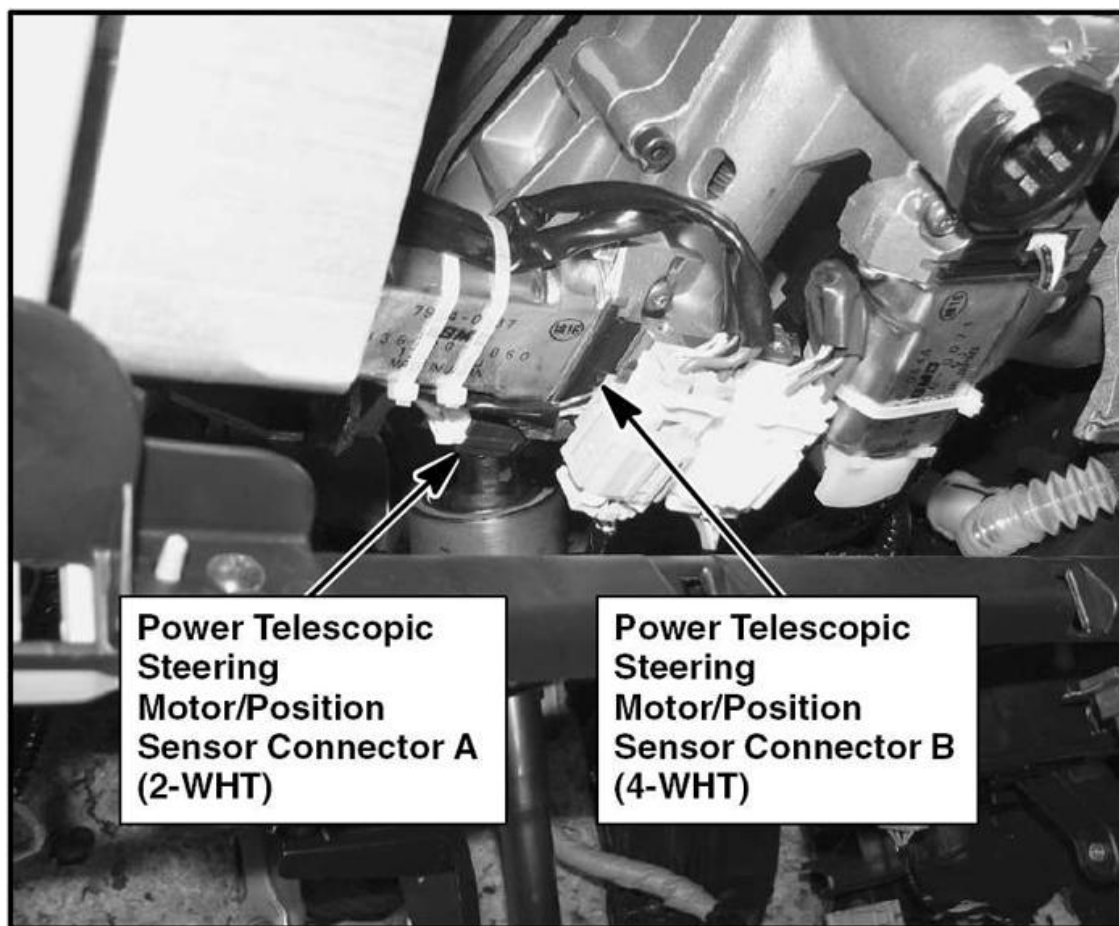


Fig. 169: Steering Column

Courtesy of AMERICAN HONDA MOTOR CO., INC.

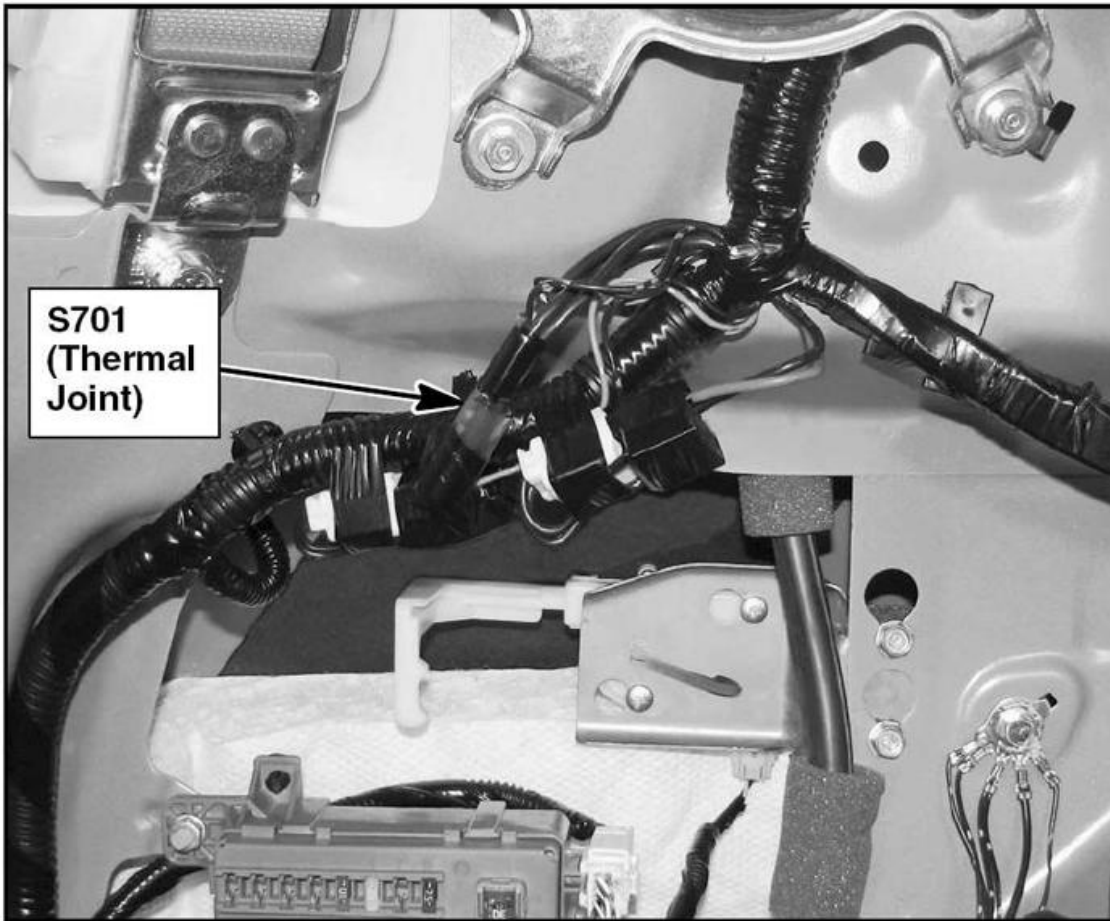


Fig. 170: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

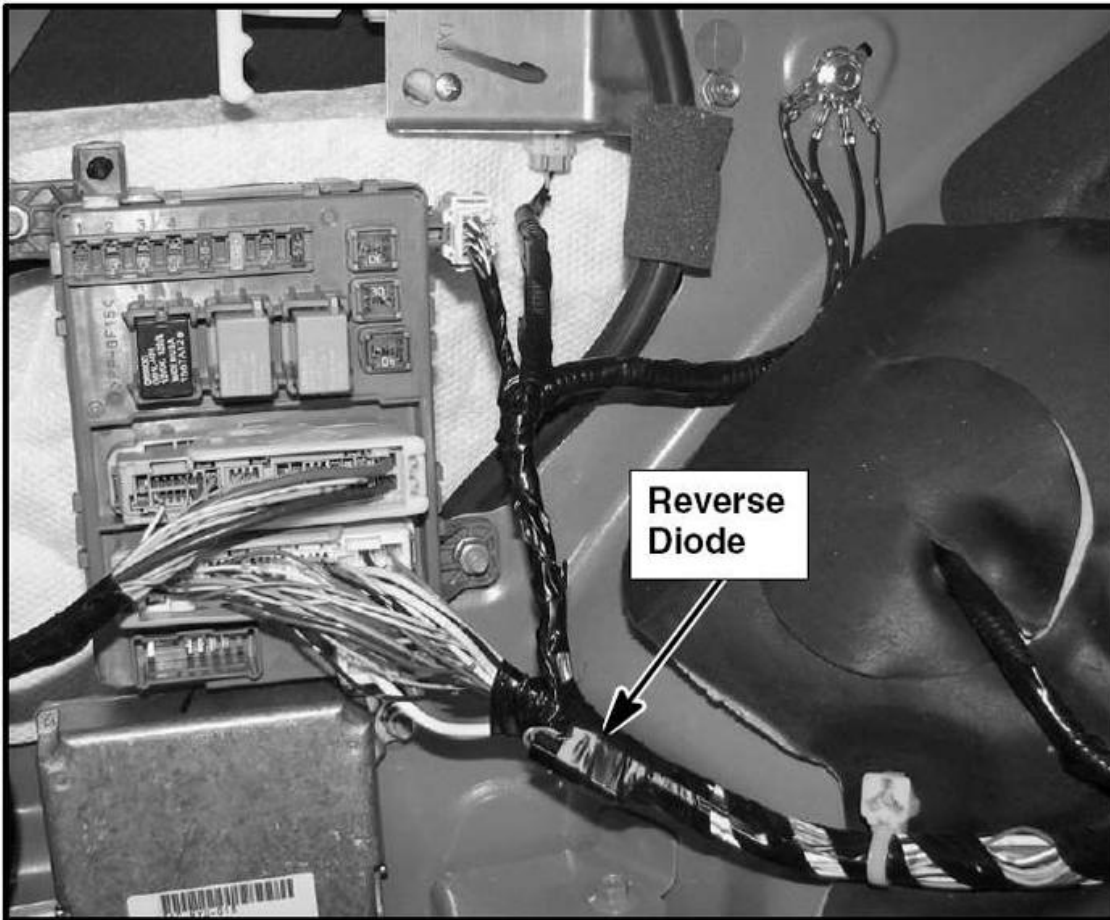


Fig. 171: Left Side Of Cargo Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ENGINE PERFORMANCE

Electronic Throttle Control System - MDX

COMPONENT LOCATION INDEX

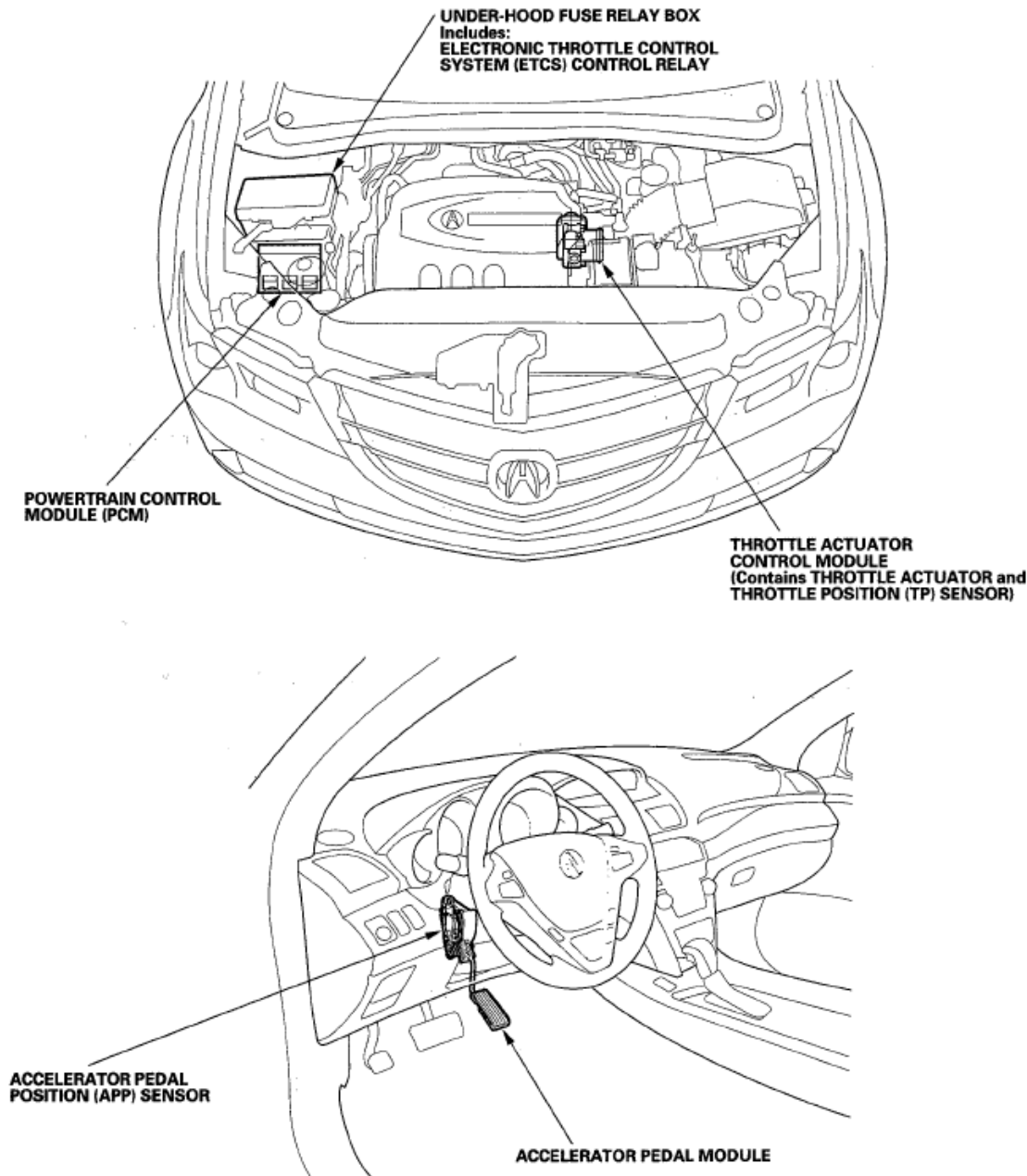


Fig. 1: Identifying Electronic Throttle Control System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0122: TP SENSOR A CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

Is there about 0.3 V or less?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

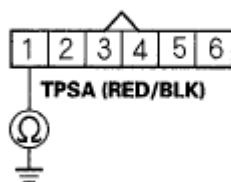
4. Check for Temporary DTCs or DTCs with the HDS.

Are DTC P0122 and P0222 indicated at the same time?

YES - Go to step 10.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the throttle body 6P connector.
7. Jump the SCS line with the HDS.
8. Disconnect PCM connector B (49P).
9. Check for continuity between throttle body 6P connector terminal No. 1 and body ground.

THROTTLE BODY 6P CONNECTOR

Wire side of female terminals

Fig. 2: Identifying Continuity Between Throttle Body 6P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

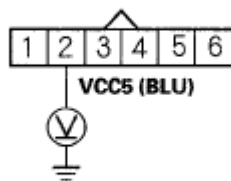
Is there continuity?

YES - Repair short in the wire between the throttle body and the PCM (B17), then go to step 18.

NO - Go to step 23.

10. Disconnect the throttle body 6P connector.
11. Measure voltage between throttle body 6P connector terminal No. 2 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 3: Identifying Voltage Between Throttle Body 6P Connector Terminal No. 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 12.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector B (49P).
15. Check for continuity between PCM connector terminal B18 and throttle body 6P connector terminal No. 2.

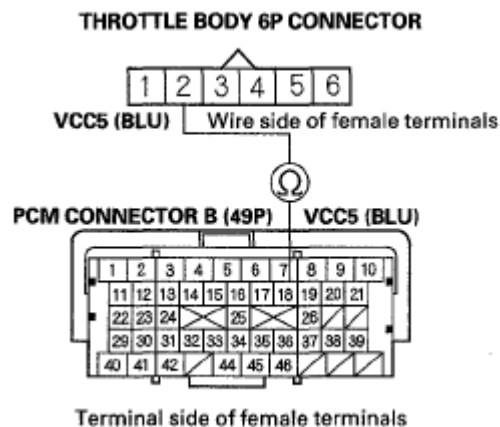


Fig. 4: Identifying Continuity Between PCM Connector Terminal B18 And Throttle Body 6P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the throttle body and the PCM (B18), then go to step 18.

16. Turn the ignition switch OFF.
17. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0122 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

23. Reconnect all connectors.
24. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0122 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0123: TP SENSOR A CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

Is there about 4.8 V or more?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

4. Check for Temporary DTCs or DTCs with the HDS.

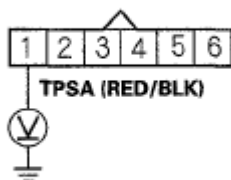
Are DTC P0123 and P0223 indicated at the same time?

YES - Go to step 13.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between throttle body 6P connector terminal No. 1 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

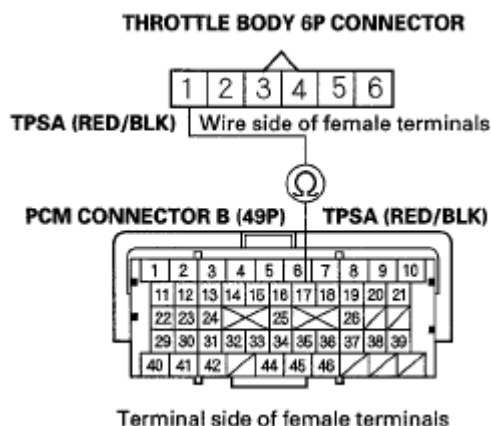
Fig. 5: Identifying Voltage Between Throttle Body 6P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 18.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector B (49P).
12. Check for continuity between PCM connector terminal B17 and throttle body 6P connector terminal No. 1.



Terminal side of female terminals

Fig. 6: Identifying Continuity Between PCM Connector Terminal B17 And Throttle Body 6P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the PCM (B17), then go to step 20.

13. Turn the ignition switch OFF.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector B (49P).
17. Check for continuity between PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

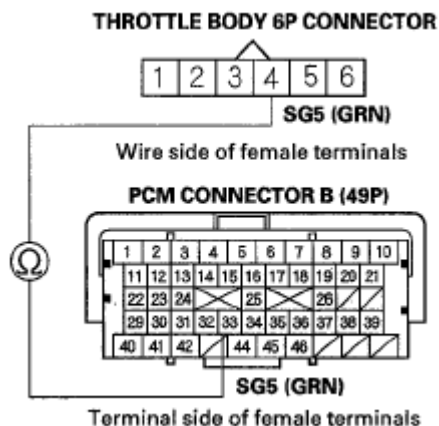


Fig. 7: Identifying Continuity Between PCM Connector Terminal B33 And Throttle Body 6P Connector Terminal No. 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the PCM (B33), then go to step 20.

18. Turn the ignition switch OFF.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch ON (II).
22. Reset the PGM with the HDS.
23. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0123 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Electronic Throttle Control System - MDX

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

25. Reconnect all connectors.
26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0123 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0222: TP SENSOR B CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

Is there about 0.3 V or less?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

4. Check for Temporary DTCs or DTCs with the HDS.

Are DTC P0122 and P0222 indicated at the same time?

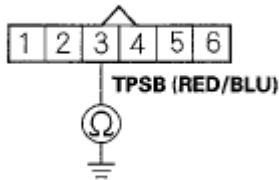
YES - Go to step 10.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the throttle body 6P connector.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connector B (49P).
9. Check for continuity between throttle body 6P connector terminal No. 3 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 8: Identifying Continuity Between Throttle Body 6P Connector Terminal No. 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

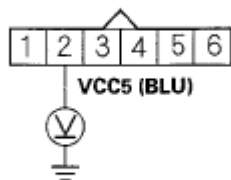
Is there continuity?

YES - Repair short in the wire between the throttle body and the PCM (B26), then go to step 18.

NO - Go to step 23.

10. Disconnect the throttle body 6P connector.
11. Measure voltage between throttle body 6P connector terminal No. 2 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 9: Identifying Voltage Between Throttle Body 6P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 12.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector B (49P).
15. Check for continuity between PCM connector terminal B18 and throttle body 6P connector terminal No. 2.

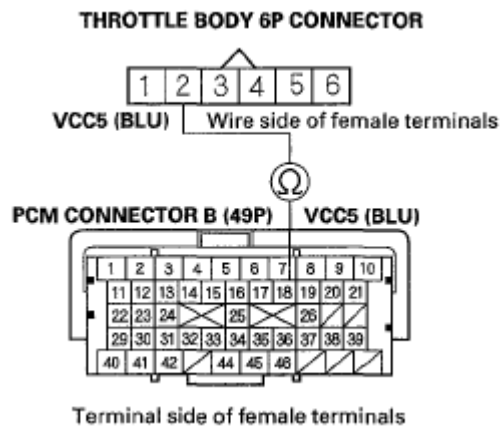


Fig. 10: Identifying Continuity Between PCM Connector Terminal B18 And Throttle Body 6P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the throttle body and the PCM (B18), then go to step 18.

16. Turn the ignition switch OFF.
17. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0222 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

23. Reconnect all connectors.
24. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0222 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0223: TP SENSOR B CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

Is there about 4.8 V or more?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

4. Check for Temporary DTCs or DTCs with the HDS.

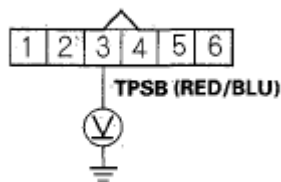
Are DTC P0123 and P0223 indicated at the same time?

YES - Go to step 13.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between throttle body 6P connector terminal No. 3 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 11: Identifying Voltage Between Throttle Body 6P Connector Terminal No. 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

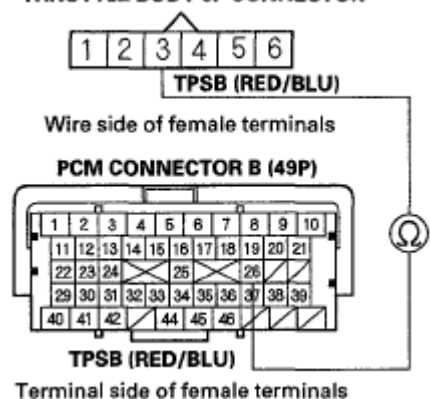
Is there about 5 V?

YES - Go to step 18.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector B (49P).
12. Check for continuity between PCM connector terminal B26 and throttle body 6P connector terminal No. 3.

THROTTLE BODY 6P CONNECTOR



Terminal side of female terminals

Fig. 12: Identifying Continuity Between PCM Connector Terminal B26 And Throttle Body 6P Connector Terminal No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the PCM (B26), then go to step 20.

13. Turn the ignition switch OFF.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector B (49P).
17. Check for continuity between PCM connector terminal B33 and throttle body 6P connector terminal No. 4.

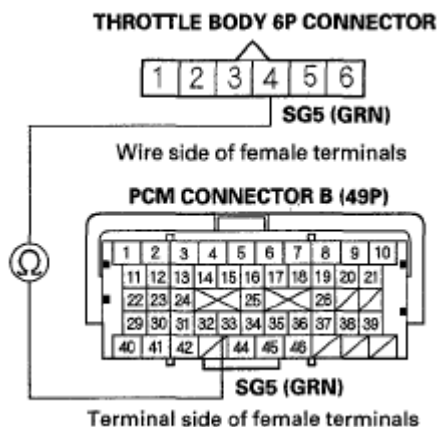


Fig. 13: Identifying Continuity Between PCM Connector Terminal B33 And Throttle Body 6P Connector Terminal No. 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the throttle body and the PCM (B33), then go to step 20.

18. Turn the ignition switch OFF.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch ON (II).
22. Reset the PCM with the HDS.
23. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0223 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

25. Reconnect all connectors.
26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0223 Indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1658: ETCS CONTROL RELAY ON MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Do the ETCS TEST in the INSPECTION MENU with the HDS.

Is the RELAY circuit OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the under-hood fuse/relay box (ETCS control relay) and the PCM.

NO - Go to step 3.

3. Turn the ignition switch OFF.
4. Test the ETCS control relay in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

ETCS control relay OK?

YES - Go to step 5.

NO - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 14.

5. Jump the SCS line with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Electronic Throttle Control System - MDX

6. Disconnect PCM connector A (49P).
7. Disconnect the under-hood fuse/relay box connector E (14P).
8. Check for continuity between PCM connector terminal A29 and body ground.

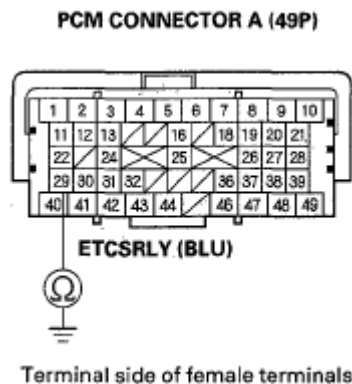


Fig. 14: Identifying Continuity Between PCM Connector Terminal A29 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A29) and the under-hood fuse/relay box (ETCS control relay), then go to step 14.

NO - Go to step 9.

9. Disconnect PCM connector C (49P).
10. Disconnect the under-hood fuse/relay box connector H (9P).
11. Turn the ignition switch ON (II).
12. Measure voltage between PCM connector terminal C4 and body ground.

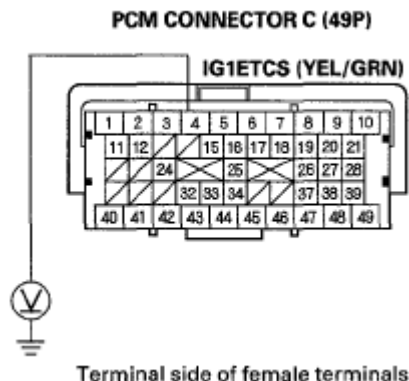


Fig. 15: Identifying Voltage Between PCM Connector Terminal C4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the PCM (C4) and the under-hood fuse/relay box (ETCS control relay), then go to step 13.

NO - Go to step 19.

13. Turn the ignition switch OFF.
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1658 indicated?

YES - Check for poor connections or loose terminals at the under-hood fuse/relay box (ETCS control relay) and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

19. Turn the ignition switch OFF.
20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
22. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1658 indicated?

YES - Check for poor connections or loose terminals at the under-hood fuse/relay box (ETCS control relay) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1659: ETCS CONTROL RELAY OFF MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Electronic Throttle Control System - MDX

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1659 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the under-hood fuse/relay box (ETCS control relay) and the PCM.

4. Turn the ignition switch OFF.
5. Check the No. 10 THROTTLE ACTUATOR CONTROL (DBW+) (15 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

YES - Go to step 6.

NO - Go to step 14.

6. Test the ETCS control relay in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

Is the ETCS control relay OK?

YES - Go to step 7.

NO - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 22.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connector C (49P).
9. Disconnect the under-hood fuse/relay box connector H (9P).
10. Check for continuity between under-hood fuse/ relay box connector H (9P) terminal No. 7 and PCM connector terminal C4.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Electronic Throttle Control System - MDX

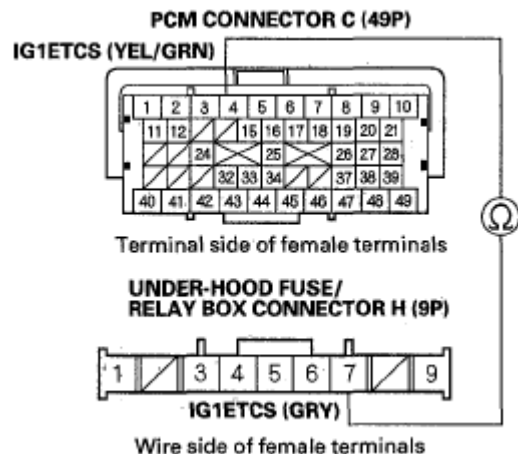


Fig. 16: Identifying Continuity Between Under-Hood Fuse/ Relay Box Connector H (9P) Terminal No. 7 And PCM Connector Terminal C4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the PCM (C4) and the under-hood fuse/relay box, then go to step 22.

11. Disconnect PCM connector A (49P).
12. Disconnect under-hood fuse/relay box connector E (14P).
13. Check for continuity between under-hood fuse/ relay box connector E (14P) terminal No. 14 and PCM connector terminal A29.

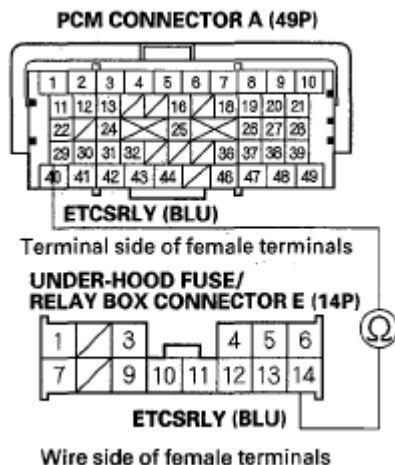


Fig. 17: Identifying Continuity Between Under-Hood Fuse/ Relay Box Connector E Terminal No. 14 And PCM Connector Terminal A29

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (A29) and the under-hood fuse/relay box, then go to step 22.

14. Jump the SCS line with the HDS.
15. Disconnect PCM connector C (49P).
16. Disconnect the under-hood fuse/relay box connector H (9P).
17. Check for continuity between PCM connector terminal C4 and body ground.

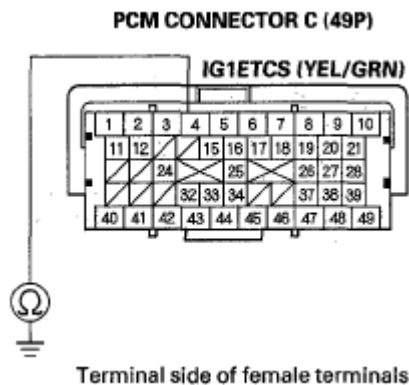


Fig. 18: Identifying Continuity Between PCM Connector Terminal C4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C4) and the under-hood fuse/relay box, then go to step 22.

NO - Go to step 18.

18. Install the under-hood fuse/relay box connector H (9P), and replace the No. 10 THROTTLE ACTUATOR CONTROL (DBW+) fuse in the under-hood fuse/ relay box.
19. Turn the ignition switch ON (II).
20. Measure voltage between PCM connector terminal C4 and body ground.

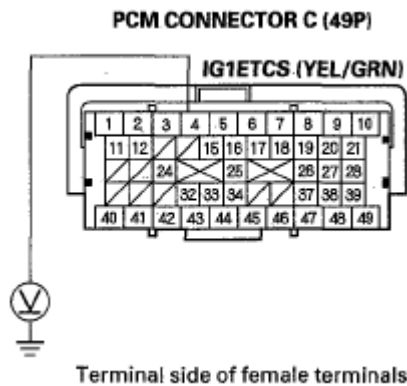


Fig. 19: Identifying Voltage Between PCM Connector Terminal C4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 27.

NO - Replace the right side engine compartment wire harness. Also replace the No. 10 THROTTLE ACTUATOR CONTROL (DBW+) fuse in the under-hood fuse/relay box, then go to step 21.

21. Turn the ignition switch OFF.
22. Reconnect all connectors.
23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1659 indicated?

YES - Check for poor connections or loose terminals at the under-hood fuse/relay box and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1659 indicated?

YES - Check for poor connections or loose terminals at the under-hood fuse/relay box and the PCM. If

the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1683: THROTTLE VALVE DEFAULT POSITION SPRING PERFORMANCE PROBLEM

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch OFF, and wait 10 seconds.
5. Turn the ignition switch ON (II).
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1683 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

7. Turn the ignition switch OFF.
8. Disconnect the intake air duct from the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
9. Push the throttle valve closed as shown.

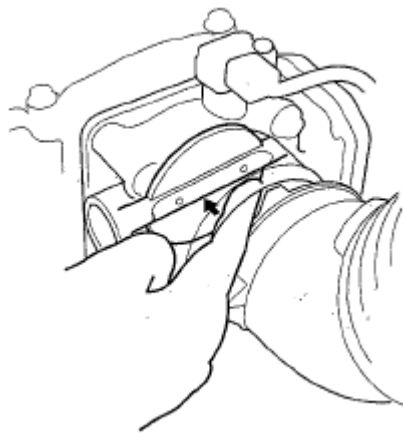


Fig. 20: Identifying Throttle Valve For Closed
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the throttle valve.

Does the throttle valve return?

YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 12.

NO - Go to step 11.

11. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
12. Turn the ignition switch ON (II).
13. Reset the PCM with the HDS.
14. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
15. Turn the ignition switch OFF, and wait 10 seconds.
16. Turn the ignition switch ON (II).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1683 indicated?

YES - If the throttle body was cleaned, go to step 11. If the throttle body was replaced, check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1684: THROTTLE VALVE RETURN SPRING PERFORMANCE PROBLEM

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch OFF, and wait 10 seconds.
5. Turn the ignition switch ON (II).
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1684 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

7. Turn the ignition switch OFF.
8. Disconnect the intake air duct from the throttle body (see THROTTLE BODY REMOVAL/INSTALLATION).
9. Push the throttle valve open as shown.

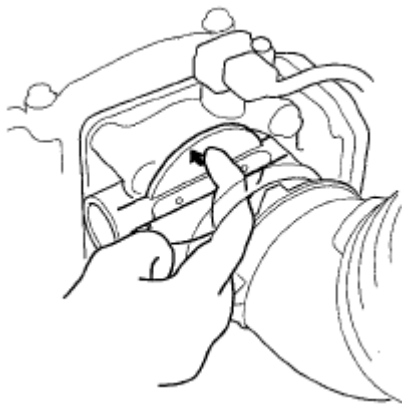


Fig. 21: Identifying Throttle Valve For Open
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Release the throttle valve.

Does the throttle valve return?

YES - Clean the throttle body (see THROTTLE BODY CLEANING), then go to step 12.

NO - Go to step 11.

11. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
12. Turn the ignition switch ON (II).
13. Reset the PCM with the HDS.
14. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
15. Turn the ignition switch OFF, and wait 10 seconds.
16. Turn the ignition switch ON (II).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1684 indicated?

YES - If the throttle body was cleaned, go to step 11. If the throttle body was replaced, check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2101: ETCS MALFUNCTION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2101 indicated?

YES - Go to step 7.

NO - Go to step 5.

5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - APP SENSOR A

6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2101 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**).

7. Turn the ignition switch OFF.
8. Disconnect the intake air duct from the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
9. Turn the ignition switch ON (II).
10. Clear the DTC with the HDS.
11. Do the ETCS TEST in the INSPECTION MENU with the HDS.
12. Visually check the throttle valve operation.

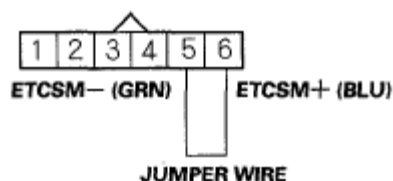
Does the throttle valve operate smoothly?

YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 22 and recheck. If DTC P2101 is indicated, go to step 19.

NO - Go to step 13

13. Turn the ignition switch OFF.
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector C (49P).
17. Connect throttle body 6P connector terminals No. 5 and No. 6 with a jumper wire.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying Throttle Body 6P Connector Terminals No. 5 And No. 6 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Check for continuity between PCM connector terminals C2 and C3.

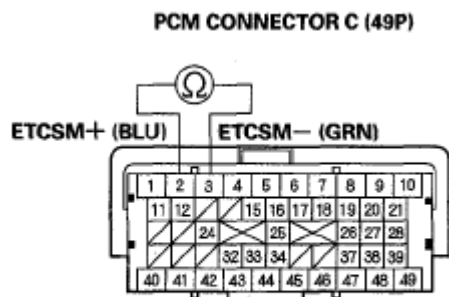


Fig. 23: Identifying Continuity Between PCM Connector Terminals C2 And C3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wires between the throttle body and the PCM (C2, C3), then go to step 21.

19. Turn the ignition switch OFF.
20. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
21. Reconnect all connectors.
22. Turn the ignition switch ON (II).
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - APP SENSOR A
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2101 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then clean the throttle body (see **THROTTLE BODY CLEANING**), and go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to .

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2101 indicated?

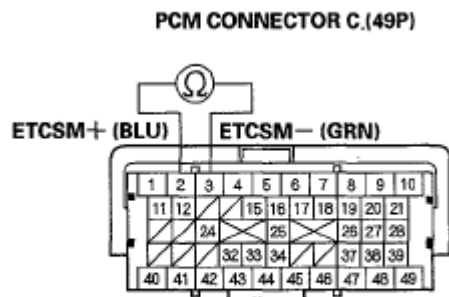
YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2118: THROTTLE ACTUATOR CURRENT RANGE/ PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Jump the SCS line with the HDS.
2. Disconnect PCM connector C (49P).
3. Measure resistance between PCM connector terminals C2 and C3.



Terminal side of female terminals

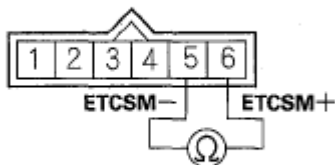
Fig. 24: Identifying Resistance Between PCM Connector Terminals C2 And C3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 1.0 ohms or less?

YES - Go to step 4.

NO - Go to step 15.

4. Disconnect the throttle body 6P connector.
5. At the throttle body side, measure resistance between throttle body 6P connector terminals No. 5 and No. 6 with the throttle fully closed.

THROTTLE BODY 6P CONNECTOR

Terminal side of male terminals

Fig. 25: Identifying Resistance Between Throttle Body 6P Connector Terminals No. 5 And No. 6 With Throttle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 1.0 ohms or less?

YES - Go to step 6.

NO - Repair short in the wires between the PCM C3 (ETCSM-line) and C4 (ETCSM+line), then go to step 7.

6. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
7. Reconnect all connectors.
8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Turn the ignition switch OFF.
12. Turn the ignition switch ON (II).
13. Slowly press the accelerator pedal to the floor.
14. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2118 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

15. Reconnect all connectors.
16. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2118 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2122: APP SENSOR A (TP SENSOR D) CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Check APP SENSOR A in the DATA LIST with the HDS.

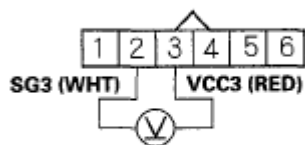
Is there about 0.2 V or less?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor A and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch ON (II).
6. Measure voltage between APP sensor 6P connector terminals No. 2 and No. 3.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 26: Identifying Voltage Between APP Sensor 6P Connector Terminals No. 2 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

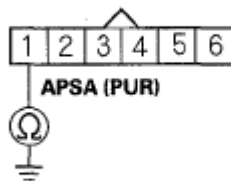
Is there about 5 V?

YES - Go to step 7.

NO - Go to step 17.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Check for continuity between APP sensor 6P connector terminal No. 1 and body ground.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 27: Identifying Continuity Between APP Sensor 6P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

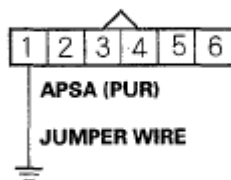
Is there continuity?

YES - Repair short in the wire between the PCM (A18) and APP sensor A, then go to step 24.

NO - Go to step 11.

11. Connect APP sensor 6P connector terminal No. 1 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 28: Identifying APP Sensor 6P Connector Terminal No. 1 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between PCM connector terminal A18 and body ground.

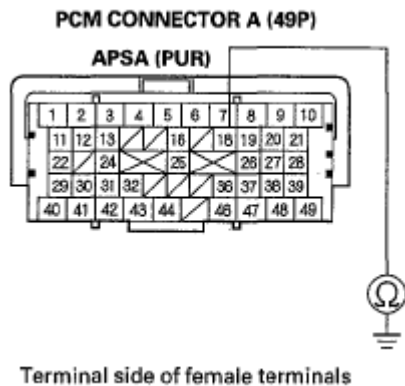


Fig. 29: Checking Continuity Between PCM Connector Terminal A18 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the PCM (A18) and APP sensor A, then go to step 24.

13. Reconnect PCM connector A (49P).
14. Connect APP sensor 6P connector terminals No. 1 and No. 3 with a jumper wire.

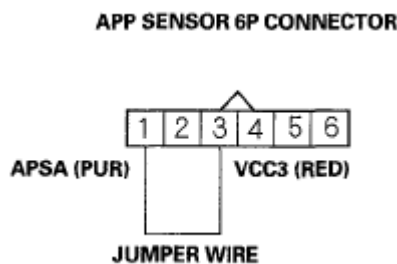


Fig. 30: Identifying APP Sensor 6P Connector Terminals No. 1 And No. 3 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch ON (II).
16. Check APP SENSOR A in the DATA LIST with the HDS.

Is there about 0.2 V or less?

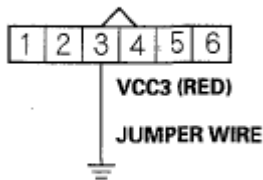
YES - Go to step 29.

NO - Go to step 22.

17. Turn the ignition switch OFF.
18. Jump the SCS line with the HDS.

19. Disconnect PCM connector A (49P).
20. Connect APP sensor 6P connector terminal No. 3 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR

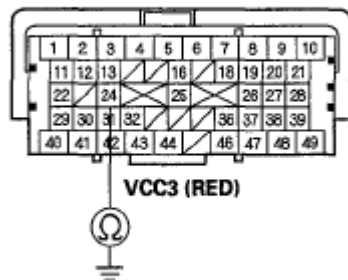


Wire side of female terminals

Fig. 31: Identifying APP Sensor 6P Connector Terminal No. 3 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Check for continuity between PCM connector terminal A24 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 32: Identifying Continuity Between PCM Connector Terminal A24 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire between the PCM (A24) and APP sensor A, then go to step 24.

22. Turn the ignition switch OFF.
23. Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).
24. Reconnect all connectors.
25. Turn the ignition switch ON (II).
26. Reset the PCM with the HDS.

27. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2122 indicated?

YES - Check for poor connections or loose terminals at APP sensor A and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

29. Turn the ignition switch OFF.
30. Reconnect all connectors.
31. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2122 indicated?

YES - Check for poor connections or loose terminals at APP sensor A and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2123: APP SENSOR A (TP SENSOR D) CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch ON (II).
2. Check APP SENSOR A in the DATA LIST with the HDS.

Is there about 4.9 V or more?

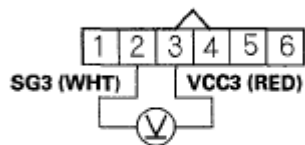
YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor A and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the APP sensor 6P connector.

5. Turn the ignition switch ON (II).
6. Measure voltage between APP sensor 6P connector terminals No. 2 and No. 3.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 33: Identifying Voltage Between APP Sensor 6P Connector Terminals No. 2 And No. 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

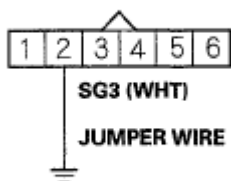
Is there about 5 V?

YES - Go to step 12.

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Connect APP sensor 6P connector terminal No. 2 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 34: Identifying APP Sensor 6P Connector Terminal No. 2 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between PCM connector terminal A26 and body ground.

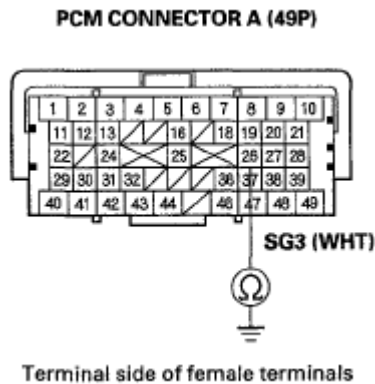


Fig. 35: Identifying Continuity Between PCM Connector Terminal A26 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the PCM (A26) and APP sensor A, then go to step 14.

12. Turn the ignition switch OFF.
13. Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2123 indicated?

YES - Check for poor connections or loose terminals at APP sensor A and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

19. Reconnect all connectors.
20. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2123 indicated?

YES - Check for poor connections or loose terminals at APP sensor A and the PCM. If the PCM was

updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2127: APP SENSOR B (TP SENSOR E) CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check APP SENSOR B in the DATA LIST with the HDS.

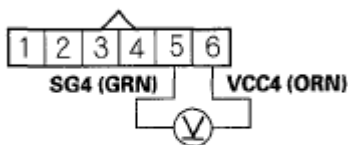
Is there about 0.2 V or less?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor B and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch ON (II).
6. Measure voltage between APP sensor 6P connector terminals No. 5 and No. 6.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 36: Identifying Voltage Between APP Sensor 6P Connector Terminals No. 5 And No. 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

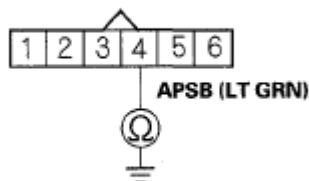
Is there about 5 V?

YES - Go to step 7.

NO - Go to step 17.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Check for continuity between APP sensor 6P connector terminal No. 4 and body ground.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 37: Identifying Continuity Between APP Sensor 6P Connector Terminal No. 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

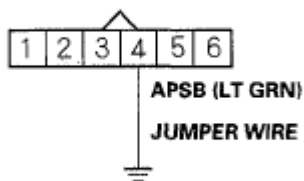
Is there continuity?

YES - Repair short in the wire between the PCM (A19) and APP sensor B, then go to step 24.

NO - Go to step 11.

11. Connect APP sensor 6P connector terminal No. 4 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 38: Identifying APP Sensor 6P Connector Terminal No. 4 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between PCM connector terminal A19 and body ground.

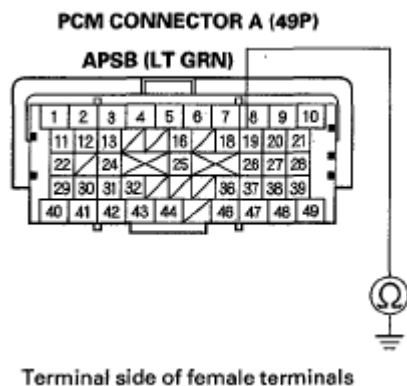


Fig. 39: Identifying Continuity Between PCM Connector Terminal A19 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the PCM (A19) and APP sensor B, then go to step 24.

13. Reconnect PCM connector A (49P).
14. Connect APP sensor 6P connector terminals No. 4 and No. 6 with a jumper wire.

APP SENSOR 6P CONNECTOR

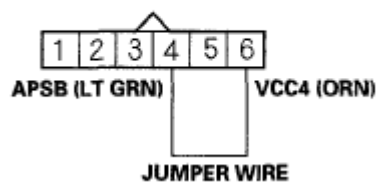


Fig. 40: Identifying APP Sensor 6P Connector Terminals No. 4 And No. 6 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Turn the ignition switch ON (II).
16. Check APP SENSOR B in the DATA LIST with the HDS.

Is there about 0.2 V or less?

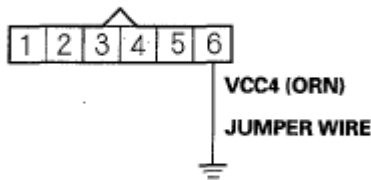
YES - Go to step 29.

NO - Go to step 22.

17. Turn the ignition switch OFF.
18. Jump the SCS line with the HDS.

19. Disconnect PCM connector A (49P).
20. Connect APP sensor 6P connector terminal No. 6 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR

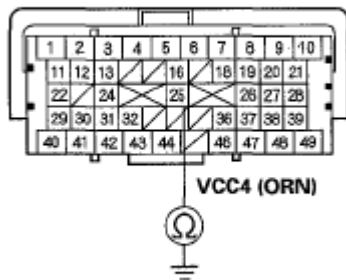


Wire side of female terminals

Fig. 41: Identifying APP Sensor 6P Connector Terminal No. 6 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Check for continuity between PCM connector terminal A25 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 42: Identifying Continuity Between PCM Connector Terminal A25 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 30.

NO - Repair open in the wire between the PCM (A25) and APP sensor B, then go to step 24.

22. Turn the ignition switch OFF.
23. Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).
24. Reconnect all connectors.
25. Turn the ignition switch ON (II).
26. Reset the PCM with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Electronic Throttle Control System - MDX

27. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2127 indicated?

YES - Check for poor connections or loose terminals at APP sensor B and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

29. Turn the ignition switch OFF.
30. Reconnect all connectors.
31. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2127 indicated?

YES - Check for poor connections or loose terminals at APP sensor B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2128: APP SENSOR B (TP SENSOR E) CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check APP SENSOR B in the DATA LIST with the HDS.

Is there about 4.0 V or more?

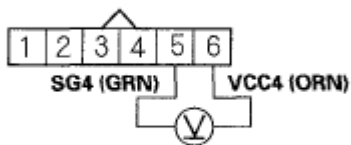
YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals APP sensor B and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the APP sensor 6P connector.

5. Turn the ignition switch ON (II).
6. Measure voltage between APP sensor 6P connector terminals No. 5 and No. 6.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 43: Identifying Voltage Between APP Sensor 6P Connector Terminals No. 5 And No. 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

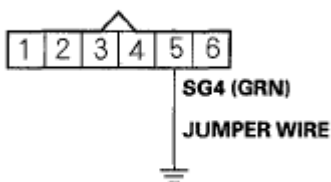
Is there about 5 V?

YES - Go to step 12.

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Connect APP sensor 6P connector terminal No. 5 to body ground with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Fig. 44: Identifying APP Sensor 6P Connector Terminal No. 5 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between PCM connector terminal A27 and body ground.

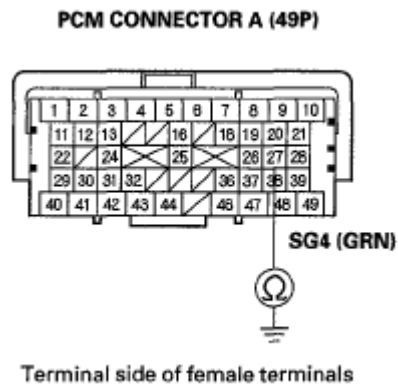


Fig. 45: Identifying Continuity Between PCM Connector Terminal A27 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the PCM (A27) and APP sensor B, then go to step 14.

12. Turn the ignition switch OFF.
13. Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2128 indicated?

YES - Check for poor connections or loose terminals at APP sensor B and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

19. Reconnect all connectors.
20. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2128 indicated?

YES - Check for poor connections or loose terminals at APP sensor B and the PCM. If the PCM was

updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2135: TP SENSOR A/B VOLTAGE INCORRECT CORRELATION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2135 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM.

5. Turn the ignition switch OFF.
6. Disconnect the intake air duct from the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
7. Turn the ignition switch ON (II).
8. Visually check the throttle valve operation while you clear the DTC with the HDS.

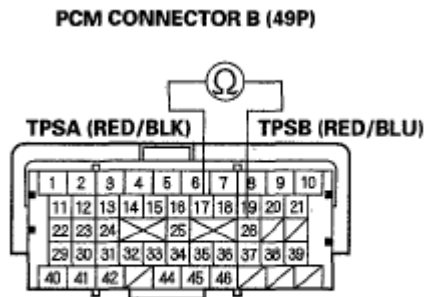
Does the valve temporarily move to the fully closed position?

YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector B (49P).

12. Check for continuity between PCM connector terminals B17 and B26.



Terminal side of female terminals

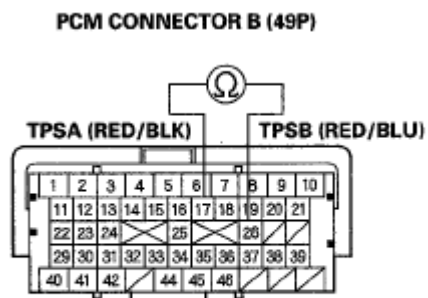
Fig. 46: Identifying Continuity Between PCM Connector Terminals B17 And B26
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Go to step 22.

13. Disconnect the throttle body 6P connector.
14. Check for continuity between PCM connector terminals B17 and B26.



Terminal side of female terminals

Fig. 47: Identifying Continuity Between PCM Connector Terminals B17 And B26
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM B17 (TPSA line) and the B26 (TPSB line), then go to step 17.

NO - Go to step 15.

15. Turn the ignition switch OFF.
16. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
17. Reconnect all connectors.
18. Turn the ignition switch ON (II).
19. Reset the PCM with the HDS.
20. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
21. Identifying for Temporary DTCs or DTCs with the HDS.

Is DTC P2135 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

22. Reconnect all connectors.
23. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2135 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2138: APP SENSOR A/B (TP SENSOR D/E) INCORRECT VOLTAGE CORRELATION

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with HDS.
3. Press the accelerator pedal to the floor.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2138 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the PCM.

5. Check APP SENSOR A and APP SENSOR B in the DATA LIST with the HDS.

Are they the same voltage?

YES - Go to step 6.

NO - Go to step 12.

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Disconnect PCM connector A (49P).
9. Check for continuity between PCM connector terminals A18 and A19.

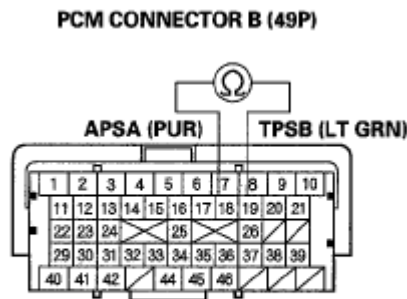


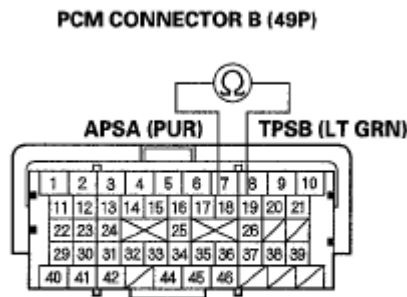
Fig. 48: Identifying Continuity Between PCM Connector Terminals A18 And A19
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Go to step 22.

10. Disconnect the APP sensor 6P connector.
11. Check for continuity between PCM connector terminals A18 and A19.



Terminal side of female terminals

Fig. 49: Identifying Continuity Between PCM Connector Terminals A18 And A19
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between PCM connector terminals A18 (APSA line) and A19 (APSB line), then go to step 14.

NO - Go to step 13.

12. Turn the ignition switch OFF.
13. Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Turn the ignition switch OFF.
19. Turn the ignition switch ON (II).
20. Press the accelerator pedal to the floor.
21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2138 indicated?

YES - Check for poor connections or loose terminals at APP sensor A/B and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

22. Reconnect all connectors.
23. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).

24. Turn the ignition switch OFF.
25. Turn the ignition switch ON (II).
26. Press the accelerator pedal to the floor.
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2138 indicated?

YES - Check for poor connections or loose terminals at APP sensor A/B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 24. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2176: THROTTLE ACTUATOR CONTROL SYSTEM IDLE POSITION NOT LEARNED

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If DTC P2135 is stored at the same time as DTC P2176, troubleshoot DTC P2135 first, then recheck for DTC P2176.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Turn the ignition switch ON (II), and wait 10 seconds.
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2176 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the PCM, then clean the throttle body (see **THROTTLE BODY TEST**).

6. Turn the ignition switch OFF.
7. Disconnect the intake air duct from the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).

8. Turn the ignition switch ON (II).
9. Clear the DTC with the HDS.
10. Visually check the throttle valve operation while doing the ETCS TEST in the INSPECTION MENU with the HDS.

Does the throttle valve move to its fully closed position?

YES - Go to step 11.

NO - Go to step 12.

11. Check for sludge or carbon on the throttle valve.

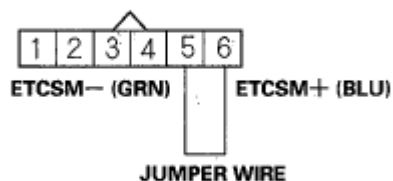
Is there sludge or carbon on the throttle valve?

YES - Clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 21.

NO - Go to step 18.

12. Turn the ignition switch OFF.
13. Disconnect the throttle body 6P connector.
14. Jump the SCS line with the HDS.
15. Disconnect PCM connector C (49P).
16. Connect throttle body 6P connector terminals No. 5 and No. 6 with a jumper wire.

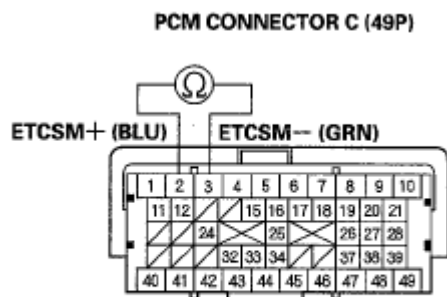
THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Fig. 50: Identifying Throttle Body 6P Connector Terminals No. 5 And No. 6 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between PCM connector terminals C2 and C3.



Terminal side of female terminals

Fig. 51: Identifying Continuity Between PCM Connector Terminals C2 And C3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wires between the throttle body and the PCM (C2, C3), then go to step 20.

18. Turn the ignition switch OFF.
19. Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
20. Reconnect all connectors.
21. Turn the ignition switch ON (II).
22. Reset the PCM with the HDS.
23. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
24. Turn the ignition switch OFF.
25. Turn the ignition switch ON (II), and wait 10 seconds.
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2176 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2176 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

APP SENSOR SIGNAL INSPECTION

NOTE:

- This procedure checks the APP sensor in its fully closed position. In any other position, the APP sensor stores DTCs which are covered in other troubleshooting procedures.
- Check for Temporary DTCs or DTCs with the HDS before doing this procedure. If any DTCs are indicated, troubleshoot them first, then do this procedure.
- Press the accelerator pedal several times to check its operation. If it does not operate smoothly, check the pedal. If you find a problem, replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

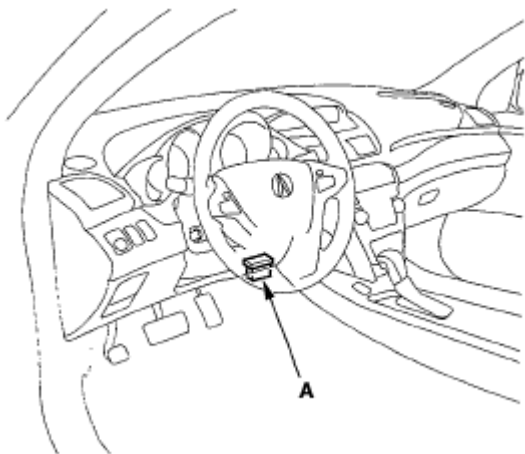


Fig. 52: Connect HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.

- If it is 0%, the APP sensor is OK.
 - If it is not 0%, update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 5.
5. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.
- If it is 0%, the APP sensor is OK.
 - If it is not 0%, replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**), then go to step 1.

ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION

1. Disconnect the accelerator pedal position (APP) sensor 6P connector (A).

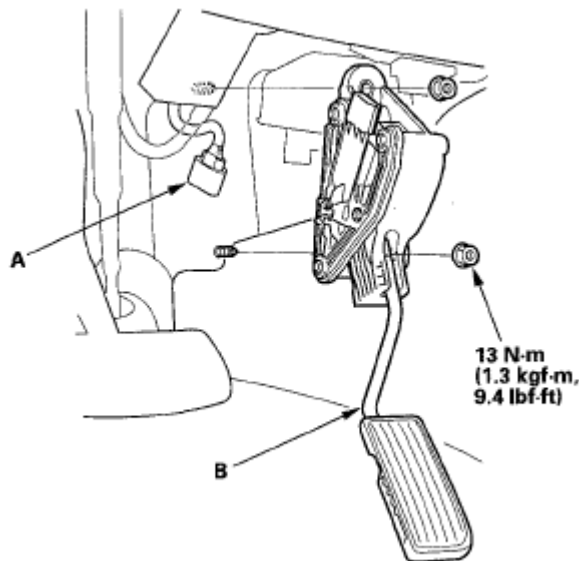


Fig. 53: Identifying Accelerator Pedal Position (APP) Sensor 6P Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the accelerator pedal module (B).

NOTE: The APP sensor is not available separately. Do not disassemble the accelerator pedal module.

3. Install the parts in the reverse order of removal.

2008 Acura MDX

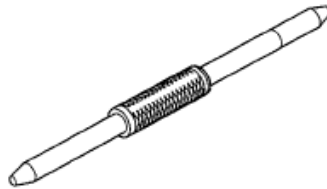
2007-09 ENGINE Engine Assembly - MDX

2007-09 ENGINE

Engine Assembly - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	070AG-SJAA10S	Frame Positioning Guide Pin	1



①

Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE REMOVAL

Special Tools Required

- Front subframe adapter EQS02BMDXSB0
- Engine support hanger A and Reds AAR-T-12566
- Engine hanger balance bar VSB02C000019
- Engine hanger adapter set VSB02C000031

These special tools are available through the Acura Tool and Equipment program, 1-888-424-6857.

NOTE:

- Use fender covers to avoid damaging painted surfaces.
- To avoid damaging the wiring and terminals, unplug the wiring connectors carefully while holding the connector portion.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring, hoses, or interfere with other parts.

1. Remove the support struts from the engine hood. Move the engine hood to a vertical position, then reinstall the support strut as shown.

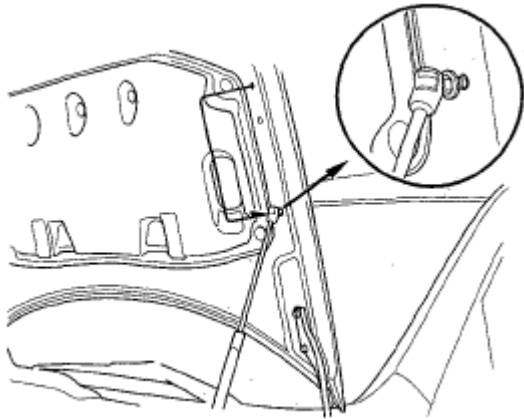


Fig. 2: Identifying Support Struts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
3. Drain the power steering system fluid, then plug the fluid reservoir and return hose (see **FLUID REPLACEMENT**).
4. Remove the bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
5. Do the battery terminal disconnection procedure (See **DISCONNECTION**).
6. Remove the battery.
7. Remove the engine cover.

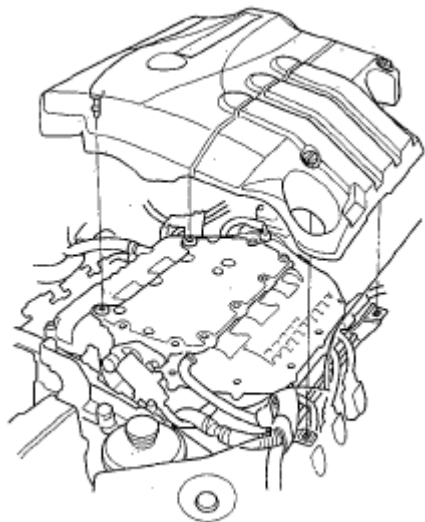


Fig. 3: Identifying Engine Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Disconnect the breather pipe (A), then remove the air intake duct (B).

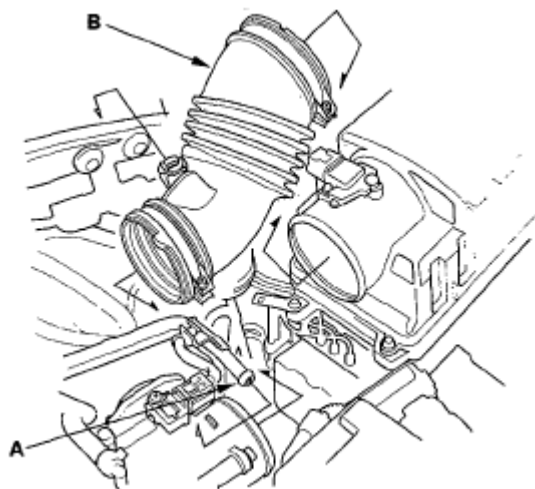


Fig. 4: Identifying Breather Pipe And Air Intake Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the air cleaner assembly (see **AIR CLEANER ELEMENT / REPLACEMENT**).
10. Remove the main under-hood fuse box (A), then remove the harness clamps (B).

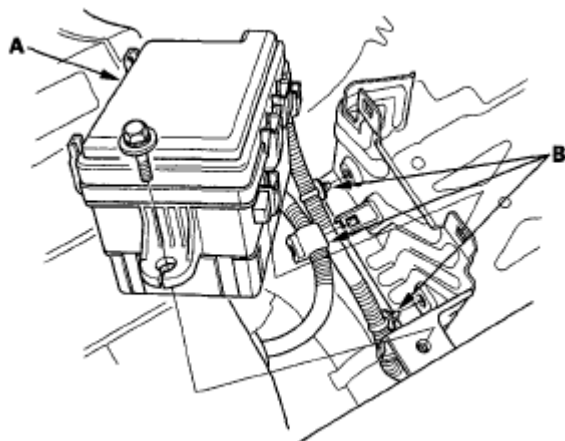


Fig. 5: Identifying Main Under-Hood Fuse Box And Harness Clamps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the harness clamps (A), then remove the battery base (B).

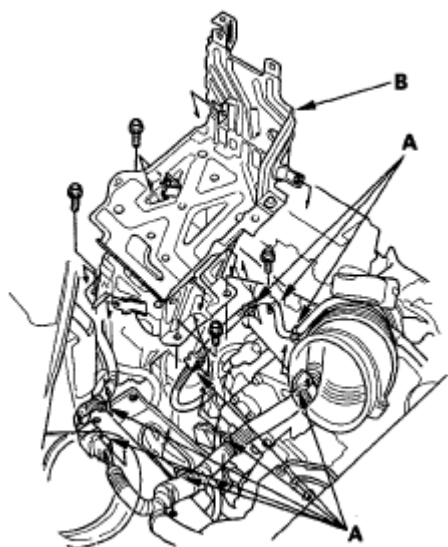


Fig. 6: Identifying Harness Clamps And Battery Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the positive starter cable (A).

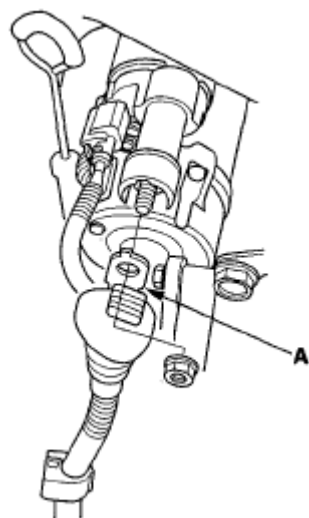


Fig. 7: Identifying Positive Starter Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the shift cable (see **SHIFT CABLE REPLACEMENT**).
14. Remove the quick-connect fitting cover (A), then disconnect the fuel feed hose (B) (see **FUEL LINE/QUICK-CONNECT FITTING REMOVAL**).

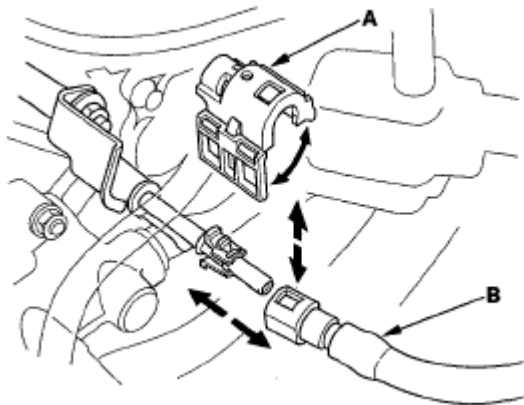


Fig. 8: Identifying Quick-Connect Fitting Cover And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Disconnect the brake booster vacuum hose (A), and evaporative emission (EVAP) canister hose (B).

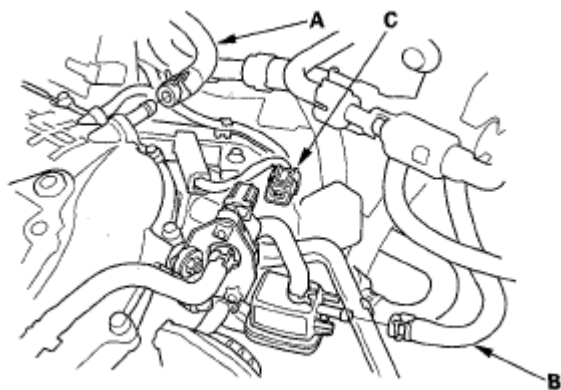


Fig. 9: Identifying Brake Booster Vacuum Hose And Evaporative Emission Canister Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Disconnect the EVAP canister purge valve connector (C).
17. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
18. Remove the steering joint cover (A).

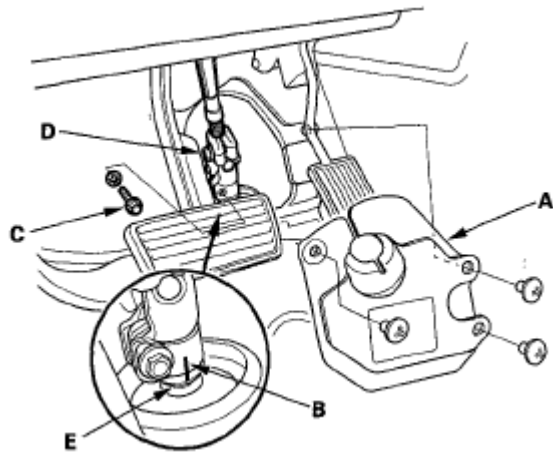


Fig. 10: Identifying Steering Joint Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Make a reference mark (B) across the steering joint and steering gearbox pinion shaft. Remove the steering joint bolt (C), and loosen the steering joint bolt (D), then disconnect the steering joint from the steering gearbox pinion shaft (E).
20. Remove the alternator cable (A) from the main under-hood fuse box.

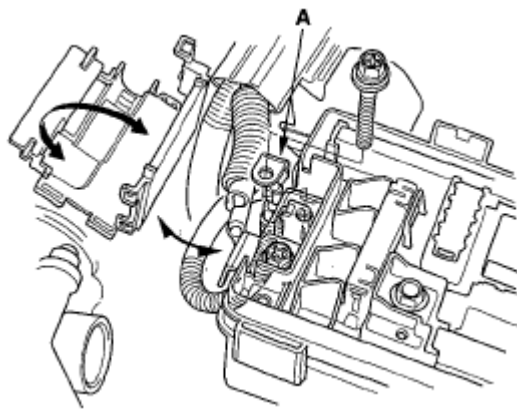


Fig. 11: Identifying Alternator Cable And Main Under-Hood Fuse Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the coolant reservoir from the bracket.
22. Remove the bracket (A), then remove the powertrain control module (PCM) cover (B).

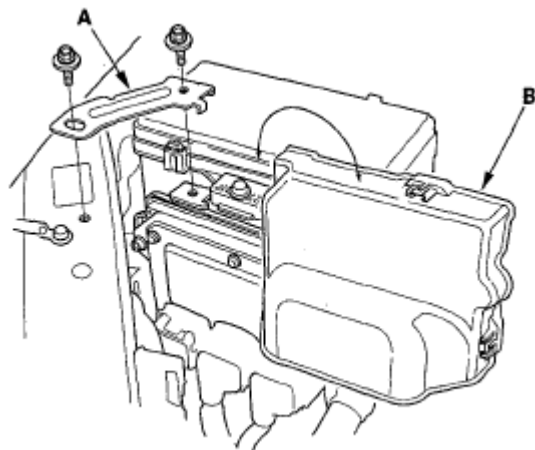


Fig. 12: Identifying Bracket And Powertrain Control Module Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove the harness clamps (A), then disconnect the two PCM connectors (B) and engine wire harness connector (C).

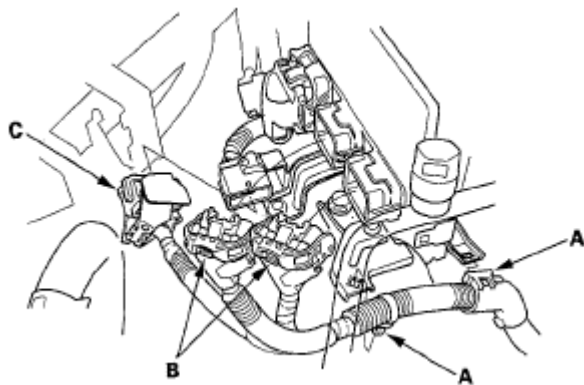


Fig. 13: Identifying Harness Clamps, PCM Connectors And Engine Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the drive belt (see **DRIVE BELT INSPECTION**).
25. Remove the power steering (P/S) pump inlet hose (A) and P/S pump outlet hose (B) from the P/S pump, then plug the P/S lines and P/S pump.

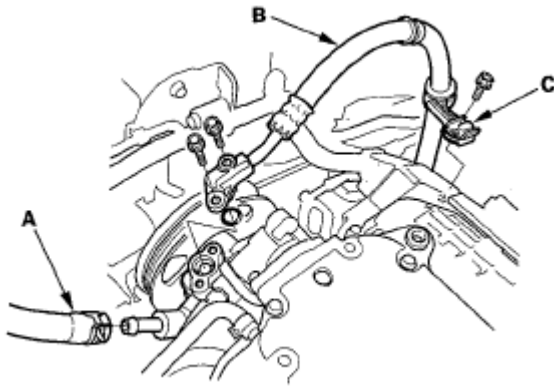


Fig. 14: Identifying Power Steering (P/S) Pump Inlet Hose And P/S Pump Outlet Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the P/S hose clamp (C) from the cylinder head cover.
27. Remove the radiator cap.
28. Raise the vehicle on the lift .
29. Remove the front wheels.
30. Remove the splash shield.

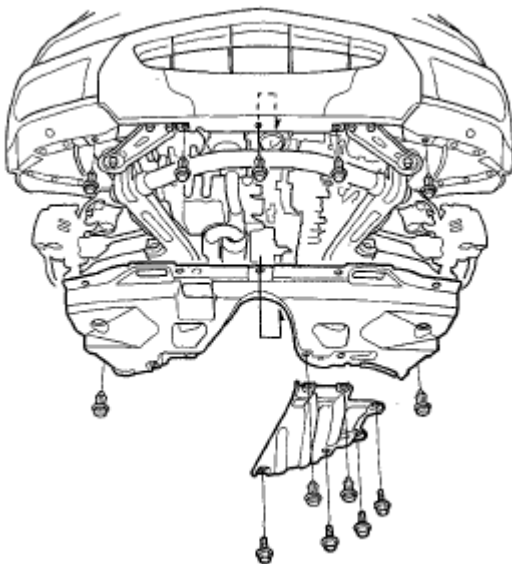


Fig. 15: Identifying Splash Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Loosen the drain plug in the radiator, and drain the engine coolant (see **COOLANT CHECK**).
32. Drain the automatic transmission fluid (ATF) (see **ATF COOLER REPLACEMENT**).
33. Drain the engine oil (see **ENGINE OIL REPLACEMENT**).
34. Remove the front subframe stiffener.

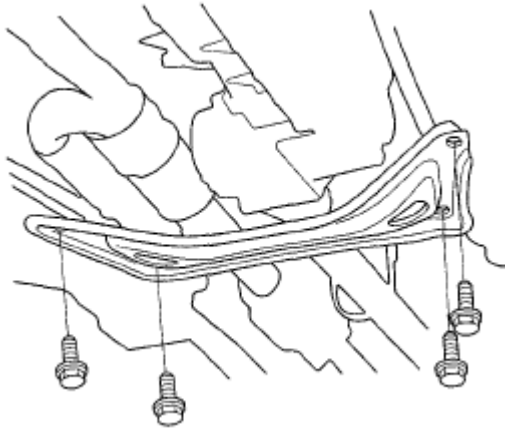


Fig. 16: Identifying Front Subframe Stiffener
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Remove exhaust pipe A.

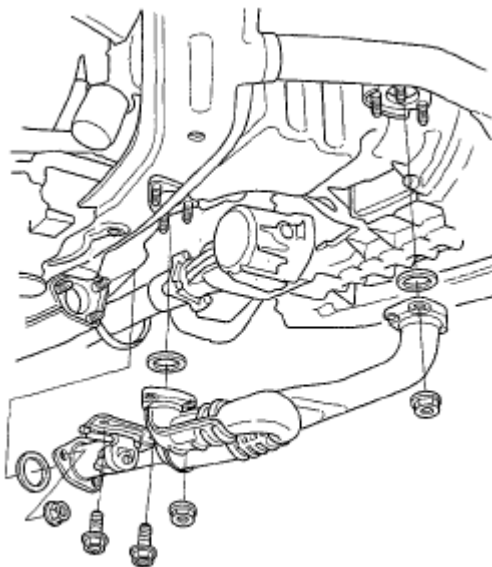


Fig. 17: Identifying Exhaust Pipe A
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Separate the stabilizer links from the dampers (see **STABILIZER LINK REMOVAL/INSTALLATION**).
37. Separate the tie-rod end ball joints from the knuckles (see step 4 on **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
38. Separate the knuckles from the lower arms (see step 7 on **KNUCKLE/HUB BEARING UNIT REPLACEMENT**).
39. Remove the driveshafts (see **FRONT DRIVESHAFT REMOVAL**). Coat all precision-finished surfaces with new engine oil. Tie plastic bags over the driveshaft ends.

40. Remove the propeller shaft from the transfer shaft flange (see **PROPELLER SHAFT REMOVAL**).
41. Remove the transfer assembly (see **TRANSFER ASSEMBLY REMOVAL**).
42. Disconnect the P/S hose (A), then plug the line and hose.

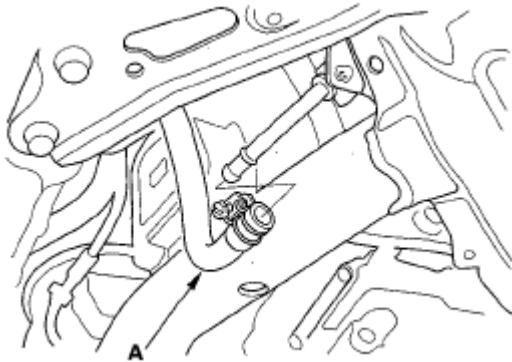


Fig. 18: Identifying P/S Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Disconnect the power steering pressure switch connector.

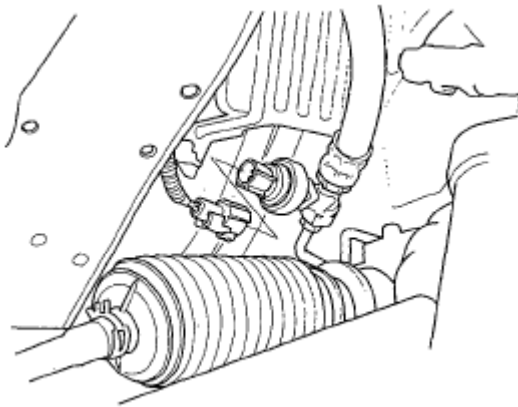


Fig. 19: Identifying Power Steering Pressure Switch Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the transmission lower mount bolts (A) and ground cable (B).

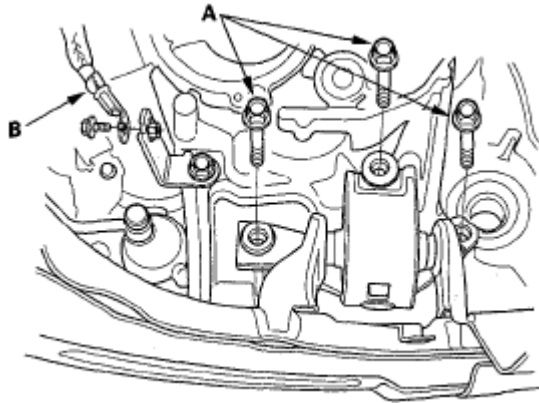


Fig. 20: Identifying Transmission Lower Mount Bolts And Ground Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Remove the rear mount bolts (A), and power steering line bracket (B).

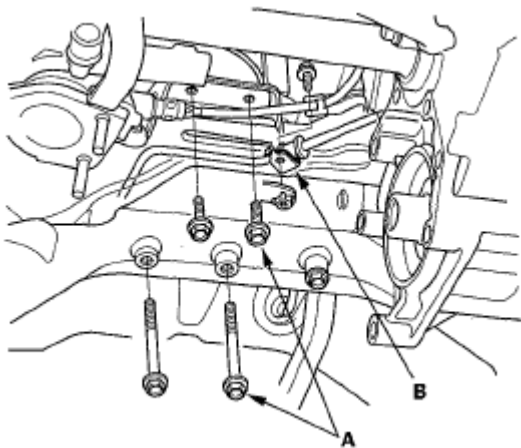


Fig. 21: Identifying Rear Mount Bolts And Power Steering Line Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Lower the vehicle on the lift.
47. Disconnect the A/C compressor clutch connector (A), then remove the A/C compressor (B) without disconnecting the A/C hoses.

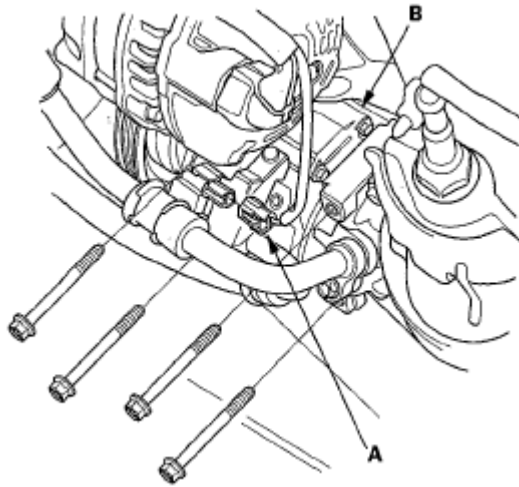


Fig. 22: Identifying A/C Compressor Clutch Connector And A/C Compressor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Disconnect the heater hoses (A).

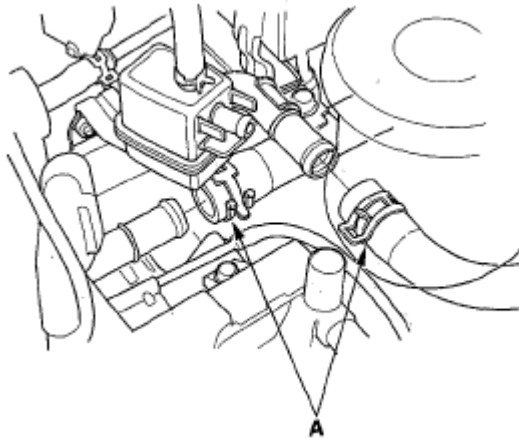


Fig. 23: Identifying Heater Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

49. Disconnect the upper radiator hose (A) and lower radiator hose (B).



Fig. 24: Identifying Upper Radiator Hose And Lower Radiator Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Disconnect the ATF cooler hoses from the transmission, then plug the ATF cooler hoses and lines.

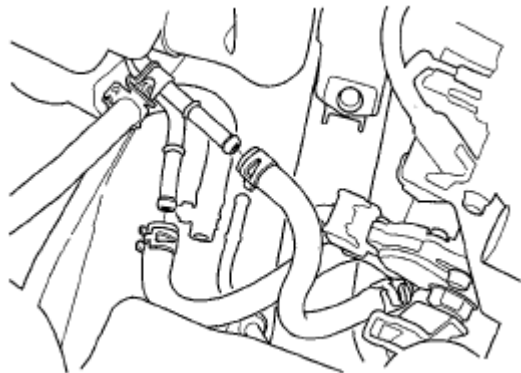


Fig. 25: Identifying Plug ATF Cooler Hoses And Lines
Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the radiator (see **RADIATOR AND FAN REPLACEMENT**).
52. Remove the connector bracket from the front cylinder head; use the bracket bolt hole to attach the engine balance bar front arm.

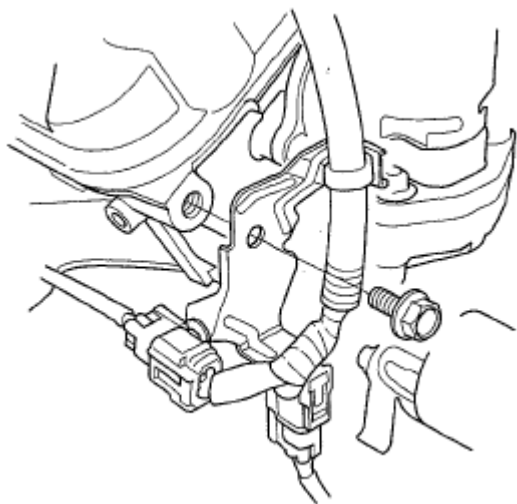


Fig. 26: Identifying Bracket Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

53. Remove the bracket (A) from the rear cylinder head; use the bracket bolt hole to attach the engine balance bar rear arm.

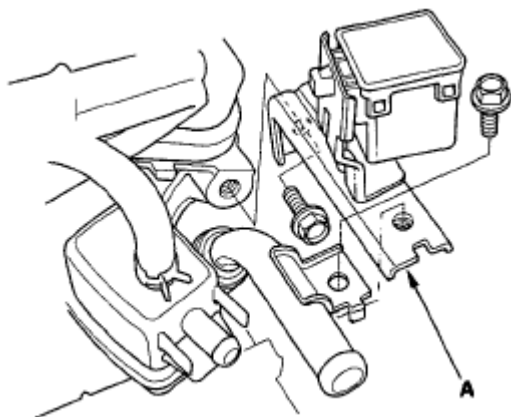


Fig. 27: Identifying Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Remove the service caps (A) for the front damper flange nuts from the cowl cover (B). Position the engine hanger adapters (VSB02C000031) with the "FRONT" mark facing forward over the damper flange nuts.

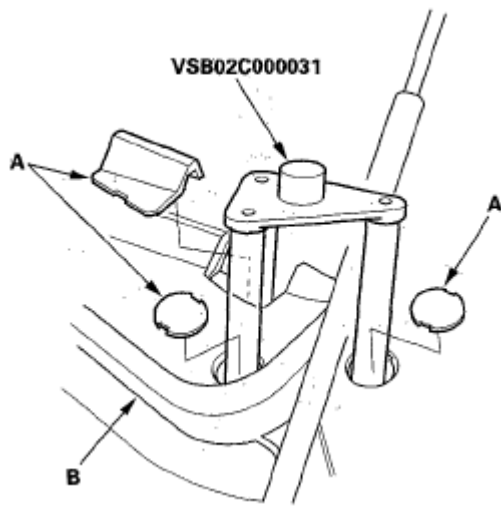


Fig. 28: Identifying Engine Hanger Adapters (VSB02C000031)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Install the engine hanger balance bar (VSB02C000019); attach the front arm (A) to the front cylinder head with a spacer (B) and 10 x 1.25 mm bolt (C), attach the rear arm (D) to the rear cylinder head with an 8 x 1.25 mm bolt (E).

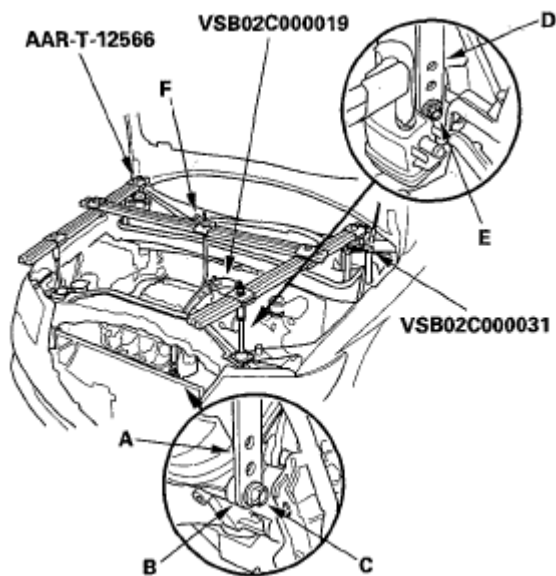


Fig. 29: Identifying Front Arm
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand to lift and support the engine/transmission.
57. Raise the vehicle on the lift to full height.
58. Disconnect the front engine mount control solenoid valve tube (A), then remove the front engine mount

bolts (B).

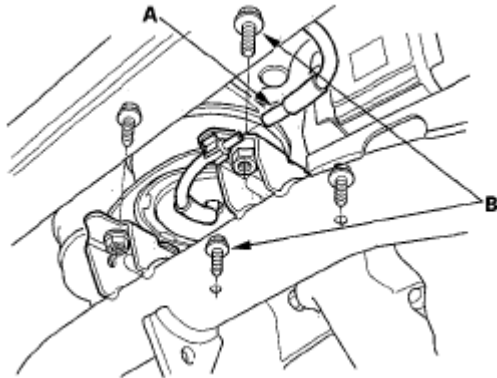


Fig. 30: Identifying Front Engine Mount Control Solenoid Valve Tube And Front Engine Mount Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

59. With active damper system: Disconnect the front suspension stroke sensor connectors (A), then remove the harness clamps (B):

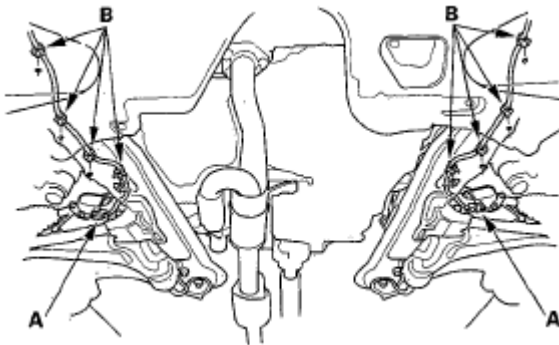


Fig. 31: Identifying Front Suspension Stroke Sensor Connectors And Harness Clamps

Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Loosen the four bolts (A) holding the adjustable arms (B) of the front subframe adapter (EQS02BMDXSBO) to its center plate.

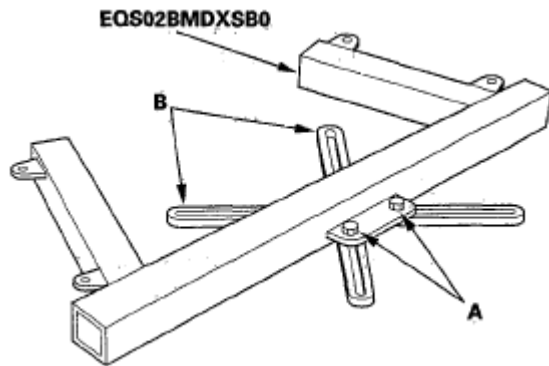


Fig. 32: Identifying Bolts Holding Adjustable Arms Of Front Subframe Adapter (EQS02BMDXSBO)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

61. Line up the slots in the arms with the bolt holes on the corner of the jack base, then attach the front subframe adapter (A) to the jack base with the bolts (B) that came with the jack. Tighten all bolts securely.

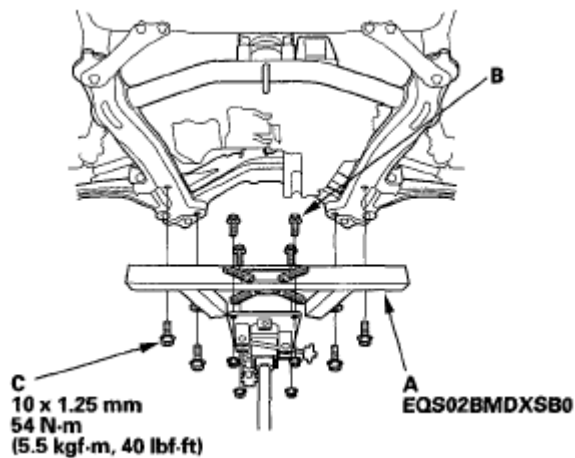


Fig. 33: Identifying Front Subframe Adapter To Jack Base With Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Raise the jack to vehicle height, then attach the front subframe adapter to the front subframe using the subframe stiffener mounting bolts (C) and bolt holes.
63. Remove the six 12 x 1.25 mm bolts (A) securing the subframe stiffeners (B), the four subframe mounting bolts (C), and the stiffeners, then lower the front subframe (D).

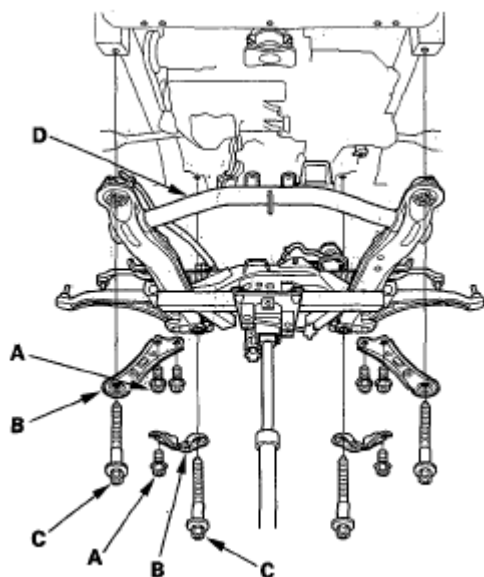


Fig. 34: Identifying Subframe Mounting Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Lower the vehicle and attach a chain hoist (A) to the engine hook (B) and transmission hook (C). Lift up on the engine/transmission until it's securely supported by the chain hoist, then remove the engine support hanger and the engine balance bar from the engine and vehicle.

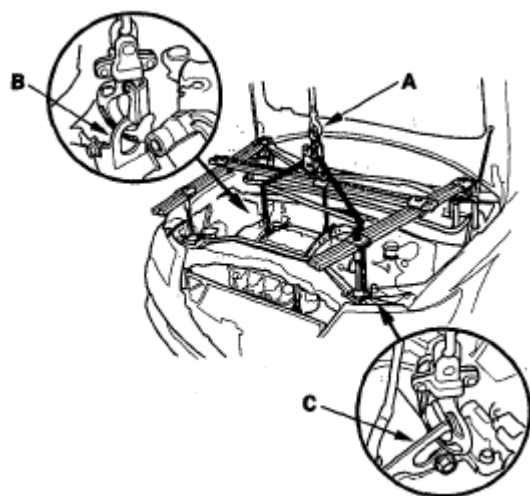


Fig. 35: Identifying Chain Hoist, Engine Hook And Transmission Hook
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

65. Remove the mounting bolts from the upper half of the side engine mount bracket.

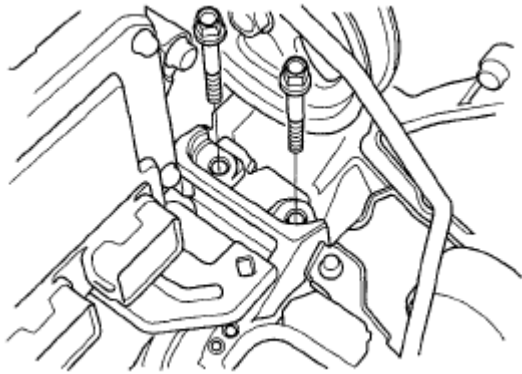


Fig. 36: Identifying Side Engine Mount Bracket Mounting Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Check that the engine/transmission is completely free of vacuum hoses, fuel and coolant hoses, and electrical wiring.
67. Slowly lower the engine/transmission about 150 mm (6 in.). Check once again that all hoses and electrical wiring are disconnected and free from the engine/transmission, then lower it all the way.
68. Disconnect the chain hoist from the engine/transmission.
69. Raise the vehicle all the way on the lift, then remove the engine/transmission from under the vehicle.

ENGINE INSTALLATION

Special Tools Required

- Frame positioning guide pin 070AG-SJAA10S
- Front subframe adapter EQS02BMDXSB0 *
- Engine support hanger A and Reds AAR-T-12566 *
- Engine hanger balance bar VSB02C000019 *
- Engine hanger adapter set VSB02C000031 *

* These special tools are available through the Acura Tool and Equipment program, 1-888-424-6857.

1. Install the engine mount bracket and accessory brackets, and tighten their bolts to the specified torque.

2008 Acura MDX

2007-09 ENGINE Engine Assembly - MDX

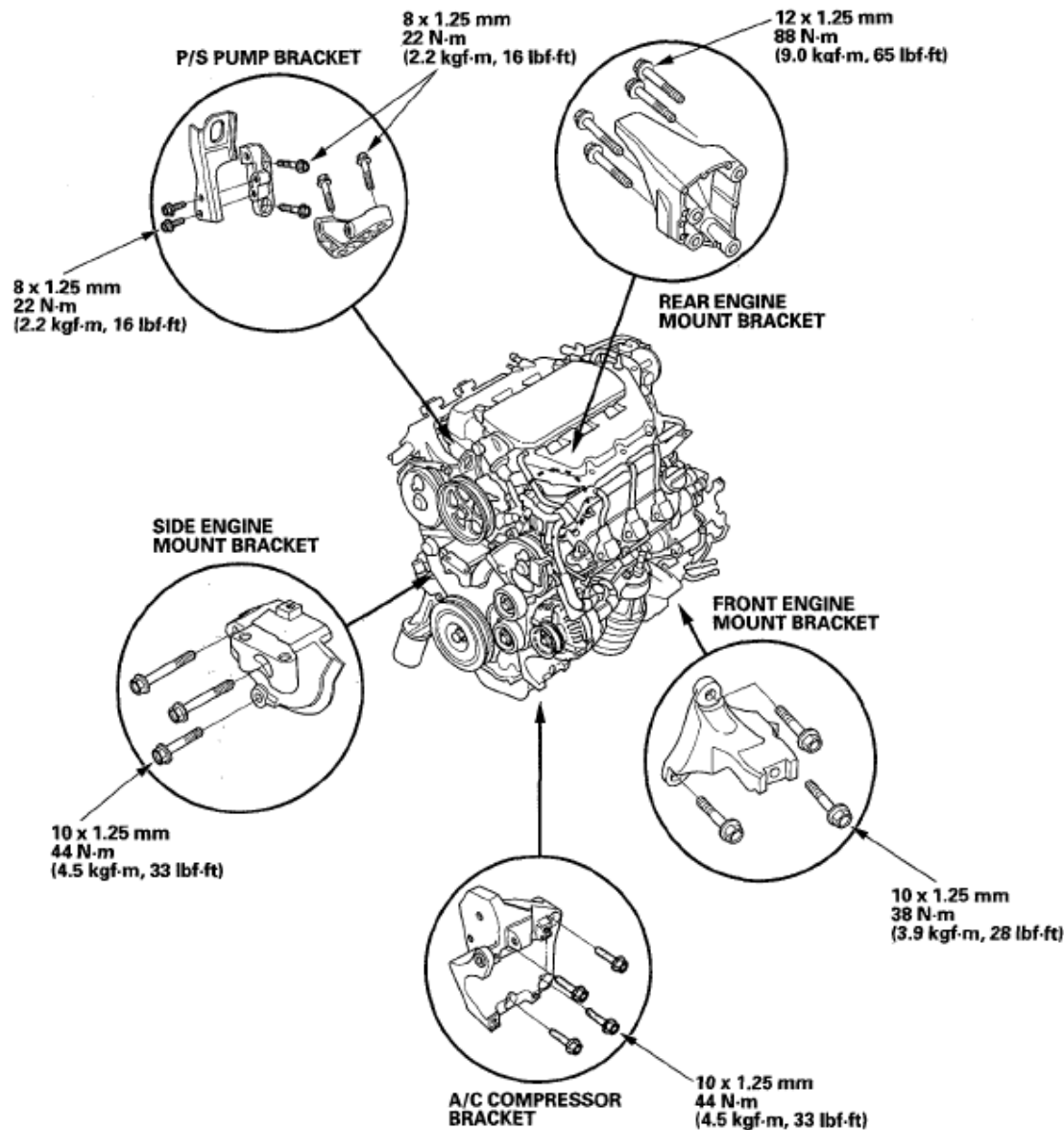


Fig. 37: Identifying Engine Mount Bracket And Accessory Brackets With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position the engine/transmission under the vehicle. Be sure that they are properly aligned. Carefully lower the vehicle until the engine and transmission are properly positioned in the engine compartment. Make sure the vehicle is not resting on any part of the engine or transmission. Lift and support the engine with a chain hoist (A), and carefully raise the engine/transmission into place.

NOTE: Reinstall the mounting bolts/support nuts in the sequence given in the following steps. Failure to follow this sequence may cause excessive noise and vibration, and reduce engine mount life.

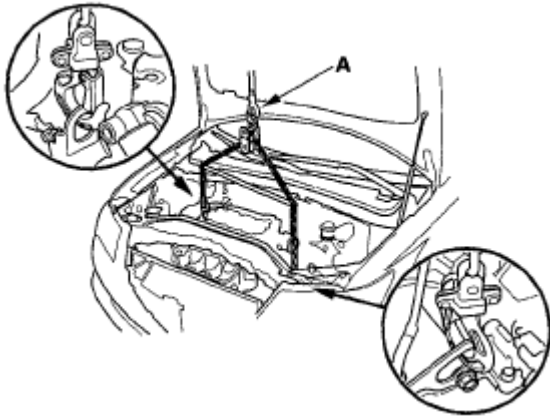


Fig. 38: Identifying Chain Hoist

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the service caps (A) for the front damper flange nuts from the cowl cover (B). Position the engine hanger adapters (VSB02C000031) with the "FRONT" mark facing forward over the damper flange nuts.

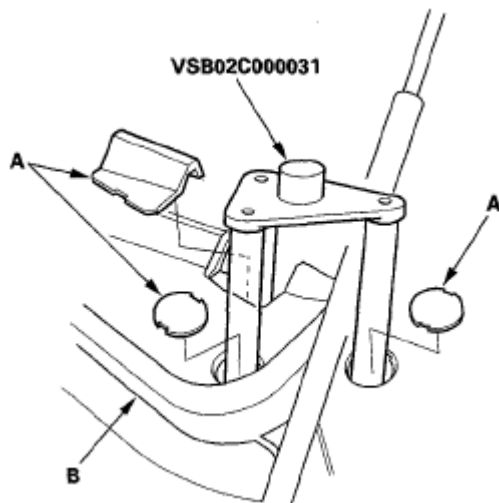


Fig. 39: Identifying Engine Hanger Adapters (VSB02C000031)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the engine hanger balance bar (VSB02C000019); attach the front arm (A) to the front cylinder head with a spacer (B) and 10 x 1.25 mm bolt (C), attach the rear arm (D) to the rear cylinder head with 8 x 1.25 mm bolt (E).

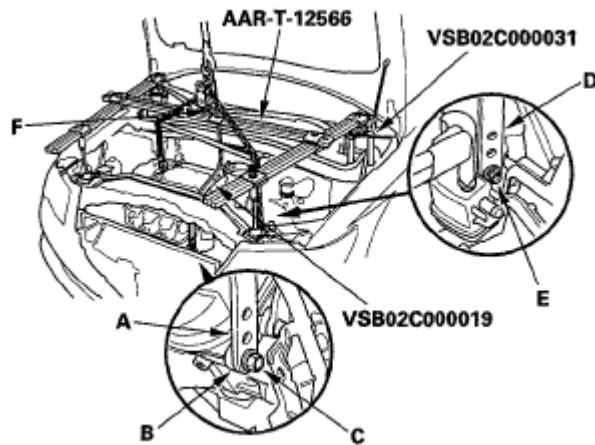


Fig. 40: Identifying Engine Hanger Balance Bar (VSB02C000019)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook to the slotted hole in the engine hanger balance bar. Tighten the wing nut (F) by hand to lift and support the engine/transmission.
6. Install new mounting bolts into the upper half of the side engine mount bracket. Tighten the bolts to the specified torque.

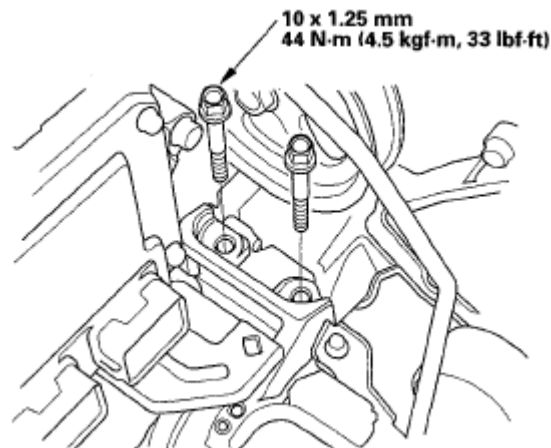


Fig. 41: Identifying Side Engine Mount Bracket Mounting Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the chain hoist, then raise the vehicle on the lift .
8. Using the subframe adapter (EQS02BMDXSB0) and a jack, raise the front subframe up to the body.

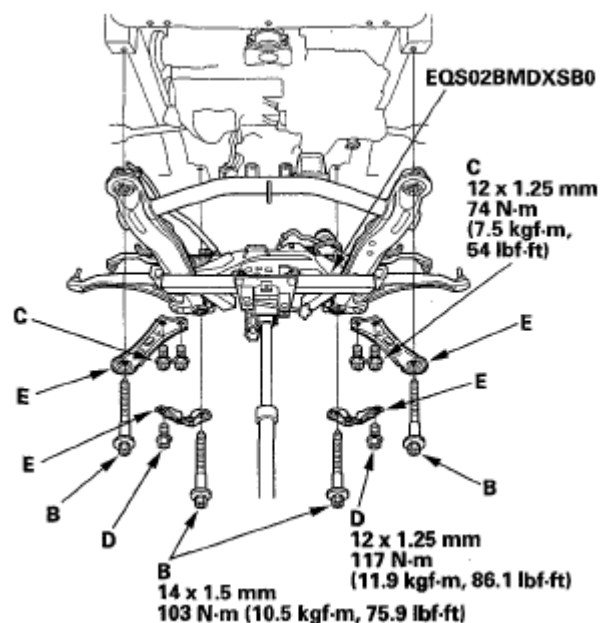


Fig. 42: Identifying Subframe Adapter (EQS02BMDXSB0) And Jack With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Loosely install the new front subframe mounting bolts (four) (B), the 12 x 1.25 mm bolts (six) (C) (D), and the stiffeners (E).
10. Loosely tighten the right rear subframe mounting bolt (A); insert the frame positioning guide pin (070AG-SJAA10S) through the positioning hole (B) on the rear stiffener, through the positioning hole (C) on the subframe, and into the positioning hole (D) on the body, then tighten the subframe mounting bolt.

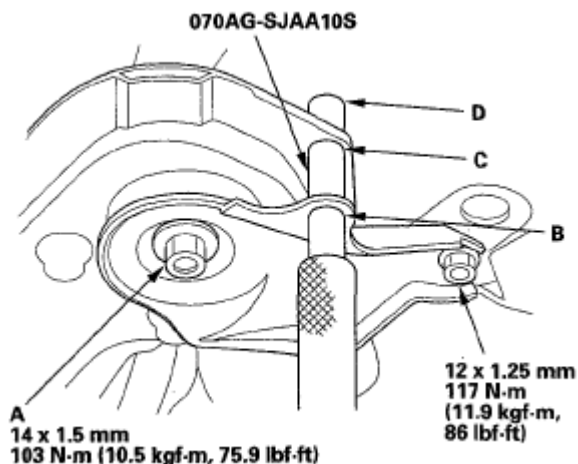


Fig. 43: Identifying Right Rear Subframe Mounting Bolt And Frame Positioning Guide Pin (070AG-SJAA10S) With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Loosely tighten the left rear subframe mounting bolt in the same manner in step 10.
12. Loosely tighten the right and left front subframe mounting bolts.
13. Loosen the right rear mounting bolt, then tighten the bolt to the specified torque.
14. Tighten the left rear mounting bolt to the specified torque.
15. Tighten the right and left front mounting bolts to the specified torque.
16. Check that the positioning holes and slot are aligned using the frame positioning guide pin.
17. Tighten the rear and front stiffener mounting bolts to the specified torque.
18. Remove the jack and front subframe adapter.
19. Tighten the transmission lower mount bolts (A) and ground cable (B).

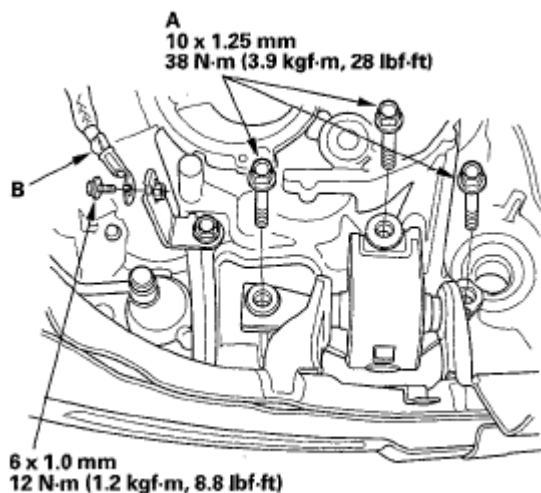


Fig. 44: Identifying Transmission Lower Mount Bolts And Ground Cable With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Tighten the rear mount bolts (A) and power steering line bracket (B).

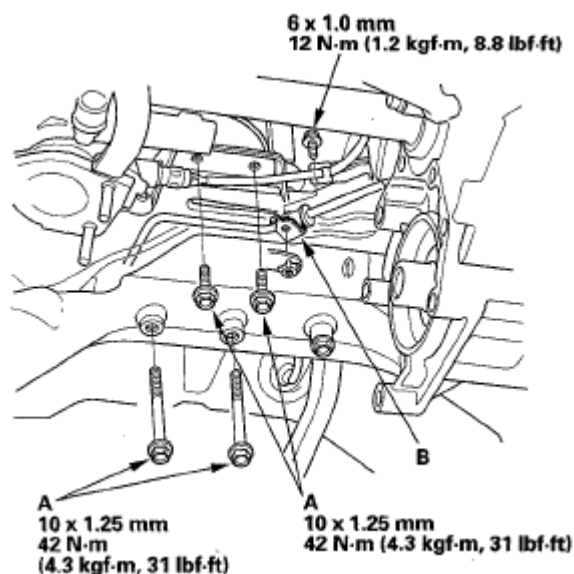


Fig. 45: Identifying Rear Mount Bolts And Power Steering Line Bracket With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Tighten the front mount bolts (A), then connect the front engine mount control solenoid valve tube (B).

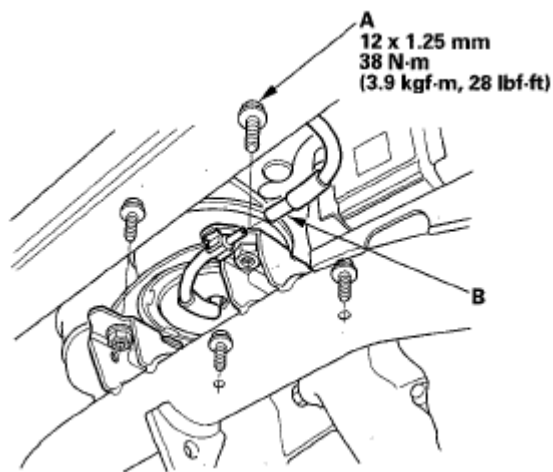


Fig. 46: Identifying Front Mount Bolts And Front Engine Mount Control Solenoid Valve Tube With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Lower the vehicle on the lift.
23. Loosen the mounting bolts for the upper half of the side engine mount bracket, then retighten them to the specified torque.

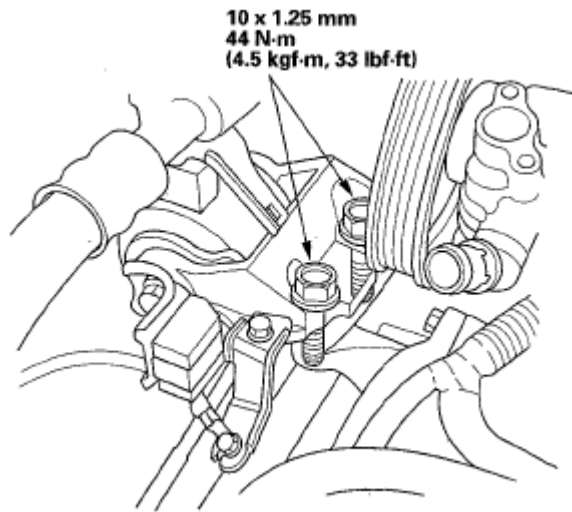


Fig. 47: Identifying Side Engine Mount Bracket Mounting Bolts Tightening Torque With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Remove the engine support hanger and engine hanger balance bar.
25. Install the A/C compressor (A), then connect the A/C compressor clutch connector (B).

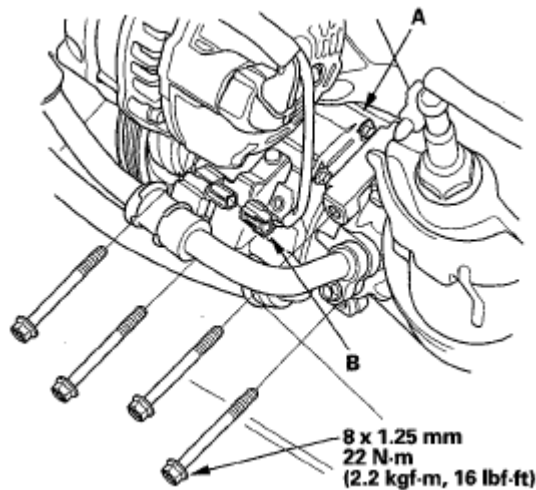


Fig. 48: A/C Compressor And A/C Compressor Clutch Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the radiator (see **RADIATOR AND FAN REPLACEMENT**).
27. Raise the vehicle on the lift .
28. Install the power steering (P/S) hose (A).

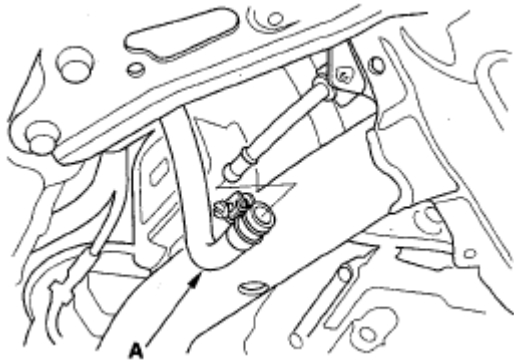


Fig. 49: Identifying Power Steering (P/S) Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Connect the power steering pressure switch connector.

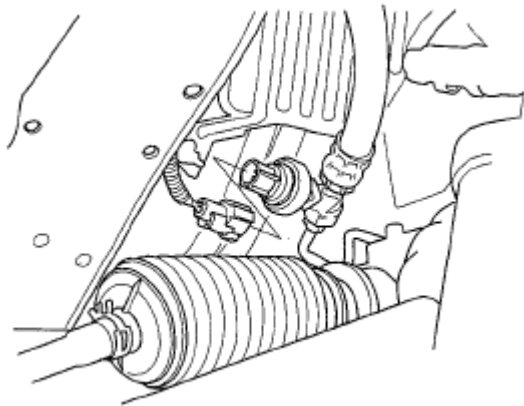


Fig. 50: Identifying Power Steering Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Install the transfer assembly (see **TRANSFER ASSEMBLY INSTALLATION**).
31. Install the propeller shaft onto the transfer shaft flange (see **PROPELLER SHAFT INSTALLATION**).
32. Wipe the driveshaft clean. Install a new set ring on the end of each driveshaft, then install the driveshafts. Make sure each ring "clicks" into place in the differential and intermediate shaft.
33. Connect the suspension lower arms to the knuckles (see step 9 on **REMOVAL/INSTALLATION**).
34. Connect the tie-rod end ball joints to the knuckles (see step 28 on **STEERING GEARBOX INSTALLATION**).
35. Connect the stabilizer links to the dampers (see **STABILIZER LINK REMOVAL/INSTALLATION**).
36. Install exhaust pipe A using new gaskets (B) and new self-locking nuts (C).

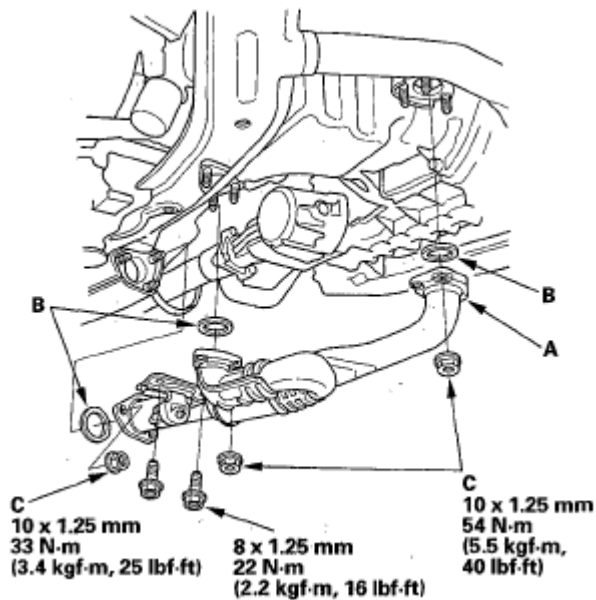


Fig. 51: Identifying Exhaust Pipe, Gaskets And Self-Locking Nuts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. With active damper system: Connect the front suspension stroke sensor connectors (A), then install the harness clamps (B).

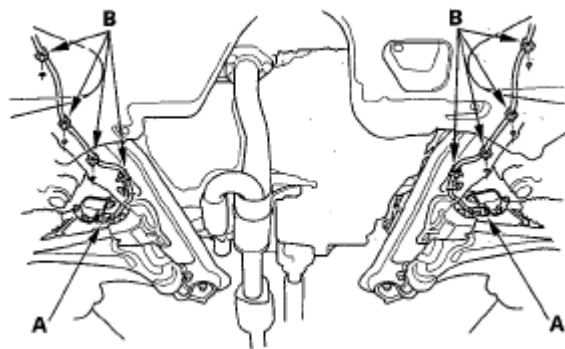


Fig. 52: Identifying Front Suspension Stroke Sensor Connectors And Harness Clamps
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Install the front subframe stiffener using hew bolts.

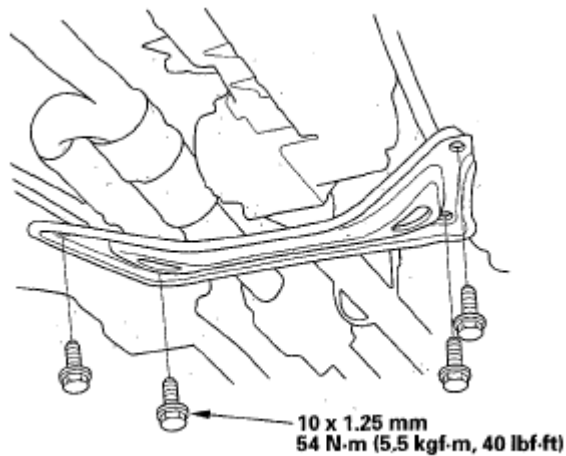


Fig. 53: Identifying Front Subframe Stiffener And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the splash shield.

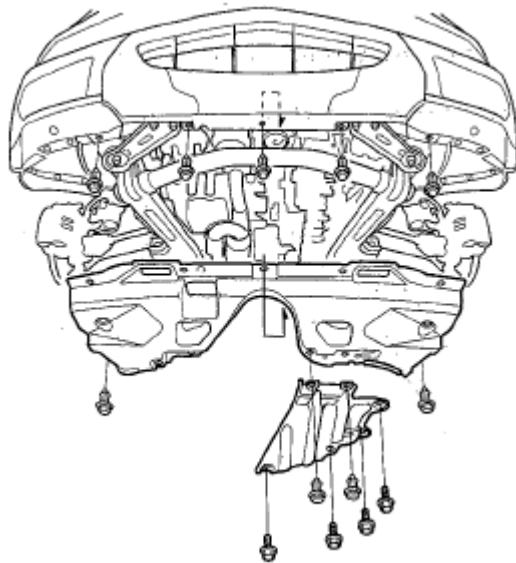


Fig. 54: Identifying Splash Shield
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Install the front wheels.
41. Lower the vehicle on the lift.
42. Install the upper radiator hose (A) and lower radiator hose (B).



Fig. 55: Identifying Upper Radiator Hose And Lower Radiator Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Install the heater hoses.

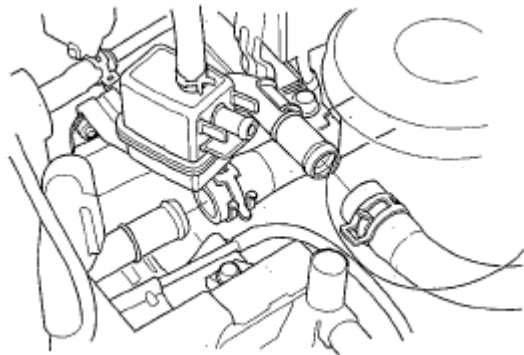


Fig. 56: Identifying Heater Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Install the automatic transmission fluid (ATF) cooler hoses to the transmission, and secure the hoses with the clamps.

NOTE: Check the installation location of the clamps (see ATF COOLER HOSE REPLACEMENT).

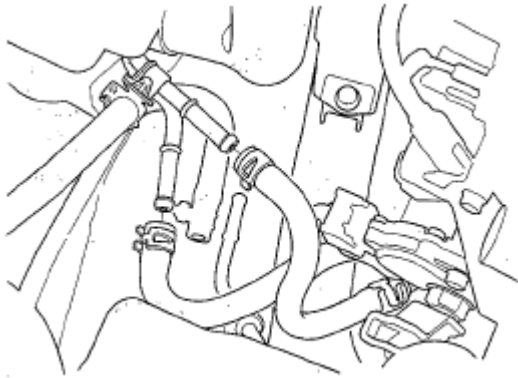
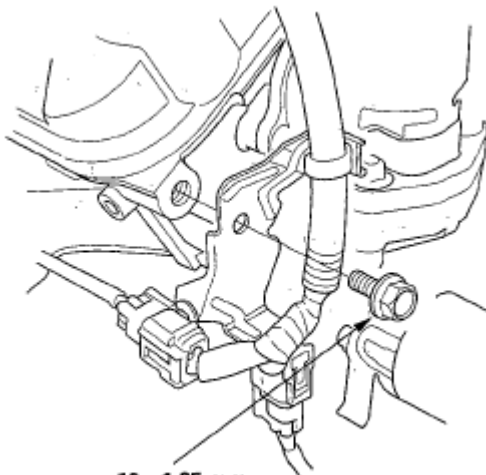


Fig. 57: Identifying Automatic Transmission Fluid Cooler Hoses
Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Install the connector bracket to the front cylinder head.



10 x 1.25 mm
44 N·m (4.5 kgf·m, 33 lbf·ft)

Fig. 58: Identifying Connector Bracket Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install the bracket (A) to the rear cylinder head.

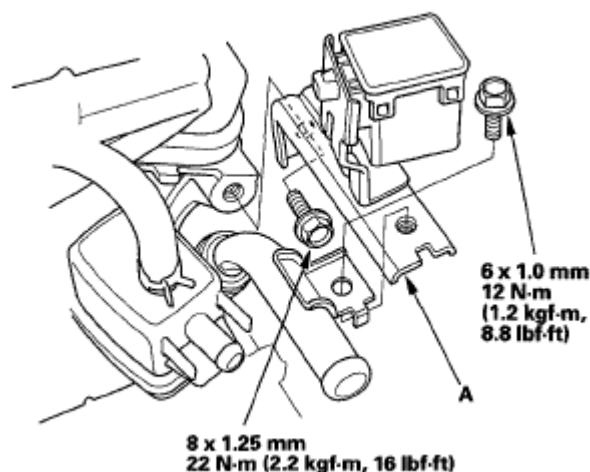


Fig. 59: Identifying Rear Cylinder Head Bracket Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Install the power steering (P/S) pump outlet hose (A) with a new O-ring (B), and install the P/S pump inlet hose (C).

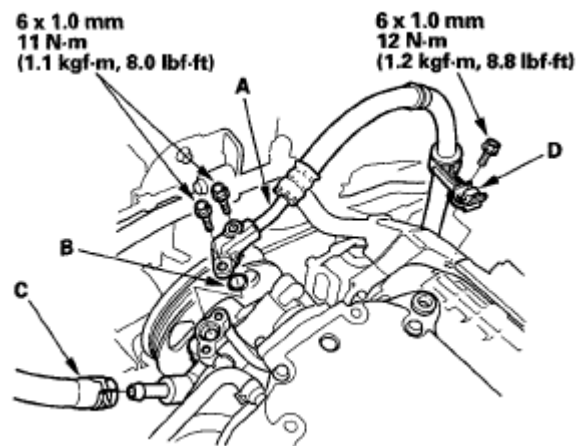


Fig. 60: Identifying Power Steering Pump Outlet Hose, O-Ring And P/S Pump Inlet Hose With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the P/S hose clamp (D) to the cylinder head cover.
49. Install the drive belt (see **DRIVE BELT INSPECTION**).
50. Connect the powertrain control module (PCM) connectors (A) and engine wire harness connector (B), then install the harness clamps (C).

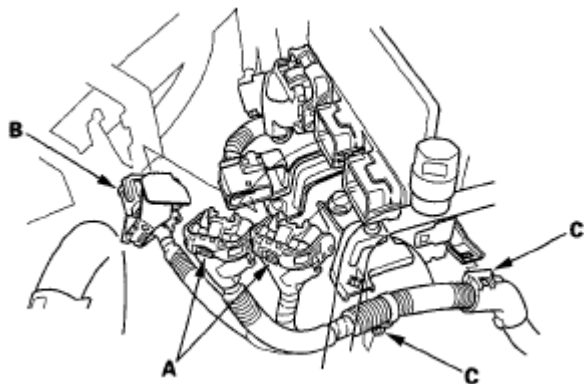


Fig. 61: Identifying Powertrain Control Module Connectors, Engine Wire Harness Connector And Harness Clamps

Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Install the PCM cover (A), then install the bracket (B).

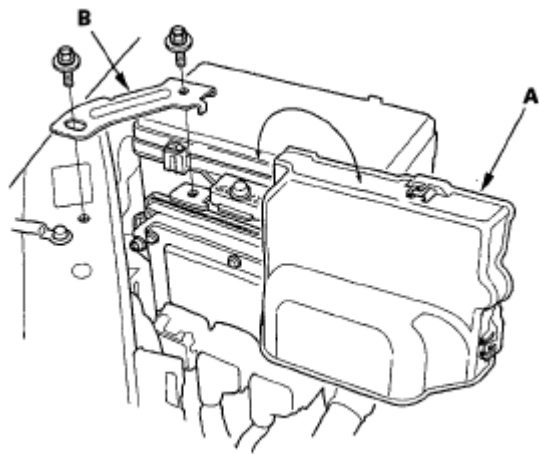


Fig. 62: Identifying PCM Cover And Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

52. Install the coolant reservoir to the bracket.
53. Install the alternator cable (A) to the main under-hood fuse box.

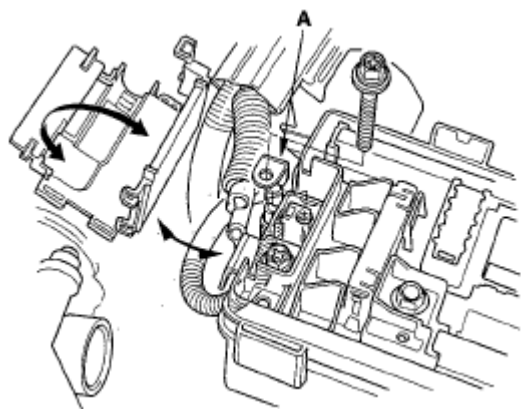


Fig. 63: Identifying Alternator Cable

Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Align the reference mark (A) on the steering joint and steering gearbox pinion shaft. Connect the steering joint (B) to the steering gearbox pinion shaft (C). Tighten the steering joint bolt.

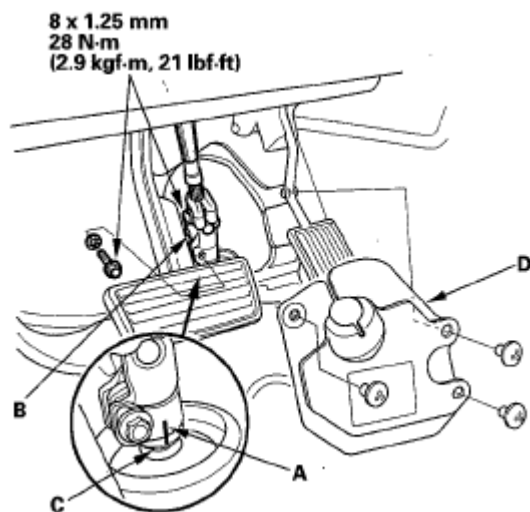


Fig. 64: Identifying Align Reference Mark On Steering Joint And Steering Gearbox Pinion Shaft With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

55. Install the steering joint cover (D).
56. Install the steering wheel (see **STEERING WHEEL INSTALLATION**).
57. Install the brake booster vacuum hose-(A) and evaporative emission (EVAP) canister hose (B).

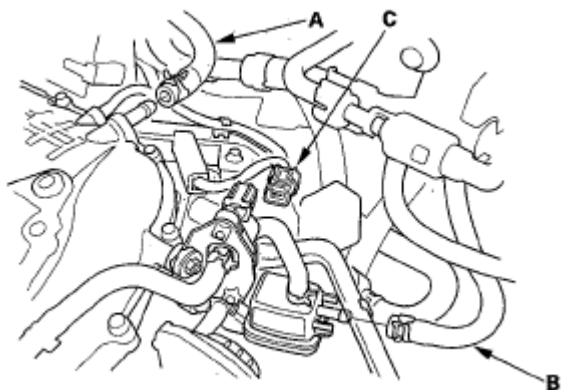


Fig. 65: Identifying Brake Booster Vacuum Hose And Evaporative Emission Canister Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

58. Connect the EVAP canister purge valve connector (C).
59. Connect the fuel feed hose (A) (see **FUEL LINE/QUICK-CONNECT FITTING INSTALLATION**), then install the quick-connect fitting cover (B).

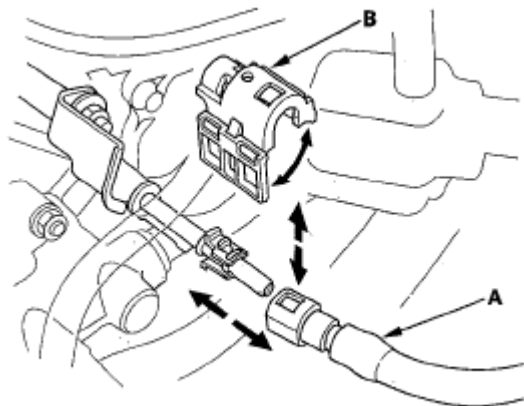


Fig. 66: Identifying Fuel Feed Hose And Quick-Connect Fitting Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. Install the shift cable (see **SHIFT CABLE REPLACEMENT**).
61. Install the positive starter cable (A).

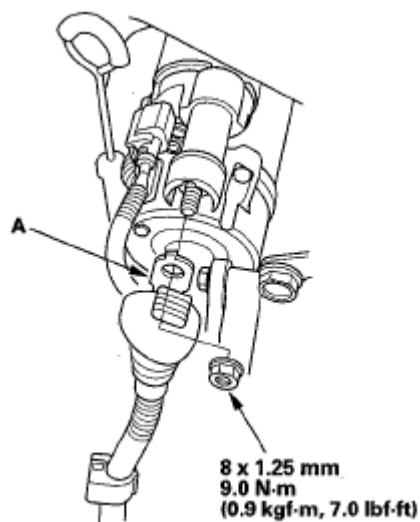


Fig. 67: Identifying Positive Starter Cable With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Install the battery base (A), then install the harness clamps (B).

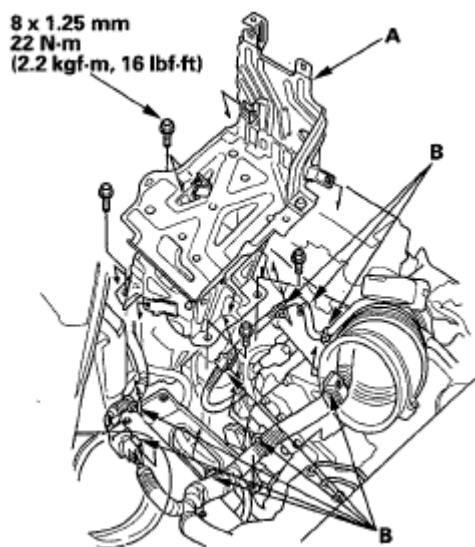


Fig. 68: Identifying Battery Base And Harness Clamps With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Install the harness clamps (A) then install the main under-hood fuse box (B).

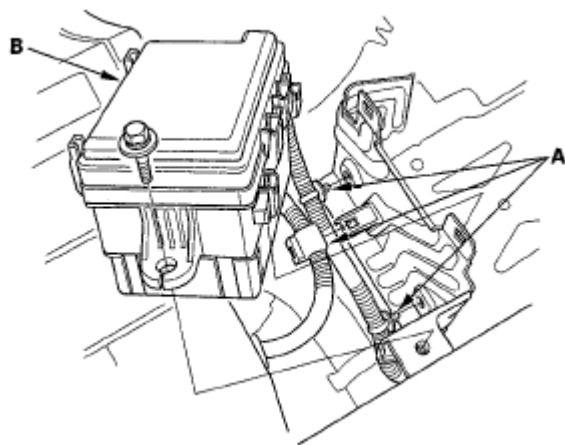


Fig. 69: Identifying Harness Clamps And Main Under-Hood Fuse Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

64. Install the air cleaner assembly (see **AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT**).
65. Install the air intake duct (A), then install the breather pipe (B).

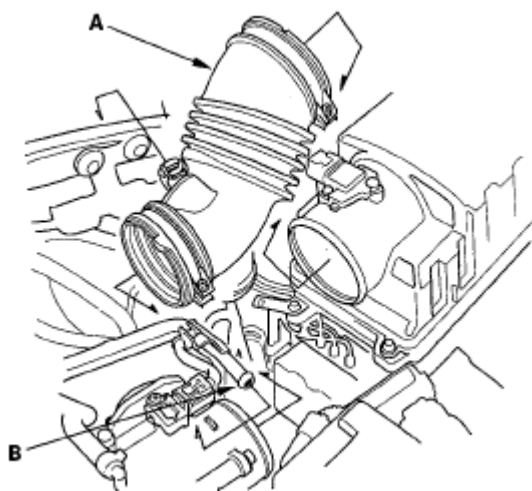


Fig. 70: Identifying Air Intake Duct And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

66. Install the engine cover.

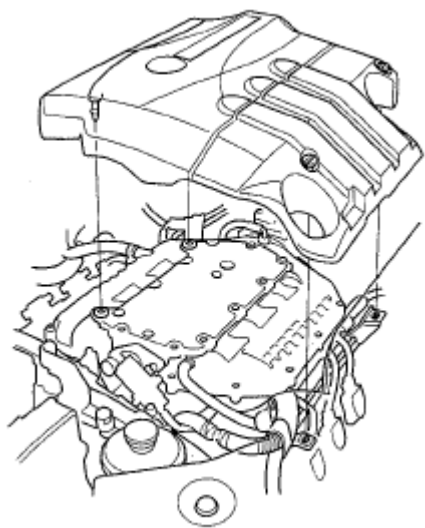


Fig. 71: Identifying Engine Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

67. Install the bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
68. Install the service caps on the cowl cover.
69. Do the battery terminal reconnection procedure (See **RECONNECTION**).
70. Refill the engine with engine oil (see step 4 on **ENGINE OIL REPLACEMENT**).
71. Refill the transmission with ATF (see **ATF REPLACEMENT**).
72. Install the return hose to the power steering fluid reservoir. Refill the power steering system fluid (see **FLUID REPLACEMENT**).
73. Move the shift lever to each gear, and verify that the A/T gear position indicator follows the transmission range switch.
74. Check for fuel leaks. Turn the ignition switch ON (II) (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leaks at any point in the fuel line.
75. Refill the radiator with engine coolant, and bleed air from the cooling system with the heater valve open (see step 10 on **COOLANT REPLACEMENT**).
76. Do the crankshaft position (CKP) pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
77. Inspect the idle speed (see **IDLE SPEED INSPECTION**).
78. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).
79. Do the headlight initial position learning procedure (see **HEADLIGHT INITIAL POSITION LEARNING PROCEDURE**).

ENGINE MOUNT REPLACEMENT

2008 Acura MDX

2007-09 ENGINE Engine Assembly - MDX

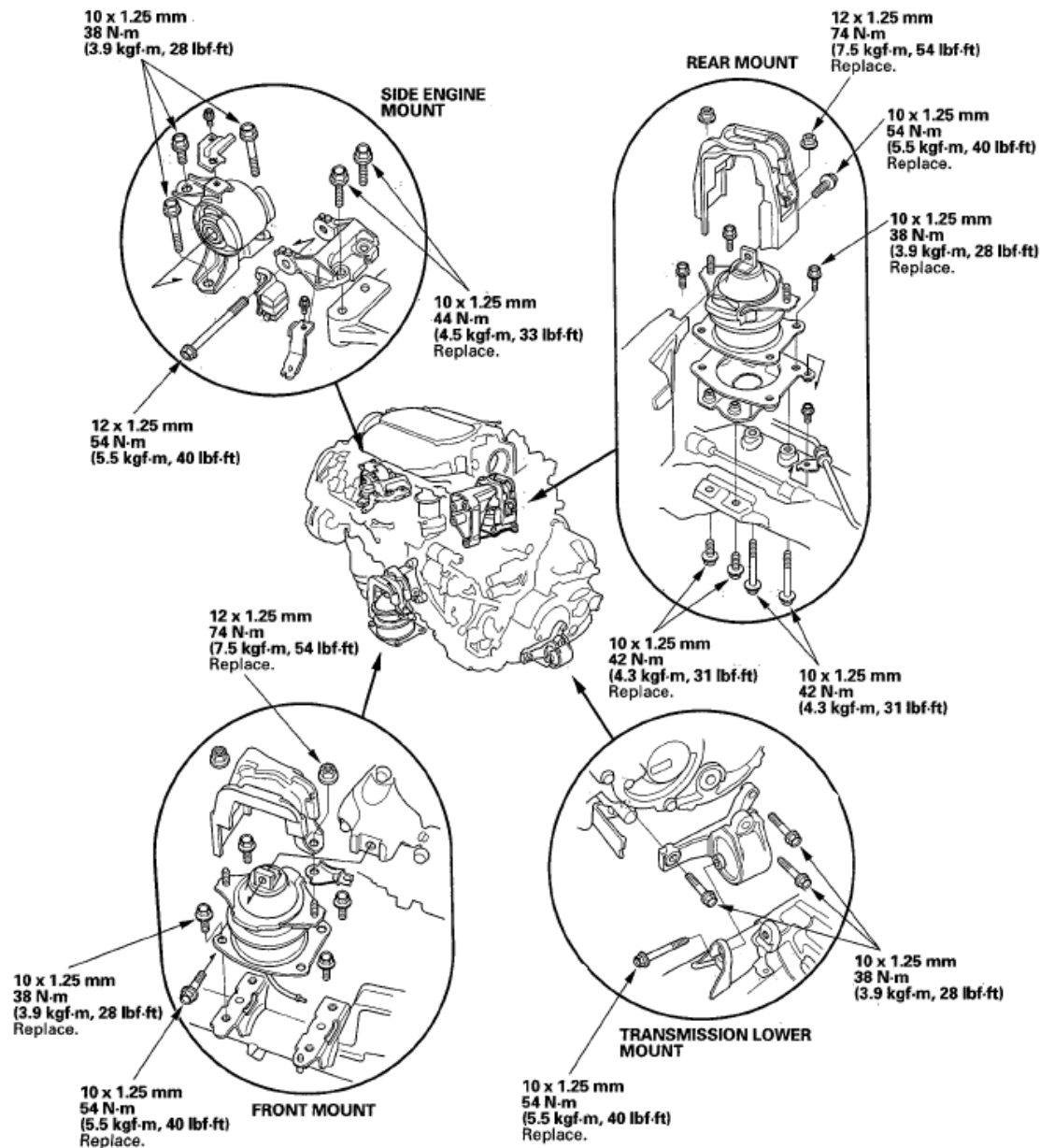


Fig. 72: Identifying Engine Mount Bolts Tightening Torque With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

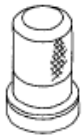
2007-09 ENGINE Engine Block - MDX

2007-09 ENGINE

Engine Block - MDX

SPECIAL TOOLS

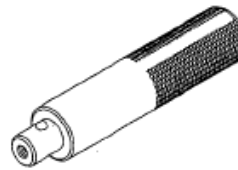
Ref. No.	Tool Number	Description	Qty
①	070AD-RCAA100	Oil Seal Driver, 64 mm	1
②	070AD-RCAA200	Driver Attachment, 106 mm	1
③	07749-0010000	Handle Driver	1



①



②



③

Fig. 1: Identifying Engine Block Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 ENGINE Engine Block - MDX

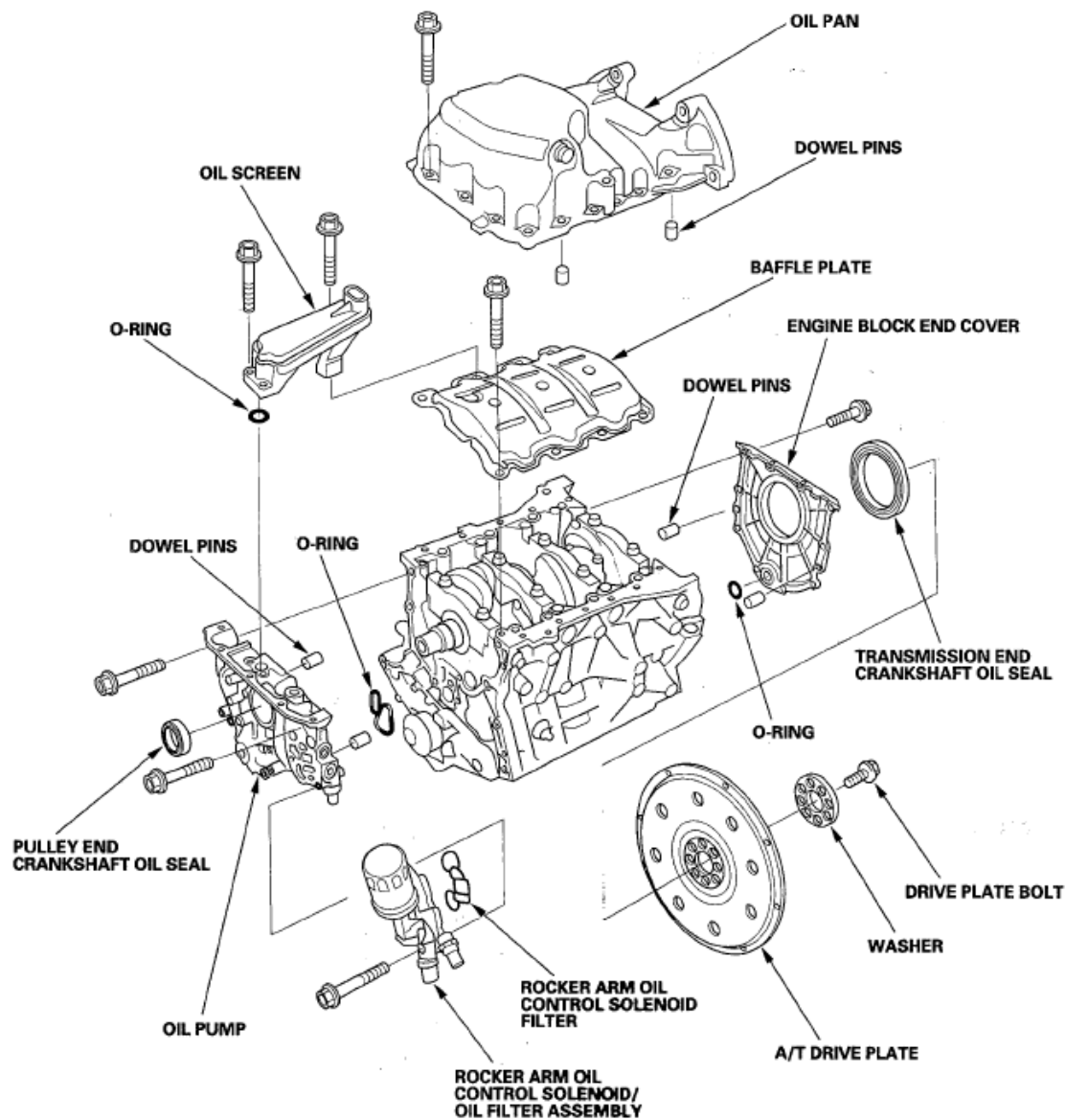


Fig. 2: Identifying Engine Block Component Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE Engine Block - MDX

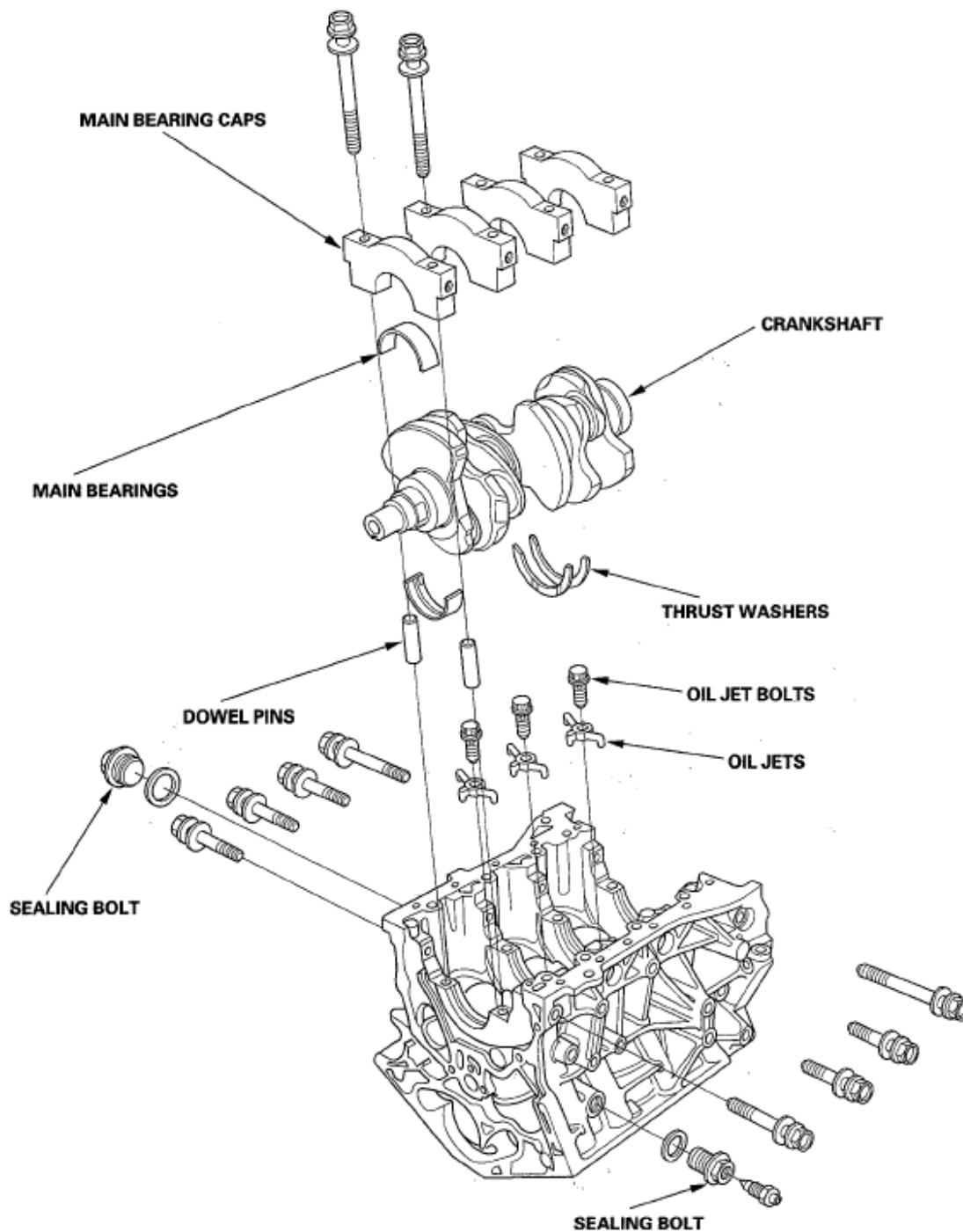


Fig. 3: Identifying Engine Block Component Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

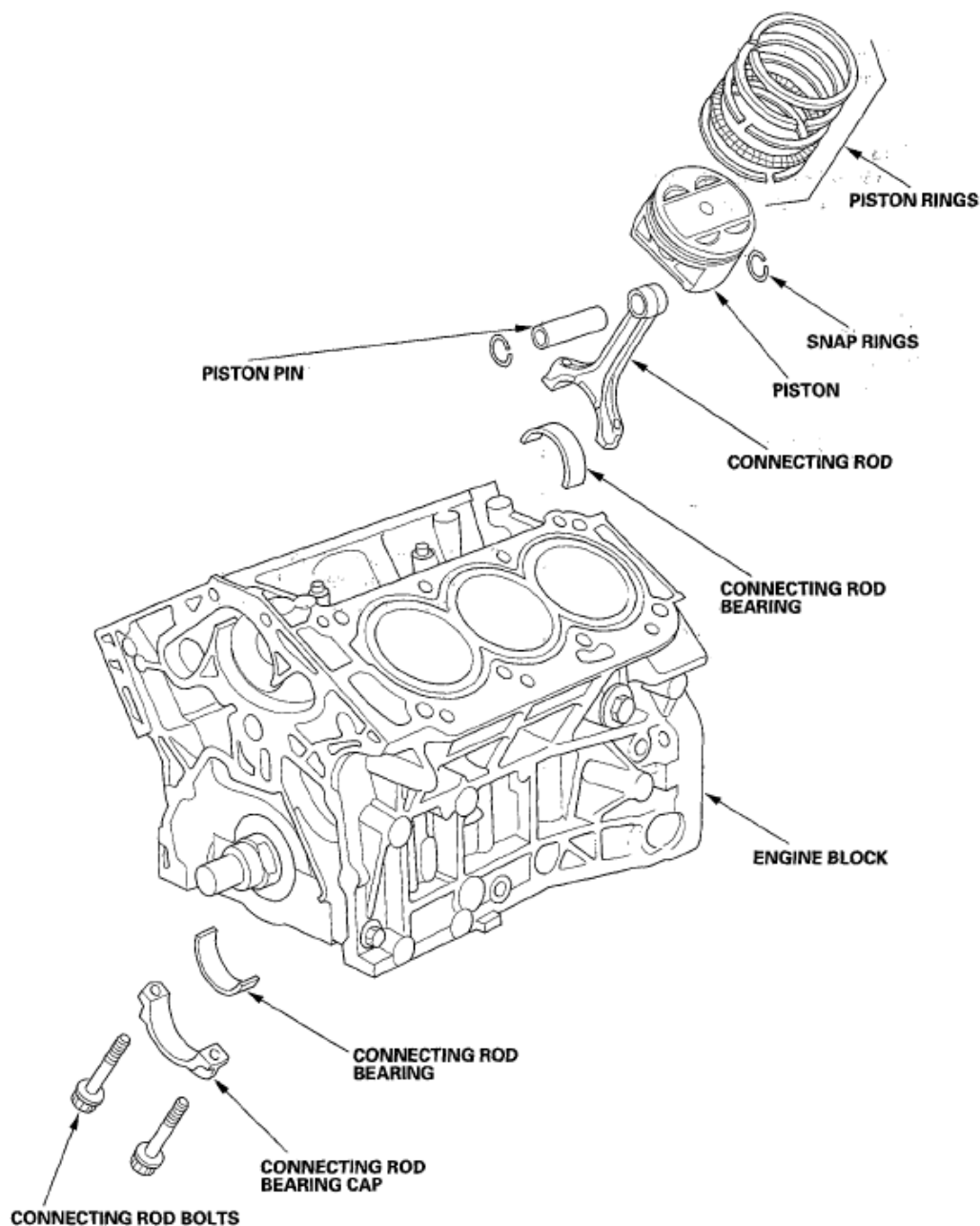


Fig. 4: Identifying Engine Block Component Location (3 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTING ROD AND CRANKSHAFT END PLAY INSPECTION

1. Remove the oil pump (see **REMOVAL**).
2. Remove the baffle plate (see step 10 on **CRANKSHAFT AND PISTON REMOVAL**).
3. Measure the connecting rod end play with a feeler gauge (A) between the connecting rod (B) and crankshaft (C).

Connecting Rod End Play

Standard (New): 0.15-0.35 mm (0.006-0.014 in.)

Service Limit: 0.45 mm (0.018 in.)

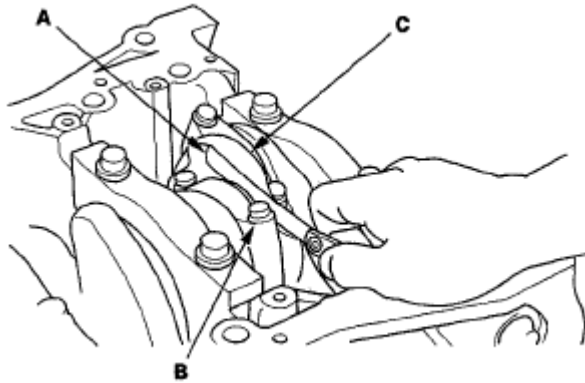


Fig. 5: Measuring Connecting Rod End Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the connecting rod end play is out-of-tolerance, install a new connecting rod and recheck. If it is still out-of-tolerance, replace the crankshaft (see **CRANKSHAFT AND PISTON REMOVAL**).
5. Push the crankshaft firmly away from the dial indicator, and zero the dial against the end of the crankshaft. Then pull the crankshaft firmly back toward the indicator; the dial reading should not exceed the service limit.

Crankshaft End Play

Standard (New): 0.10-0.35 mm (0.004-0.014 in.)

Service Limit: 0.45 mm (0.018 in.)

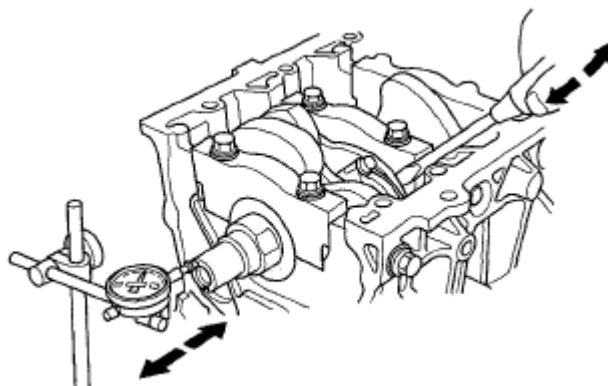


Fig. 6: Identifying Crankshaft End Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the end play is excessive, replace the thrust washers and recheck. If it is still out-of-tolerance, replace the crankshaft (see **CRANKSHAFT AND PISTON REMOVAL**).

CRANKSHAFT MAIN BEARING REPLACEMENT

MAIN BEARING CLEARANCE INSPECTION

1. Remove the main bearing caps and bearing halves (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Clean each main journal and bearing half with a clean shop towel.
3. Place one strip of plastigage across each main journal.

NOTE: If the engine is still in the vehicle when you bolt the main cap down to check the clearance, the weight of the crankshaft and drive plate will flatten the plastigage further than just the torque on the cap bolt and give you an incorrect reading. For an accurate reading, support the crank with a jack under the counterweights, and check only one bearing at a time.

4. Reinstall the bearings and caps, then torque the bearing cap bolts to 74 N.m (7.5 kgf.m, 54 lbf.ft), and the bearing cap side bolts to 49 N.m (5.0 kgf.m, 36 lbf.ft) in the proper sequence (see step 22 on **CRANKSHAFT AND PISTON INSTALLATION**).

NOTE:

- Apply new engine oil to the bolt threads and flanges.
- Do not rotate the crankshaft during inspection.

5. Remove the cap and bearing half, and measure the widest part of the plastigage.

Main Bearing-to-Journal Oil Clearance

Standard (New): 0.019-0.045 mm (0.0007-0.0018 in.)

Service Limit: 0.050 mm (0.0020 in.)

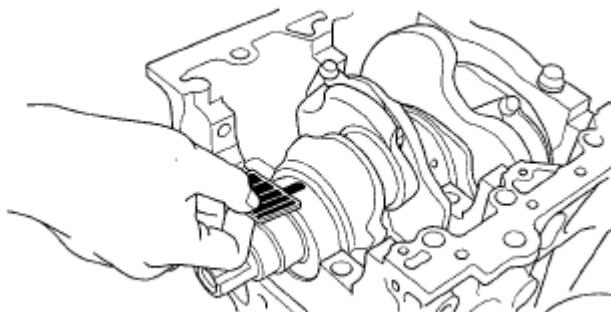


Fig. 7: Measuring Widest Part Of Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the plastigage measures too wide or too narrow, remove the crankshaft, and remove the upper half of the bearing. Install a new, complete bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the bearings or the caps to adjust clearance.
7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the color listed above or below the current one), and check again. If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the crankshaft and start over (see **CRANKSHAFT AND PISTON REMOVAL**).

MAIN BEARING SELECTION

Crankshaft Bore Code Location

Letters or bars have been stamped on the end of the block as a code for the size of each of the four main journal bores.

Use them, and the numbers stamped on the crankshaft (codes for main journal size), to choose the correct bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

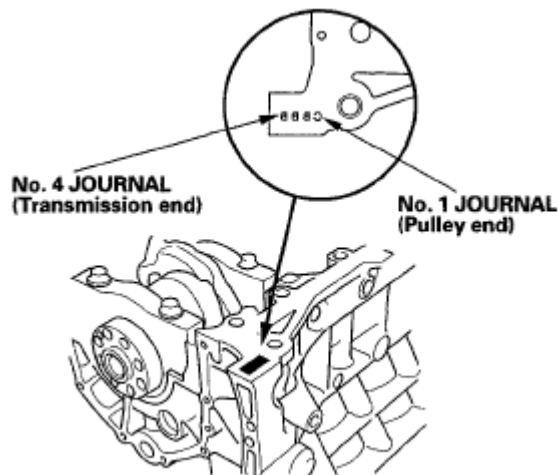


Fig. 8: Locating And Identifying Crankshaft Bore Code (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

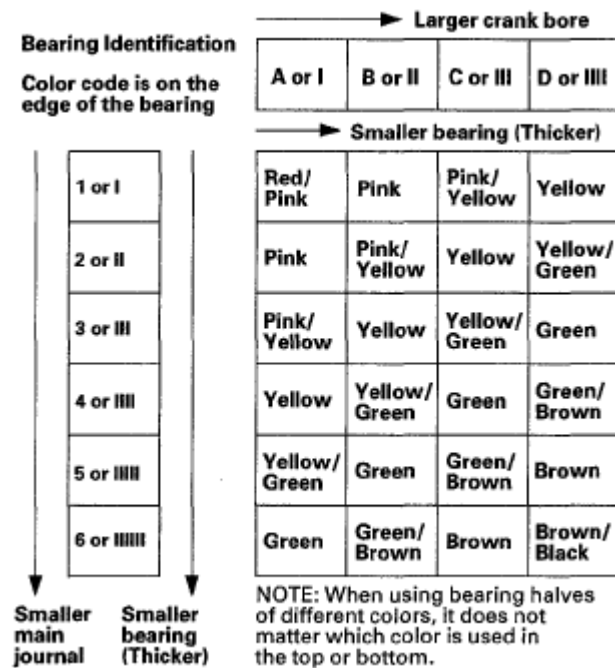


Fig. 9: Locating And Identifying Crankshaft Bore Code (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Main Journal Code Locations (Numbers or Bars)

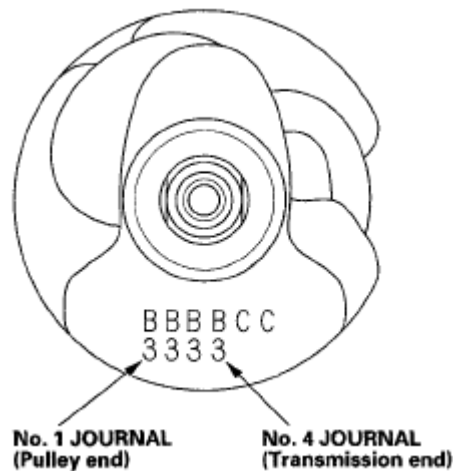


Fig. 10: Locating Main Journal Code (Numbers Or Bars)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CONNECTING ROD BEARING REPLACEMENT

ROD BEARING CLEARANCE INSPECTION

1. Remove the connecting rod cap and bearing half (see CRANKSHAFT AND PISTON REMOVAL).

2. Clean the crankshaft rod journal and bearing half with a clean shop towel.
3. Place a strip of plastigage across the rod journal.
4. Reinstall the bearing half and cap, and torque the bolts.

NOTE:

- Apply new engine oil to the bolt threads and flanges.
- Do not rotate the crankshaft during inspection.

Tightening Torque:

20 N.m (2.0 kgf.m, 14 lbf.ft) + 90 °

5. Remove the rod cap and bearing half and measure the widest part of the plastigage.

Connecting Rod Bearing-to-Journal Oil Clearance

Standard (New): 0.020-0.044 mm (0.0008-0.0017 in.)

Service Limit: 0.050 mm (0.0020 in.)

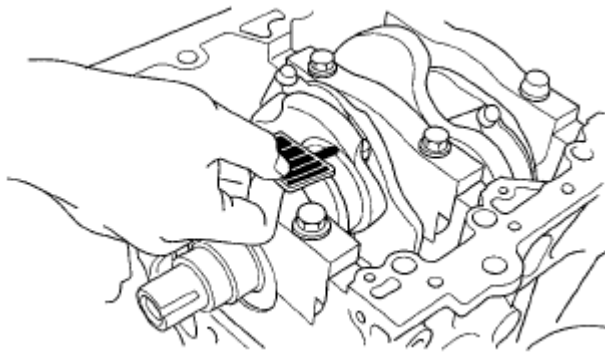


Fig. 11: Measuring Widest Part Of Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the plastigage measures too wide or too narrow, remove the upper half of the bearing, then install a new, complete bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the bearings or the caps to adjust clearance.
7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the color listed above or below the current one), and check clearance again. If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the crankshaft and start over (see **CRANKSHAFT AND PISTON REMOVAL**).

ROD BEARING SELECTION

Each rod falls into one of four tolerance ranges, from 0 to 0.024 mm (0.0009 in.), in 0.006 mm (0.0002 in.) increments, depending on the size of its big end bore. It's then stamped with a number or bar (1,2,3, or 4/I, II,

III, or MM) indicating the range. You may find any combination of 1,2,3, or 4/I, II, III, or III I in any engine.

Normal Bore Size: 60.0 mm (2.36 in.)

Inspect the connecting rod for cracks and heat damage.

Connecting Rod Journal Code Locations

Numbers or bars have been stamped on the side of each connecting rod as a code for the size of the big end. Use them, and the letters or bars stamped on the crank (codes for rod journal size) to choose the correct bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

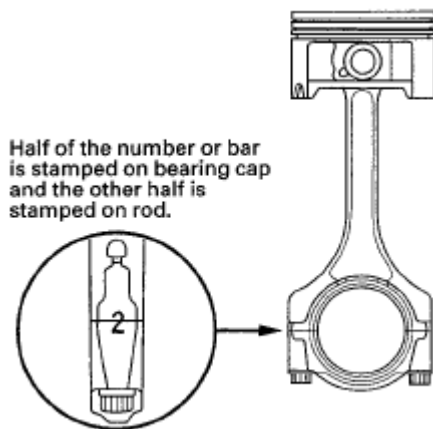


Fig. 12: Identifying And Locating Connecting Rod Journal Code (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Bearing Identification
Color code is on the edge of the bearing

	→ Larger big end bore			
	1 or I	2 or II	3 or III	4 or IIII
	→ Smaller bearing (Thicker)			
A or I	Pink	Pink/ Yellow	Yellow	Yellow/ Green
B or II	Pink/ Yellow	Yellow	Yellow/ Green	Green
C or III	Yellow	Yellow/ Green	Green	Green/ Brown
D or IIII	Yellow/ Green	Green	Green/ Brown	Brown
E or IIIII	Green	Green/ Brown	Brown	Brown/ Black
F or IIIII	Green/ Brown	Brown	Brown/ Black	Black

↓ Smaller rod journal ↓ Smaller bearing (Thicker)

NOTE: When using bearing halves of different colors, it does not matter which color is used in the top or bottom.

Fig. 13: Identifying And Locating Connecting Rod Journal Code (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connecting Rod Journal Code Locations (Letters or Bars)

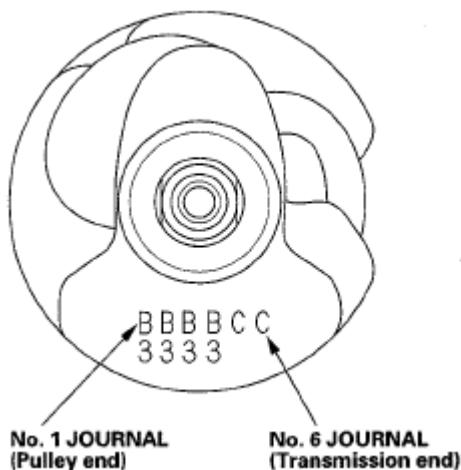


Fig. 14: Locating Connecting Rod Journal Code (Letters Or Bars)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL PAN REMOVAL

1. If the engine is already out of the vehicle, go to step 6.
2. Raise the vehicle on the lift .
3. Drain the engine oil (see **ENGINE OIL REPLACEMENT**).

4. Remove the splash shield (see step 30 on **ENGINE REMOVAL**).
5. Remove exhaust pipe A (see step 35 on **ENGINE REMOVAL**).
6. Remove the rear warm up three way catalytic converter (rear WU-TWC) bracket.

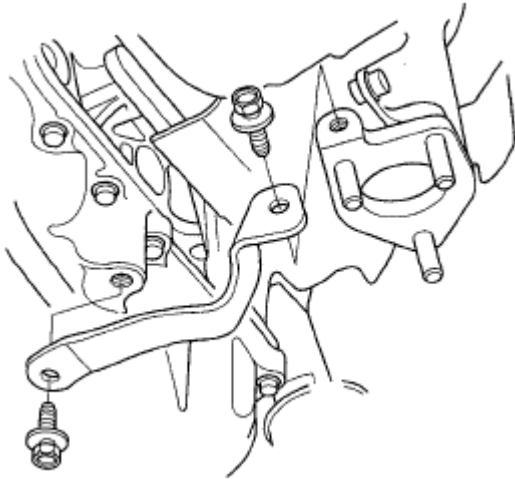


Fig. 15: Identifying Rear Warm Up Three Way Catalytic Converter Bracket Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the torque converter cover (A) and the four bolts (B) securing the transmission.

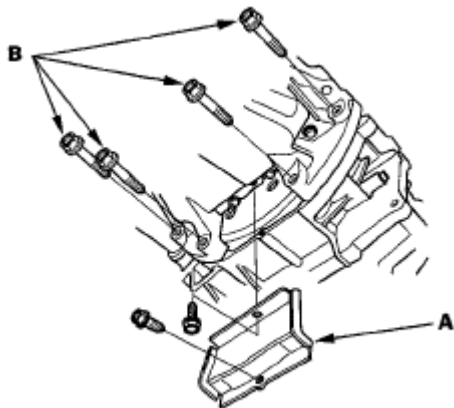


Fig. 16: Identifying Torque Converter Cover And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts securing the oil pan.
9. Using a flat blade screwdriver, separate the oil pan from the block in the places shown.

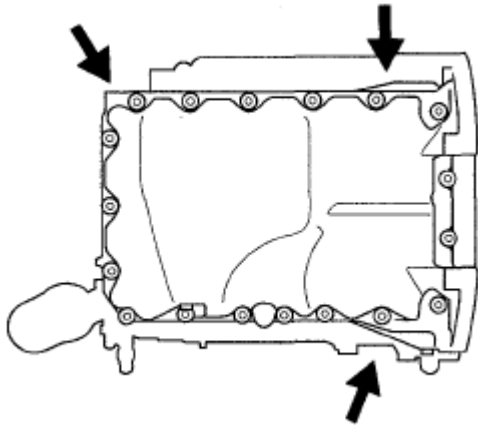


Fig. 17: Identifying Oil Pan Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the oil pan.

CRANKSHAFT AND PISTON REMOVAL

1. Remove the engine assembly (see ENGINE REMOVAL).
2. Remove the transmission (see TRANSMISSION REMOVAL).
3. Remove the drive plate.
4. Remove the cylinder heads (see CYLINDER HEAD REMOVAL).
5. Remove the crankshaft position (CKP) sensor (see CKP SENSOR REPLACEMENT).
6. Remove the timing belt drive pulley from the crankshaft.
7. Remove the oil pan (see OIL PAN REMOVAL).
8. Remove the engine block end cover.

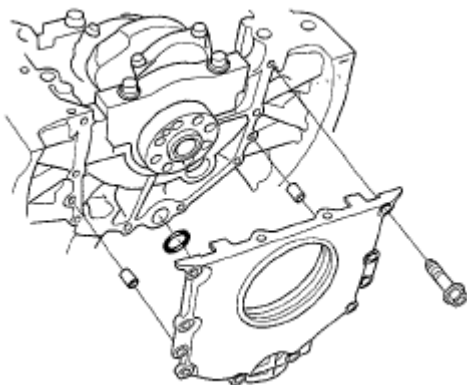


Fig. 18: Identifying Drive Plate And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the rocker arm oil control solenoid/oil filter assembly.

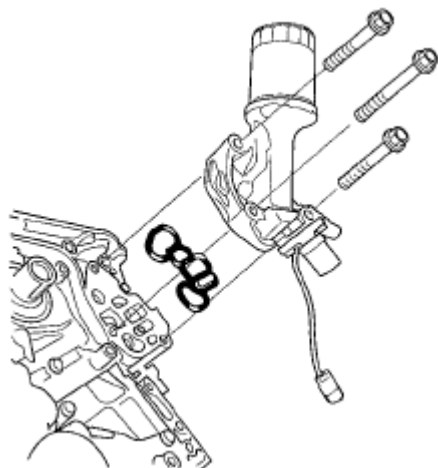


Fig. 19: Identifying Rocker Arm Oil Control Solenoid/Oil Filter Assembly And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the oil screen (A), baffle plate (B), and oil pump(C).

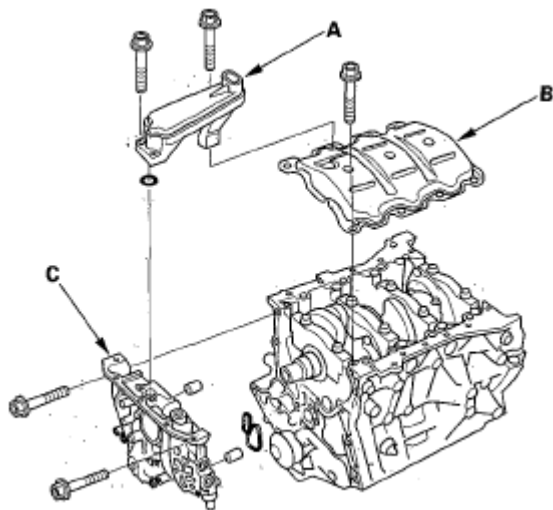


Fig. 20: Identifying Oil Screen, Baffle Plate, And Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the connecting rod caps after setting the crank pin at bottom dead center (BDC) for each cylinder. Remove the piston/connecting rod assembly by pushing on the connecting rod. Take care not to damage the oil jets, crank pin, or cylinder with the connecting rod.

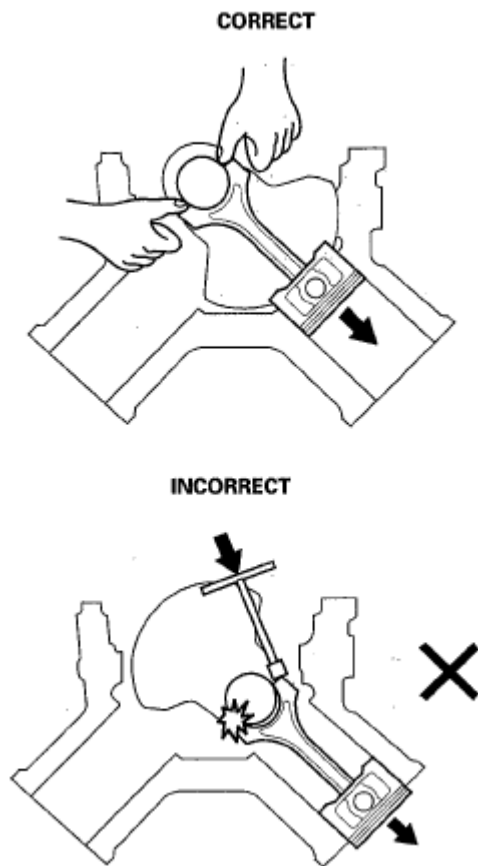


Fig. 21: Identifying Correct And Incorrect Position For Pushing Connecting Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the bearing from the cap. Keep all caps/ bearings in order.
13. Remove the upper bearing halves from the connecting rods, and set them aside with their respective caps.
14. After removing a piston/connecting rod assembly, reinstall the cap on the rod.
15. To avoid mix-up during reassembly, mark each piston/connecting rod assembly with its cylinder number.
16. Loosen the bearing cap bolts and bearing cap side bolts in sequence $\frac{1}{3}$ turn at a time; repeat the sequence until all bolts are loosened.

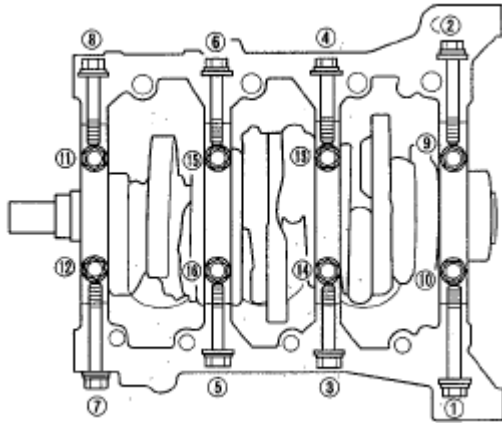


Fig. 22: Identifying Bearing Cap Bolts Loosening Sequence
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the bearing cap bolts (A) and bearing cap side bolts (B), then remove the bearing cap (C).

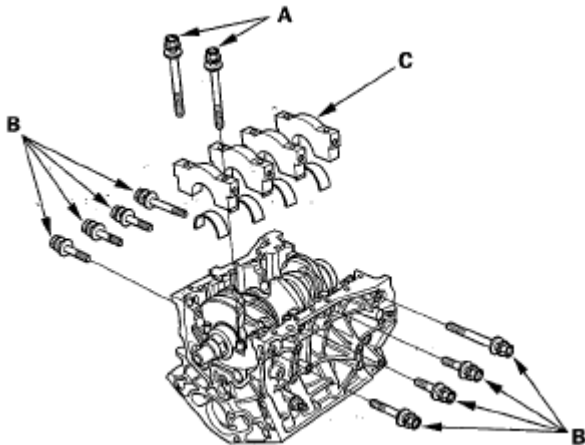


Fig. 23: Identifying Bearing Cap Bolts And Bearing Cap Side Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Lift the crankshaft (A) out of the engine block, being careful not to damage the journals.

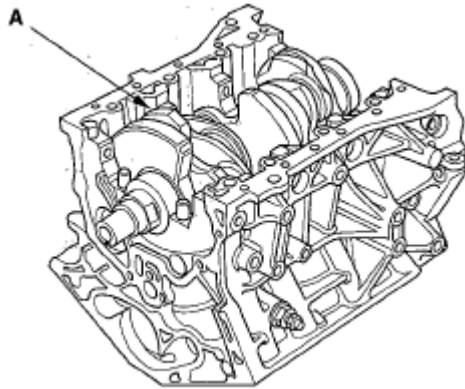


Fig. 24: Identifying Crankshaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Reinstall the main caps and bearings on the engine block in the proper order.

CRANKSHAFT INSPECTION

OUT-OF-ROUND AND TAPER

1. Remove the crankshaft from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Clean the crankshaft oil passages with pipe cleaners or a suitable brush.
3. Check the keyway and threads.
4. Measure out-of-round at the middle of each rod and main journal in two places. The difference between measurements on each journal must not be more than the service limit.

Journal Out-of-Round

Standard (New): 0.005 mm (0.0002 in.) max.

Service Limit: 0.010 mm (0.0004 in.)

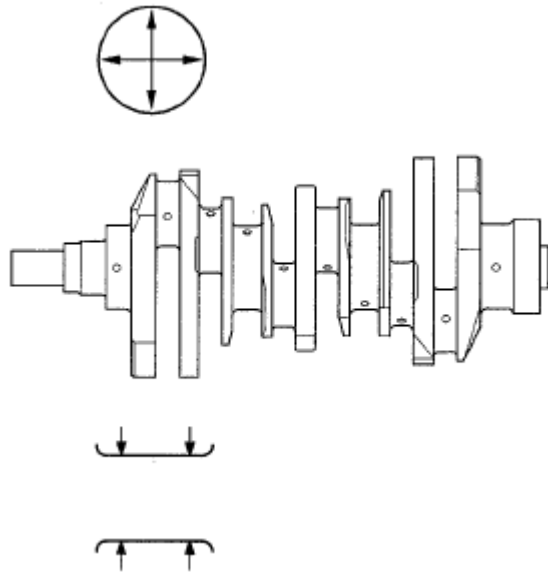


Fig. 25: Identifying Out-Of-Round At Middle Of Rod And Main Journal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure taper at the edges of each rod and main journal. The difference between measurements on each journal must not be more than the service limit.

Journal Taper

Standard (New): 0.005 mm (0.0002 in.) max.

Service Limit: 0.010 mm (0.0004 in.)

Straightness

6. Place the engine block on the surface plate.
7. Clean and install the bearings on the No. 1 and No. 4 journal of the engine block.
8. Lower the crankshaft into the engine block.
9. Measure the runout on all of the main journals. Rotate the crankshaft two complete revolutions. The difference between measurements on each journal must not be more than the service limit.

Crankshaft Total Runout

Standard (New): 0.025 mm (0.0010 in.) max.

Service Limit: 0.030 mm (0.0012 in.)

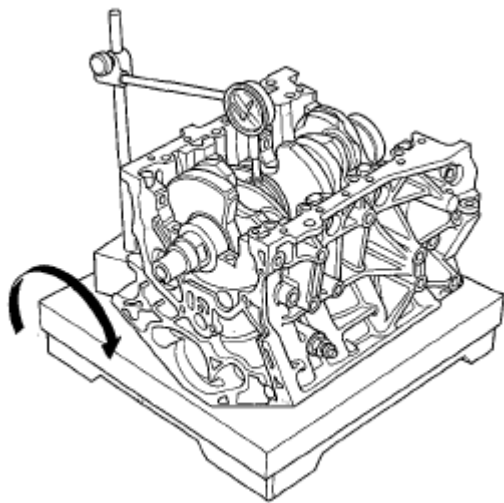


Fig. 26: Identifying Crankshaft Runout

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BLOCK AND PISTON INSPECTION

1. Remove the piston from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Check the piston for distortion or cracks.
3. Measure the piston diameter at a point 16.0 mm (0.63 in.) from the bottom of the skirt.

Piston Diameter

Standard (New): 89.983-89.996 mm (3.5426-3.5431 in.)

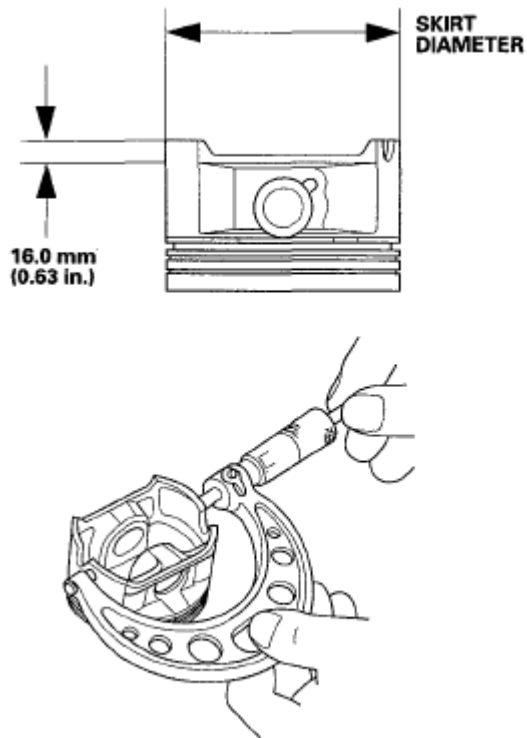


Fig. 27: Identifying Piston Diameter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure wear and taper in direction X and Y at three levels in each cylinder as shown. If the measurements in any cylinder are beyond the service limit, replace the engine block

Cylinder Bore Size

Standard (New): 90.000-90.015 mm (3.5433-3.5439 in.)

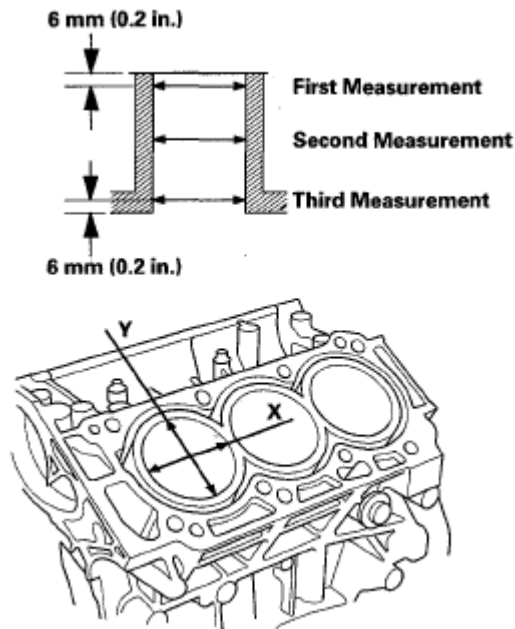


Fig. 28: Identifying Cylinder Bore Size

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check the top of the engine block for warpage. Measure along the edges and across the center as shown.:

Engine Block Warpage

Standard (New): 0.07 mm (0.003 in.) max.

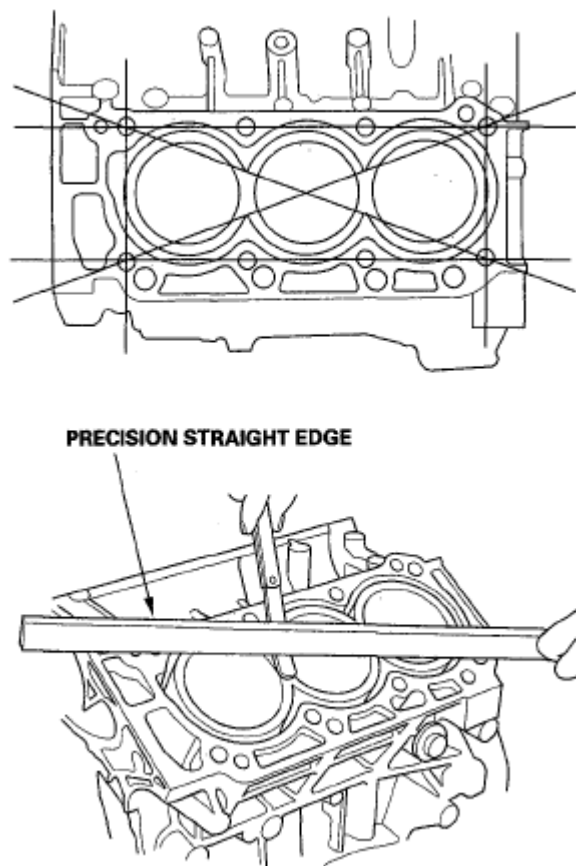


Fig. 29: Identifying Engine Block Warpage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Calculate the difference between cylinder bore diameter and piston diameter. If the clearance is near or exceeds the service limit, inspect the piston and cylinder bore for excessive wear.

Piston-to-Cylinder Bore Clearance

Standard (New): 0.004-0.032 mm (0.0002-0.0013 in.)

Service Limit: 0.08 mm (0.003 in.)

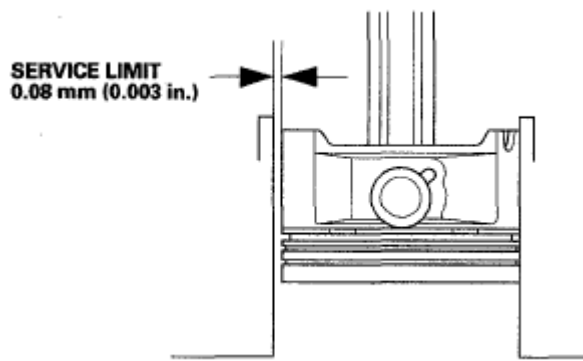


Fig. 30: Identifying Piston-To-Cylinder Bore Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PISTON, PIN, AND CONNECTING ROD REPLACEMENT

DISASSEMBLY

1. Remove the piston from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Apply new engine oil to the piston pin snap rings (A) and turn them in the ring grooves until the end gaps are lined up with the cutouts in the piston pin bores (B).

NOTE: Take care not to damage the ring grooves.

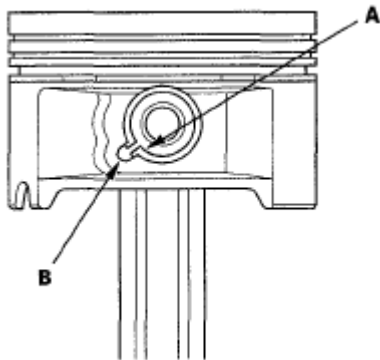


Fig. 31: Identifying Snap Rings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove snap rings (A) from both sides of the piston. Start at the cutout in the piston pin bore. Remove the snap rings carefully so they do not go flying or get lost. Wear eye protection.

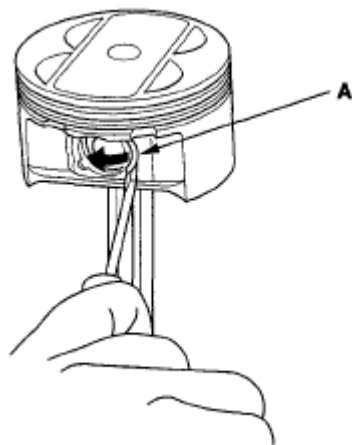


Fig. 32: Identifying Snap Rings

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Heat the piston and connecting rod assembly to about 158°F (70°C), then remove the piston pin.

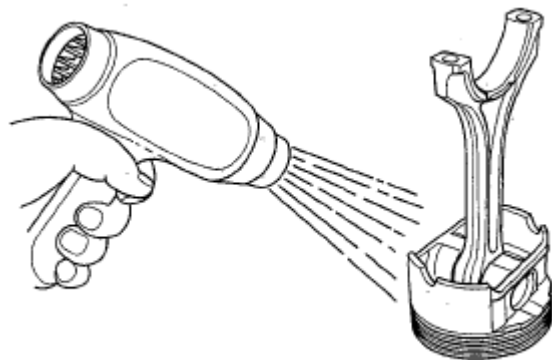


Fig. 33: Heating Piston And Connecting Rod Assembly

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Inspection

NOTE: Inspect the piston, piston pin, and connecting rod when they are at room temperature.

1. Measure the diameter of the piston pin.

Piston Pin Diameter

Standard (New): 21.962-21.965 mm (0.8646-0.8648 in.)

Service Limit: 21.954 mm (0.8643 in.)

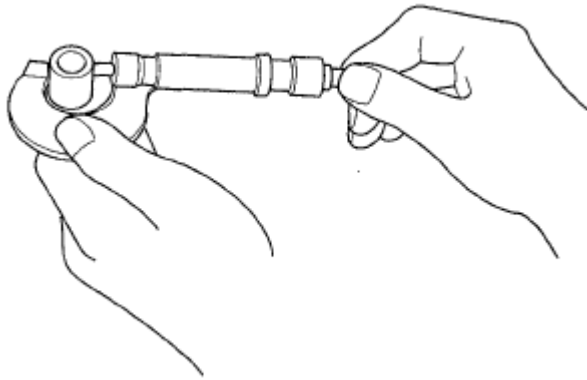


Fig. 34: Identifying Diameter Of Piston Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Zero the dial indicator to the piston pin diameter.

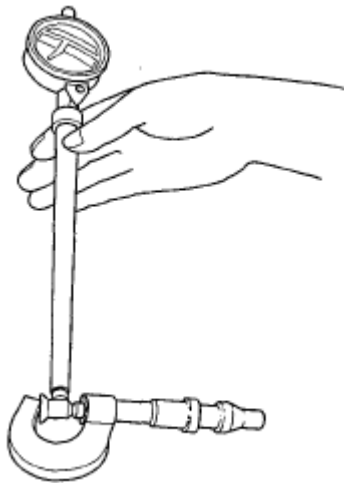


Fig. 35: Identifying Piston Pin Diameter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the difference between the piston pin diameter and piston pin hole diameter on the piston.

Piston Pin-to-Piston Clearance

Standard (New): -0.0050 to +0.0010 mm (-0.00020 to +0.00004 in.)

Service Limit: 0.004 mm (0.0002 in.)

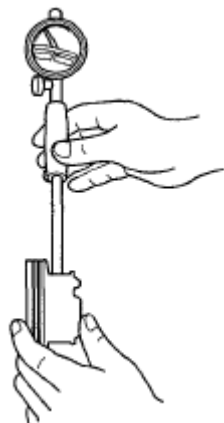


Fig. 36: Identifying Difference Between Piston Pin Diameter And Piston Pin Hole Diameter On Piston

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure the piston pin-to-connecting rod clearance.

Piston Pin-to-Connecting Rod Clearance

Standard (New): 0.005-0.014 mm (0.0002-0.0006 in.)

Service Limit: 0.019 mm (0.0007 in.)

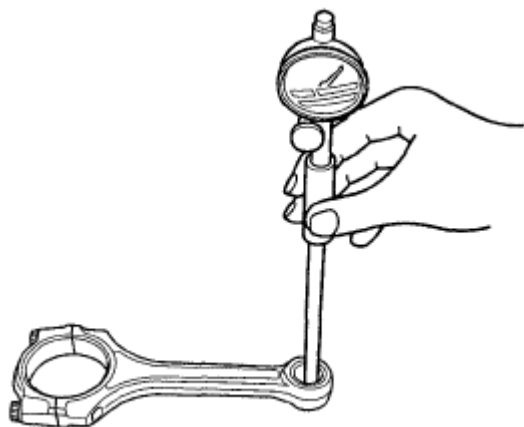


Fig. 37: Identifying Piston Pin-To-Connecting Rod Clearance

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REASSEMBLY

1. Install a piston pin snap ring (A) only on one side.

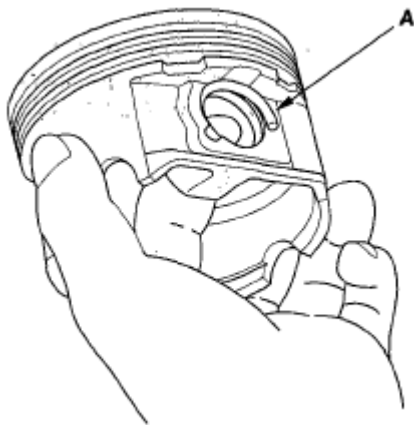


Fig. 38: Identifying Piston Pin Snap Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Coat the piston pin bore in the piston, the bore in the connecting rod, and the piston pin with new engine oil.
3. Heat the piston to about 158°F (70°C).

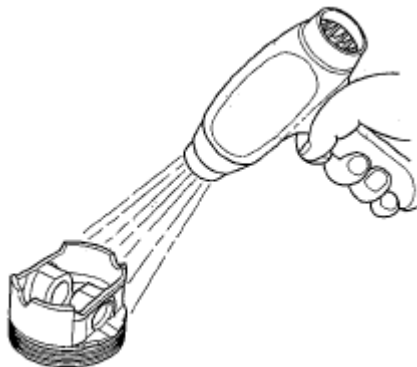


Fig. 39: Heating Piston

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Assemble the piston (A) and connecting rod (B) with the embossed marks (C) on the same side. Install the piston pin (D).

NOTE: Apply new engine oil to the piston pin.

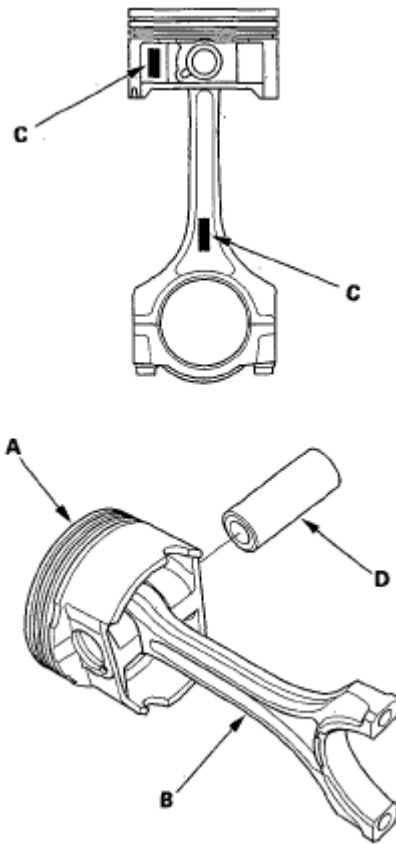


Fig. 40: Identifying Piston And Connecting Rod
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the remaining snap ring.

PISTON RING REPLACEMENT

1. Remove the piston from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Using a ring expander (A), remove the old piston rings (B).

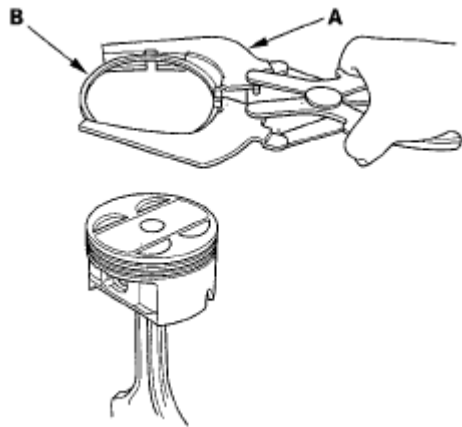


Fig. 41: Identifying Piston Rings

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean all the ring grooves thoroughly with a squared-off broken ring, or a ring groove cleaner with a blade that fits the piston grooves. File down the blade, if necessary. The top ring and second ring grooves are 1.2 mm (0.05 in.) wide, and the oil ring groove is 2.8 mm (0.11 in.) wide. Do not use a wire brush to clean the ring grooves, or cut the ring grooves deeper with the cleaning tool.

NOTE: If the piston is to be separated from the connecting rod, do not install new rings yet.

4. Using a piston, push a new ring (A) into the cylinder bore 15-20 mm (0.6-0.8 in.) from the bottom.

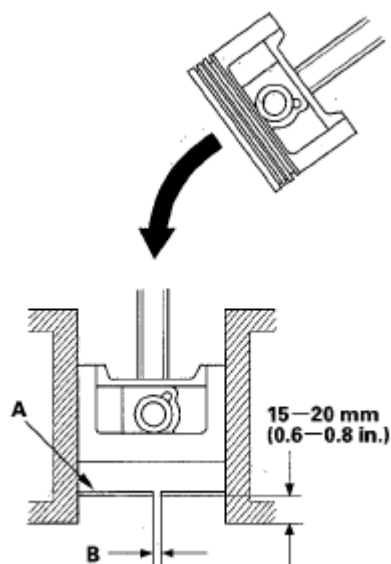


Fig. 42: Identifying Ring Into Cylinder Bore

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure the piston ring end-gap (B) with a feeler gauge:

2008 Acura MDX

2007-09 ENGINE Engine Block - MDX

- If the gap is too small, check to see if you have the proper rings for your engine.
- If the gap is too large, recheck the cylinder bore diameter against the wear limits (see step 4 on **BLOCK AND PISTON INSPECTION**).

Piston Ring End-Gap

Top Ring:

Standard (New): 0.30-0.40 Mm (0.012-0.016 In.)

Service Limit: 0.60 Mm (0.024 In.)

Second Ring:

Standard (New): 0.40-0.55 Mm (0.016-0.022 In.)

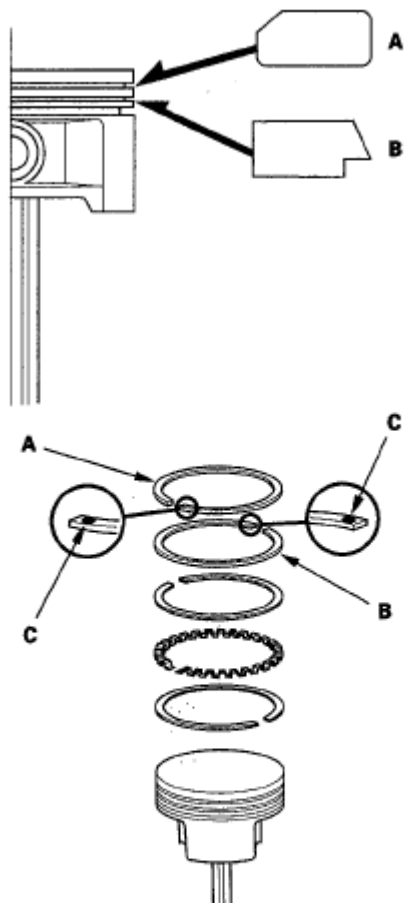
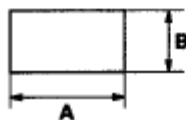
Service Limit: 0.70 Mm (0.028 In.)

Oil Ring:

Standard (New): 0.20-0.70 Mm (0.008-0.028 In.)

Service Limit: 0.80 Mm (0.031 In.)

6. Install the rings as shown. The top ring (A) has a 1E mark and the second ring (B) has a 2E mark. The manufacturing marks (c) must face upward.

**Piston Ring Dimensions:**

Top Ring (Standard)
A: 3.1 mm (0.12 in.)
B: 1.2 mm (0.05 in.)

Second Ring (Standard)
A: 3.4 mm (0.13 in.)
B: 1.2 mm (0.05 in.)

Fig. 43: Identifying Top Ring And Second Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. After installing a new set of rings, measure the ring-to-groove clearance:

Top Ring Clearance

Standard (New): 0.055-0.085 mm (0.0022-0.0033 in.)

Service Limit: 0.15 mm (0.006 in.)

Second Ring Clearance

Standard (New): 0.030-0.060 mm (0.0012-0.0024 in.)

Service Limit: 0.13 mm (0.005 in.)



Fig. 44: Measuring Ring-To-Groove Clearance
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Rotate the rings in their grooves to make sure they do not bind.
9. Position the ring end gaps as shown:

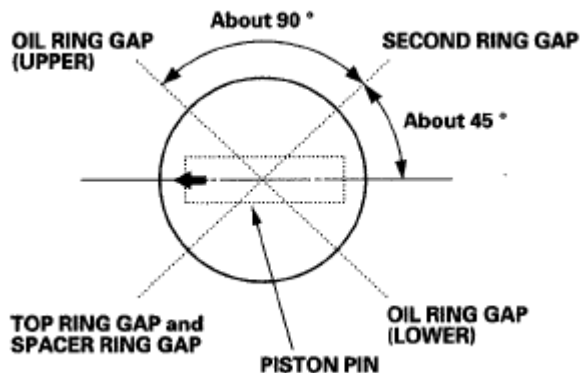


Fig. 45: Identifying Ring End Gaps Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CRANKSHAFT AND PISTON INSTALLATION

Special Tools Required

- Handle driver 07749-0010000
 - Driver attachment, 106 mm 070AD-RCAA200
1. Check the connecting rod bearing clearance with plastigage (see **CONNECTING ROD BEARING REPLACEMENT**).
 2. Check the main bearing clearance with plastigage (see **CRANKSHAFT MAIN BEARING REPLACEMENT**).
 3. Install the bearing halves in the engine block and connecting rods.

4. Apply new engine oil to the inside of the main bearings and rod bearings.
5. Lower the crankshaft (A) into the engine block.

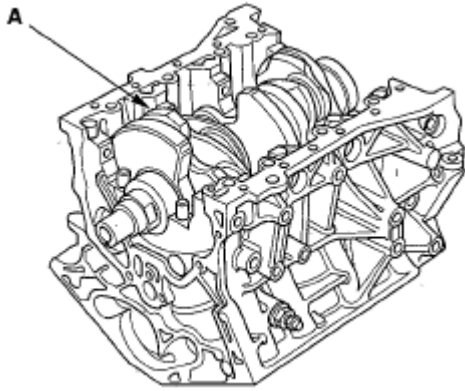


Fig. 46: Identifying Lower Crankshaft Into Engine Block
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Apply new engine oil to the side with the thrust washer groove. Install the thrust washers (A) in the No. 3 journal.

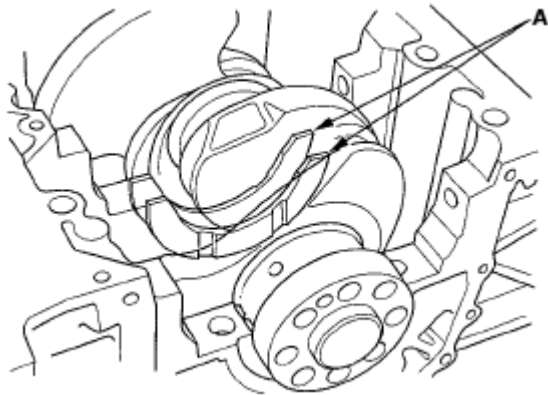


Fig. 47: Identifying Thrust Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the bearings (A) and bearing caps (B) with the arrow (C) facing the timing belt end of the engine.

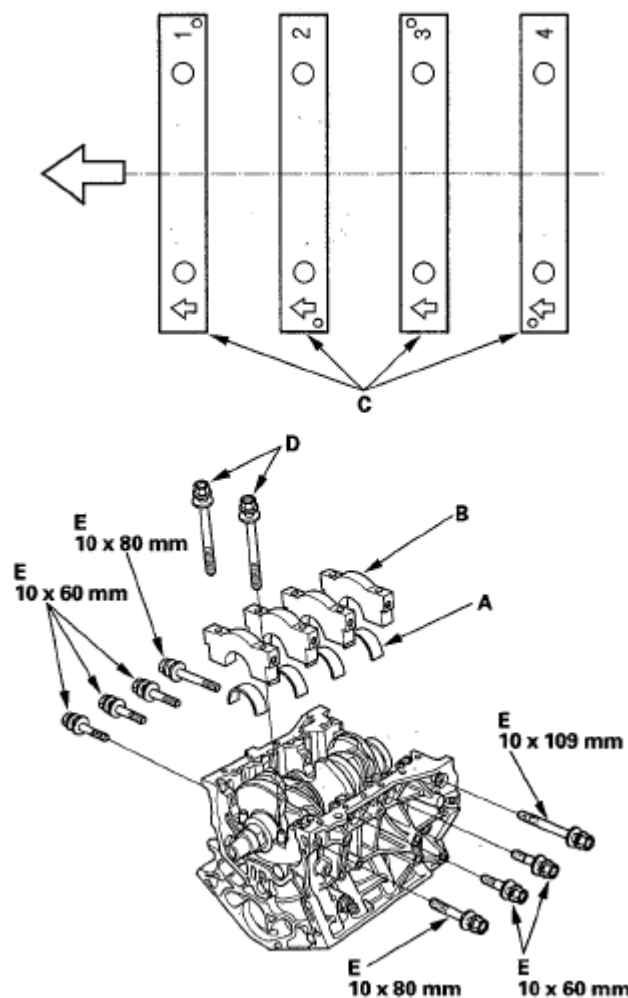


Fig. 48: Identifying Bearings And Bearing Caps Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Apply new engine oil to the bolt threads and flanges, then loosely install the bearing cap bolts (D) and bearing cap side bolts (E).
9. Set the crankshaft to bottom dead center (BDC) for the cylinder you are installing the piston in.
10. Apply new engine oil to the piston, inside of the ring compressor, and the cylinder bore.
11. Attach the ring compressor to the piston/ connecting rod assembly, and check that the bearing is securely in place.
12. Position the piston/connecting rod assembly with the arrow (A) facing the timing belt side of the engine.

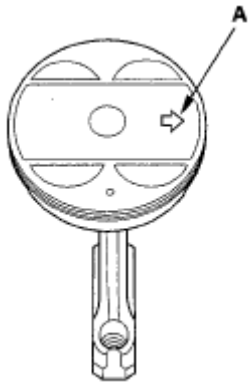


Fig. 49: Identifying Piston/Connecting Rod Assembly Mark

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Position the piston/connecting rod assembly in the cylinder, and tap it in using the wooden handle of a hammer (A). Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.

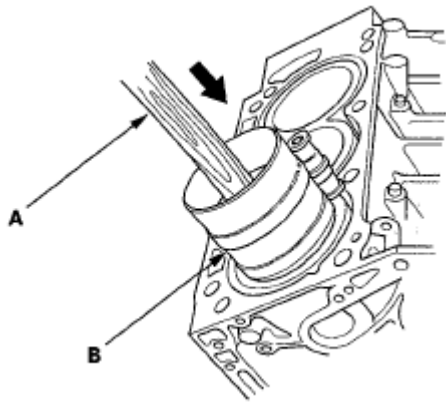


Fig. 50: Identifying Hammer In Cylinder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Stop after the ring compressor pops free, and check the connecting rod-to-crank journal alignment before pushing the piston into place.
15. Measure the diameter of each connecting rod bolt at point A and point B.

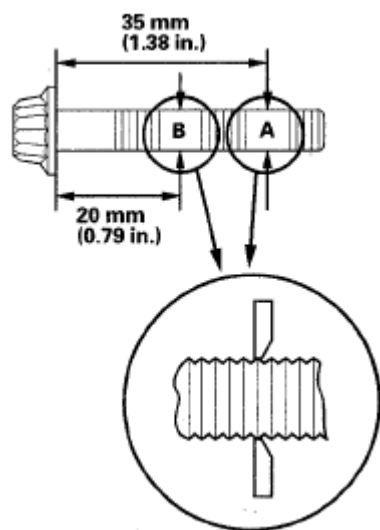


Fig. 51: Identifying Diameter Of Connecting Rod Bolt
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Calculate the difference in diameter between point A and point B.

Point A-Point B = Difference in Diameter

Difference in Diameter

Specification: 0-0.1 mm (0-0.004 in.)

17. If the difference in diameter is out of tolerance, replace the connecting rod bolt.
18. Line up the mark (A) on the connecting rod and cap, then install the cap.

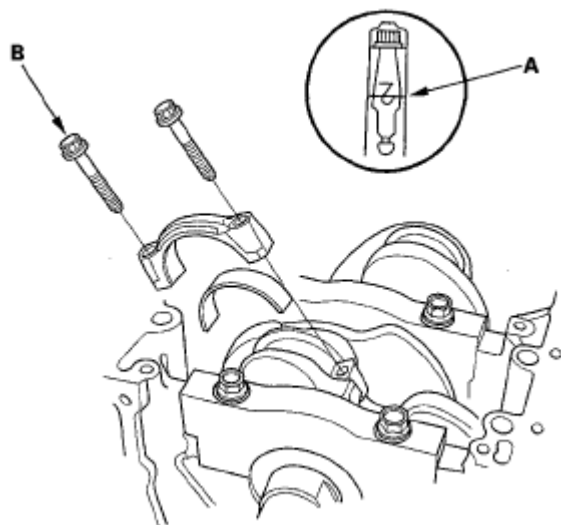


Fig. 52: Identifying Lining Up Mark On Connecting Rod And Cap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Apply new engine oil to the bolt threads and flanges. Torque the bolts (B) to 20 N.m (2.0 kgf.m, 14 lbf.ft).
20. Mark the connecting rod (A) and bolt head (B) as shown.

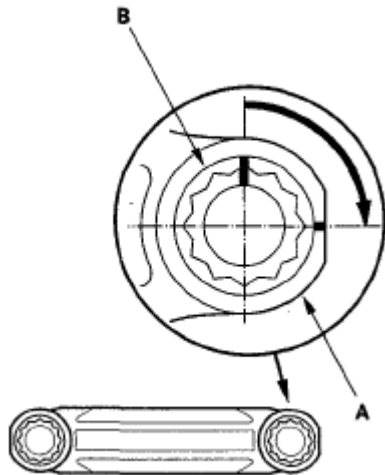


Fig. 53: Identifying Marking Of Connecting Rod And Bolt Head
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Tighten the bolt until the mark on the bolt head lines up with the mark on the connecting rod (turn the bolt 90 °).

NOTE: Remove the connecting rod bolt if you tightened it beyond the specified angle, and go back to step 15 of the procedure. Do not loosen it back to the specified angle.

22. Tighten the bearing cap bolts, and then the bearing cap side bolts to the specified torque in the sequence as shown. Repeat the torque sequence again to measure the bolts are properly torqued.

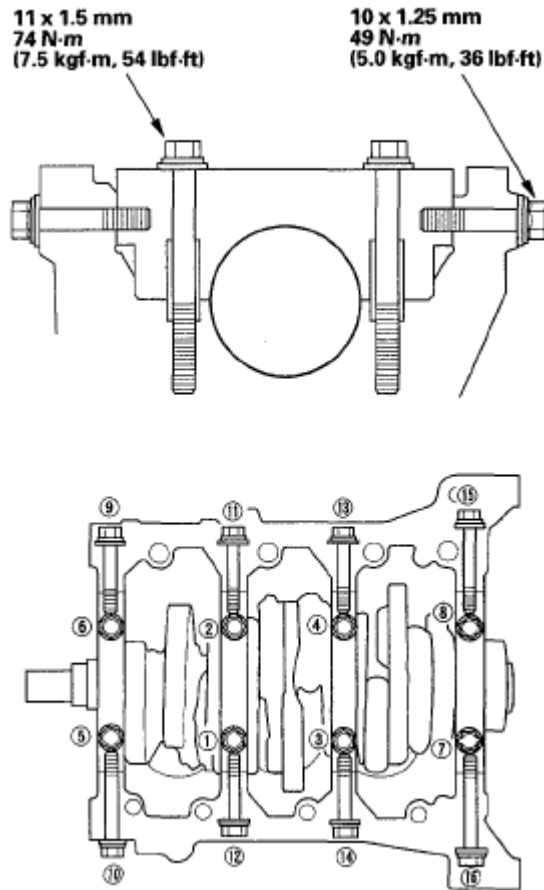


Fig. 54: Identifying Bearing Cap Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Apply a light coat of multipurpose grease to the crankshaft and to the lip of the seal.
24. Drive the new crankshaft oil seal until the driver attachment bottoms on the engine block end cover.

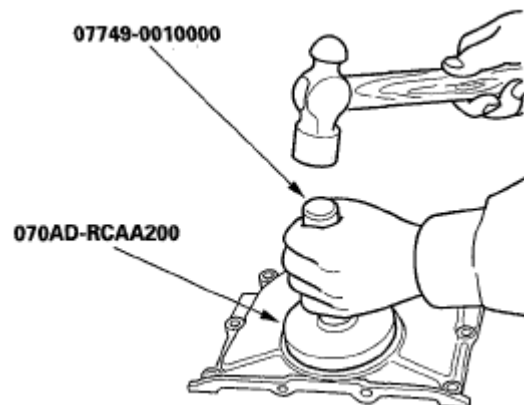


Fig. 55: Driving Crankshaft Oil Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove all of the old liquid gasket from the engine block end cover mating surfaces, bolts, and bolt holes.
26. Clean and dry the engine block end cover mating surfaces.
27. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, or 08718-0009, evenly to the engine block mating surface of the engine block end cover. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

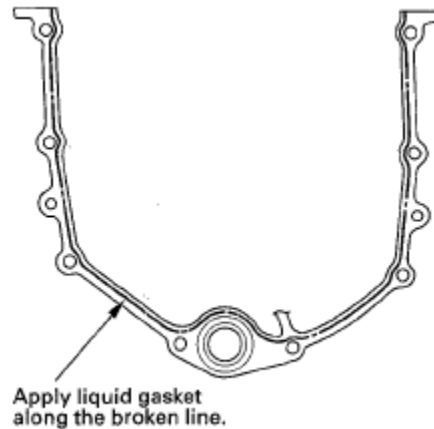


Fig. 56: Applying Liquid Gasket To Engine Block Mating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Install the dowel pins (A), new O-ring (B), and the engine block end cover (C) on the engine block.

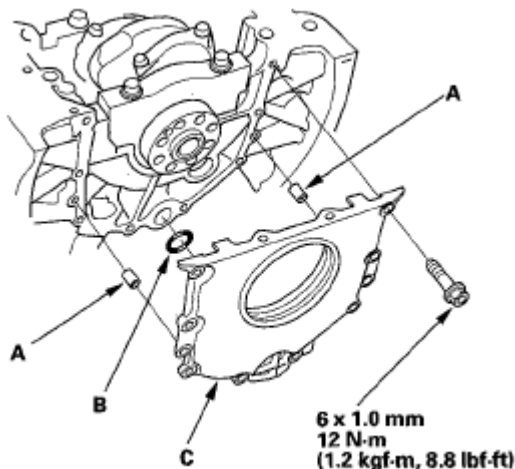


Fig. 57: Identifying Dowel Pins, O-Ring And Engine Block End Cover With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Clean the excess grease off the crankshaft, and check the seal for distortion.
30. Install a new crankshaft oil seal in the oil pump (see step 2 in **OIL PUMP OVERHAUL**).
31. Remove all of the old liquid gasket from the oil pump mating surfaces, bolts, and bolt holes.
32. Clean and dry the oil pump mating surfaces.
33. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, or 08718-0009, evenly to the engine block mating surface of the oil pump. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

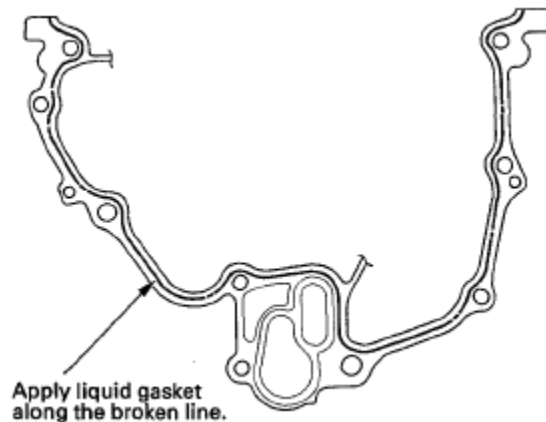


Fig. 58: Applying Liquid Gasket To Engine Block Mating Surface Of Oil Pump

Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Grease the lip of the oil seal, and apply oil to the new O-ring (A).

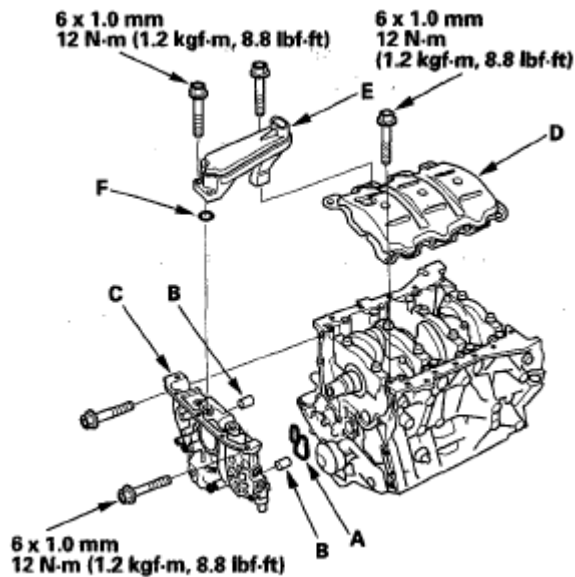


Fig. 59: Identifying Lip Of Oil Seal And O-Ring With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the dowel pins (B), then align the inner rotor with the crankshaft, and install the oil pump (C).
36. Clean the excess grease off the crankshaft, and check the seal for distortion.
37. Install the baffle plate (D), then install the oil screen (E) with the new O-ring (F).
38. Install the rocker arm oil control solenoid/oil filter assembly (A), with a new rocker arm oil control solenoid filter (B).

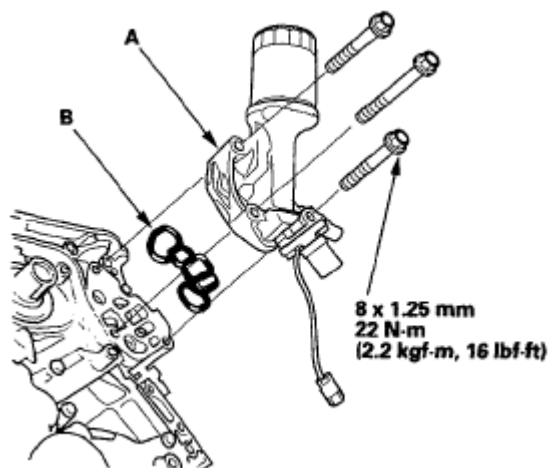


Fig. 60: Identifying Rocker Arm Oil Control Solenoid/Oil Filter Assembly With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Install the oil pan (see [OIL PAN INSTALLATION](#)).
40. Install the crankshaft position (CKP) sensor (see [CKP SENSOR REPLACEMENT](#)).

41. Install the cylinder heads (see **CYLINDER HEAD INSTALLATION**).
42. Install the drive plate.
43. Install the transmission (see **TRANSMISSION INSTALLATION**).
44. Install the engine assembly (see **ENGINE INSTALLATION**).

NOTE: When any crankshaft or connecting rod bearing is replaced, after assembly it is necessary to run the engine at idling speed until it reaches normal operating temperature, then continue to run it for about 15 minutes.

OIL PAN INSTALLATION

1. Remove all of the old liquid gasket from the oil pan mating surfaces, bolts, and bolt holes.
2. Clean and dry the oil pan mating surfaces.
3. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, or 08718-0009. evenly to the oil pan mating surface of the engine block. Install the component within 5 minutes of applying the liquid gasket.

- NOTE:**
- If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
 - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

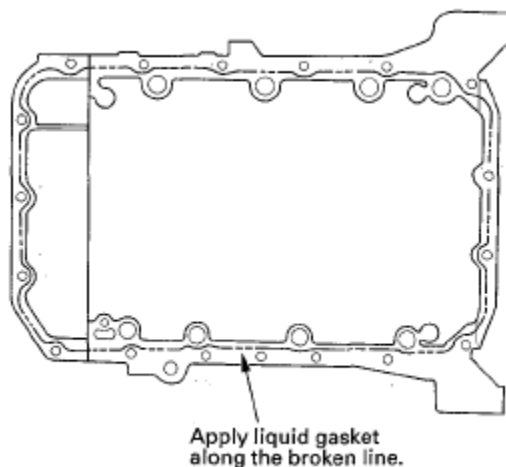


Fig. 61: Applying Liquid Gasket Oil Pan Mating Surface Of Engine Block

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the oil pan on the engine block.
5. Tighten the bolts in three steps. In the final step, tighten all bolts, in sequence, to 12 N.m (1.2 kgf.m, 8.8 lbf.ft).

NOTE: After assembly, wait at least 30 minutes to allow liquid gasket to cure before filling the engine with oil.

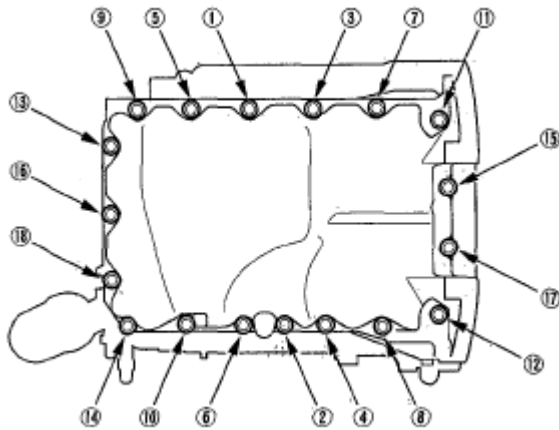


Fig. 62: Identifying Tightening Sequence Of Oil Pan Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Tighten the four bolts (A) securing the transmission, then install the torque converter covers (B).

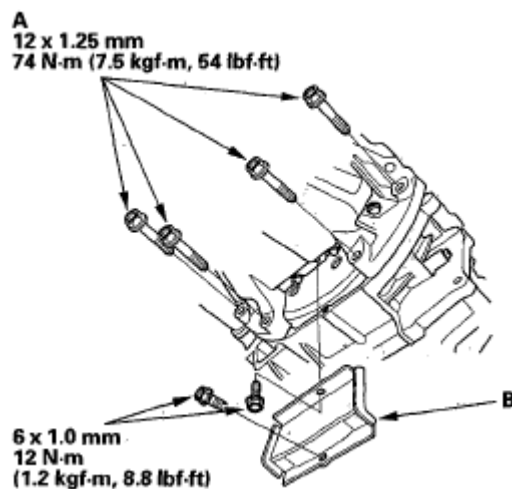


Fig. 63: Identifying Torque Converter Cover And Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the rear warm up three way catalytic converter (rear WU-TWC) bracket.

8 x 1.25 mm
22 N·m
(2.2 kgf·m, 16 lbf·ft)

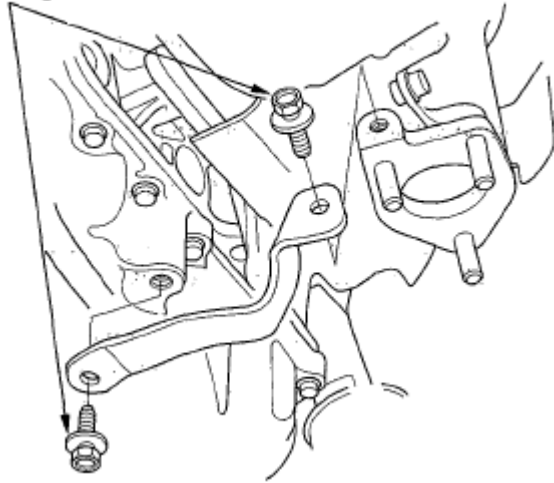


Fig. 64: Identifying Three Way Catalytic Converter Bracket Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If the engine is still in the vehicle, do the following steps.
9. Install exhaust pipe A using new gaskets and new self-locking nuts (see step 36 on **ENGINE INSTALLATION**).
10. Install the splash shield (see step 39 on **ENGINE INSTALLATION**).
11. Lower the vehicle on the lift.
12. Refill the engine with engine oil (see step 4 on **ENGINE OIL REPLACEMENT**).

PULLEY END CRANKSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

Oil seal driver, 64 mm 070AD-RCAA100

1. Remove the crankshaft position (CKP) sensor, timing belt, and timing belt drive pulley (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).
2. Remove the pulley end crankshaft oil seal.
3. Clean and dry the crankshaft oil seal housing.
4. Apply a light coat of multipurpose grease to the crankshaft and to the lip of the seal.
5. Using the seal driver, drive in the crankshaft oil seal until the driver bottoms against the oil pump. When the seal is in place, clean any excess grease off the crankshaft, and check that the oil seal lip is not distorted.

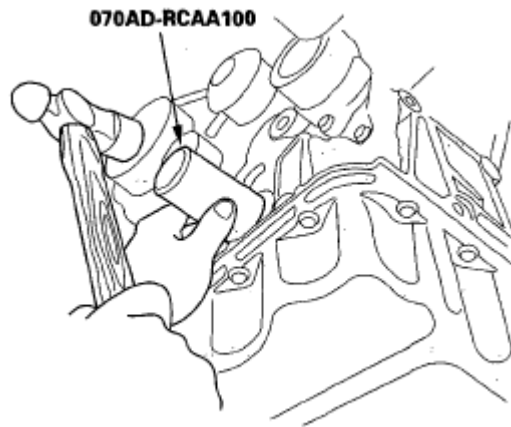


Fig. 65: Identifying Oil Seal Driver

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the timing belt drive pulley, timing belt, and CKP sensor (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).

TRANSMISSION END CRANKSHAFT OIL SEAL INSTALLATION - IN CAR

Special Tools Required

- Handle driver 07749-0010000
 - Driver attachment, 106 mm 070AD-RCAA200
1. Remove the transmission (see **TRANSMISSION REMOVAL**) and the drive plate.
 2. Remove the transmission end crankshaft oil seal.
 3. Clean and dry the crankshaft oil seal housing.
 4. Apply a light coat of multipurpose grease to the crankshaft and to the lip of the seal.
 5. Using the special tools, drive in the crankshaft oil seal until the driver attachment bottoms against the engine block end cover- Align the hole in the driver attachment with the pin on the crankshaft.

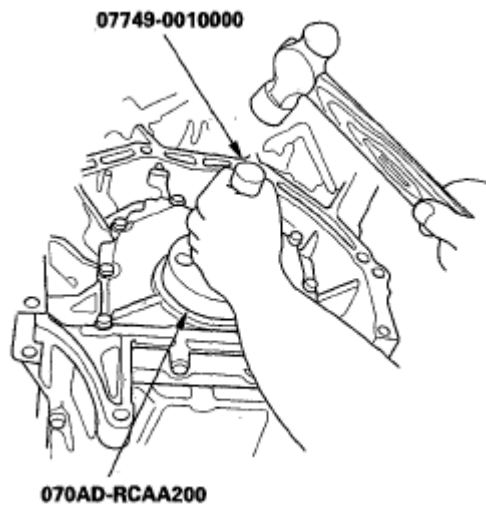


Fig. 66: Driving Crankshaft Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clean any excess grease off the crankshaft, and check that the oil seal lip is not distorted.
7. Install the drive plate, and the transmission (see TRANSMISSION INSTALLATION).

SEALING BOLT INSTALLATION

NOTE: When installing the sealing bolt (A), always use a new washer.

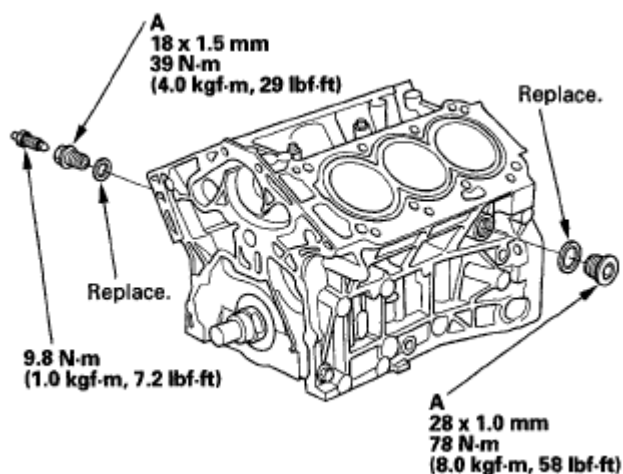


Fig. 67: Identifying Sealing Bolt With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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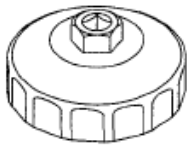
2007-09 ENGINE Engine Lubrication - MDX

2007-09 ENGINE

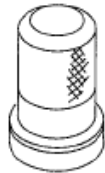
Engine Lubrication - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAA-PLCA100	Oil Filter Wrench	1
②	070AD-RCAA100	Oil Seal Driver, 64 mm	1



①



②

Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

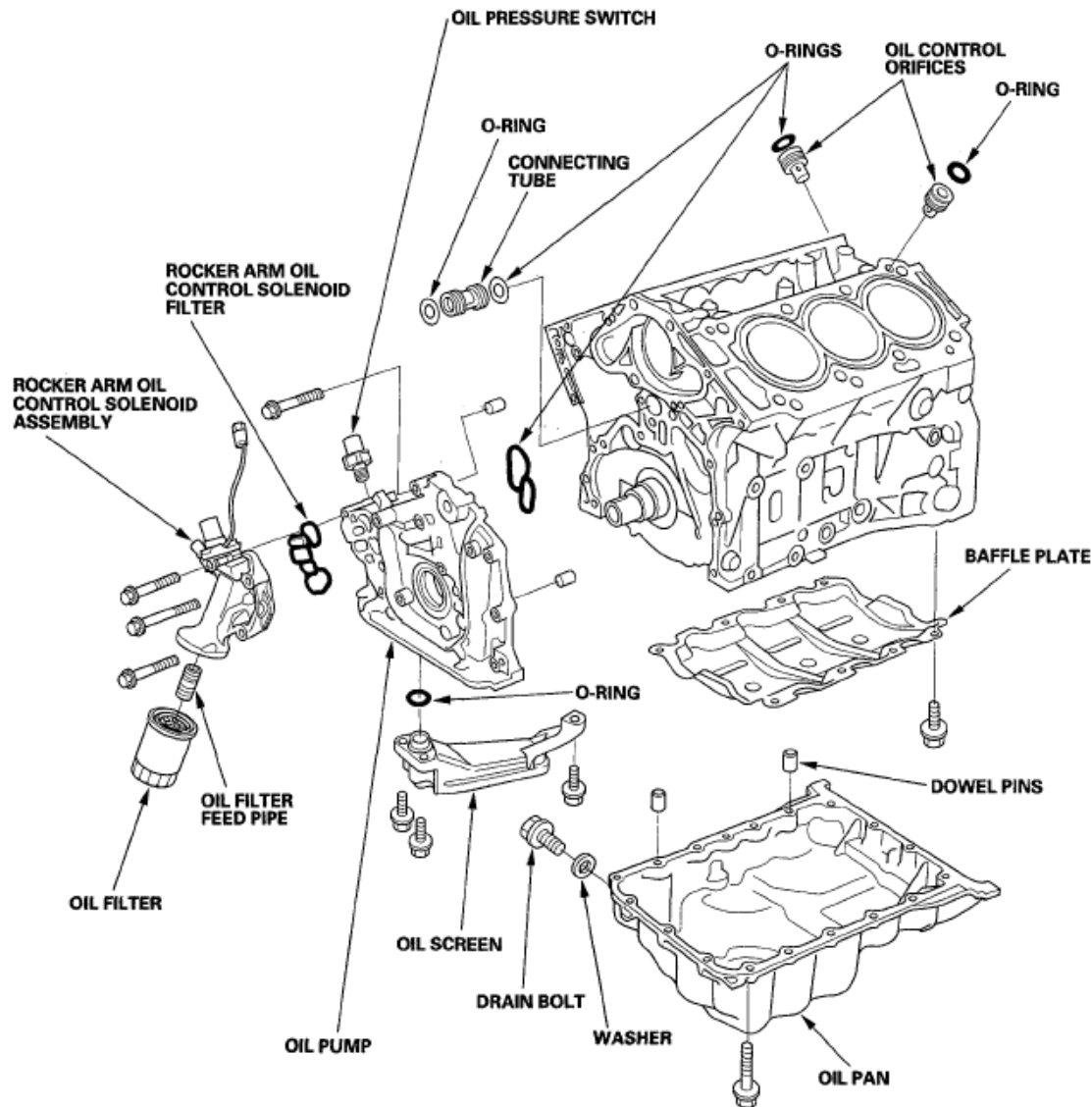


Fig. 2: Identifying Engine Lubrication Component Location
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
	1. Verify the engine oil filler cap, oil drain bolt, and oil filter are tight. 2. Check for oil leaks. 3. Check for worn valve guide(s) (see <u>VALVE STEM-TO-GUIDE CLEARANCE INSPECTION</u>) or worn valve stem seal(s) (see	

2008 Acura MDX

2007-09 ENGINE Engine Lubrication - MDX

Excessive engine oil consumption	<u>VALVE, SPRING, AND VALVE SEAL REMOVAL</u>). 4. Check for damaged or worn piston ring(s) (see <u>PISTON RING REPLACEMENT</u>). 5. Check for damaged or worn engine internal parts (cylinder wall, pistons, etc.) (see <u>BLOCK AND PISTON INSPECTION</u>).	
Low oil pressure indicator does not come on with the ignition switch ON (II)	1. Do the low oil pressure indicator circuit troubleshooting (Open) (see <u>LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (OPEN)</u>). 2. Test the oil pressure switch (see <u>OIL PRESSURE SWITCH TEST</u>).	An open in the wire between the powertrain control module (PCM) and the oil pressure switch
Low oil pressure indicator stays on	1. Check the engine oil level. 2. Do the low oil pressure indicator circuit troubleshooting (Short) (see <u>LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (SHORT)</u>). 3. Test the oil pressure switch (see <u>OIL PRESSURE SWITCH TEST</u>). 4. Check the engine oil pressure (see <u>OIL PRESSURE TEST</u>). 5. Check the oil filter for clogging. 6. Check the oil screen for clogging. 7. Check the relief valve (see <u>EXPLODED VIEW</u>). 8. Test the oil pump (see <u>INSPECTION</u>).	A wire shorted to ground between the powertrain control module (PCM) and the oil pressure switch

LOW OIL PRESSURE INDICATOR CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ENGINE Engine Lubrication - MDX

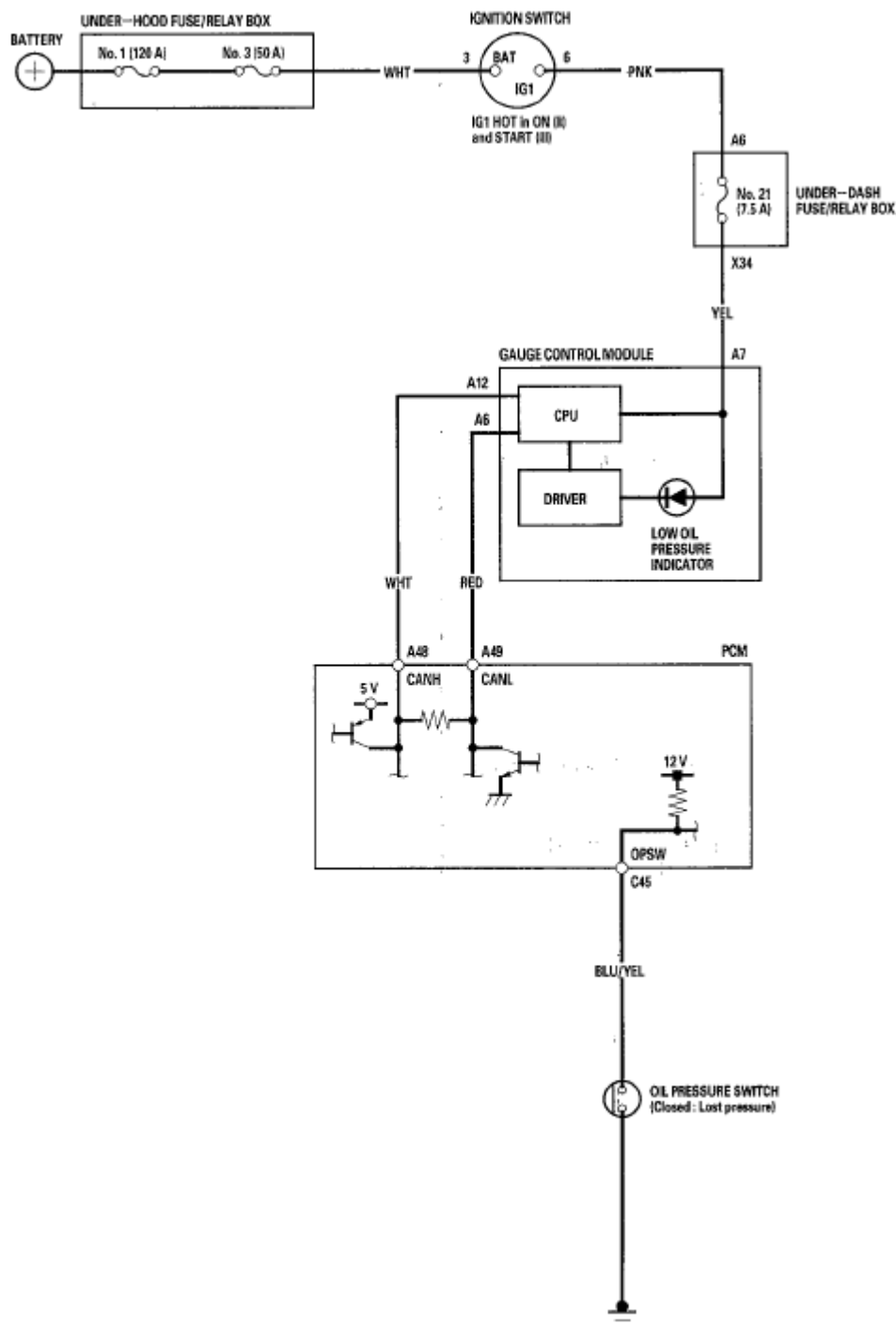


Fig. 3: Low Oil Pressure Indicator Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (OPEN)

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Turn the ignition switch to ON (II), select PGM-FI, and check the OIL PRESSURE SWITCH in the DATA LIST with the HDS.

Is ON indicated?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Go to step 6.

6. Check the oil pressure switch (see **OIL PRESSURE SWITCH TEST**).

Is the oil pressure switch OK?

YES - Go to step 7.

NO - Replace the oil pressure switch (see **OIL PRESSURE SWITCH REPLACEMENT**).

7. Turn the ignition switch to ON (II), and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

8. Disconnect PCM connector C (49P) and the oil pressure switch connector.
9. Check for continuity between PCM connector terminal C45 and the oil pressure switch connector.

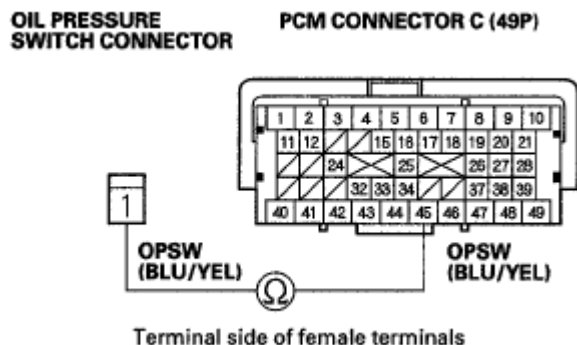


Fig. 4: Identifying Continuity Between PCM Connector Terminal C45 And Oil Pressure Switch Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).B

NO - Repair open in the wire between the oil pressure switch and the PCM.

LOW OIL PRESSURE INDICATOR CIRCUIT TROUBLESHOOTING (SHORT)

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**). If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Start the engine, select PGM-FI, and check the OIL PRESSURE SWITCH in the DATA LIST with the HDS.

Is OFF indicated?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the oil pressure switch connector.
8. Start the engine and check the OIL PRESSURE SWITCH in the DATA LIST with the HDS.

Is OFF indicated?

YES - Go to step 9.

NO - Go to step 10.

9. Check the oil pressure switch (see **OIL PRESSURE SWITCH TEST**).

Is the oil pressure switch OK?

YES - Do the oil pressure test (see **OIL PRESSURE TEST**).

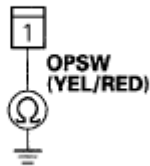
NO - Replace the oil pressure switch (see **OIL PRESSURE SWITCH REPLACEMENT**).

10. Turn the ignition switch to ON (II), and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

11. Disconnect PCM connector C (49P) and the oil pressure switch connector.
12. Check for continuity between the oil pressure switch connector and body ground.

OIL PRESSURE SWITCH CONNECTOR



Terminal side of female terminal

Fig. 5: Identifying Continuity Between Oil Pressure Switch Connector And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the oil pressure switch and the PCM.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**) or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

OIL PRESSURE SWITCH TEST

1. Disconnect the oil pressure switch connector (A) from the engine oil pressure switch (B).

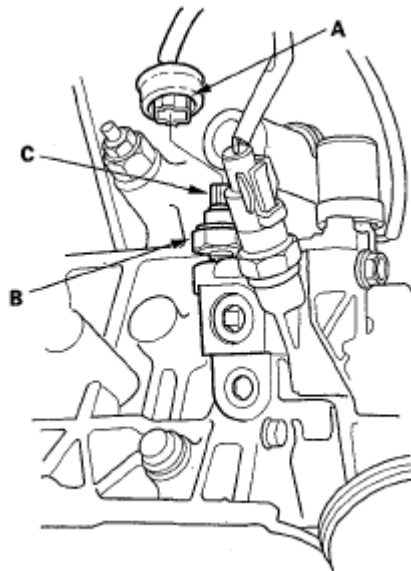


Fig. 6: Identifying Oil Pressure Switch Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the positive terminal (C) and the engine (ground). There should be no continuity with the engine stopped. There should be continuity with the engine running.

OIL PRESSURE SWITCH REPLACEMENT

1. Disconnect the oil pressure switch connector, then remove the oil pressure switch.

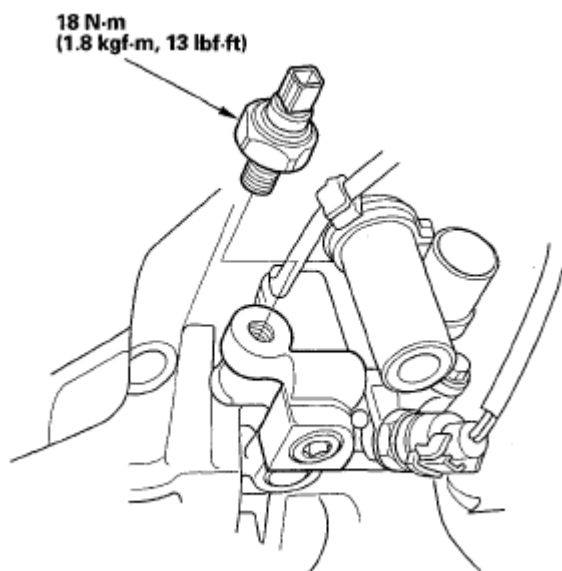


Fig. 7: Identifying Oil Pressure Switch With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove any old liquid gasket from the switch and switch mounting hole.
3. Apply a very small amount of liquid gasket to the oil pressure switch threads, then install the oil pressure switch.

NOTE: Using too much liquid gasket may cause liquid gasket to enter the oil passage or the end of the new oil pressure switch.

OIL PRESSURE TEST

Special Tools Required

- Pressure gauge adapter 07NAJ-P07010A
- Oil pressure hose 07ZAJ-S5AA200
- A/T pressure hose 07406-0020201
- A/T low pressure gauge w/panel 07406-0070301
- A/T pressure hose, 2,210 mm 07MAJ-PY4011A
- A/T pressure hose adapter 07MAJ-PY40120

If the low oil pressure indicator stays on with the engine running, check the engine oil level. If the oil level is correct:

1. Remove the oil pressure switch (A)..

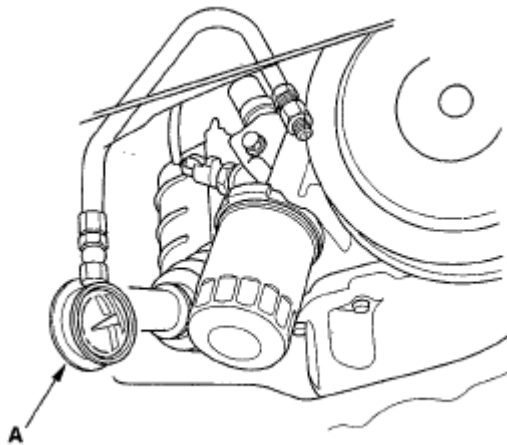


Fig. 8: Identifying Oil Pressure Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the oil pressure hose, the A/T pressure hose, the A/T low pressure gauge w/panel, the A/T pressure hose, 2,210 mm and the A/T pressure hose adapter.
3. Install the oil pressure switch in the pressure gauge adapter (B).
4. Start the engine. Shut it off immediately if the gauge registers no oil pressure. Repair the problem before continuing.

5. Allow the engine to reach operating temperature (fan comes on at least twice). The pressure should be:

Engine Oil Temperature: 176°F (80°C)

Engine Oil Pressure:

At Idle: 70 kPa (0.7 kgf/cm² , 10 psi) min.

At 3,000 rpm: 490 kPa (5.0 kgf/cm² , 71 psi) min.

6. If oil pressure is out of specifications, inspect these items:
 - Inspect the oil pressure relief valve (see **EXPLODED VIEW**).
 - Check the oil screen for clogging.
 - Inspect the oil pump (see **INSPECTION**).

ENGINE OIL REPLACEMENT

1. Warm up the engine.
2. Remove the drain bolt (A), and drain the engine oil.

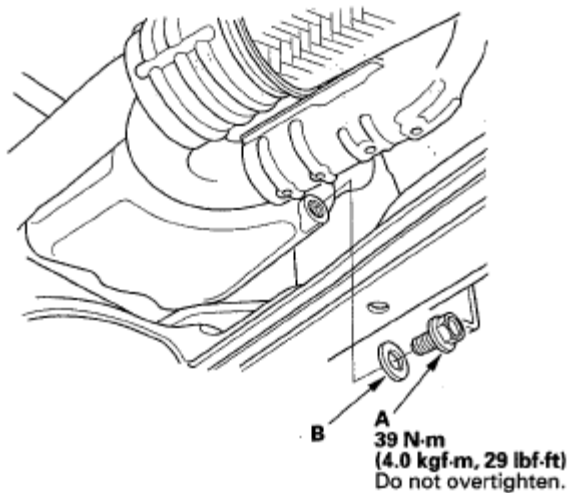


Fig. 9: Identifying Drain Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the drain bolt with a new washer (B).
4. Refill with the recommended oil (see **LUBRICANTS AND FLUIDS**).

Capacity At Oil Change: 4.0 L (4.2 US qt)

At Oil Change including Filter: 4.3 L (4.5 US qt)

After Engine Overhaul: 5.0 L (5.3 US qt)

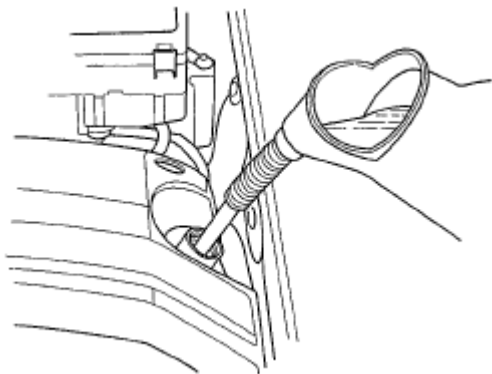


Fig. 10: Refilling With Recommended Oil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
6. Turn the ignition switch ON (II).
7. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
8. Select BODY ELECTRICAL with the HDS.
9. Select ADJUSTMENT in the GAUGES MENU with the HDS.
10. Select RESET in the MAINTENANCE MINDER with the HDS.
11. Select RESETTING THE ENGINE OIL LIFE with the HDS.

NOTE: If you changed the ATF at the same time with the engine oil, select **RESETTING THE ENGINE OIL LIFE AND ATF** with the HDS instead.

12. Run the engine for more than 3 minutes, then check for oil leaks.
13. Reset the multi-information display (see **RESETTING THE MAINTENANCE INFORMATION DISPLAY**).

ENGINE OIL FILTER REPLACEMENT

Special Tools Required

Oil filter wrench 07AAA-PLCA100

1. Remove the oil filter with the oil filter wrench.
2. Inspect the filter to make sure the rubber seal is not stuck to the oil filter seating surface of the engine.
3. Inspect the threads (A) and rubber seal (B) on the new filter. Clean the seat on the engine block, then apply a light coat of new engine oil to the filter rubber seal. Use only filters with a built-in bypass system.

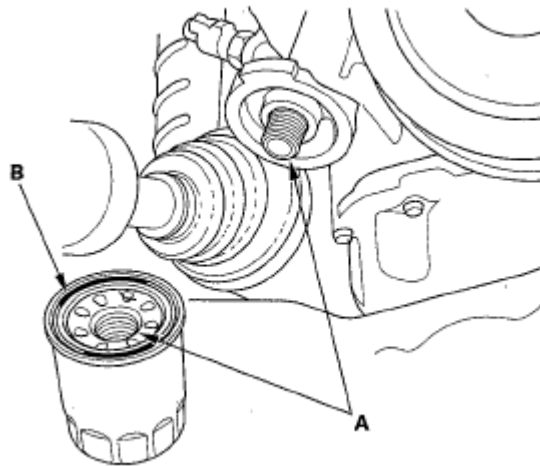


Fig. 11: Identifying Threads And Rubber Seal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the oil filter by hand.
5. After the rubber seal seats/tighten the oil filter clockwise with the oil filter wrench.

Tighten: 3/4 Turn Clockwise

Tightening Torque: 12 N.m (1.2 kgf.m, 8.8 lbf.ft)

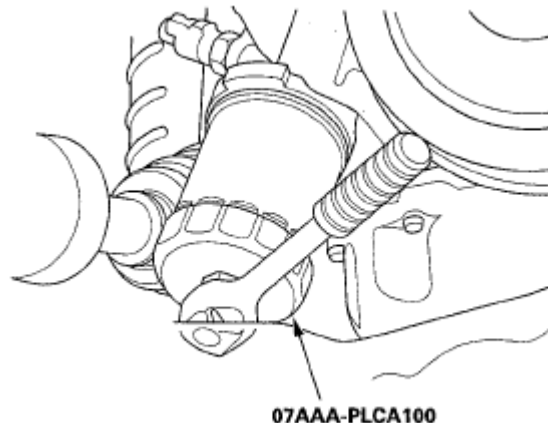


Fig. 12: Identifying Oil Filter With Oil Filter Wrench
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If four numbers or triangle marks (1 to 4 or ? to ???) are printed around the outside of the filter, you can use the following procedure to tighten the filter.
 - Spin the filter on until its seal lightly seats against the block, and note which number or mark is at the bottom.
 - Tighten the filter by turning it clockwise three numbers or marks from the one you noted. For example, if ? mark is at the bottom when the seal is lightly seated, tighten the filter until the triangle

mark(s) ???? comes around to the bottom.

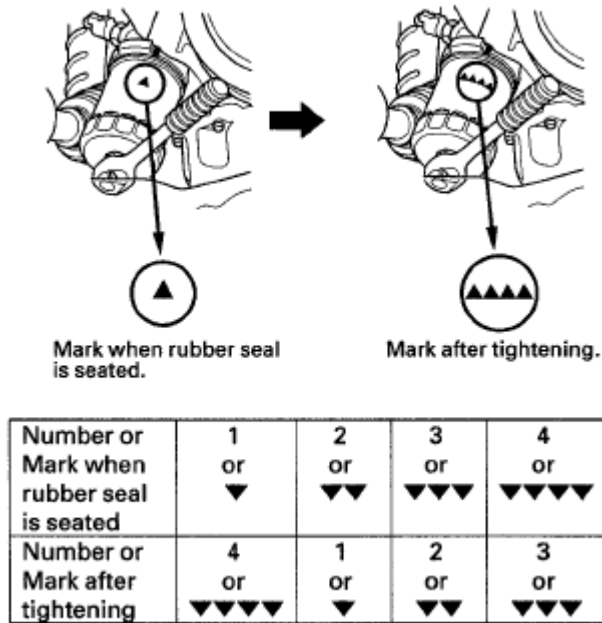


Fig. 13: Identifying Triangle Marks Around Outside Of Filter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. After installation, fill the engine with oil up to the specified level, run the engine for more than 3 minutes, then check for oil leakage.

OIL FILTER FEED PIPE REPLACEMENT

1. Remove the oil filter (see ENGINE OIL FILTER REPLACEMENT).
2. Remove the oil filter feed pipe.

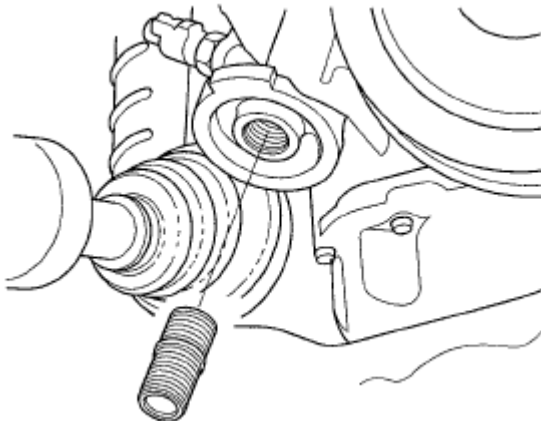


Fig. 14: Identifying Oil Filter Feed Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install two 20 x 1.5 mm nuts (A) onto the new oil filter feed pipe, and hold one nut with a wrench, then tighten the other nut.

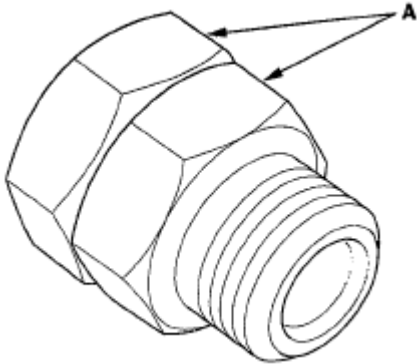


Fig. 15: Identifying Nuts Onto New Oil Filter Feed Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Tighten the oil filter feed pipe to 49 N.m (5.0 kgf.m, 36 lbf.ft), then remove the nuts from the oil filter feed pipe.

OIL JET REPLACEMENT

1. Remove the crankshaft from the engine block (see **CRANKSHAFT AND PISTON REMOVAL**).
2. Remove the oil jet bolt (A), then remove and discard the oil jet (B).

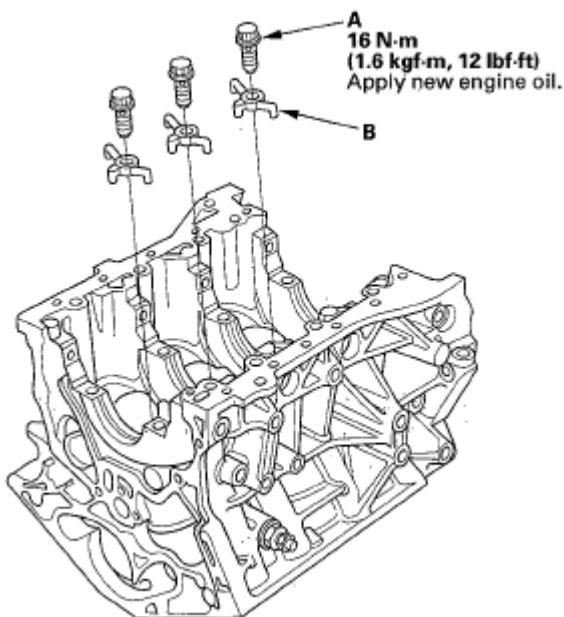


Fig. 16: Identifying Oil Jet Bolt And Oil Jet With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully install the new oil jet and tighten the oil jet bolt.
4. Install the crankshaft (see **CRANKSHAFT AND PISTON INSTALLATION**).

OIL JET BOLT INSPECTION

1. Remove the oil jet bolt (see **OIL JET REPLACEMENT**).
2. Inspect the oil jet bolt as follows.
 - Make sure that a 0.6 mm (0.02 in.) diameter drill will go through the oil intake (0.7 mm (0.03 in.) diameter). Make sure the check ball (A) moves smoothly and has a stroke of about 4.0 mm (0.16 in.).
 - Check the oil jet bolt operation with an air nozzle. It should take at least 120 kPa (1.2 kgf/cm, 17 psi) to unseat the check ball.

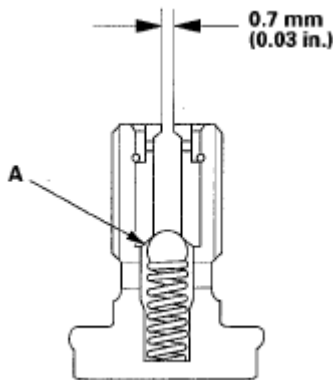


Fig. 17: Identifying Oil Jet Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

OIL PUMP OVERHAUL

EXPLODED VIEW

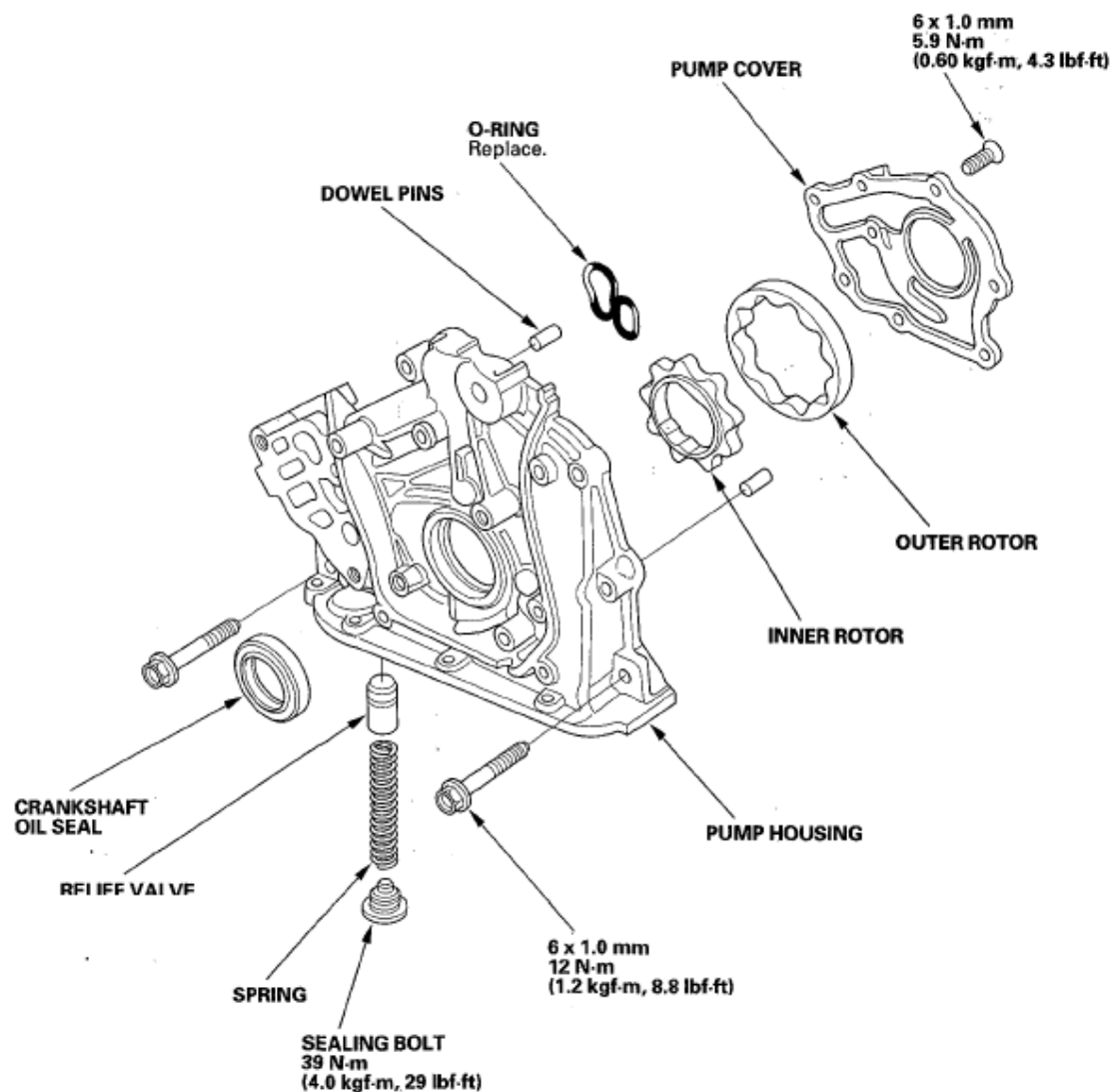


Fig. 18: Exploded View Of Oil Pump Overhaul With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Oil seal driver, 64 mm 070AD-RCAA100
- Engine support hanger A and Reds AAR-T-12566 *
- Engine hanger adapter set VSB02C000031 *

* These special tools are available through the Honda Tool and Equipment program, 1-888-424-6857.

REMOVAL

1. Remove the bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. Remove the drive belt (see **DRIVE BELT INSPECTION**).

3. Remove the power steering (P/S) pump and P/S line bracket (see step 6 **CYLINDER HEAD REMOVAL**).
4. Remove the service caps (A) for the front damper flange nuts from the cowl cover (B). Position the engine hanger adapters (VSB02C000031) with the FRONT mark facing forward over the damper flange nuts.

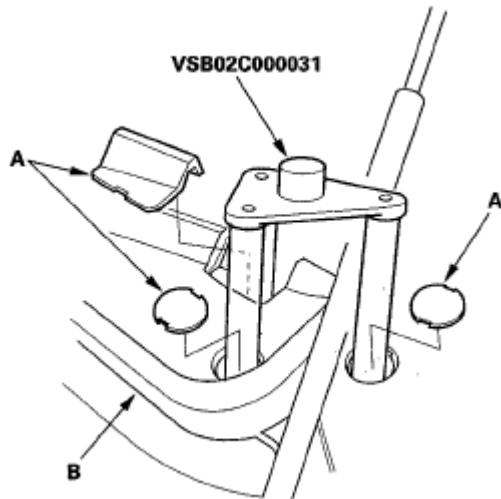


Fig. 19: Identifying Engine Hanger Adapters (VSB02C000031)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook (A) to the engine hanger (B). Tighten the wing nut (C) by hand, to lift and support the engine/transmission.

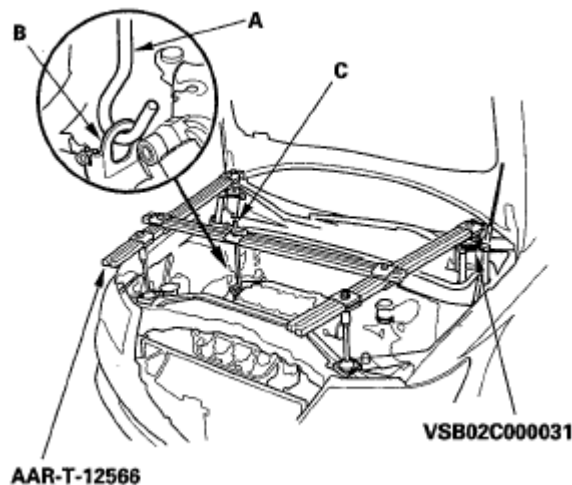


Fig. 20: Identifying Engine Support Hanger
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the timing belt (see **TIMING BELT REMOVAL**).
7. Remove the crankshaft position (CKP) sensor (see **CKP SENSOR REPLACEMENT**).

8. Remove the rocker arm oil control solenoid/oil filter assembly (see step 9 **CRANKSHAFT AND PISTON REMOVAL**).
9. Remove the oil pan (see **OIL PAN REMOVAL**).
10. Remove the oil screen (A), then remove the oil pump(B).

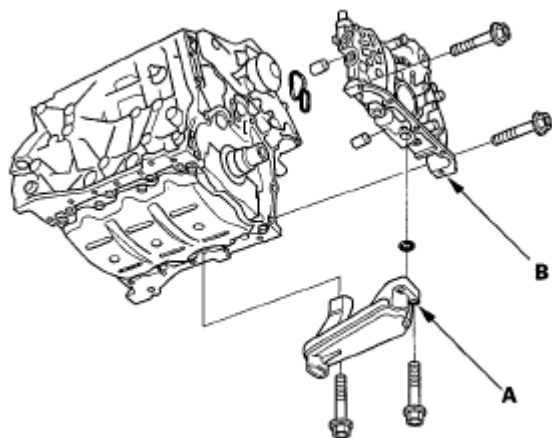


Fig. 21: Identifying Oil Screen And Oil Pump
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSPECTION

1. Remove the screws from the pump housing, then separate the housing and cover.
2. Check the inner-to-outer rotor radial clearance between the inner rotor (A) and outer rotor (B). If the inner-to-outer rotor clearance exceeds the service limit, replace the oil pump assembly.

Inner Rotor-to-Outer Rotor Radial Clearance

Standard (New): 0.04-0.16 mm

(0.002-0.006 in.)

Service Limit: 0.20 mm (0.008 in.)

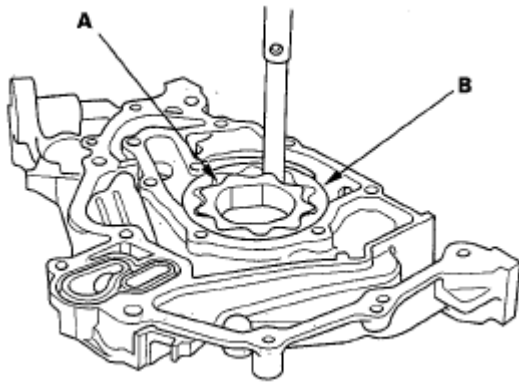


Fig. 22: Identifying Inner-To-Outer Rotor Radial Clearance Between Inner Rotor And Outer Rotor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the housing-to-rotor axial clearance between the rotors (A) and pump housing (B). If the housing-to-rotor axial clearance exceeds the service limit, replace the oil pump assembly.

Housing-to-Rotor Axial Clearance

Standard (New): 0.02-0.07 mm (0.001-0.003 in.)

Service Limit: 0.12 mm (0.005 in.)

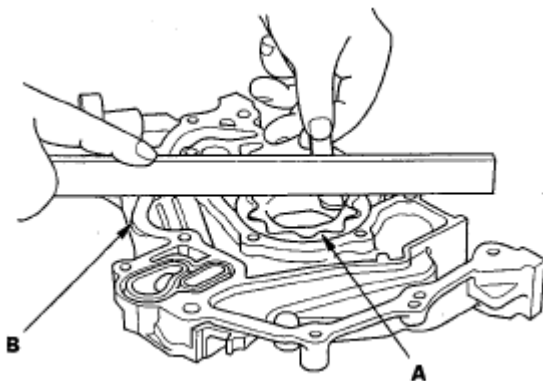


Fig. 23: Identifying Housing-To-Rotor Axial Clearance Between Rotors And Pump Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the housing-to-outer rotor radial clearance between the outer rotor (A) and pump housing (B). If the housing-to-outer rotor radial clearance exceeds the service limit, replace the oil pump assembly.

Housing-to-Outer Rotor Radial Clearance

Standard (New): 0.10-0.19 mm (0.004-0.007 in.)

Service Limit: 0.20 mm (0.008 in.)

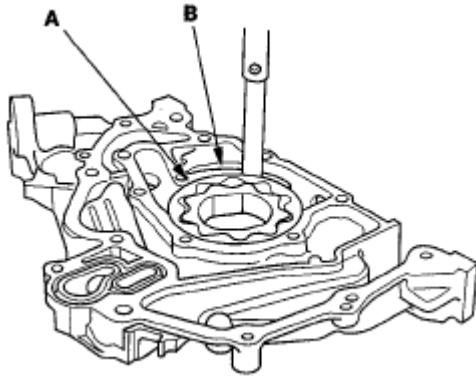


Fig. 24: Identifying Housing-To-Outer Rotor Radial Clearance Between Outer Rotor And Pump Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect both rotors and pump housing for scoring or other damage. Replace the parts, if necessary.
6. Apply liquid thread lock to the pump housing screws, then install the oil pump cover.
7. Check that the oil pump turns freely.

INSTALLATION

1. Remove the old oil seal from the oil pump.
2. Gently tap in the new oil seal until the oil seal driver bottoms on the pump.

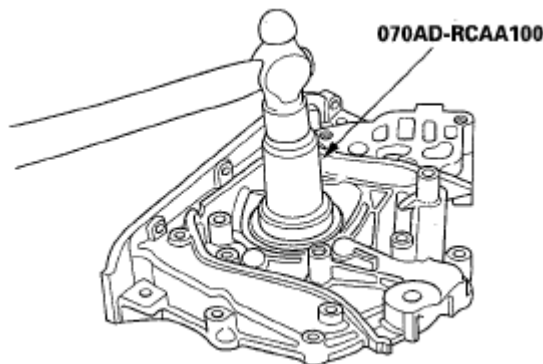


Fig. 25: Tapping In New Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove all of the old liquid gasket from the oil pump mating surfaces, bolts, and bolt holes.
4. Clean and dry the oil pump mating surfaces.
5. Apply liquid gasket, P/N 08717-0004, 08718-0001, 08718-0003, or 08718-0009, evenly to the engine block mating surface of the oil pump. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

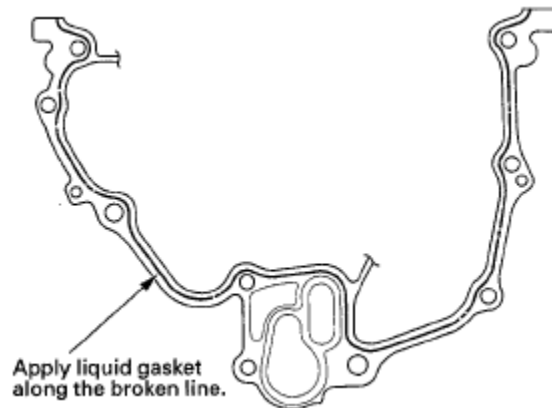


Fig. 26: Identifying Applying Liquid Gasket Area Along Broken Line
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Grease the lip of the oil seal, and apply oil to the new O-ring (A).

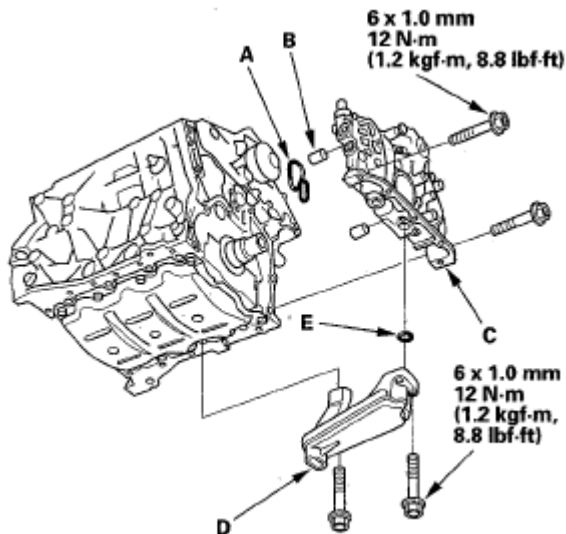


Fig. 27: Identifying O-Rings, Dowel Pins, Oil Pump And Oil Screen With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the dowel pins (B), then align the inner rotor with the crankshaft, and install the oil pump (C).
8. Clean the excess grease off the crankshaft, and check the seal for distortion.
9. Install the oil screen (D) with new O-ring (E).
10. Install the rocker arm oil control solenoid/oil filter assembly, with a new rocker arm oil control solenoid

2008 Acura MDX

2007-09 ENGINE Engine Lubrication - MDX

filter (see step 38 **CRANKSHAFT AND PISTON INSTALLATION**).

11. Install the oil pan (see **OIL PAN INSTALLATION**).
12. Install the crankshaft position (CKP) sensor (see **CKP SENSOR REPLACEMENT**).
13. Install the timing belt (see **TIMING BELT INSTALLATION**).
14. Remove the engine support hanger, and engine hanger adapters.
15. Install the service caps on the cowl cover.
16. Install the power steering (P/S) pump and P/S line bracket (see step 27 **CYLINDER HEAD INSTALLATION**).
17. Install the drive belt (see **DRIVE BELT INSPECTION**).
18. Install the bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).

2008 Acura MDX

2007-09 ENGINE Engine Mount Control System - MDX

2007-09 ENGINE

Engine Mount Control System - MDX

COMPONENT LOCATION INDEX

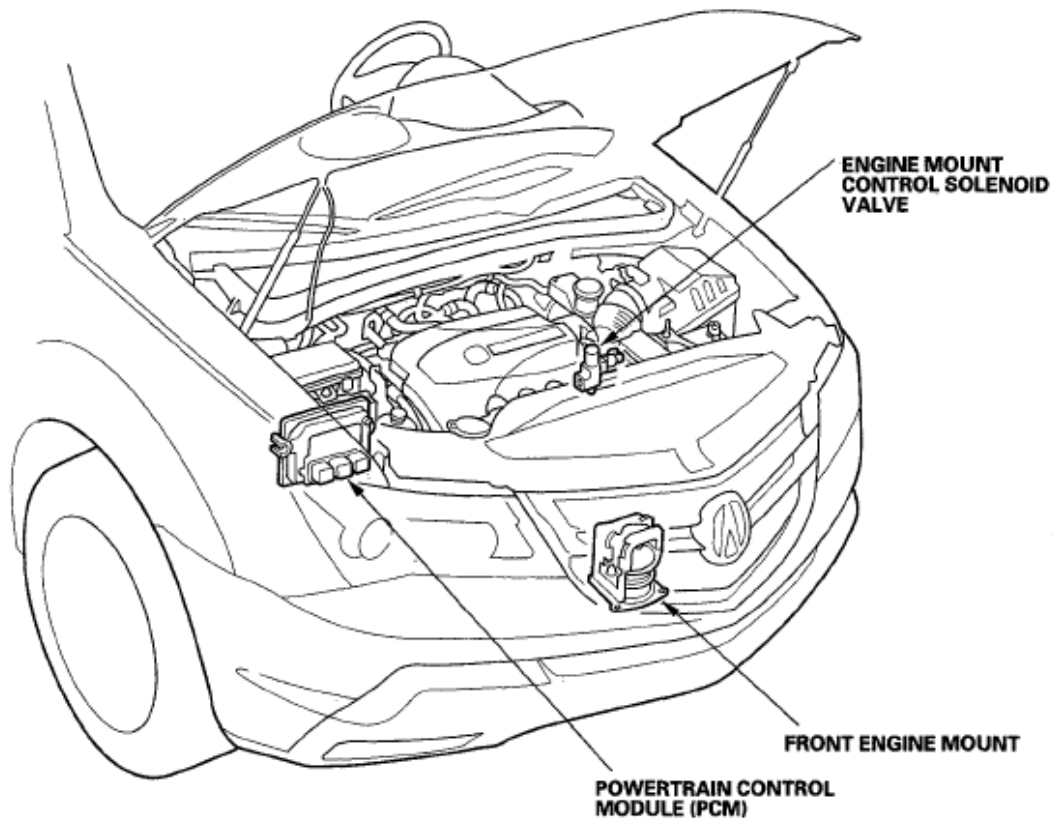


Fig. 1: Identifying Engine Mount Control System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

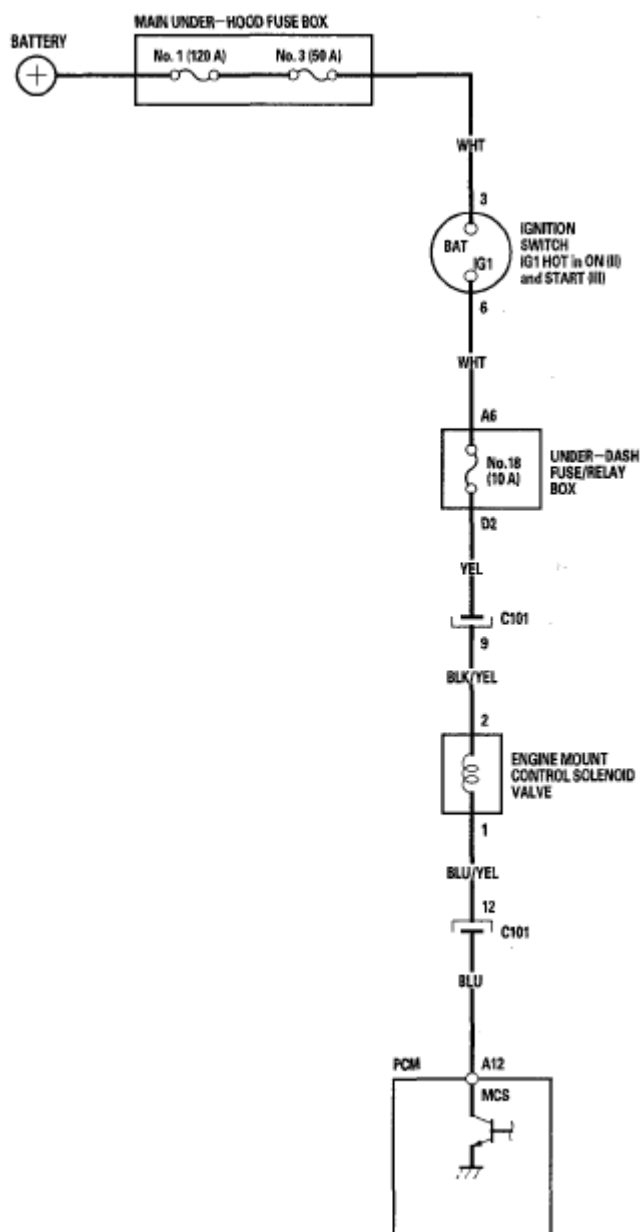


Fig. 2: Engine Mount Control System - Circuit Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TROUBLESHOOTING

Special Tools Required

Vacuum pump/gauge, 0-30 in.Hg Snap-on YA4000A or equivalent, commercially available

NOTE: Check the vacuum hoses and lines for damage and proper connections before troubleshooting.

Follow this procedure if the engine vibrates excessively when idling.

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Start the engine, and let it idle.
5. Raise the engine speed from idling to 2,000 rpm.
6. Check the MOUNT CTRL SOL in the PGM-FI DATA LIST with the Honda Diagnostic System (HDS).

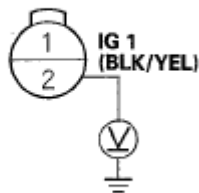
Is ON indicated at idling and OFF indicated at 2,000 rpm?

YES - Go to step 7.

NO - Update the powertrain control module (PCM) if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**).

7. Disconnect the engine mount control solenoid valve 2P connector from the engine mount control solenoid valve.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between engine mount control solenoid valve 2P connector terminal No. 2 and body ground.

**ENGINE MOUNT CONTROL
SOLENOID VALVE 2P CONNECTOR**



Wire side of female terminals

Fig. 3: Identifying Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

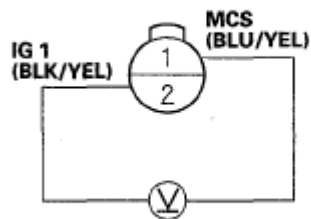
YES - Go to step 10.

NO - Repair open in the wire between engine mount control solenoid valve 2P connector terminal No. 2

and No. 18 (10 A) fuse in the under-dash fuse/relay box.

10. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2, with the engine at idle.

**ENGINE MOUNT CONTROL
SOLENOID VALVE 2P CONNECTOR**



Wire side of female terminals

Fig. 4: Identifying Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

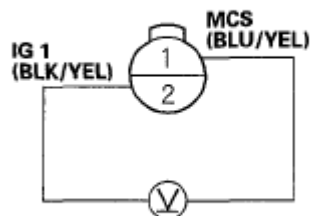
Is there battery voltage?

YES - Go to step 11.

NO - Repair open in the wire between PCM (A12) and the engine mount control solenoid valve 2P connector. If the wire is OK, update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), and recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**).

11. Raise the engine speed above 1,000 rpm.
12. Measure the voltage between engine mount control solenoid valve 2P connector terminals No. 1 and No. 2.

**ENGINE MOUNT CONTROL
SOLENOID VALVE 2P CONNECTOR**



Wire side of female terminals

Fig. 5: Identifying Voltage Between Engine Mount Control Solenoid Valve 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to body ground in the wire between PCM (A12) and the engine mount control solenoid valve. If the wire is OK, update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), and recheck. If the engine mount control system works properly, and the PCM was updated, the troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**).

NO - Go to step 13.

13. Disconnect the vacuum hose (A) that is closest to the solenoid connector from the engine mount control solenoid valve (B), and connect a commercially available vacuum pump/gauge, 0-30 in.Hg, to the hose. Apply about 20 in.Hg of vacuum, and wait for 20 seconds.

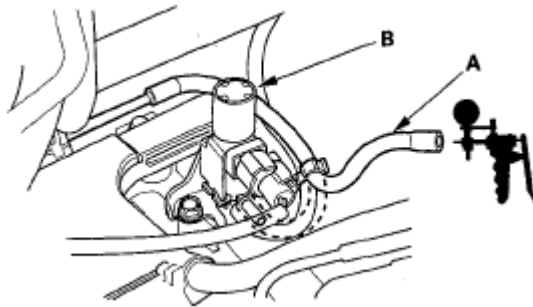


Fig. 6: Identifying Engine Mount Control Solenoid Valve And Vacuum Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do the engine mount hold vacuum?

YES - Go to step 14.

NO - Either the vacuum hose or one of the engine mount has a vacuum leak. Repair as needed.

14. Release the vacuum, then apply vacuum again.

Is there a noticeable change in idle smoothness with and without vacuum applied?

YES - Go to step 15.

NO - Replace the front engine mount.

15. Connect a commercially available vacuum pump/ gauge, 0-30 in.Hg, to the engine mount control solenoid valve (A) that is closest to the solenoid connector.

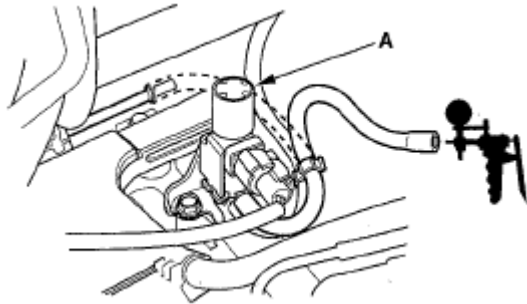


Fig. 7: Identifying Engine Mount Control Solenoid Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there manifold vacuum at idle, and a decrease in manifold vacuum when you raise the engine speed above 1,000 rpm?

YES - The system is OK.

NO - Replace the engine mount control solenoid valve.

2007-09 ENGINE PERFORMANCE

EVAP System - MDX

COMPONENT LOCATION INDEX

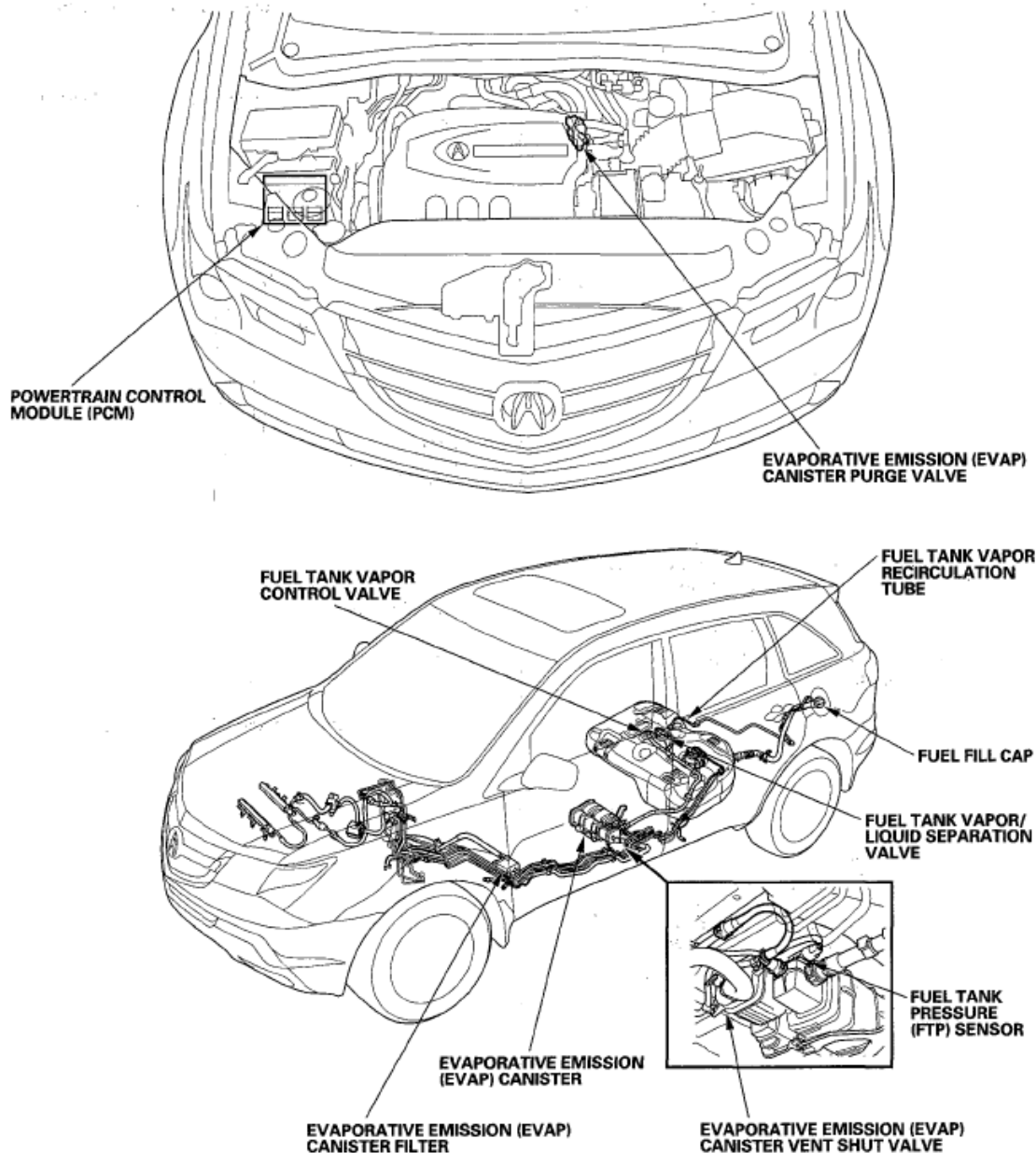


Fig. 1: Identifying EVAP System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0443: EVAP CANISTER PURGE VALVE CIRCUIT MALFUNCTION**Special Tools Required**

Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0443 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve and the PCM.

5. Turn the ignition switch OFF, and allow the engine to cool below 140°F (60°).
6. Disconnect the vacuum hose (A) from the purge joint (B) in the engine compartment, and connect a vacuum pump/gauge, 0-30 in.Hg, to the hose.

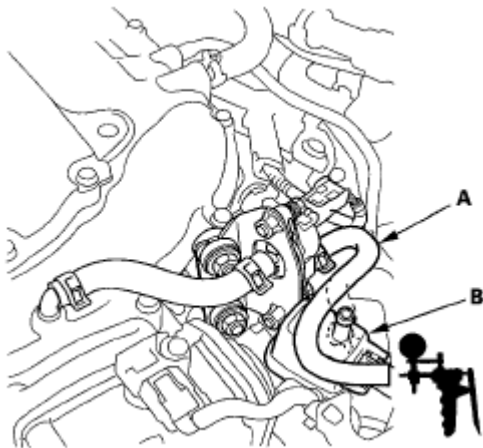


Fig. 2: Identifying Vacuum Hose From Purge Joint
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Start the engine, and let it idle.

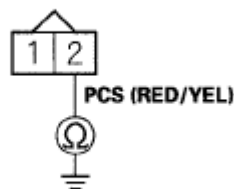
Is there vacuum?

YES - Go to step 8.

NO - Go to step 14.

8. Turn the ignition switch OFF.
9. Disconnect the EVAP canister purge valve 2P connector.
10. Check for continuity between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

Fig. 3: Identifying Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

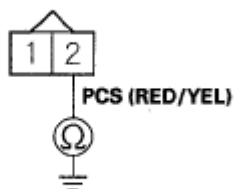
Is there continuity?

YES - Go to step 11.

NO - Go to step 23.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

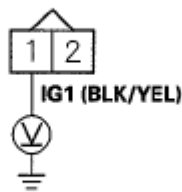
Fig. 4: Identifying Continuity Between EVAP Canister Purge Valve 2P Connector Terminal No. 2

And Body Ground**Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity ?*

YES - Repair short in the wire between the EVAP canister purge valve and the PCM (C40), then go to step 24.

NO - Go to step 30.

14. Turn the ignition switch OFF.
15. Disconnect the EVAP canister purge valve 2P connector.
16. Turn the ignition switch ON (II).
17. Measure voltage between EVAP canister purge valve 2P connector terminal No. 1 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR

Wire side of female terminals

Fig. 5: Identifying Voltage Between EVAP Canister Purge Valve 2P Connector Terminal No. 1 And Body Ground**Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there battery voltage?*

YES - Go to step 18.

NO - Repair open in the wire between the EVAP canister purge valve and the No. 18 ACG (10 A) fuse in the under-dash fuse/relay box, then go to step 24.

18. Turn the ignition switch OFF.
19. Jump the SCS line with the HDS.
20. Disconnect PCM connector C (49P).
21. Check for continuity between PCM connector terminal C40 and EVAP canister purge valve 2P connector terminal No. 2.

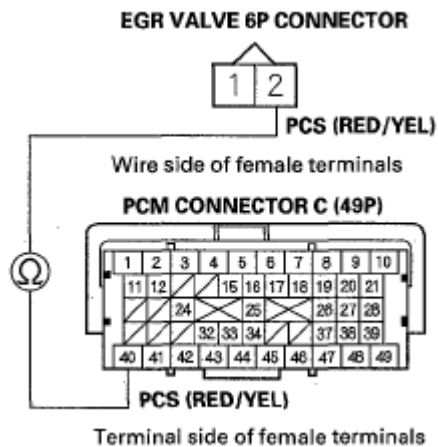


Fig. 6: Identifying Continuity Between PCM Connector Terminal C40 And EVAP Canister Purge Valve 2P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

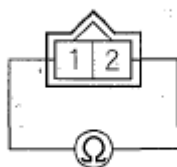
Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the EVAP canister purge valve and the PCM (C40), then go to step 24.

22. At the valve side, measure resistance between EVAP canister purge valve 2P connector terminals No. 1 and No. 2.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Terminal side of male terminals

Fig. 7: Identifying Resistance Between EVAP Canister Purge Valve 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 33 ohms at room temperature?

YES - Go to step 30.

NO - Go to step 23.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

23. Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**).
24. Reconnect all connectors.
25. Turn the ignition switch ON (II).
26. Reset the PCM with the HDS.
27. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0443 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister purge valve and the PCM, then go to step 1.

NO - Go to step 29.

29. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 28, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

30. Reconnect all connectors.
31. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
32. Start the engine.
33. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0443 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister purge valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 32. If the PCM was substituted, go to step 1.

NO - Go to step 34.

34. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 33, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 32. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 32.

DTC P0451: FTP SENSOR RANGE/PERFORMANCE PROBLEM

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If DTC P2422 is stored at the same time as DTC P0451, troubleshoot DTC P2422 first, then recheck for DTC P0451.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle.
4. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 5.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 3 and recheck.

5. Turn the ignition switch OFF.
6. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**).
7. Turn the ignition switch ON (II).
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
10. Start the engine, then let it idle.
11. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0451 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1.

NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 11, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 10.

DTC P0452: FTP SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Remove the fuel fill cap.
5. Turn the ignition switch ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

Is about - 7.3 kPa (-2.16 in.Hg, - 55 mmHg), or 0.3 V or less indicated?

YES - Go to step 10.

NO - Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 10.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

10. Turn the ignition switch OFF.
11. Disconnect the FTP sensor 3P connector.
12. Turn the ignition switch ON (II).
13. Check the FTP SENSOR in the DATA LIST with the HDS.

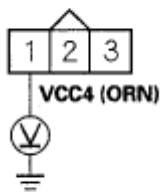
Is about 7.3 kPa (2.15 in.Hg, 54.7 mmHg), or 4.90 V indicated?

YES - Go to step 24.

NO - Go to step 14.

14. Measure voltage between FTP sensor 3P connector terminal No. 1 and body ground.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 8: Identifying Voltage Between FTP Sensor 3P Connector Terminal No. 1 Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

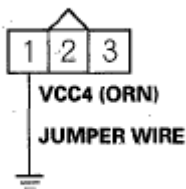
Is there about 5 V?

YES - Go to step 20.

NO - Go to step 15.

15. Turn the ignition switch OFF.
16. Jump the SCS line with the HDS.
17. Disconnect PCM connector A (49P).
18. Connect FTP sensor 3P connector terminal No. 1 to body ground with a jumper wire.

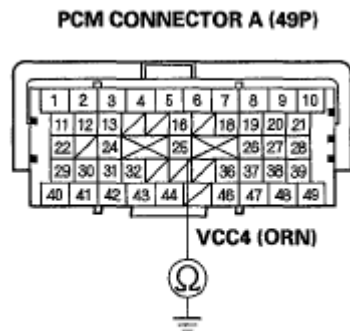
FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 9: Identifying FTP Sensor 3P Connector Terminal No. 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Check for continuity between PCM connector terminal A25 and body ground.



Terminal side of female terminals

Fig. 10: Identifying Continuity Between PCM Connector Terminal A25 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

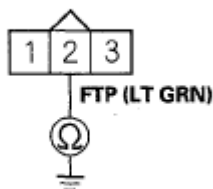
Is there continuity?

YES - Go to step 32.

NO - Repair open in the wire between the PCM (A25) and the FTP sensor, then go to step 26.

20. Turn the ignition switch OFF.
21. Jump the SCS line with the HDS.
22. Disconnect PCM connector A (49P).
23. Check for continuity between FTP sensor 3P connector terminal No. 2 and body ground.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 11: Identifying Continuity Between FTP Sensor 3P Connector Terminal No. 2 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A39) and the FTP sensor, then go to step 26.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

NO - Go to step 32.

24. Turn the ignition switch OFF.
25. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**).
26. Reconnect all connectors.
27. Turn the ignition switch ON (II).
28. Reset the PCM with the HDS.
29. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
30. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0452 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1.

NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 30, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

32. Reconnect all connectors.
33. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
34. Start the engine.
35. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0452 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 34. If the PCM was substituted, go to step 1.

NO - Go to step 36.

36. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 35, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 34. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0453: FTP SENSOR CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Remove the fuel fill cap.
5. Turn the ignition switch ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?

YES - Go to step 10.

NO - Go to step 7.

7. Install the fuel fill cap.
8. Start the engine.
9. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

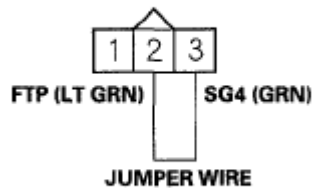
Does the screen indicate FAILED?

YES - Go to step 10.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 6 and recheck.

10. Turn the ignition switch to LOCK (0).
11. Disconnect the FTP sensor 3P connector.
12. Connect FTP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 12: Identifying FTP Sensor 3P Connector Terminals No. 2 And No. 3 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Turn the ignition switch ON (II).
14. Check the FTP SENSOR in the DATA LIST with the HDS.

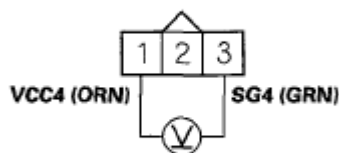
Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?

YES - Go to step 15.

NO - Go to step 26.

15. Measure voltage between FTP sensor 3P connector terminals No. 1 and No. 3.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 13: Identifying Voltage Between FTP Sensor 3P Connector Terminals No. 1 And No. 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

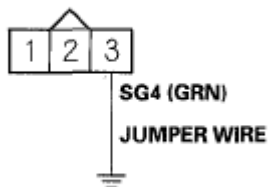
YES - Go to step 21.

NO - Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.

18. Disconnect PCM connector A (49P).
19. Connect FTP sensor 3P connector terminal No. 3 to body ground with a jumper wire.

FTP SENSOR 3P CONNECTOR

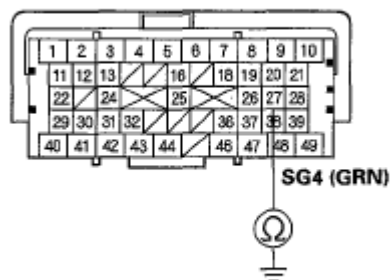


Wire side of female terminals

Fig. 14: Identifying FTP Sensor 3P Connector Terminal No. 3 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check for continuity between PCM connector terminal A27 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 15: Identifying Continuity Between PCM Connector Terminal A27 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

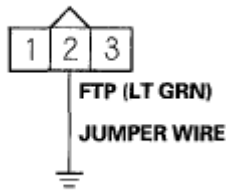
Is there continuity?

YES - Go to step 34.

NO - Repair open in the wire between the PCM (A27) and the FTP sensor, then go to step 28.

21. Turn the ignition switch to LOCK (0).
22. Jump the SCS line with the HDS.
23. Disconnect PCM connector A (49P).
24. Connect FTP sensor 3P connector terminal No. 2 to body ground with a jumper wire.

FTP SENSOR 3P CONNECTOR

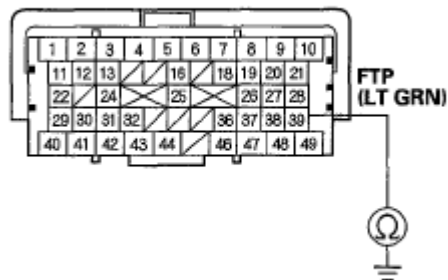


Wire side of female terminals

Fig. 16: Identifying FTP Sensor 3P Connector Terminal No. 2 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Check for continuity between PCM connector terminal A39 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 17: Identifying Continuity Between PCM Connector Terminal A39 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 34.

NO - Repair open in the wire between the PCM (A39) and the FTP sensor, then go to step 28.

26. Turn the ignition switch to LOCK (0).
27. Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**).
28. Reconnect all connectors.
29. Turn the ignition switch ON (II).
30. Reset the PCM with the HDS.
31. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0453 indicated?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

YES - Check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1.

NO - Go to step 33.

33. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 32, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

34. Reconnect all connectors.
35. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
36. Start the engine.
37. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0453 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 36. If the PCM was substituted, go to step 1.

NO - Go to step 38.

38. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 37, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 36. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0455: EVAP SYSTEM VERY LARGE LEAK DETECTED; DTC P0456: EVAP SYSTEM VERY SMALL LEAK DETECTED

NOTE: The fuel system is designed to allow specified maximum vacuum and pressure

conditions. Do not deviate from the vacuum and pressure tests as indicated in these procedures. Excessive pressure/ vacuum would damage the EVAP components or cause eventual fuel tank failure.

Special Tools Required

- Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available
- Vacuum/pressure gauge, 0-4 in.Hg, 07JAZ-001000B

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- Fresh fuel has a higher volatility that will create greater pressure/vacuum. The optimum condition for testing is less than a full tank of fresh fuel. If possible, to assist in leak detection, add 1 gallon of fresh fuel to the tank (as long as it will not fill the tank), just before starting these procedures.

1. Check the fuel fill cap (the cap must say "TIGHTEN TO CLICK"). It should turn 1/4 turn after it's tight, then it clicks.

Is the correct fuel fill cap Installed and properly tightened?

YES - Go to step 2.

NO - Replace or tighten the cap, then go to step 22.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap.

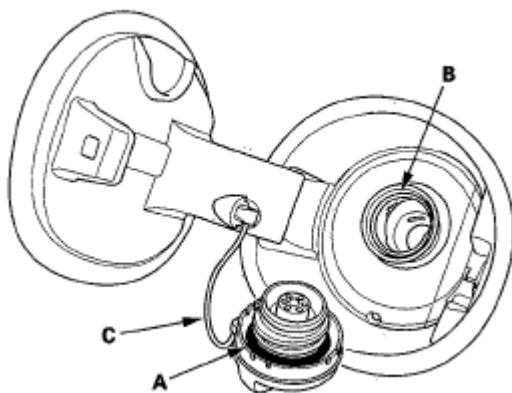


Fig. 18: Identifying Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

YES - Replace the fuel fill cap or the fuel fill pipe (see **FUEL FILL PIPE REMOVAL/INSTALLATION**), then go to step 22.

NO - Go to step 3.

3. Turn the ignition switch ON (II).
4. Clear the DTC with the HDS.
5. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, or the EVAP canister vent shut valve, and the PCM.

NO - Go to step 6.

6. Turn the ignition switch OFF.
7. Check for a poor connection or damage at the fuel tank vapor control valve hose.

Is the tube OK?

YES - Go to step 8.

NO -

- Replace the fuel tank vapor control valve hose, then go to step 22.
 - If necessary, replace the fuel tank (see **FUEL TANK REPLACEMENT**), then go to step 22.
8. Disconnect the fuel tank vapor control valve hose (A) from the EVAP canister (B), and plug the EVAP canister port (C).

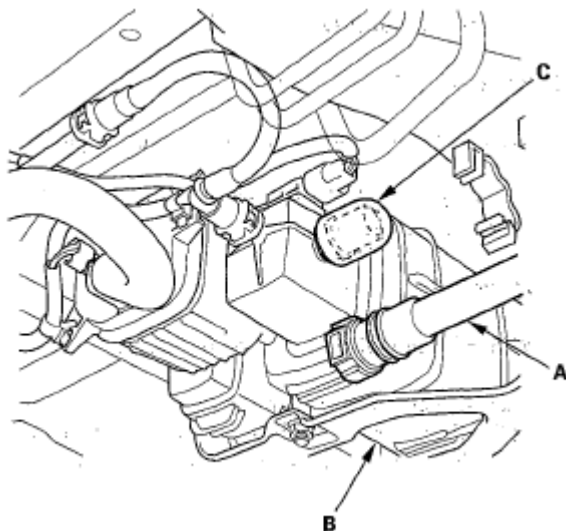


Fig. 19: Identifying Fuel Tank Vapor Control Valve Hose From EVAP Canister
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the vacuum hose (purge line) (A) from the EVAP canister purge valve (B) in the engine compartment, and connect the vacuum pump/ gauge, 0-30 in.Hg, to the vacuum hose as shown.

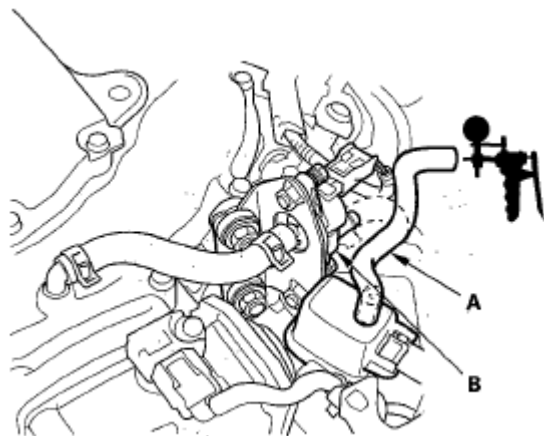


Fig. 20: Identifying Vacuum Hose (Purge Line) From EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Turn the ignition switch ON (II).
11. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
12. Apply vacuum to the hose until the FTP reads 1.90 V (-0.59 in.Hg, -15.1 mmHg).

NOTE: Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

13. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

Does the voltage increase more than 0.2 V (0.1 in.Hg, 2.5 mmHg)?

YES - Go to step 14.

NO - Go to step 19.

14. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
15. Disconnect the fresh air hose (A) from the EVAP canister vent shut valve (B), and plug the EVAP canister vent shut valve port (C).

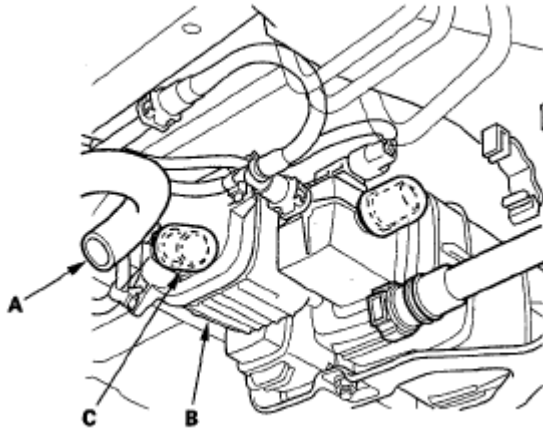


Fig. 21: Identifying Fresh Air Hose And EVAP Canister Vent Shut Valve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Apply vacuum to the EVAP system until the FTP reads 1.90 V (-0.59 in.Hg, -15.1 mmHg).

NOTE: Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

17. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

Does the voltage increase more than 0.2 V (0.1 in.Hg, 2.5 mmHg)?

YES - Go to step 18.

NO - Replace the EVAP canister vent shut valve, then go to step 21.

18. Check for a loose or damaged EVAP canister purge line between the EVAP canister and the EVAP canister purge valve.

Is the line OK?

YES - Replace these parts, then go to step 21.

- FTP sensor O-ring
- EVAP canister vent shut valve case and O-ring
- EVAP canister

NO - Reconnect or repair the EVAP canister purge hose, then go to step 21.

19. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.

20. Check these parts for looseness or damage:

- Fuel fill pipe

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

- Fuel vapor return pipe

Are the parts OK?

YES - Check the fuel tank unit base gasket (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**), and check the fuel tank, then go to step 21.

NO - Repair or replace the damaged parts, then go to step 21.

21. Reconnect all hoses and connectors.
22. Turn the ignition switch ON (II).
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the PCM, then go to step 1.

DTC P0457: EVAP SYSTEM LEAK DETECTED/FUEL FILL CAP LOOSE OR MISSING

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Check the fuel fill cap (the cap must say "TIGHTEN TO CLICK"). It should turn 1/4 turn after it's tight, then it clicks.

Is the correct fuel fill cap installed and properly tightened?

YES - Go to step 2.

NO - Replace or tighten the cap, then go to step 19.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether cord (C) is not caught under the cap.

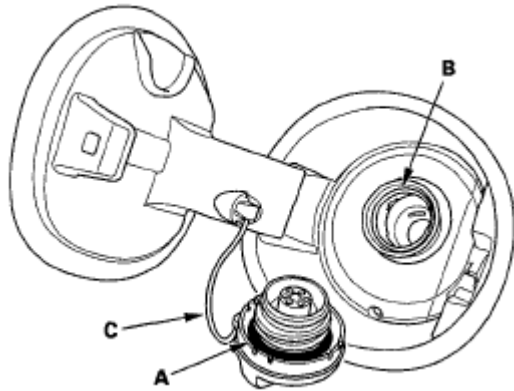


Fig. 22: Identifying Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

YES - Replace the fuel fill cap or the fuel fill pipe (see **FUEL FILL PIPE REMOVAL/INSTALLATION**), then go to step 19.

NO - Go to step 3.

3. Turn the ignition switch ON (II).
4. Clear the DTC with the HDS.
5. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM.

NO - Go to step 6.

6. Turn the ignition switch OFF.
7. Remove the EVAP canister vent shut valve from the EVAP canister (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**).
8. Connect the 2P connector to the EVAP canister vent shut valve.
9. Turn the ignition switch ON (II).
10. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
11. Check the EVAP canister vent shut valve (A) operation.

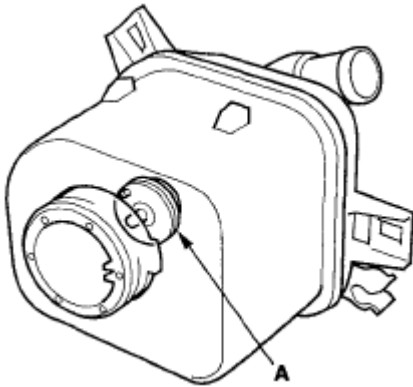


Fig. 23: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the valve operate?

YES - Check the routing of the EVAP canister vent tube, then go to step 18.

NO - Go to step 12.

12. Turn the ignition switch OFF.
13. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**).
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM, and check all EVAP line connections, then go to step 1.

18. Reinstall the EVAP canister vent shut valve.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM, and check all EVAP line connections, then go to step 1.

DTC P0496: EVAP SYSTEM HIGH PURGE FLOW

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the PCM.

NO - Go to step 4.

4. Turn the ignition switch OFF.
5. Replace the EVAP canister purge valve (see EVAP CANISTER PURGE VALVE REPLACEMENT).
6. Turn the ignition switch ON (II).
7. Reset the PCM with the HDS.
8. Do the PCM idle learn procedure (see PCM IDLE LEARN PROCEDURE).
9. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the PCM, then go to step 1.

DTC P0497: EVAP SYSTEM LOW PURGE FLOW**Special Tools Required**

- Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available
- Vacuum/pressure gauge, 0-4 in.Hg, 07JAZ-001000B

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Check the fuel fill cap installation (The cap label must say "Tighten to click.". The cap should tighten 1/4 turn after it is tight.).

Is the fuel fill cap installed and properly tightened?

YES - Go to step 2.

NO - Properly install the fuel fill cap, then go to step 28.

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Select EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the PCM.

NO - Go to step 5.

5. Check for poor connection, blockage, or damage at the EVAP canister purge line between the intake manifold and the EVAP canister.

Is the line OK?

YES - Go to step 6.

NO - Reconnect or repair the EVAP canister purge line, then go to step 28.

6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B).

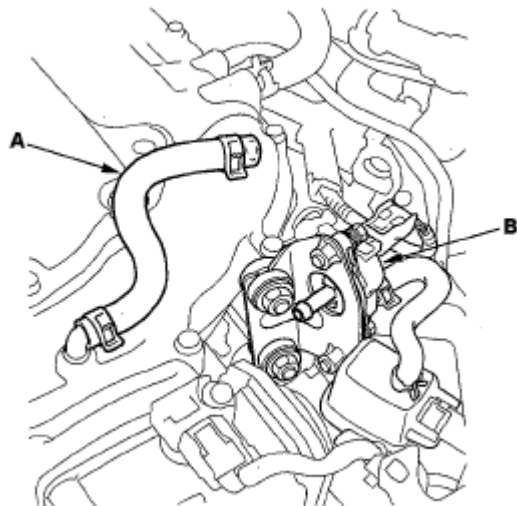


Fig. 24: Identifying Vacuum Hose From EVAP Canister Purge Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the vacuum hose (A) from the purge line (at the EVAP canister side), and connect a T-fitting (B) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, to the hose as shown.

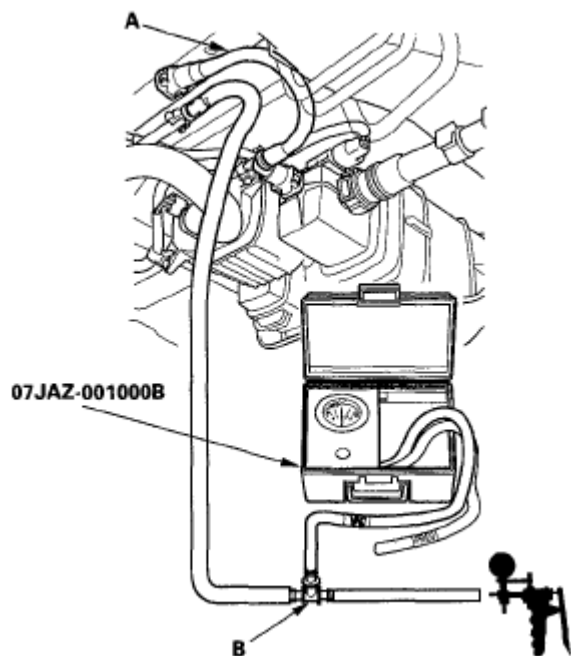


Fig. 25: Identifying T-Fitting From Vacuum Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
9. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

Does it hold vacuum?

YES - Go to step 10.

NO - Go to step 15.

10. Select EVAP PCS OFF in the INSPECTION MENU with the HDS.
11. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B). Connect a T-fitting (C) from the vacuum gauge and the vacuum pump/ gauge, 0-30 in.Hg, to the hose (D) as shown.

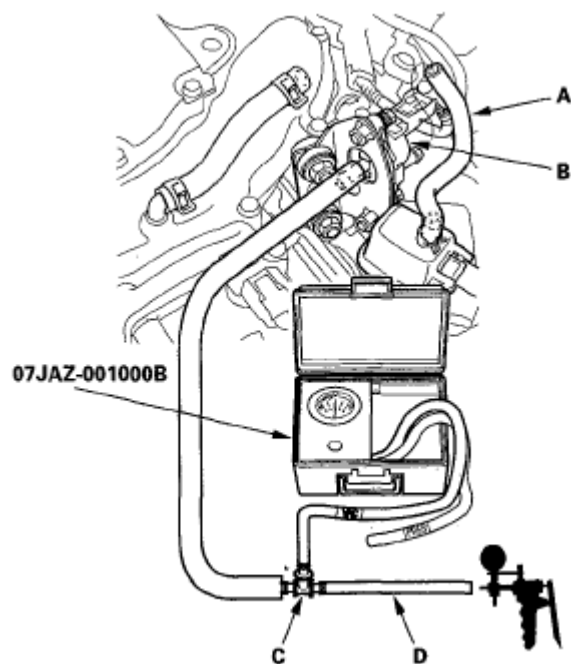


Fig. 26: Identifying T-Fitting From Vacuum Gauge
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Turn the ignition switch ON (II).
13. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
14. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

Does it hold vacuum?

YES - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**), then go to step 28.

NO - Check for blockage in the vacuum hose between the EVAP canister purge valve and the EVAP canister, then go to step 28.

15. Connect the vacuum pump/gauge, 0-30 in.Hg, to the vacuum hose (A) as shown.



Fig. 27: Identifying Vacuum Pump/Gauge To Vacuum Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Start the engine, and let it idle.

Is there vacuum?

YES - Go to step 17.

NO - Check for blockage in the vacuum hose between the EVAP canister purge valve and the intake manifold, then go to step 28.

17. Turn the ignition switch OFF.
18. Remove the FTP sensor with its connector connected (see **FTP SENSOR REPLACEMENT**).
19. Connect a T-fitting (A) from the vacuum pump/ gauge, 0-30 in.Hg, and the vacuum pump to the FTP sensor (B) as shown.

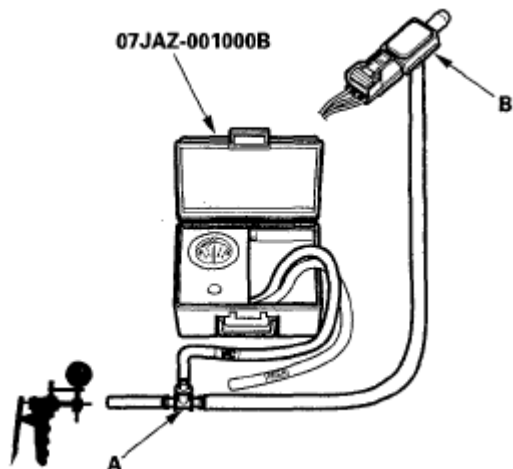


Fig. 28: Identifying T-Fitting From Vacuum Pump/Gauge

Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Check and record the FTP SENSOR reading in the DATA LIST with the HDS.
21. Slowly apply about 1.3 kPa (0.4 in.Hg, 10 mmHg) of vacuum to the hose.

NOTE: Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

22. Check the FTP SENSOR in the DATA LIST with the HDS.

Is the difference more than 1.1 kPa (0.31 in.Hg, 8 mmHg) before and after applying vacuum?

YES - Go to step 23.

NO - Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**), then go to step 27.

23. Reconnect the vacuum hoses to the EVAP canister purge line (EVAP canister side), and reinstall the FTP sensor.
24. Disconnect the vacuum hose (purge line) (A) from the EVAP canister purge valve (B) in the engine compartment, and connect a T-fitting (C) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, to the vacuum hose (A) as shown.

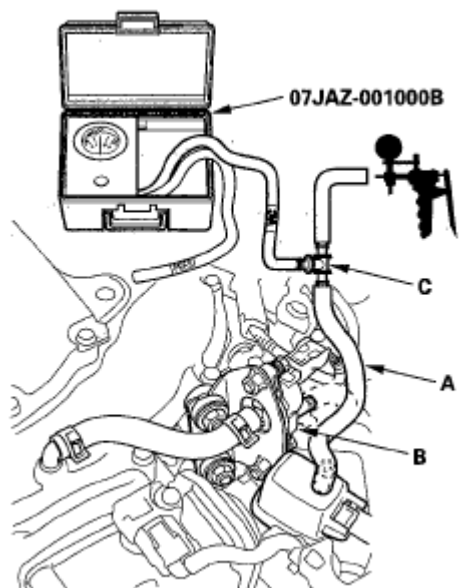


Fig. 29: Identifying T-Fitting From Vacuum Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
26. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

Does the hose hold vacuum?

YES - Check for blockage at the EVAP canister port; then go to step 27.

NO - Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**), then go to step 27.

27. Reconnect all hoses.
28. Turn the ignition switch ON (II).
29. Reset the PCM with the HDS.
30. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
31. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Troubleshooting is complete.

NO - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the PCM, then go to step 1.

DTC P0498: EVAP CANISTER VENT SHUT VALVE CONTROL CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0498 indicated?

YES - Go to step 6.

NO - Go to step 4.

4. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
5. Check for Temporary DTCs or DTCs with the HDS.

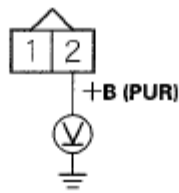
Is DTC P0498 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the PCM.

6. Turn the ignition switch OFF.
7. Disconnect the EVAP canister vent shut valve 2P connector.
8. Turn the ignition switch ON (II).
9. Measure voltage between EVAP canister vent shut valve 2P connector terminal No. 2 and body ground.

EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Wire side of female terminals

Fig. 30: Identifying Voltage Between EVAP Canister Vent Shut Valve 2P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

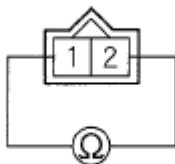
Is there battery voltage?

YES - Go to step 10.

NO - Repair open in the wire between the EVAP canister vent shut valve and the under-hood fuse/ relay box (PGM-FI subrelay), then go to step 18.

10. Turn the ignition switch OFF.
11. At the valve side, measure resistance between EVAP canister vent shut valve 2P connector terminals No. 1 and No. 2.

EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Terminal side of male terminals

Fig. 31: Identifying Resistance Between EVAP Canister Vent Shut Valve 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 25 - 30 ohms at room temperature?

YES - Go to step 12.

NO - Go to step 17.

12. Jump the SCS line with the HDS.
13. Disconnect PCM connector A (49P).
14. Check for continuity between PCM connector terminal A22 and body ground.

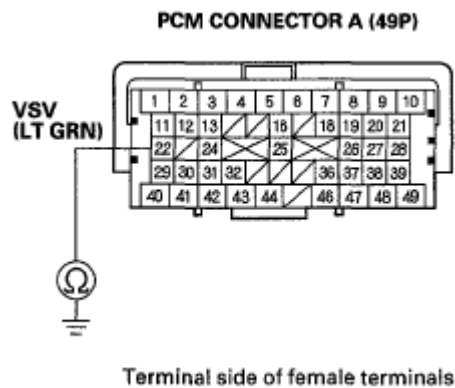


Fig. 32: Identifying Continuity Between PCM Connector Terminal A22 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the EVAP canister vent shut valve and the PCM (A22), then go to step 18.

NO - Go to step 15.

15. Connect EVAP canister vent shut valve 2P connector terminal No. 1 to body ground with a jumper wire.

EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR

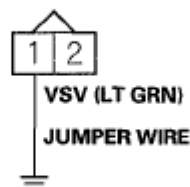


Fig. 33: Identifying EVAP Canister Vent Shut Valve 2P Connector Terminal No. 1 To Body Ground With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between PCM connector terminal A22 and body ground.

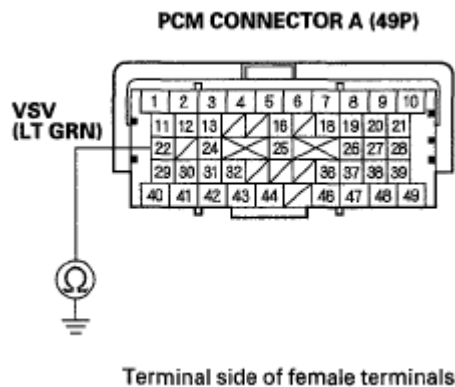


Fig. 34: Identifying Continuity Between PCM Connector Terminal A22 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair open in the wire between the EVAP canister vent shut valve and the PCM (A22), then go to step 18.

17. Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0498 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

24. Reconnect all connectors.
25. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
26. Select EVAP CVS ON in the INSPECTION MENU with the HDS.

27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0498 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

DTC P0499: EVAP CANISTER VENT SHUT VALVE CONTROL CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0499 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the PCM.

5. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
6. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
7. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0499 indicated?

YES - Check for poor connections or loose terminals at the EVAP canister vent shut valve and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 6. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

DTC P1454: FTP SENSOR RANGE/PERFORMANCE PROBLEM; DTC P2422: EVAP CANISTER VENT SHUT VALVE CLOSE MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Remove the fuel fill cap, and wait 1 minute.
5. Check the FTP SENSOR in the DATA LIST with the HDS.

Is it between - 0.67 and 0.67 kPa (- 0.2 and 0.2 in.Hg, - 5 and 5 mmHg), or 2.4 and 2.6 V?

YES - Go to step 6.

NO - Go to step 17.

6. Install the fuel fill cap.
7. Clear the DTC with the HDS.
8. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park on neutral) until the radiator fan comes on, then let it idle.
9. Monitor the OBD STATUS for DTC PI 454 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 10.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM. If the screen indicates NOT COMPLETED, go to step 8 and recheck.

10. Clear the DTC with the HDS.
11. Turn the ignition switch OFF.
12. Remove the EVAP canister vent shut valve from the EVAP canister (see EVAP CANISTER VENT SHUT VALVE REPLACEMENT).
13. Connect the 2P connector to the EVAP canister vent shut valve.
14. Turn the ignition switch ON (II).
15. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
16. Check the EVAP canister vent shut valve (A) operation.

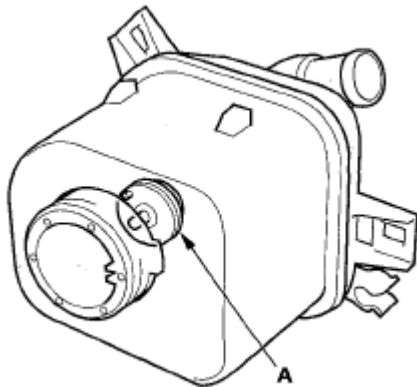


Fig. 35: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the valve operate?

YES - Check for a blockage in the EVAP canister, canister filter, vent hoses, and drain joint, then install the EVAP canister vent shut valve, and go to step 23.

NO - Replace the EVAP canister vent shut valve (see **EVAP CANISTER VENT SHUT VALVE REPLACEMENT**), then go to step 23.

17. Disconnect the air tube (A) from the FTP sensor (B).

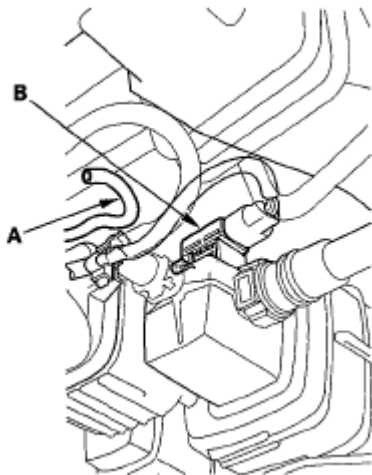


Fig. 36: Identifying Air Tube And FTP Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Check the FTP SENSOR in the DATA LIST with the HDS.

Is it between - 0.67 and 0.67 kPa (- 0.2 and 0.2 in.Hg, - 5 and 5 mmHg), or 2.4 and 2.6 V?

YES - Check for a blockage in the FTP sensor air tube or vent, then go to step 23.

NO - Go to step 19.

19. Turn the ignition switch OFF.
20. Remove the FTP sensor (A) from the EVAP canister with its connector connected (see **FTP SENSOR REPLACEMENT**).

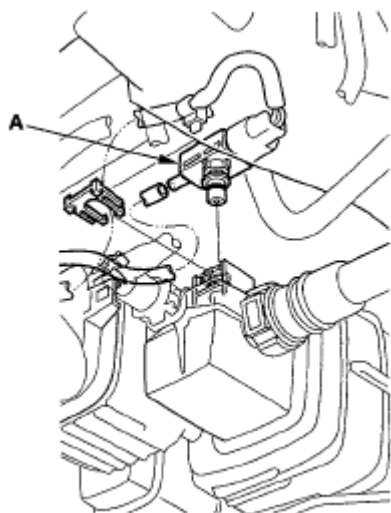


Fig. 37: Identifying FTP Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch ON (II).
22. Check the FTP SENSOR in the DATA LIST with the HDS.

Is it between - 0.67 kPa and 0.67 kPa (- 0.2 and 0.2 in.Hg, - 5 and 5 mmHg), or 2.4 and 2.6 V?

YES - Check for debris or clogging at the EVAP canister and the FTP sensor port, then go to step 23.

NO - Replace the FTP sensor (see **FTP SENSOR REPLACEMENT**), then go to step 23.

23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
26. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park on neutral) until the radiator fan comes on, then let it idle.
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1454 and/or P2422 indicated?

YES - Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM, then go to step 1.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE EVAP System - MDX

NO - Go to step 28.

28. Monitor the OBD STATUS for DTC P1454 and/or P2422 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 27, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P145C: EVAP SYSTEM PURGE FLOW MALFUNCTION (VACUUM LINE)

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- This DTC is representative of an EVAP system purge flow problem. If DTC P145C is indicated alone, troubleshoot P0496 and P0497 using the freeze data for P145C.
- If any of the DTCs listed below are indicated at the same time as DTC P145C, troubleshoot those DTC first, then recheck for P145C: P0496, P0497: EVAP system purge flow

FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING

Special Tools Required

- Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available
- Vacuum/pressure gauge, 0-4 in.Hg 07JAZ-001000B

When the fuel fill cap warning message does not go off after fuel fill cap tightened, or the message turned on frequently, do this troubleshooting procedure.

1. Check the fuel fill cap (the cap must say "Tighten to click"). It should turn 1/4 after it's tight, then it clicks.

Is the correct fuel fill cap installed and properly tightened?

YES - Go to step 2.

NO - Replace or tighten the cap, then go to step 13.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Verify that the fuel fill cap tether

cord (C) is not caught under the cap.

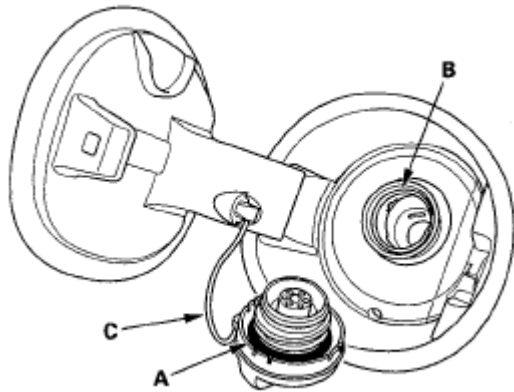


Fig. 38: Identifying Fuel Fill Cap Seal And Fuel Fill Pipe Mating Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

YES - Replace the fuel fill cap or the fuel fill pipe (see **FUEL FILL PIPE REMOVAL/INSTALLATION**), then go to step 13.

NO - Go to step 3.

3. Reinstall and tighten the fuel fill cap.
4. Clear the DTC with the HDS.
5. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 1 minute.
6. Test-drive at 45 mph (72 km/h) 1 minute or more.

Does the fuel cap message come on?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time.

7. Turn the ignition switch OFF.
8. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B) in the engine compartment. Connect a T-fitting (C) from the vacuum gauge and the vacuum pump/gauge, 0-30 in.Hg, to the vacuum hose (D) as shown.

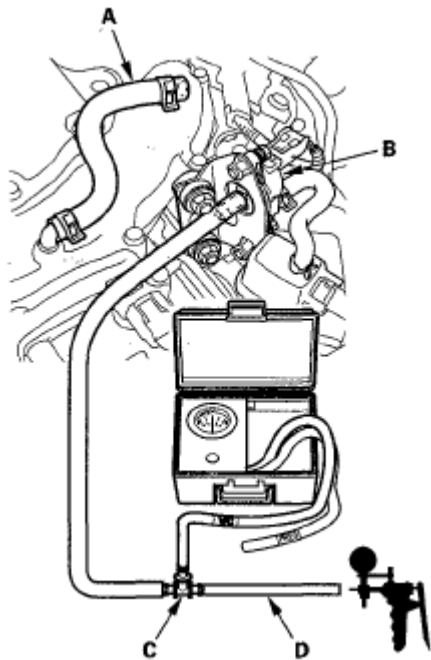


Fig. 39: Identifying T-Fitting From Vacuum Gauge And Vacuum Pump/Gauge To Vacuum Hose
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Apply vacuum to the hose about 2 kPa (0.6 in.Hg, 15 mmHg).
10. Turn the ignition switch ON (II).
11. Select the EVAP PCS ON in the INSPECTION MENU with the HDS.

Release the vacuum immediately?

YES - Check for vacuum hose blockage between the EVAP canister purge valve and the EVAP canister, then go to step 12.

NO - Replace the EVAP canister purge valve (see **EVAP CANISTER PURGE VALVE REPLACEMENT**), then go to step 12.

12. Install the parts in the reverse order of removal.
13. Turn the ignition switch ON (II).
14. Reset the PCM with the HDS.
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle for 1 minute.
17. Test-drive at 45 mph (72 km/h) for 1 minute or more.

Does the fuel fill cap message come on?

YES - Go to step 1 and recheck.

NO - Troubleshooting is complete.

FTP SENSOR REPLACEMENT

1. Remove the EVAP canister cover (A).

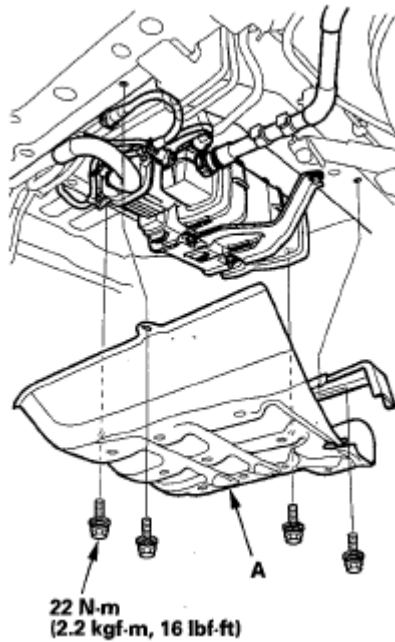


Fig. 40: Identifying EVAP Canister Cover And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the FTP sensor connector (A).

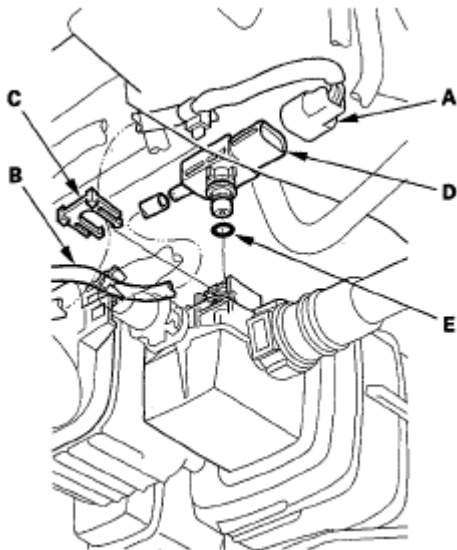


Fig. 41: Identifying FTP Sensor Connector And Hose With FTP Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the hose (B), remove the retainer (C) and remove the FTP sensor (D).
4. Install the parts in the reverse order of removal with a new O-ring (E).

EVAP CANISTER PURGE VALVE REPLACEMENT

1. Disconnect the hoses (A) and EVAP canister purge valve connector (B).

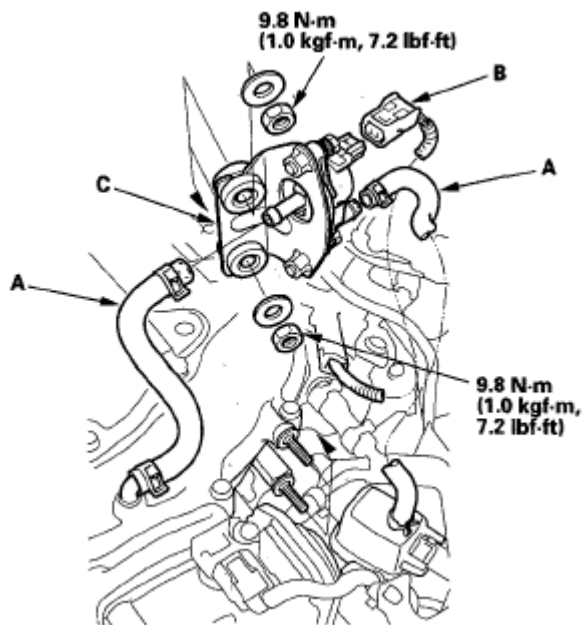


Fig. 42: Identifying Hoses And EVAP Canister Purge Valve Connector With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the EVAP canister purge valve and the bracket (C).
3. Remove the EVAP canister purge valve (A) from the bracket (B).

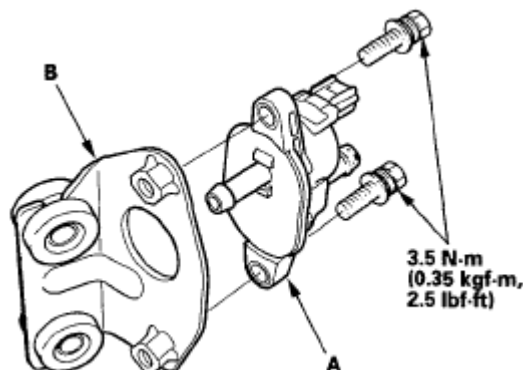


Fig. 43: Identifying EVAP Canister Purge Valve With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal.

EVAP CANISTER VENT SHUT VALVE REPLACEMENT

1. Remove the EVAP canister (see EVAP CANISTER REPLACEMENT).
2. Pry the lock tabs outward (A), then remove the EVAP canister vent shut valve (B).

NOTE: Be careful not to damage the lock tabs.

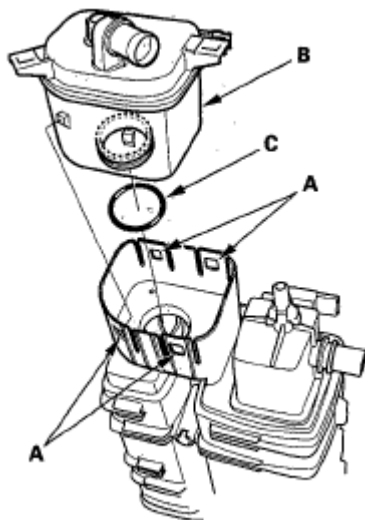


Fig. 44: Identifying EVAP Canister Vent Shut Valve With O-Ring
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the parts in the reverse order of removal with a new O-ring (C).

NOTE: Do not coat the O-ring with oil.

EVAP CANISTER FILTER REPLACEMENT

1. Disconnect the hoses (A).
2. Remove the EVAP canister filter and bracket (B).

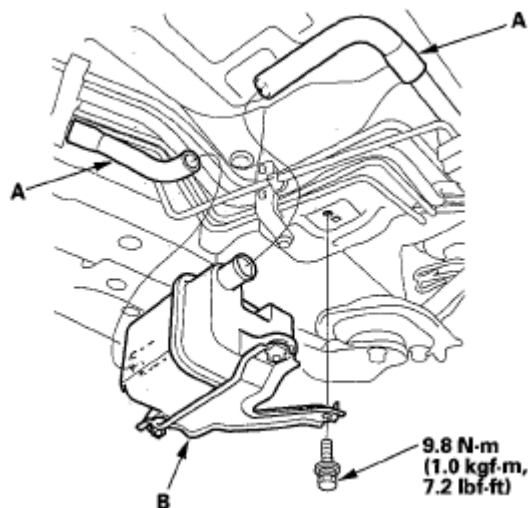


Fig. 45: Identifying EVAP Canister Filter And Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the EVAP canister filter (A) from the bracket (B).

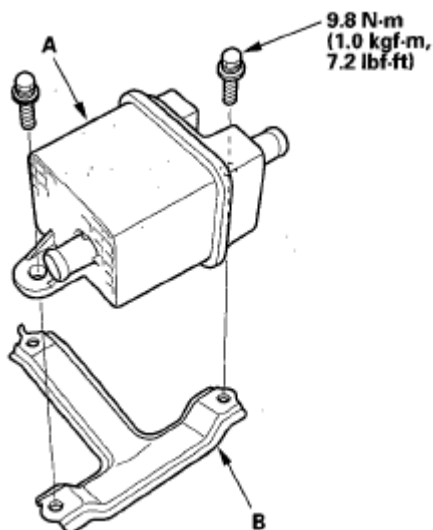


Fig. 46: Identifying EVAP Canister Filter From Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal.

EVAP CANISTER REPLACEMENT

1. Remove the EVAP canister cover (A). Open the clamps (B).

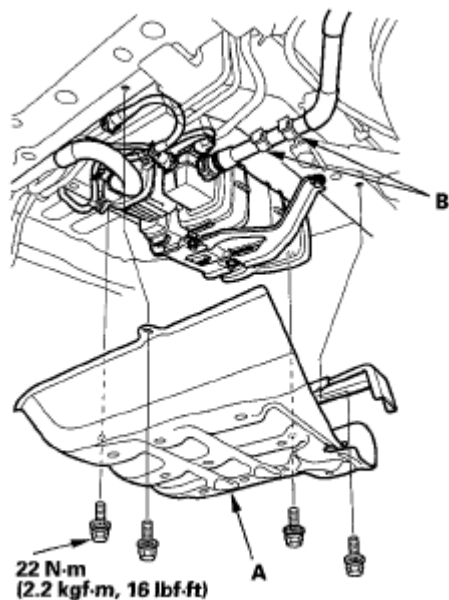


Fig. 47: Identifying EVAP Canister Cover And Clamps With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the hoses (A), the FTP sensor connector (B), and the EVAP canister vent shut valve connector (C).

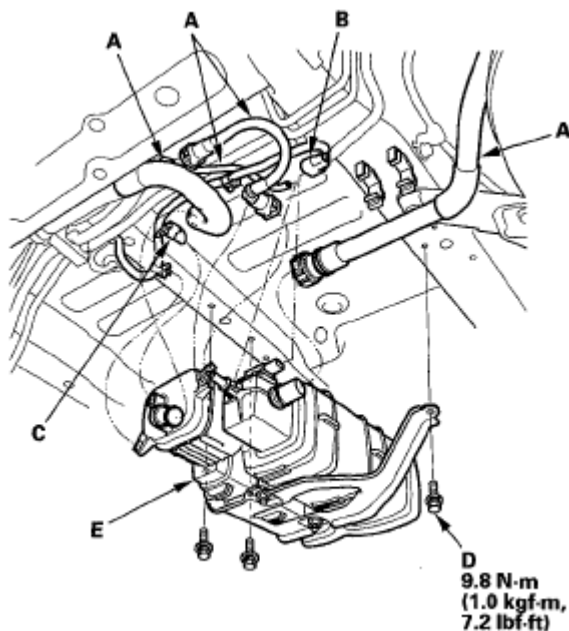


Fig. 48: Identifying Hoses, FTP Sensor Connector And EVAP Canister Vent Shut Valve Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts (D).

4. Remove the EVAP canister assembly (E).
5. Remove the EVAP canister bracket (A).

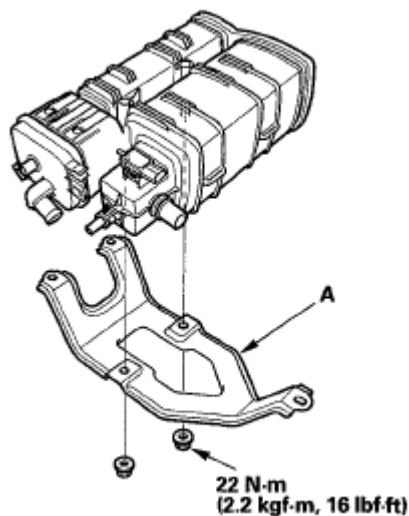


Fig. 49: Identifying EVAP Canister Bracket With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pry the lock tabs outward (A), then remove the EVAP canister vent shut valve (B).

NOTE: Be careful not to damage the lock tabs.

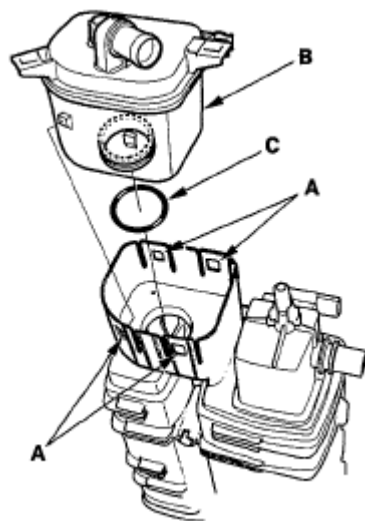


Fig. 50: Identifying EVAP Canister Vent Shut Valve With O-Ring With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the EVAP canister vent shut valve in the new EVAP canister with a new O-ring (C).

2008 Acura MDX
2007-09 ENGINE PERFORMANCE EVAP System - MDX

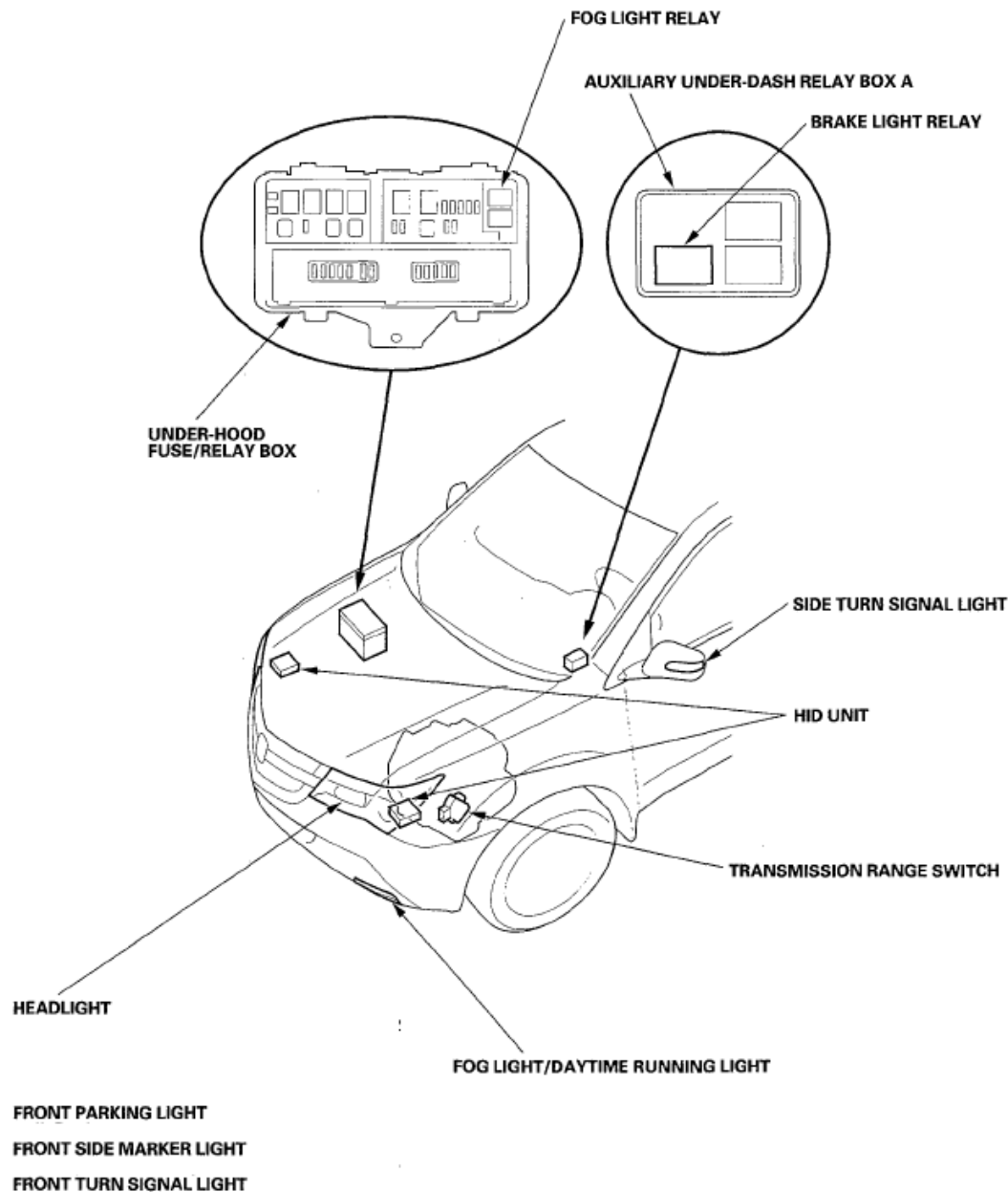
NOTE: **Do not coat the O-ring with oil.**

8. Install the parts in the reverse order of removal.

2007-09 ACCESSORIES AND EQUIPMENT

Exterior Lights - MDX

COMPONENT LOCATION INDEX



(cont'd)

Fig. 1: Identifying Exterior Lights Component Location (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

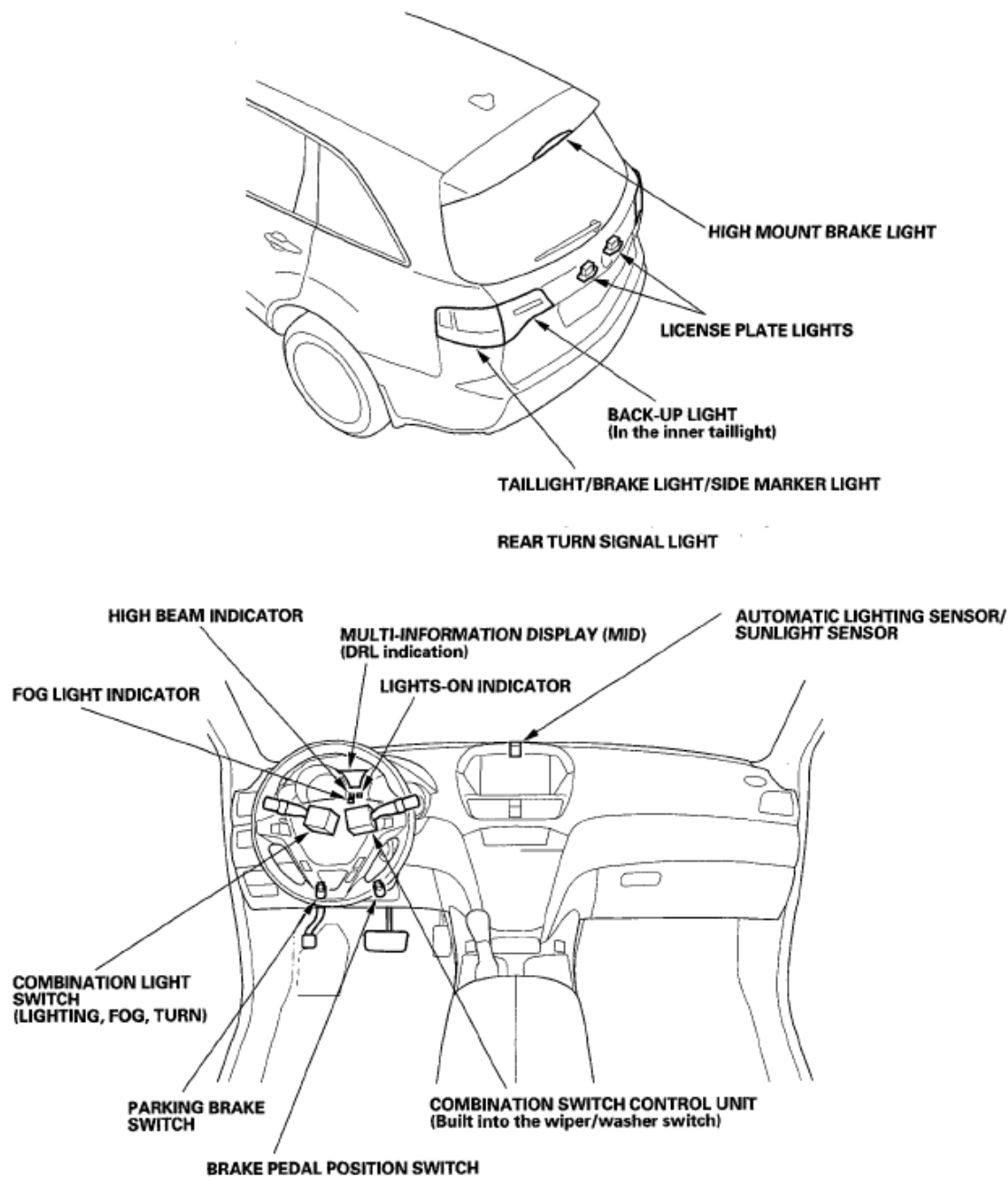


Fig. 2: Identifying Exterior Lights Component Location (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

DAYTIME RUNNING LIGHTS

The daytime running lights system is composed of the relay control module, the combination control unit, the left and right daytime running lights, and the DRL indication on the multi-information display (MID). The

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

daytime running lights operate with the ignition switch ON (II), the headlights off, and the parking brake released.

When the daytime running lights are on, the relay control module turns the left and right daytime running lights control circuit on and off (duty cycle) which provides a reduced voltage (approximately 6-8 volts) via the No. 1 and No. 2 fuses in the under-hood fuse/relay box. The DRL comes on with reduced brightness.

The gauge control module will show the DRL indication on the multi-information display (MID) with the ignition switch ON (II) and the parking brake released when a problem is detected with the daytime running lights circuit.

NOTE: **The daytime running lights are disabled when the ignition switch is turned to LOCK (0). To keep the daytime running lights from coming on, apply the parking brake switch while the ignition switch is in the LOCK (0) position. When you then turn the ignition switch back ON (II), the daytime running lights will not come on until the parking brake is released.**

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

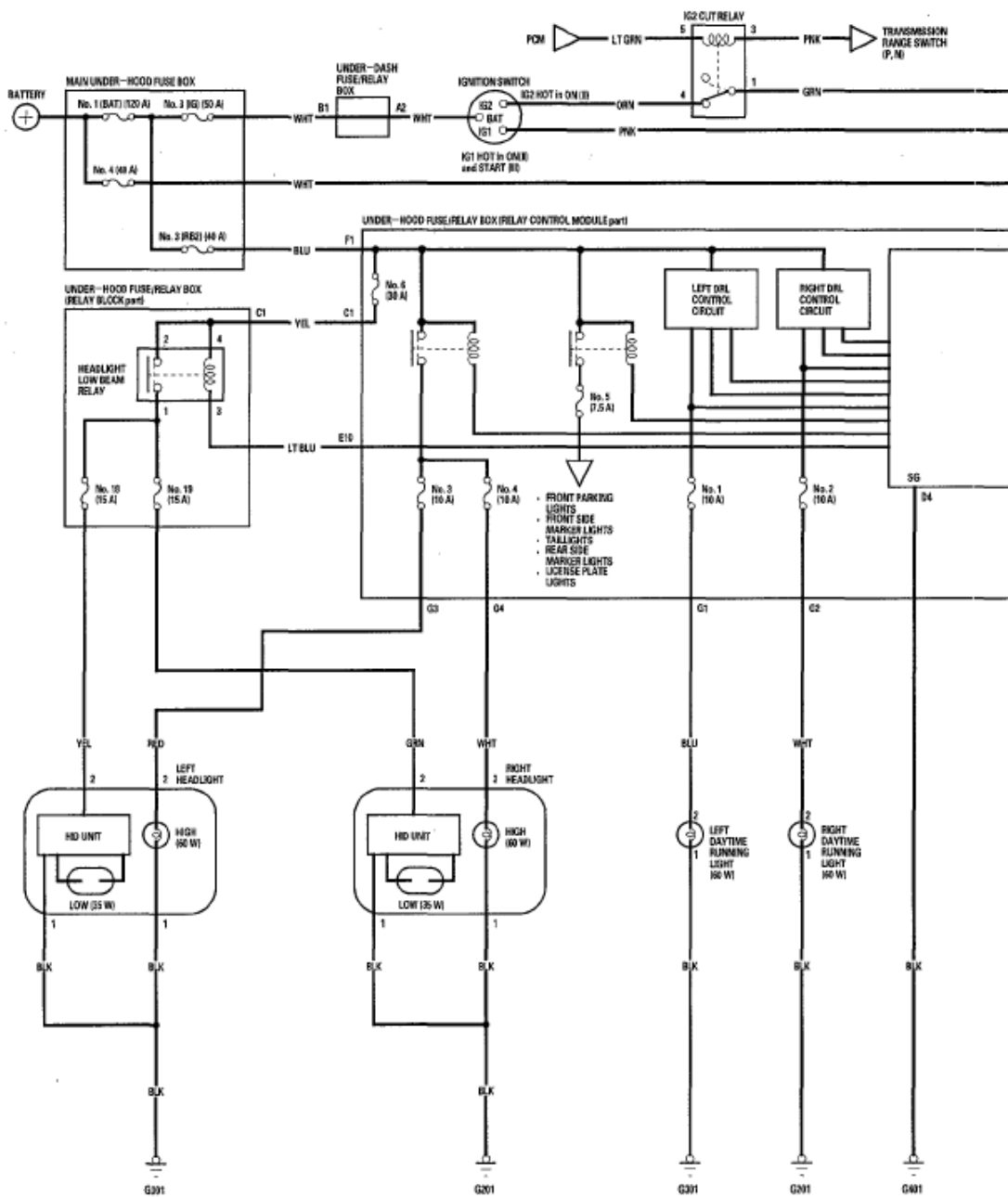


Fig. 3: Exterior Lights Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

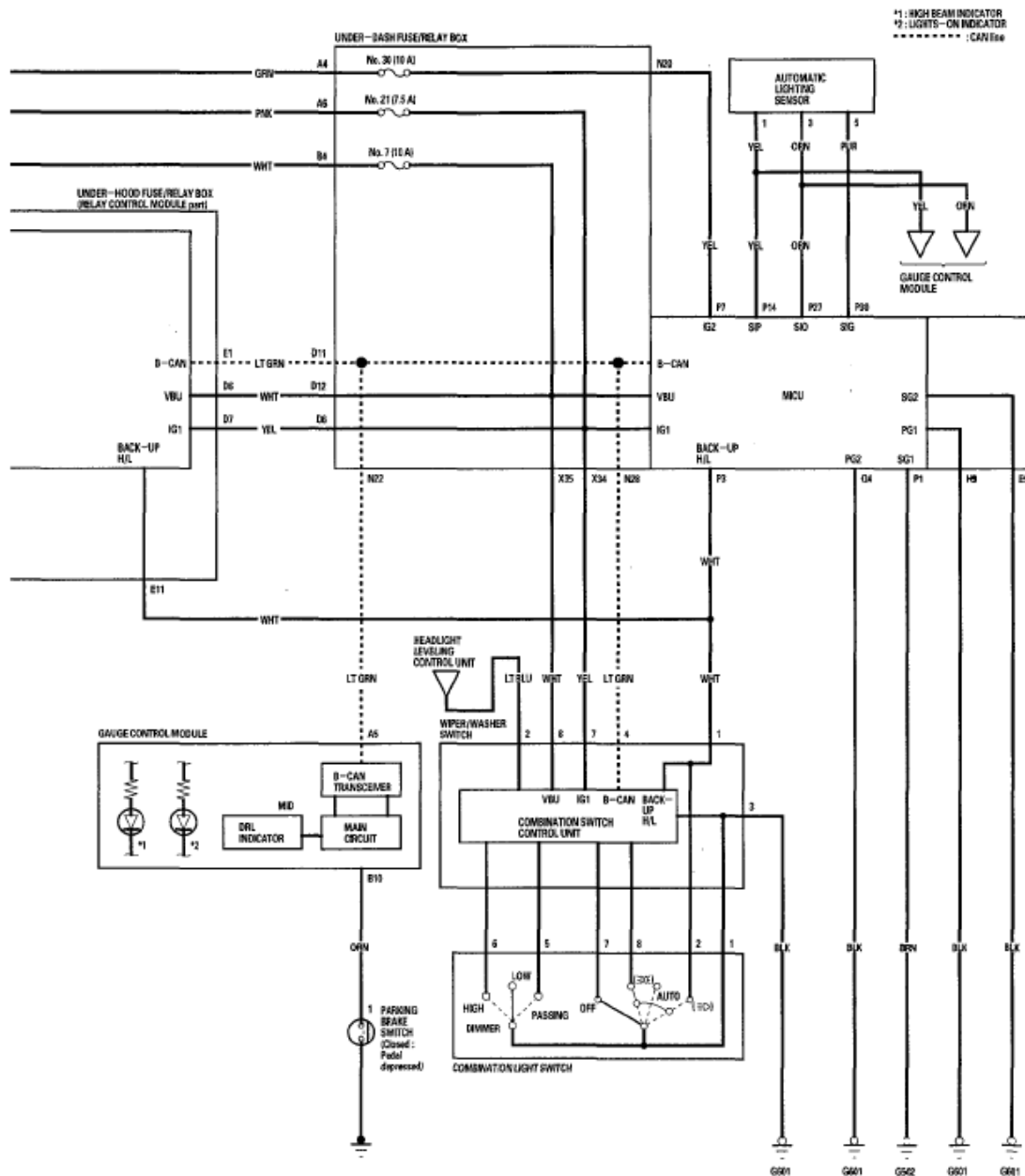


Fig. 4: Exterior Lights Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - PARKING/SIDE MARKER/LICENSE PLATE LIGHTS, TAILLIGHTS

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX



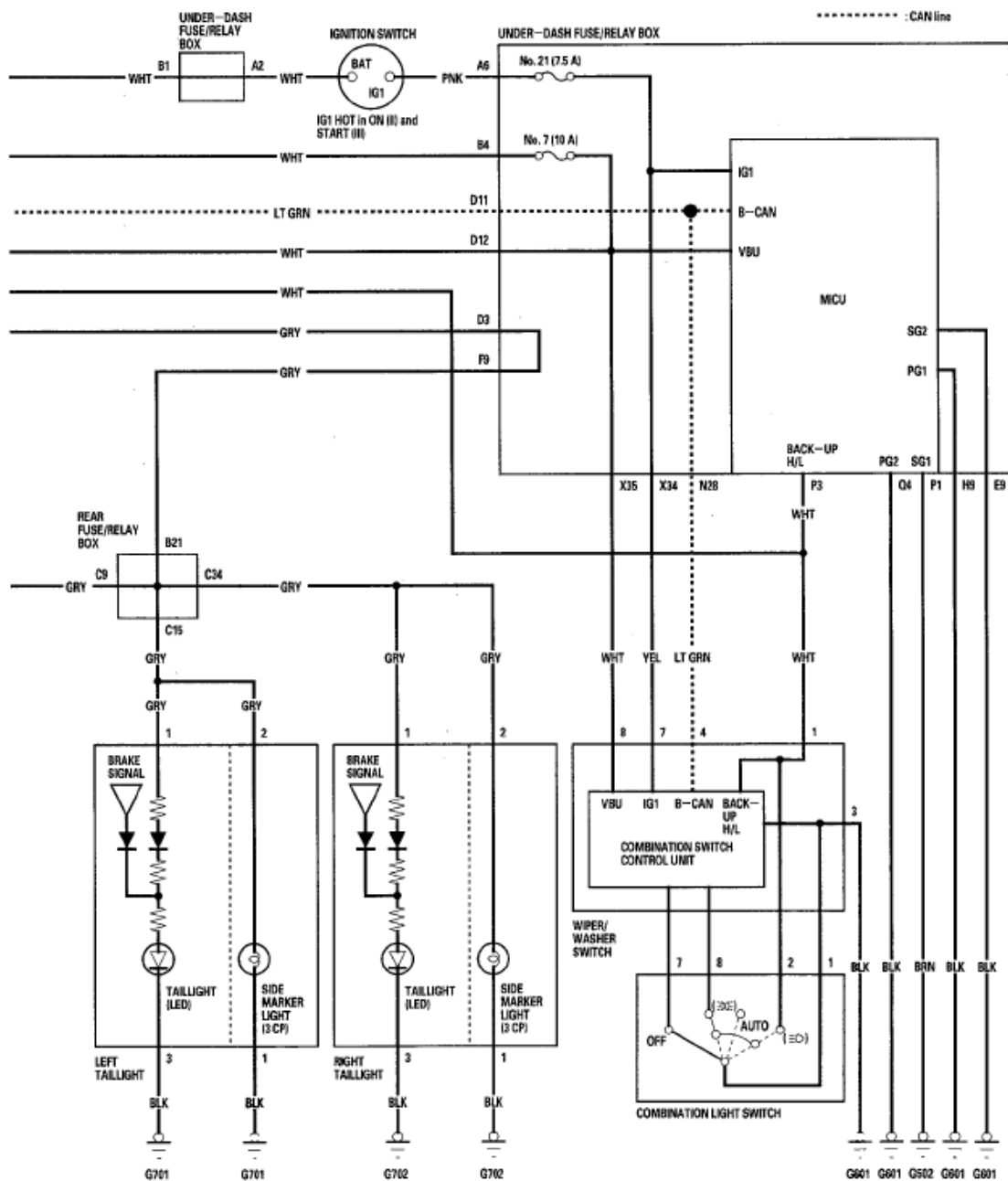


Fig. 6: Parking/Side Marker/License Plate Lights, Taillights - Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - FOG LIGHTS

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2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

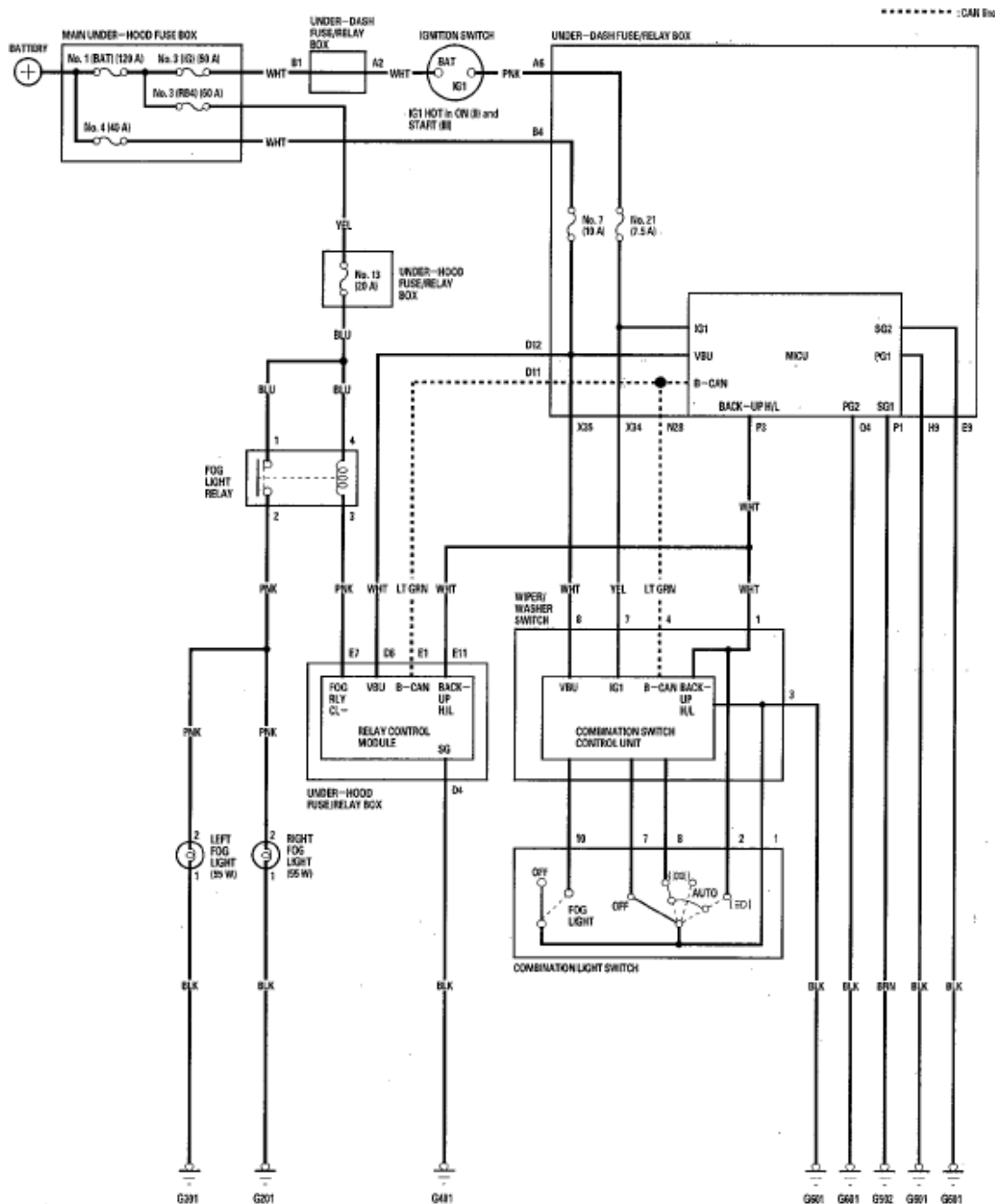


Fig. 7: Fog Lights - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - BRAKE LIGHTS

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

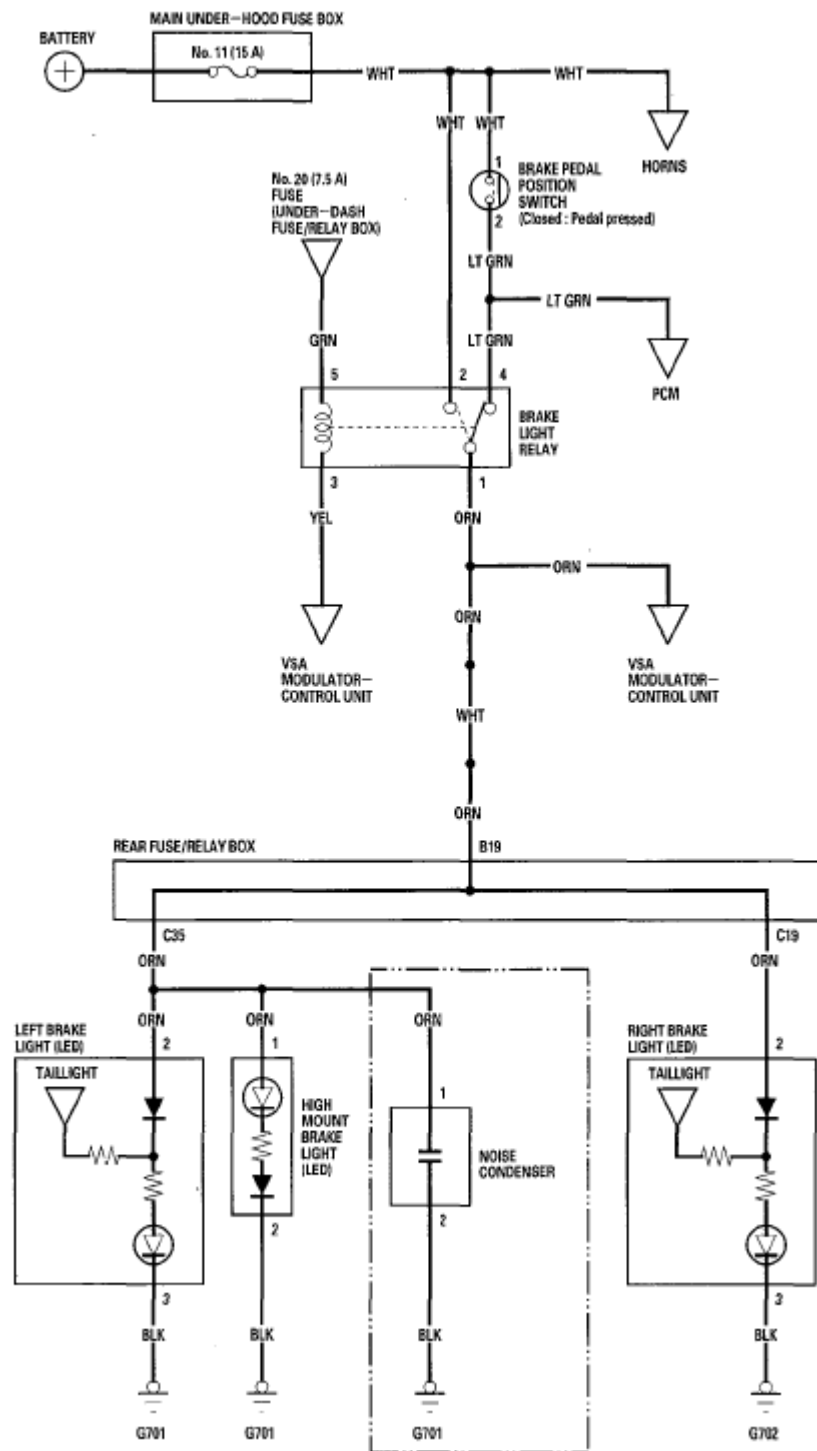


Fig. 8: Brake Lights - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - BACK-UP LIGHTS

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

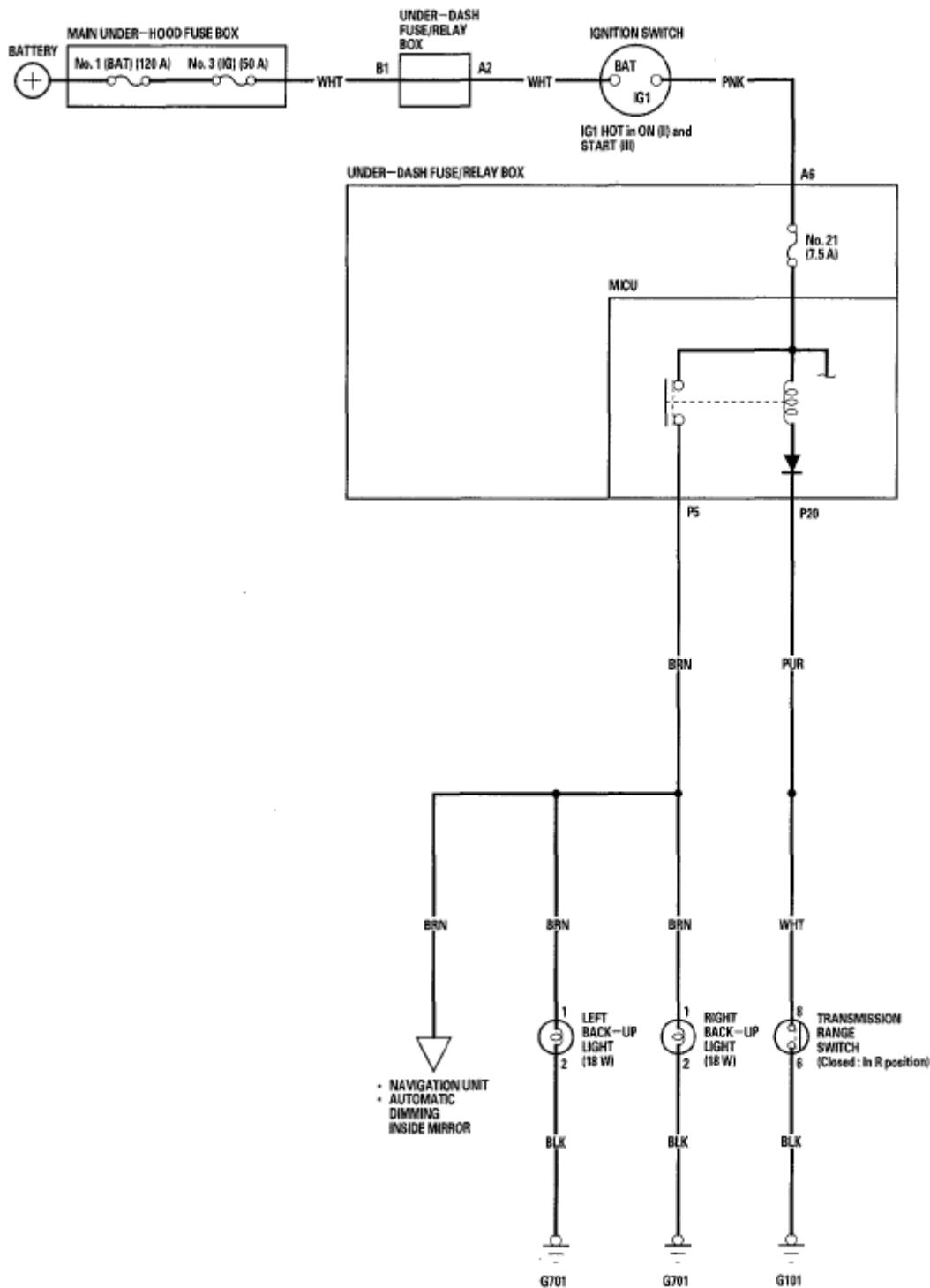


Fig. 9: Back-Up Lights - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1075: HEADLIGHT SWITCH BACK-UP CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the headlight switch ON for 5 seconds and OFF.
4. Check for DTCs with the HDS.

Is DTC B1075 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select BODY ELECTRICAL system select menu, then enter the DATA LIST menu.
6. Check the ON/OFF information of the HEADLIGHT BACK-UP with the HDS.

Is OFF indicated?

YES - Go to step 7.

NO - Check for a short in the WHT wire between the combination switch control unit and the relay control module (H/L BACK-UP line) or between the combination switch control unit and the MICU, if the harness is OK, replace the combination switch control unit (see **WIPER/WASHER SWITCH REPLACEMENT**).

7. Turn the headlight switch ON.
8. Select BODY ELECTRICAL system select menu, then enter the DATA LIST menu.
9. Check the ON/OFF information of the HEADLIGHT BACK-UP with the HDS.

Is ON indicated?

YES - Go to the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**) and check for a poor ground, if the GND line is OK, replace the under-hood fuse/ relay box (see **REMOVAL AND INSTALLATION**).

NO - Check for an open in the wire between the combination switch control unit and the relay control module (H/L BACK-UP line) or between the combination switch control unit and the MICU, if the wire is OK, replace the combination switch control unit (see **WIPER/WASHER SWITCH REPLACEMENT**).

RUNNING LIGHTS SYSTEM ERROR (USA)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Turn the headlight switch OFF, and apply the parking brake.
2. Turn the ignition switch ON (II).
3. Clear the DTCs with the HDS.
4. Release the parking brake.
5. Turn the ignition switch to LOCK (0), and then back ON (II).
6. Check for DTCs with the HDS.

Is DTC B1078 or B1079 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

7. Turn the ignition and headlight switches OFF.
8. Check the No. 1 (10 A) and No. 2 (10 A) fuses in the under-hood fuse/relay box.

Are the fuses OK?

YES - Go to step 9.

NO - Replace the blown fuse and recheck. If the fuse blows again, repair short in the wire between the under-hood fuse/relay box and the appropriate daytime running lights.

9. Check the daytime running light bulbs.

Are the daytime running light bulbs OK?

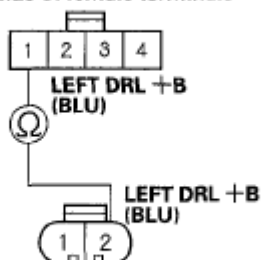
YES - Go to step 10.

NO - Replace the faulty bulb.

10. Disconnect under-hood fuse/relay box connector G (4P).
11. Disconnect each daytime running light 2P connector.
12. Check for continuity between each daytime running light 2P connector No. 2 terminal and the under-hood fuse/relay box connector G (4P) No. 1 and No. 2 terminals respectively.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR G (4P)

Wire side of female terminals



LEFT DAYTIME RUNNING LIGHT 2P CONNECTOR

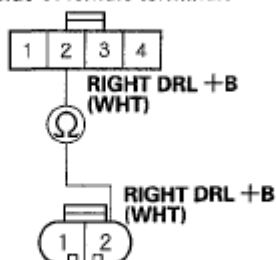
Wire side of female terminals

Fig. 10: Identifying Continuity Between Under-Hood Fuse/Relay Box G (4P) Terminals And Left Daytime Running Light 2P Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR G (4P)

Wire side of female terminals



RIGHT DAYTIME RUNNING LIGHT 2P CONNECTOR

Wire side of female terminals

Fig. 11: Identifying Continuity Between Under-Hood Fuse/Relay Box G (4P) Terminals And Right Daytime Running Light 2P Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

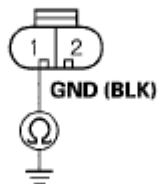
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the No. 1 terminal of each daytime running light 2P connector and body ground.

LEFT DAYTIME RUNNING LIGHT 2P CONNECTOR

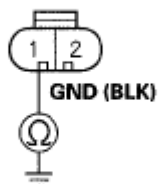


Wire side of female terminals

Fig. 12: Identifying Continuity Between No. 1 Terminal Of Left Daytime Running Light 2P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT DAYTIME RUNNING LIGHT 2P CONNECTOR



Wire side of female terminals

Fig. 13: Identifying Continuity Between No. 1 Terminal Of Right Daytime Running Light 2P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the relay control module.

NO - Repair open in the BLK wire or poor ground (G201-right side, G301-left side).

DTC B1252: COMBINATION SWITCH CONTROL UNIT INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1252 indicated?

YES - Replace the combination switch control unit (see **WIPER/WASHER SWITCH REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time.

DTC B1255: COMBINATION SWITCH CONTROL UNIT LOST COMMUNICATION WITH MICU (MICU MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1255 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the combination switch control unit and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1157, B1806, B1955, and B2155 also indicated?

YES - Do the MICU input test (see **MICU INPUT TEST**).

NO - Do the combination switch control unit input test (see **WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST**).

DTC B1275: COMBINATION LIGHT SWITCH OFF POSITION CIRCUIT MALFUNCTION; DTC B1276: COMBINATION LIGHT SWITCH PARKING (SMALL) POSITION CIRCUIT MALFUNCTION; DTC B1277: HEADLIGHT SWITCH AUTO POSITION CIRCUIT MALFUNCTION; DTC B1278: HEADLIGHT SWITCH ON POSITION CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Exterior Lights - MDX

2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Operate each combination light switch position for more than 2 seconds, then turn the combination light switch OFF.
4. Check for DTCs with the HDS.

Is DTC B1275, B1276, B1277 and/or B1278 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Do the combination light switch test (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**) and check for open or short in the combination light switch terminals in each switch position.

Is the combination light switch OK?

YES - Faulty combination switch control unit, replace the wiper/washer switch.

NO - Replace the combination light switch.

DTC B1279: HEADLIGHT SWITCH DIMMER POSITION CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the headlight switch ON.
4. Change the DIMMER switch from low beam to high beam and wait for 2 seconds.
5. Pull and hold the combination light switch lever, and hold the passing switch position for more than 2 seconds.
6. Check for DTCs with the HDS.

Is DTC B1279 indicated?

YES - Go to step 7.

NO - Intermittent failure, the headlight switch DIMMER circuit is OK at this time. Check for loose or poor connections.

7. Turn the ignition switch to LOCK (0).

8. Do the combination light switch test (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**) and check for open or short in the combination light switch terminals in each switch position.

Is the combination light switch OK?

YES - Faulty combination switch control unit, replace the wiper/washer switch.

NO - Replace the combination light switch.

DTC B1280: TURN SIGNAL SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the turn signal switch to left position and wait for 2 seconds, then turn to right position and wait for 2 seconds.
4. Check for DTCs with the HDS.

Is DTC B1280 indicated?

YES - Go to step 5.

NO - Intermittent failure, the turn signal switch circuit is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Do the combination light switch test (see **COMBINATION LIGHT SWITCH TEST/REPLACEMENT**) and check for open or short in the turn signal switch terminals in each switch position.

Is the turn signal switch OK?

YES - Faulty combination switch control unit, replace the wiper/washer switch.

NO - Replace the combination light switch.

DTC B1575: AUTOMATIC LIGHTING SENSOR CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B1575 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the automatic lighting sensor and the MICU.

4. Turn the ignition switch to LOCK (0).
5. Disconnect under-dash fuse/relay box connector P OOP).
6. Disconnect the automatic lighting sensor 5P connector.
7. Disconnect gauge control module connector A (12P).
8. Check for continuity between the under-dash fuse/ relay box connector P (30P) No. 14, No. 27, and No. 30 terminals and the automatic lighting sensor 5P connector No. 1, No. 3 and No. 5 terminals respectively.

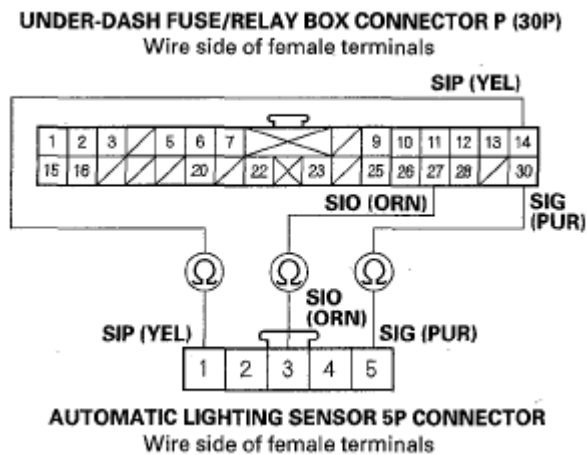


Fig. 14: Identifying Continuity Between Under-Dash Fuse/ Relay Box Terminals And Automatic Lighting Sensor Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

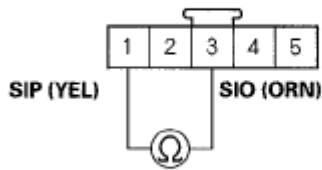
Is there continuity?

YES - Go to step 9.

NO - Repair an open in the wire.

9. Check for continuity between the automatic lighting sensor 5P connector No. 1 and No. 3 terminals.

AUTOMATIC LIGHTING SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 15: Identifying Continuity Between Automatic Lighting Sensor 5P Connector No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

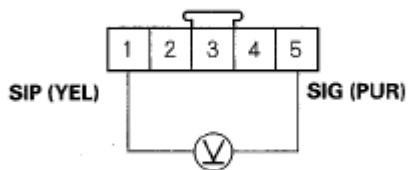
Is there continuity?

YES - Repair a short in the wire between the No. 1 and No. 3 terminals.

NO - Go to step 10.

10. Reconnect under-dash fuse/relay box connector P (30P).
11. Turn the ignition switch ON (II).
12. Measure the voltage between the automatic lighting sensor 5P connector No. 1 and No. 5 terminals.

AUTOMATIC LIGHTING SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 16: Identifying Voltage Between Automatic Lighting Sensor 5P Connector No. 1 And No. 5 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the automatic lighting sensor.

NO - Replace the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION**).

COMBINATION LIGHT SWITCH TEST/REPLACEMENT

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the combination light switch 20P connector (A) from the combination light switch (B).

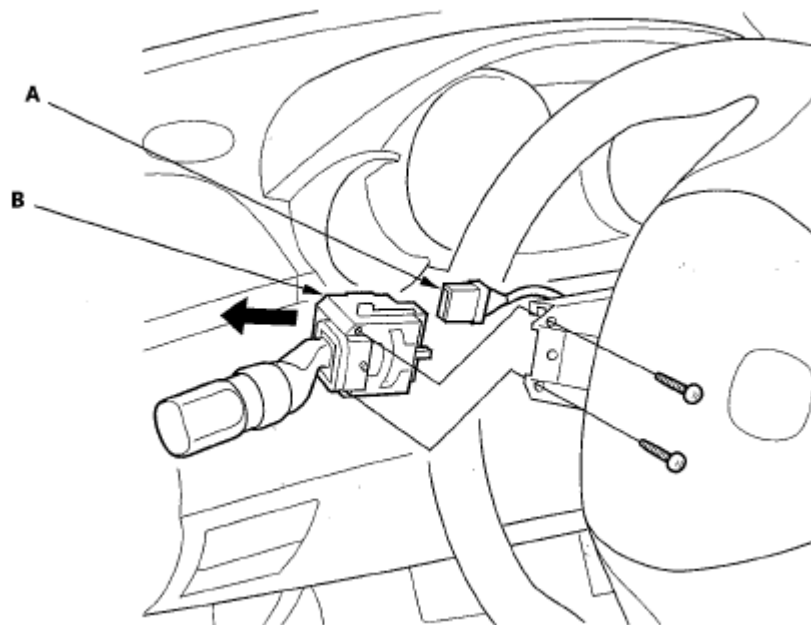


Fig. 17: Identifying Combination Light Switch 20P Connector From Combination Light Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws, then slide out the combination light switch.
5. Inspect the connector terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, check for continuity between the terminals in each switch position according to the tables.

1	2	3	4	5	6	7	8	9	10

Terminal side of male terminals

Fig. 18: Identifying Combination Light Switch Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Light switch:

Terminal		4	9	6	5	3	10
Position							
Headlight switch	OFF	○					○
	000					○	○
	LOW		○			○	○
	HIGH		○		○	○	○
Passing switch	OFF						
	ON			○			○

Fig. 19: Light Switch Continuity Between Terminals in Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Turn signal switch:

Terminal	8	7	10
Position			
LEFT	○		○
Neutral			
RIGHT		○	○

Fig. 20: Turn Signal Switch Continuity Between Terminals in Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fog light switch:

Terminal	1	10
Position		
OFF		
ON	○	○

Fig. 21: Fog Light Switch Continuity Between Terminals in Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the continuity check is not as specified, replace the switch.

HID LAMP SYSTEM TROUBLESHOOTING

WARNING: A transient high tension (25,000 V) occurs at the bulb sockets or the high intensity discharge (HID) lamps when the combination light switch is turned ON, it may cause serious electrical shock or electrocution if you do not observe the cautions.

CAUTION:

- Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the

headlight assembly.

- Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.
- Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.
- Do not disassemble the inverter unit and the igniter unit.
- Do not turn on the HID bulb by using a power source other than the battery mounted on your vehicle.

Special Tools Required

HID bulb test light assembly 07AAJ-S3MA100

NOTE: Before troubleshooting the HID Lamp System, perform the multiplex integrated control system troubleshooting using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Check the No. 18 (15 A) and No. 19 (15 A) fuses in the under-hood fuse/relay box.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse(s), and recheck.

2. Do the battery terminal disconnection procedure(See DISCONNECTION .
3. Remove the bulb socket from the HID bulb (see HID BULB REPLACEMENT).
4. Check for corrosion and traces of electrical arcing on the contacts of the socket (A).

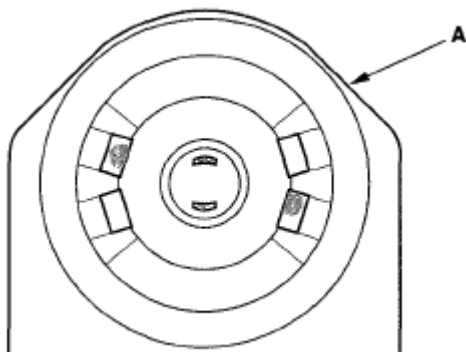


Fig. 22: Identifying Contacts Of Socket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the socket corroded or burnt?

YES - Replace the socket, and recheck.

NO - Go to step 5.

5. Connect the HID bulb test light assembly (A) to the bulb socket (B).

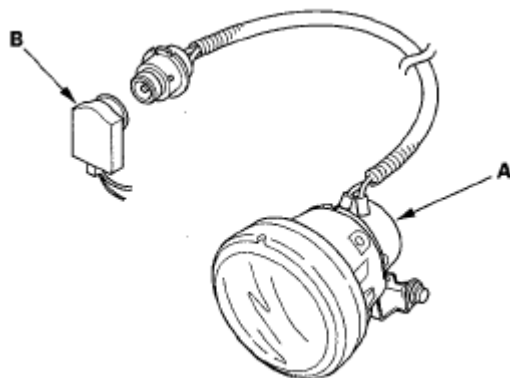


Fig. 23: Identifying HID Bulb Test Light Assembly To Bulb Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Do the battery terminal reconnection procedure (See **RECONNECTION**)
7. Turn the combination light (headlight) switch ON.

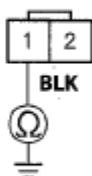
Does the bulb in the test light come on?

YES - Replace the original HID bulb (see **HID BULB REPLACEMENT**).

NO - Go to step 8.

8. Turn the combination light (headlight) switch OFF.
9. Do the battery terminal disconnection procedure (See **DISCONNECTION**)
10. Remove the HID bulb test light assembly from the bulb socket.
11. Disconnect the HID unit 2P connector.
12. Check for continuity between the No. 1 terminal of the HID unit 2P connector and body ground.

HID UNIT 2P CONNECTOR



Wire side of female terminals

Fig. 24: Identifying Continuity Between No. 1 Terminal Of HID Unit 2P Connector And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty HID unit.

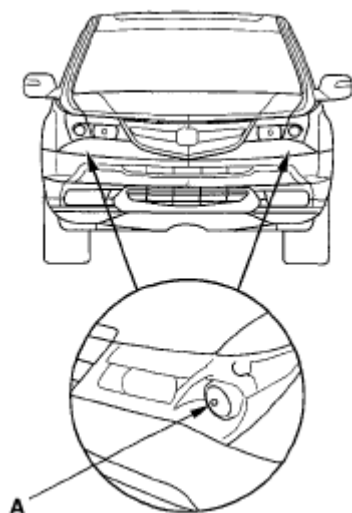
NO - Repair open in the wire between the HID unit and body ground. If the wire is OK, check for poor ground (G201/G301).

HEADLIGHT ADJUSTMENT

CAUTION: Headlights become very hot during use; do not touch them or any attaching hardware immediately after they have been turned off.

Before adjusting the headlights:

- Park the vehicle on a level surface.
 - Make sure the tire pressures are correct.
 - The driver or someone who weighs the same should sit in the driver's seat.
1. Clean the outer lens so that you can see the center (A) of the headlights.

**Fig. 25: Identifying Center Of Headlights**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Park the vehicle in front of a wall or a screen (A).

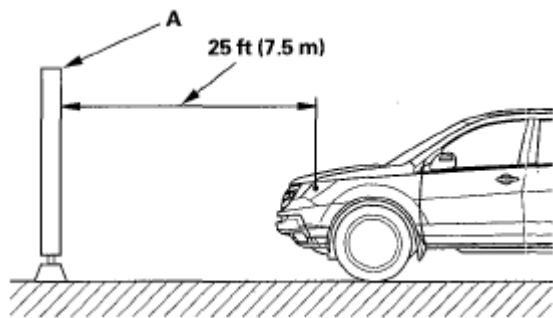


Fig. 26: Identifying Headlights Adjusting Screen And Distance Between Vehicle And Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the low beams on.
4. Determine if the headlights are aimed properly.

Vertical adjustment:

Measure the height of the headlights (A).

Adjust the cut line (B) to the lights height.

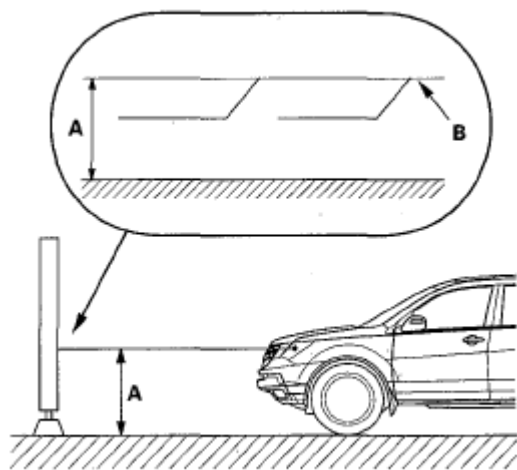


Fig. 27: Identifying Height Of Headlights And Cut Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If necessary, open the hood and adjust the headlights to local requirements by turning the vertical adjuster.

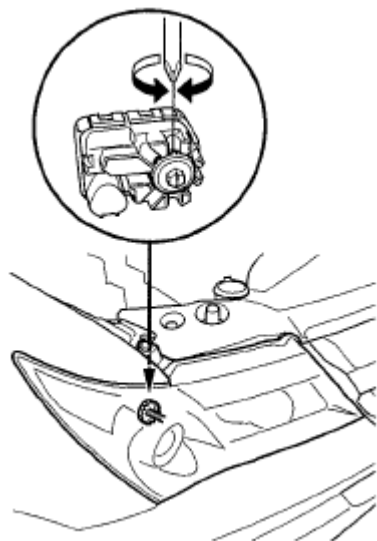


Fig. 28: Identifying Headlights

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HEADLIGHT REPLACEMENT

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Remove the connectors (A) from the headlight assembly (B).

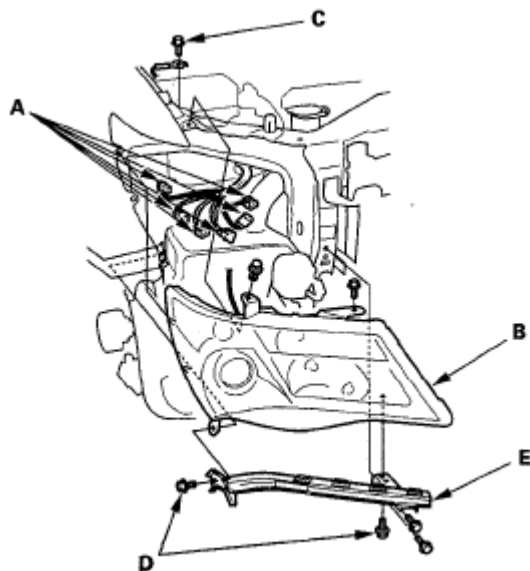


Fig. 29: Identifying Connectors, Headlight Assembly, Strap Bolt And Upper Beam

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the security strap bolt (C).
4. Remove the clips and bolts, then remove the headlight.

5. Remove the bolts (D) and the corner upper beam (E) from the headlight.
6. Install the headlight in the reverse order of removal.
7. After the replacement, do the headlights learning procedure (see **HEADLIGHT INITIAL POSITION LEARNING PROCEDURE**) and aim the headlights to local requirements.

HID UNIT REPLACEMENT

1. Do the battery terminal disconnection procedure(See **DISCONNECTION**).
2. Remove the headlight assembly (see **HEADLIGHT REPLACEMENT**).
3. Remove the three mounting screws and the HID unit (A).

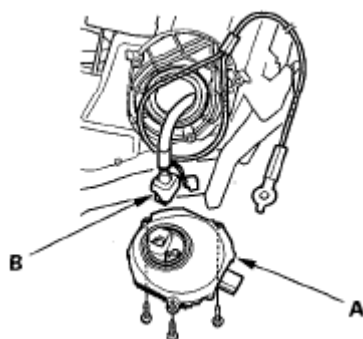


Fig. 30: Identifying HID Unit With Mounting Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the 4P connector (B) from the HID unit.
5. Inspect the gasket for damage. If damaged, replace it.
6. Install the parts in the reverse order of removal.
7. Do the battery terminal reconnection procedure(See **RECONNECTION**) .

HID BULB REPLACEMENT

WARNING: A transient high tension (25,000 V) occurs at the bulb sockets of the high intensity discharge (HID) lamps when the combination light switch is turned ON, it may cause serious electrical shock or electrocution if you do not observe the cautions.

CAUTION:

- Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the headlight assembly.
- Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.

- Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.
- Do not disassemble the inverter unit and the igniter unit.
- Do not turn on the HID bulb by using a power source other than the battery mounted on your vehicle.

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** .
2. Remove the headlight assembly (see **HEADLIGHT REPLACEMENT**).
3. Turn the cover (A) 45° counterclockwise to remove it from the headlight assembly.

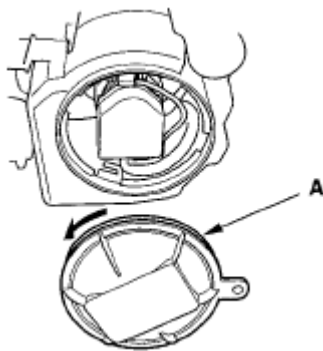


Fig. 31: Identifying Cover To Removing From Headlight Assembly
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the socket (A) 45 ° counterclockwise to remove it from the bulb (B).

Headlight: 35 W

5. Pull the retaining spring (C) away from the bulb then remove the bulb.
6. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.
7. Do the battery terminal reconnection procedure(See **RECONNECTION**

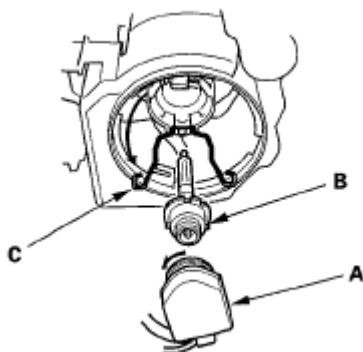


Fig. 32: Identifying Socket To Removing From Bulb

Courtesy of AMERICAN HONDA MOTOR CO., INC.

BULB REPLACEMENT

HEADLIGHT BULB (HIGH BEAM)

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. For the left headlight, remove the battery cover, remove the battery hold-down by removing the two nuts, then slide the battery to access the bulb.
3. Disconnect the 2P connector (A) from the headlight bulb socket (B).

Headlight Bulb: 60 W

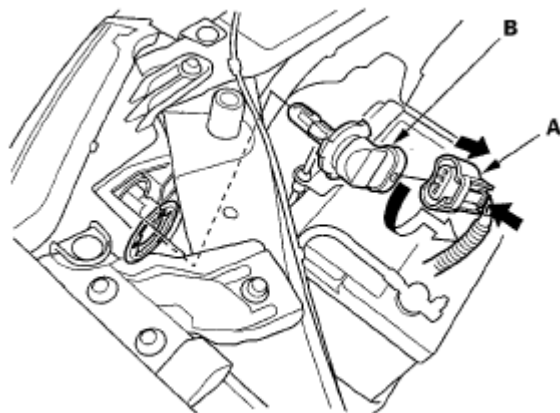


Fig. 33: Identifying 2P Connector From Headlight Bulb Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the bulb socket 45° counterclockwise to remove it from the headlight housing.
5. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.

NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.

FRONT PARKING LIGHT BULB

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. For right parking light, remove the clip from windshield washer reservoir.
3. Disconnect the 2P connector (A) from the front parking light bulb socket (B).

Front Parking Light Bulb: 3 CP

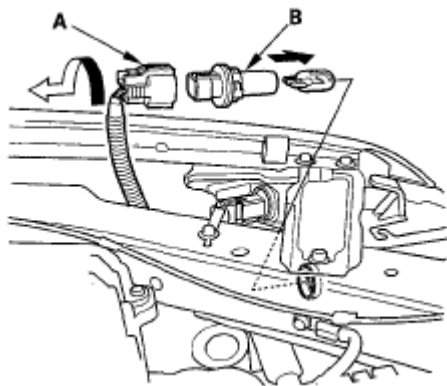


Fig. 34: Identifying 2P Connector From Front Parking Light Bulb Socket
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the bulb socket 45° counterclockwise to remove it from the headlight housing.
5. Install a new bulb in the reverse order of removal.

FRONT TURN SIGNAL LIGHT BULB

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. For the left light, remove the battery cover, remove the battery hold-down by removing the two nuts, then slide the battery to access the bulb.
3. Disconnect the 3P connector (A) from the bulb socket (B).

Front Turn Signal Light Bulb: 21 W B

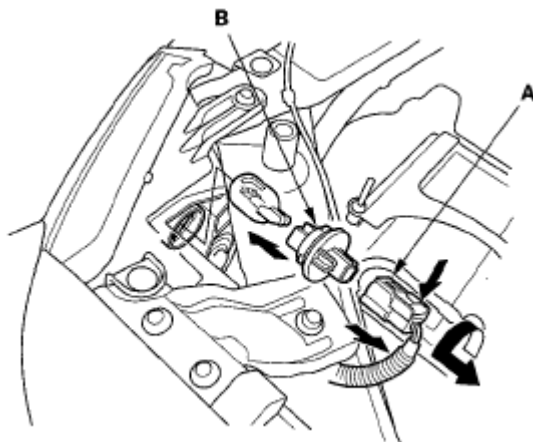


Fig. 35: Identifying 3P Connector From Bulb Socket
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the bulb socket 45° counterclockwise to remove it from the headlight housing.
5. Install a new bulb in the reverse order of removal.

FRONT SIDE MARKER LIGHT BULB

1. Disconnect the 2P connector (A) from the front turn signal/front parking light.

Front Side Marker Light Bulb: 3 CP

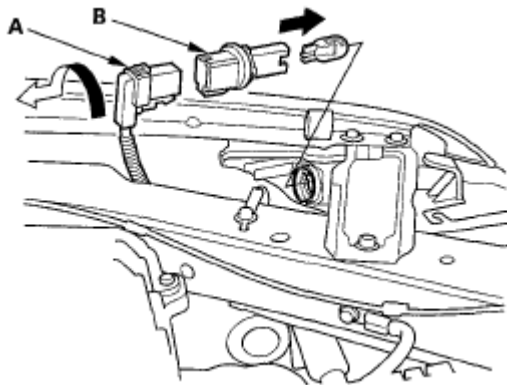


Fig. 36: Identifying 2P Connector From Front Turn Signal/Front Parking Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the bulb socket (B) 45° counterclockwise to remove it from the headlight housing.
3. Install a new bulb in the reverse order of removal.

FOG LIGHT/DAYTIME RUNNING LIGHT REPLACEMENT

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
2. Disconnect the 2P connectors from the fog light and the daytime running light.

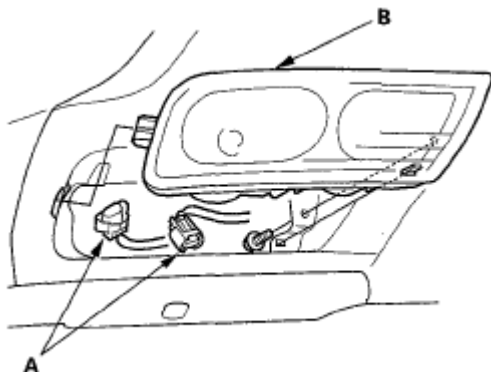


Fig. 37: Identifying 2P Connectors And Fog Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screw, then remove the light.
4. Install the light in the reverse order of removal.

5. After replacement, adjust the fog lights/daytime running lights (see **FOG LIGHT/DAYTIME RUNNING LIGHT ADJUSTMENT**).

FOG LIGHT/DAYTIME RUNNING LIGHT ADJUSTMENT

Before adjusting the fog light/daytime running light:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- Have the driver or someone who weighs the same sit in the driver's seat.

Adjust the fog lights/daytime running lights to local requirements by turning the adjuster (A).

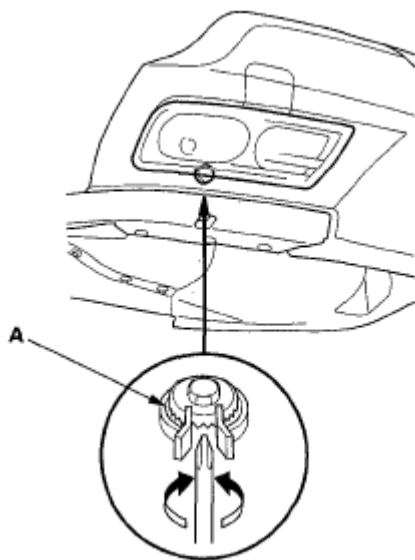


Fig. 38: Identifying Fog Lights/Daytime Running Lights
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FOG LIGHT/DAYTIME RUNNING LIGHT BULB REPLACEMENT

1. Remove the inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connectors (A) from the fog lights/daytime running lights (B).

Fog Light: 55 W

Daytime Running Light: 60 W

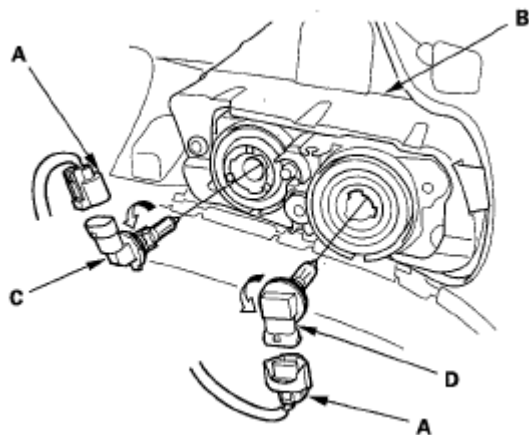


Fig. 39: Identifying 2P Connectors From Fog Lights/Daytime Running Lights
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the fog light bulb socket (C) and the daytime running light bulb socket (D) 45° counterclockwise to remove them from the housing.
4. Install new bulb(s) in the reverse order of removal.

NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.

TAILLIGHT REPLACEMENT

TAILLIGHT

1. Remove the covers (A) and two bolts from the taillight (B).

Rear Turn Signal Light: 21 W

Rear Side Marker Light: 3 CP

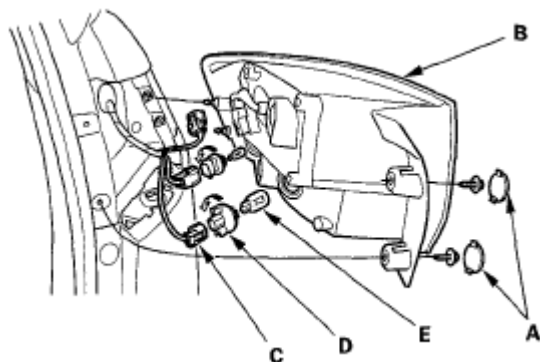


Fig. 40: Identifying Covers, Taillight Bolts, Connector, Bulb Sockets And Bulbs
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Carefully pull out the taillight.
3. Disconnect the connectors (C) from the taillight.
4. Turn the bulb sockets (D) 45° counterclockwise to remove the bulbs (E).
5. Install the light in the reverse order of removal.

INNER TAILLIGHT

1. Remove the tailgate lower trim panel (see TRIM REMOVAL/INSTALLATION - TAILGATE AREA).
2. Disconnect the 2P connector (A) from the inner taillight (B).

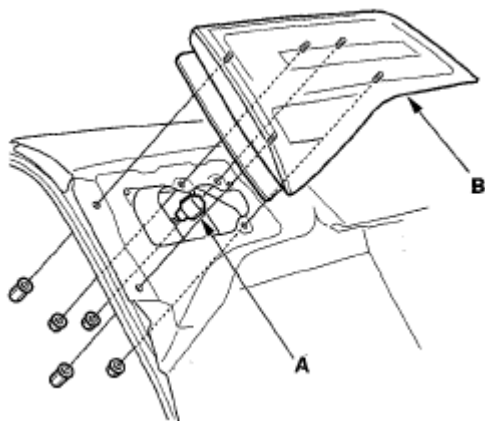


Fig. 41: Identifying 2P Connector And Inner Taillight
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the five nuts, then remove the inner taillight.
4. Turn the bulb socket (A) 45° counterclockwise to remove the bulb(B).

Back-up Light: 21 W

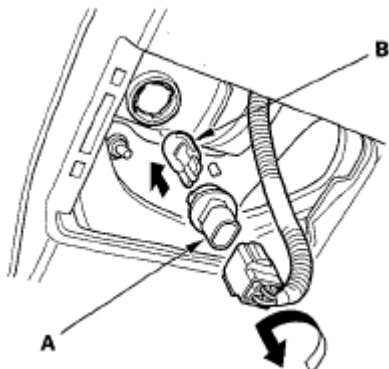


Fig. 42: Identifying Bulb Socket To Removing Bulb
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the light in the reverse order of removal.

TAILLIGHT/BRAKE LIGHT LED REPLACEMENT

1. Remove the taillight (see **TAILLIGHT REPLACEMENT**).
2. Remove the four screws (A) and the back cover (B) from the taillight (C).

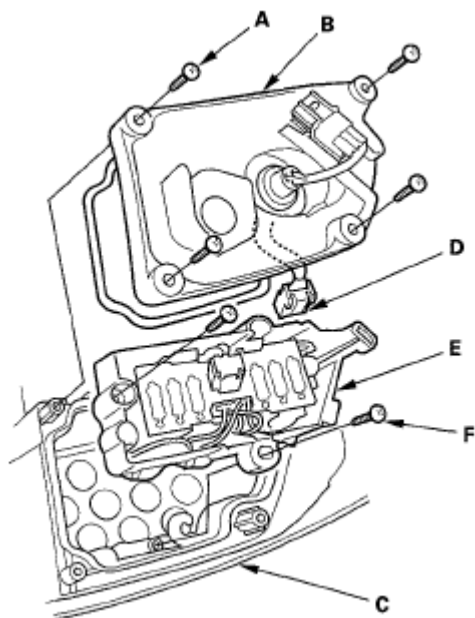


Fig. 43: Identifying Four Screws, Back Cover, Taillight, Connector And Taillight/Brake Light Led
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully disconnect the connector (D) from the taillight/brake light LED (E).
4. Remove the two screws (F) and the taillight/brake light LED from the taillight housing.
5. Inspect the gasket, if the gasket is distorted or compressed, replace it.
6. Install a new LED in the reverse order of removal.

LICENSE PLATE LIGHT REPLACEMENT

1. Pull the license plate light assembly out, and disconnect the 2P connector (A) from the light.

License Plate Light: 3 CP

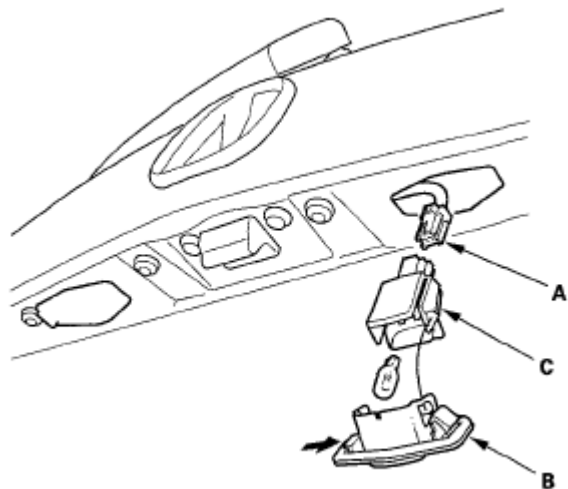


Fig. 44: Identifying 2P Connector And License Plate Light Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Separate the lens (B) and housing (C), then remove the bulb.
3. Install the light in the reverse order of removal.

HIGH MOUNT BRAKE LIGHT REPLACEMENT

1. Remove the tailgate spoiler (see TAILGATE SPOILER TRIM REPLACEMENT).
2. Remove the two screws from the high mount brake light (A).

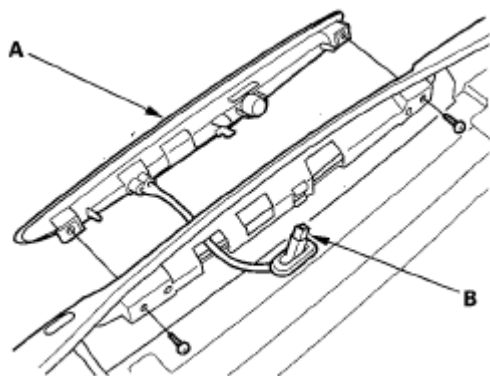


Fig. 45: Identifying High Mount Brake Light Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the high mount brake light.
4. Install the light in the reverse order of removal.

BRAKE PEDAL POSITION SWITCH TEST

1. Disconnect the 4P connector (A) from the brake pedal position switch (B).

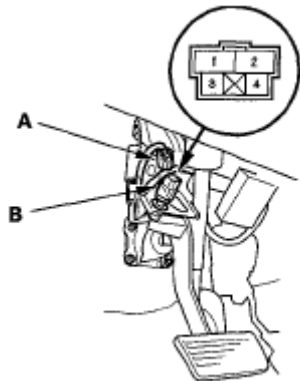


Fig. 46: Identifying 4P Connector On Brake Pedal Position Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the No. 1 and No. 2 terminals.
 - There should be continuity when the brake pedal is pressed.
 - There should be no continuity when the brake pedal is released.
3. Check for continuity between the No. 3 and No. 4 terminals.
 - There should be no continuity when the brake pedal is pressed.
 - There should be continuity when the brake pedal is released.
4. If necessary, adjust the pedal height (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**), or replace the switch.

2008-9 ACCESSORIES AND EQUIPMENT**Exterior Trim - MDX****FRONT BULKHEAD COVER REPLACEMENT**

NOTE: Take care not to scratch the front bumper and body.

1. Remove the front bulkhead cover (A).
 1. Remove the clips.
 2. Pass the hood latch knob (B) through the hole in the cover.

Fastener Locations

▷ : Clip, 8

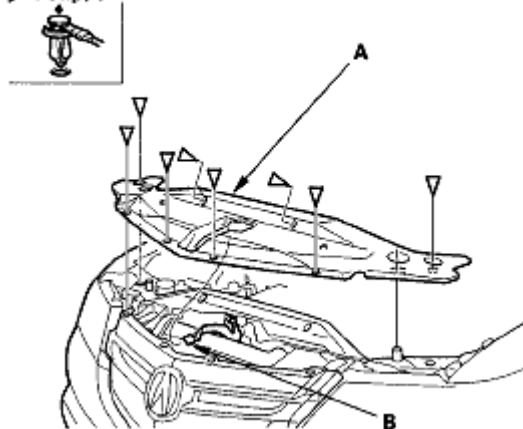


Fig. 1: Identifying Front Bulkhead Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the cover in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

FRONT GRILLE REPLACEMENT**Special Tools Required**

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

GRILLE REPLACEMENT

NOTE: Take care not to scratch the front bumper and body.

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. Remove the front grille (A).
 1. Remove the bolts (B) and clips (C, D).
 2. Release the hooks (E) of the grille from the front bumper (F) by pulling the grille upward.

NOTE: To remove the clips D, pry the inner clip up at the edge near the line (G) on its head.

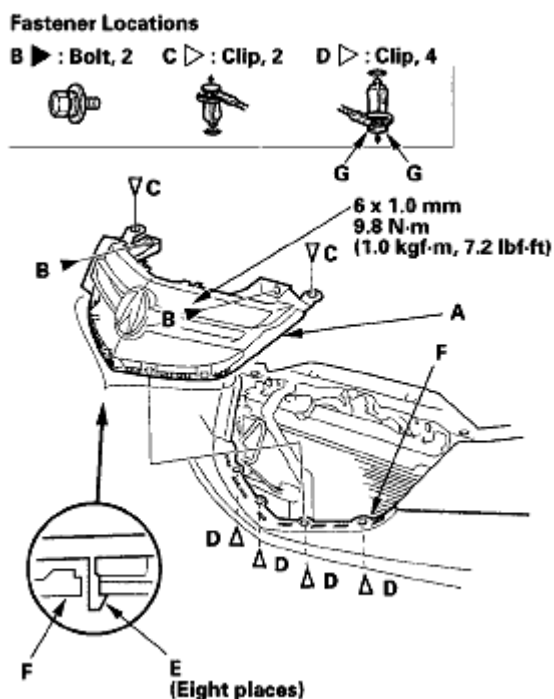


Fig. 2: Identifying Front Grille Bolts, Clips And Hooks With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the grille in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

TRIM REPLACEMENT

- NOTE:**
- Take care not to scratch the front grille.
 - Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the front grille.
2. Remove the screw. From behind the grille, pry up on the hooks (A) with a trim tool, then remove the front grille trim (B), and the front grille seal (C) from the front grille base (D). The left front grille trim is

shown; the right front grille trim is similar.

Fastener Location

► : Screw, 1

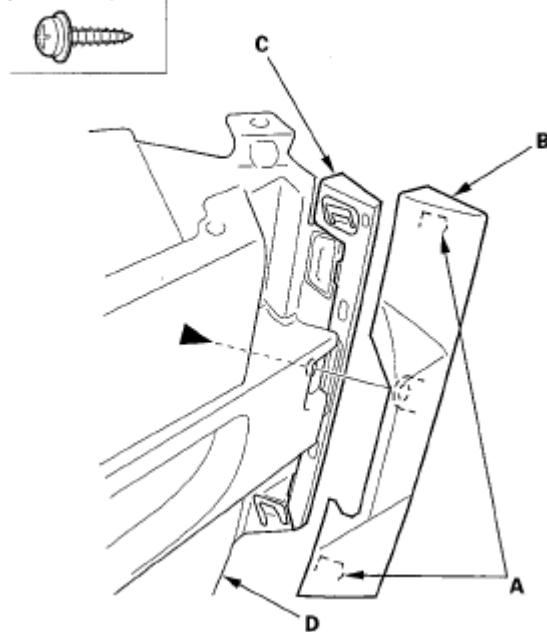


Fig. 3: Identifying Trim Hooks, Grill And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the trim in the reverse order of removal, and push the hooks into place securely.

COWL COVER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the cowl cover and body.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the windshield wiper arms (see **WIPER MOTOR REPLACEMENT**).
2. Using a trim tool, remove the clips (A) from the cowl cover (B).

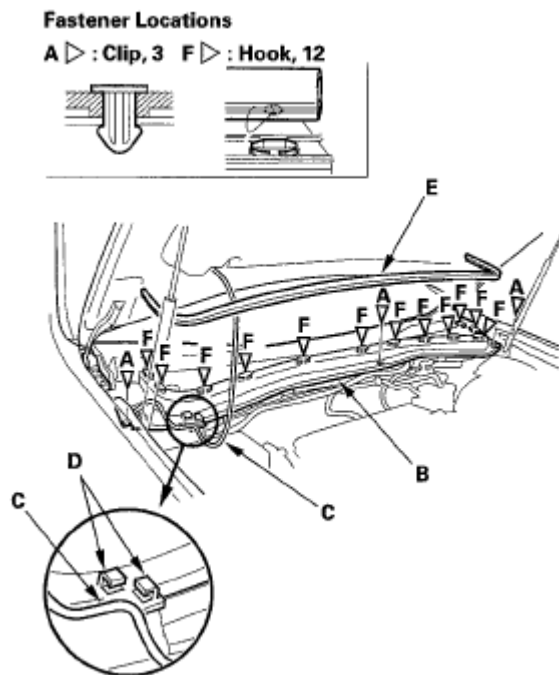


Fig. 4: Identifying Cowl Cover And Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the windshield washer tube (C) from the hooks (D).
4. If necessary, remove the hood rear seal (E) from all of the hooks (F).
5. Pull the cowl cover (A) forward to release the hooks (B, C) of it from the windshield (D) and body. From both hood hinge portions, release the hooks (E, F) of the hood hinge cover (G) from the front fender (H) and the roof molding (I).

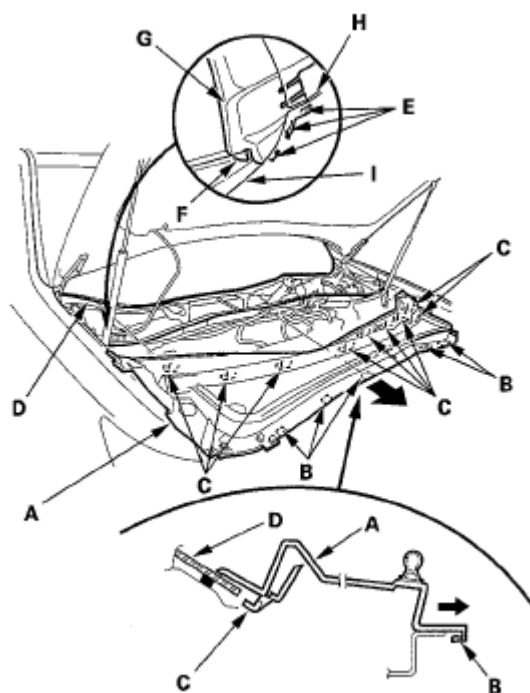


Fig. 5: Identifying Cowl Cover, Hooks And Windshield
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the cowl cover.
7. Install the cover in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

A-PILLAR CORNER TRIM REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the trim and body.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Open the front door.
2. Using a trim tool, detach the bottom clip of the A-pillar corner trim (A).

Fastener Location

▷ : Clip, 1

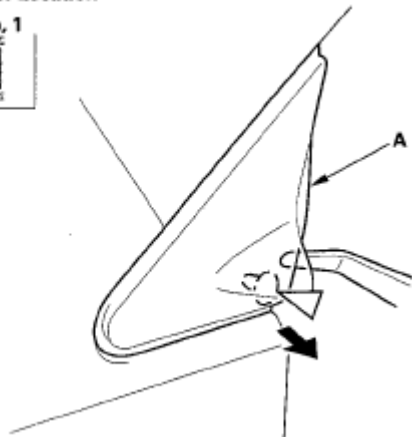


Fig. 6: Identifying Bottom Clip Of A-Pillar Corner Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Gently slide the A-pillar corner trim (A) up along the A-pillar to release it from the clips.

Fastener Locations

▷ : Clip, 2

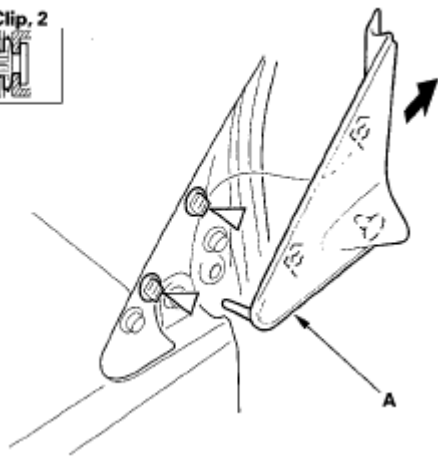


Fig. 7: Identifying A-Pillar Corner Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Using a trim tool, remove the clips from the body.
5. If the clips are damaged or stress-whitened, replace them with new ones.
6. Install the clips (A) on the A-pillar corner trim (B).

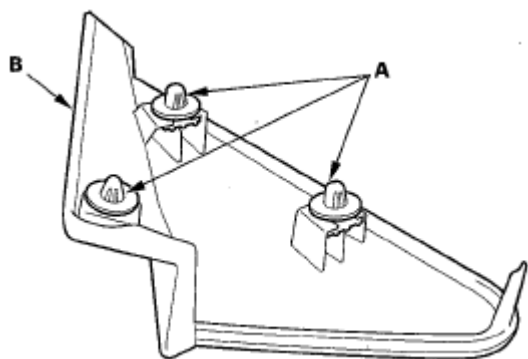


Fig. 8: Identifying Clips And A-pillar Corner Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Hold the A-pillar corner trim (A) up, and fit the clips into the holes in the body, then push on the trim until the clips snap into place securely.

Fastener Locations

▷ : Clip, 3



Fig. 9: Identifying A-Pillar Corner Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROOF RAIL REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

FOR SOME MODELS

NOTE:

- Take care not to scratch the covers, roof rail, and the body.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- When using a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Pry up on the front cover (A) with a trim tool to detach the clips and rib (B) from the front bracket (C), then remove the cover by pulling the cover forward.

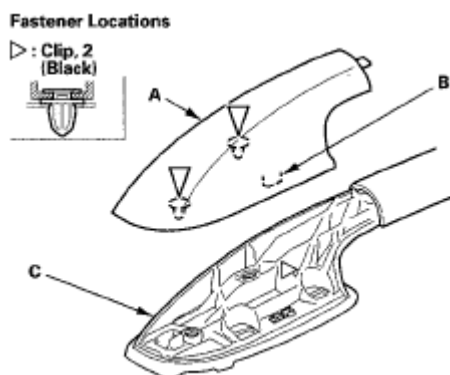


Fig. 10: Identifying Front Cover And Front Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pry up on the rear cover (A) with a trim tool to detach the clips from the rear bracket (B), then remove the cover by pulling the cover rearward.

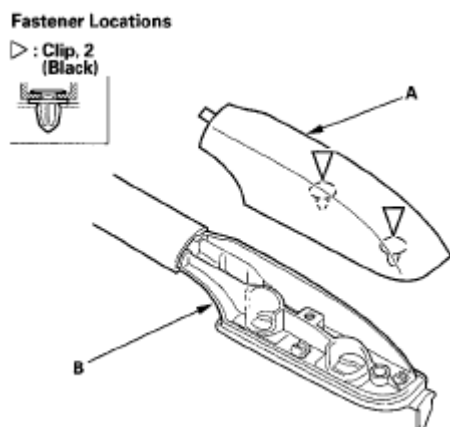


Fig. 11: Identifying Rear Cover And Rear Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the roof rail (A) and the center bracket (B).
 1. Using a trim tool, pry the notch (C), then remove the roof rail bar cap (D).
 2. Using a TORX T30 bit, remove the nuts (E) from the front bracket (F) and the rear bracket (G).

3. Using a TORX T30 bit, remove the bolts (H), then remove the roof rail.
4. Remove the center cover (I), and using a TORX T30 bit, remove the nuts (J), then remove the center bracket.

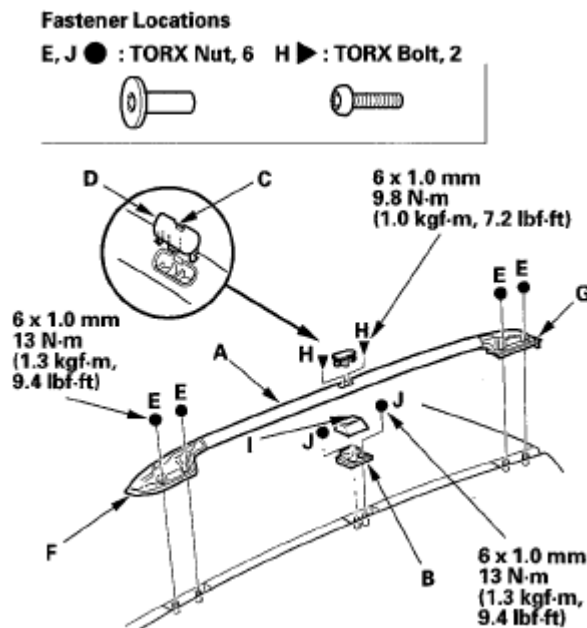


Fig. 12: Identifying Center Cover And Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the roof rail in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

ROOF MOLDING REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

MOLDING REMOVAL

NOTE:

- Put on gloves to protect your hands.
- Take care not to damage the windshield.
- Do not use any metallic tools to remove the windshield portion of the roof molding, or you may chip the edge of the windshield and some cracks in the windshield will occur.

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to bend the roof molding.

1. For some models: Remove the roof rail (see **ROOF RAIL REPLACEMENT**).
2. Detach the bottom clip (A) at the lower corner of the windshield.

Fastener Location

A ▷ : Clip, 1
(Left: Yellow, Right: Pink)

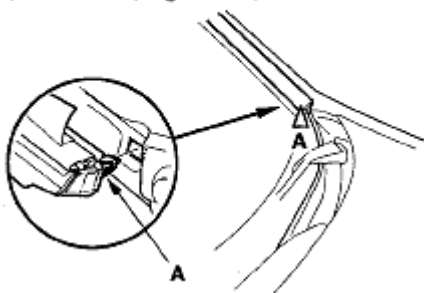


Fig. 13: Identifying Bottom Clip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the windshield portion of the roof molding (A).
 1. Carefully insert the large trim tool (B) and plastic spatula (C) in under the molding next to the lower clip (D).
 2. While pulling the clip portion of the molding up by hand, push each of the eight small hook (E) in numbered sequence shown to release the clip from the clip (F) on the A-pillar. Do not try to pry up the clip if it is hard to release from the clip on the A-pillar.
 3. Gradually work your way up to release each of the upper clips (G, H, I).

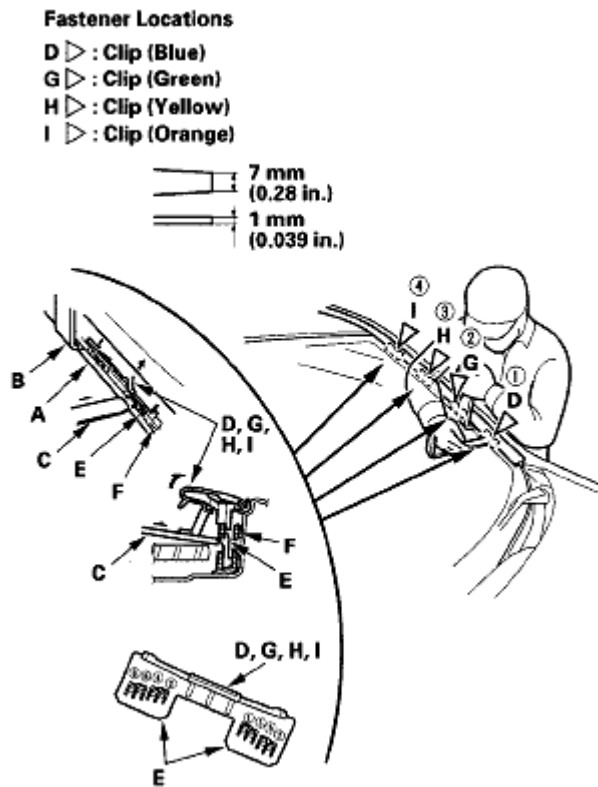


Fig. 14: Identifying Windshield Portion Of Roof Molding
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Start from the front to the rear, carefully insert a trim tool in under the roof molding(s) (A) next to each of the clips (B), and pry the molding(s) up to release it with the clip from the stud bolt on the body, then remove the roof portion of the molding(s).

Without roof rail

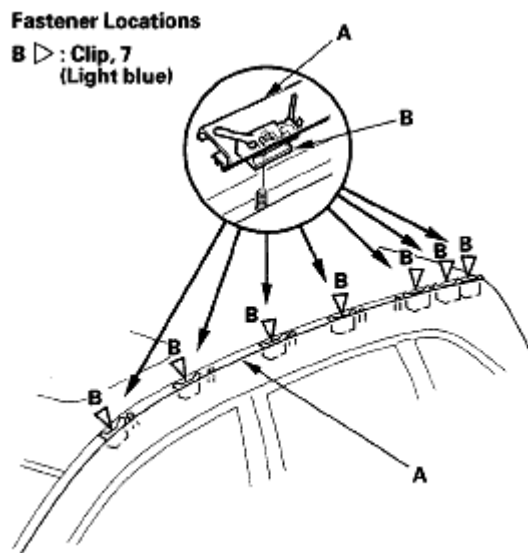


Fig. 15: Identifying Roof Molding Of Clips (Without Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

With roof rail

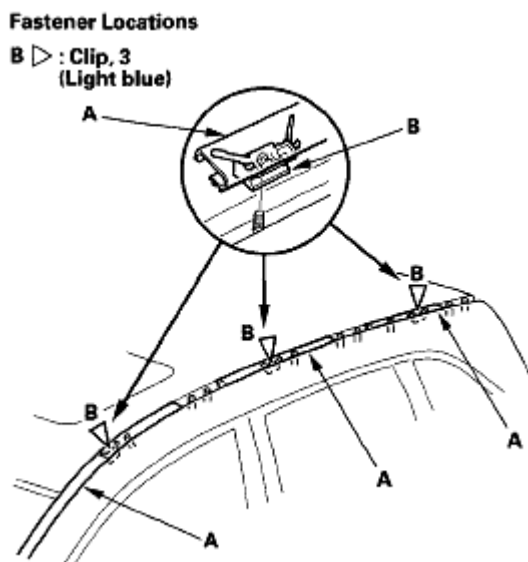


Fig. 16: Identifying Roof Molding Of Clips (With Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check if the clips are damaged or stress-whitened, and if necessary, replace them with new ones.

MOLDING INSTALLATION

1. Install the clips (A, B, C, D, E, F) on the roof molding(s) (G).

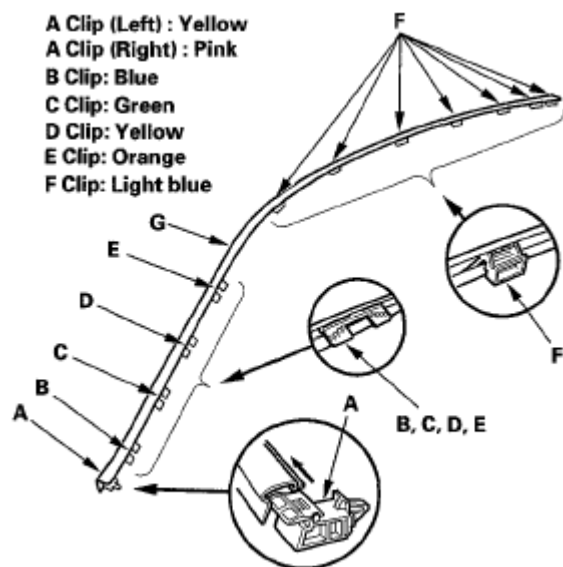
Without roof rail

Fig. 17: Identifying Clips On Roof Molding (Without Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

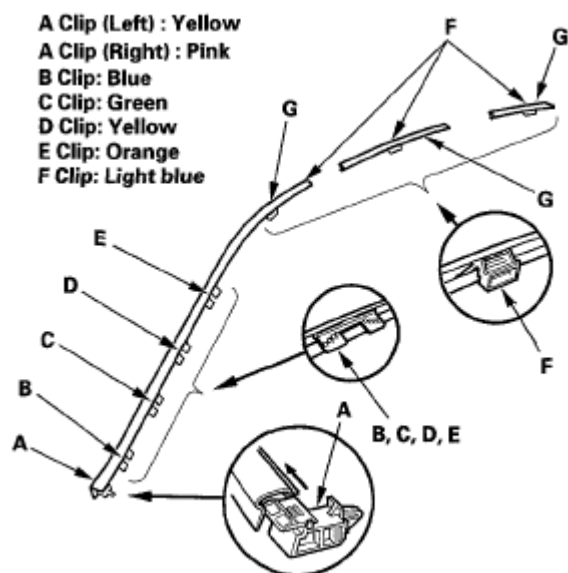
With roof rail

Fig. 18: Identifying Clips On Roof Molding (With Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the roof molding(s) (A).
 1. Hold the roof molding(s) up on the roof, and align each clip to the stud bolts.
 2. From the rear to the front, fit the clips (B) to the stud bolts (C), then push on the molding until they

snap into place.

3. From the top to the bottom, push the clips (D) in the windshield portion of the roof molding until they snap into place to the clip (E) on the A-pillar.
4. Push the bottom clip (F) to the front fender into place.
5. Set the hook(G) of the hood hinge cover (H).

Without roof rail

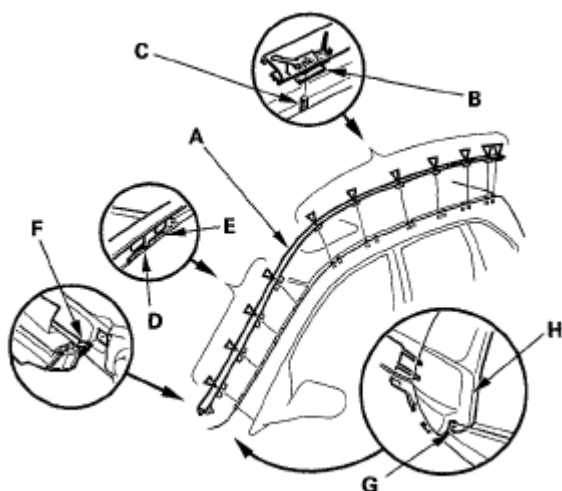


Fig. 19: Identifying Roof Molding (Without Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

With roof rail

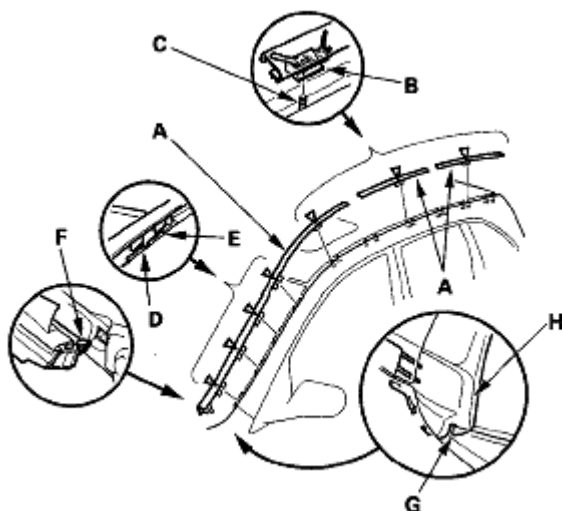


Fig. 20: Identifying Roof Molding (With Roof Rail)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Push the clip portions into place securely and reinstall the roof rail (see **ROOF RAIL REPLACEMENT**), if equipped.

BODY SIDE CLIP REPLACEMENT

1. Gradually scrape off the adhesive tape (A) under the clips (B) while heating it with a heat gun to 212-248°F (100-120°C).

NOTE:

- To prevent damage, do not heat the painted surface around the clips too much.
- To keep the exterior resin parts near the A-pillar from being overheated by the heat gun, wrap them with aluminum foil.

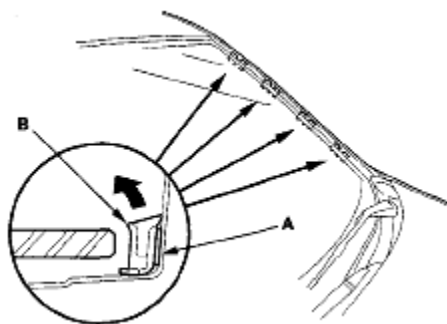


Fig. 21: Identifying Adhesive Tape Under Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Clean the body bonding surface with a sponge dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
3. Install the clips (A).
 1. Peel the adhesive backing away from the clips.
 2. Line up the clips with the alignment marks (B) on the body, and attach the clips with adhesive tape (C).
 3. Apply two-part epoxy adhesive (D) around the edge of the clips as shown.

Adhesive tape: Thickness 1 mm (0.04 in.)

Width 8 mm (0.32 in.)

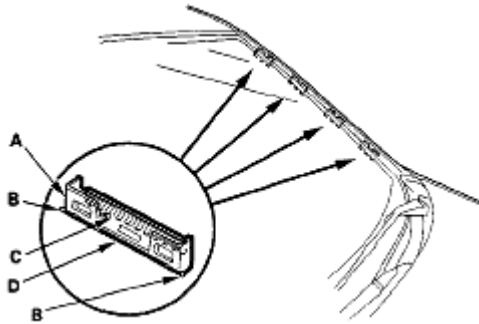


Fig. 22: Identifying Alignment Marks, Adhesive Tape And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SIDE SILL PANEL REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE: **Take care not to scratch the body.**

1. Open the front door and rear door.
2. Remove the side sill panel (A).
 1. Remove the screws (B) then remove the splash guard (C).
 2. Remove the screw (D) fastening the rear fender cover (E) and the rear strake (F).
 3. Use the trim tool to pry out the front clip (G), then release the front of the side sill panel from the body.
 4. While pulling the front portion of the side sill panel away from the body, slide the panel forward and remove it.

The side clips (H) will stay in the body.

5. Remove the side clips by turning them 45 °.

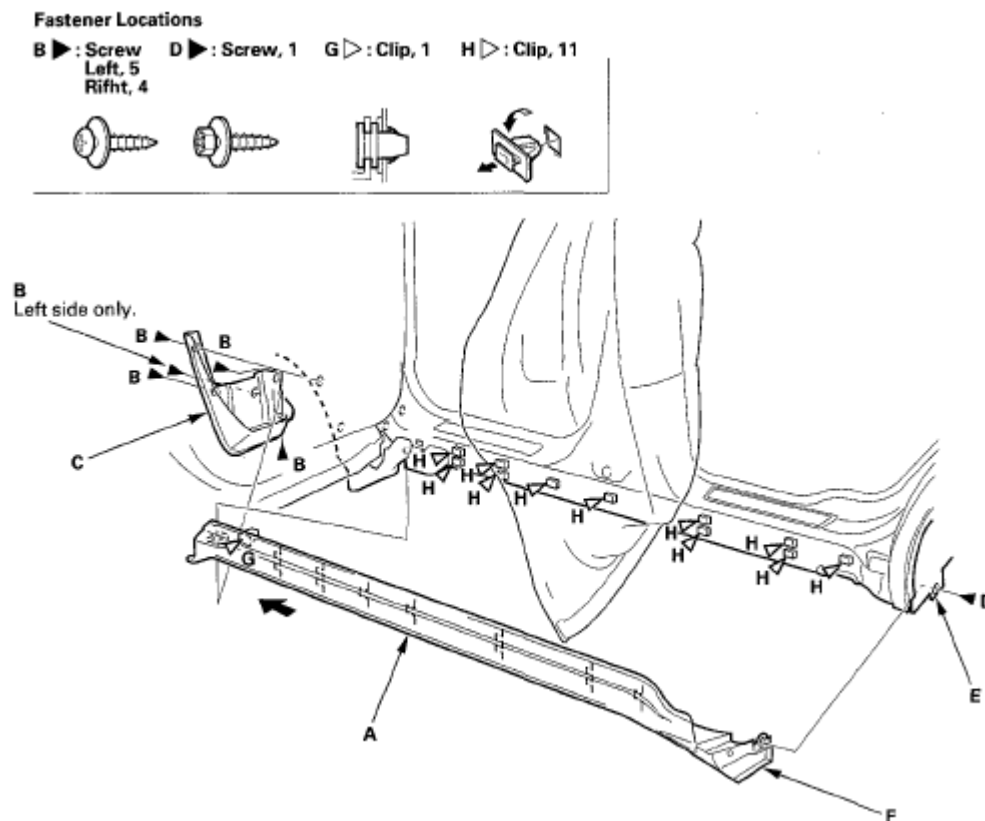


Fig. 23: Identifying Side Sill Panel Screws

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the clips are damaged or stress-whitened, replace them with new ones.
4. Install the side clips on the side sill panel.
5. Hold the panel up, and fit the front clip and all the side clips into the holes in the body, then push on the panel until the side clips snap into place.
6. Reinstall the front inner fender and front splash guard.

TAILGATE SPOILER TRIM REPLACEMENT

NOTE: Take care not to scratch the tailgate and body.

1. Open the tailgate. Disconnect the rear window washer tube (A). Remove the radio antenna connector grommet (B) from the tailgate, and disconnect the radio antenna connector (C).

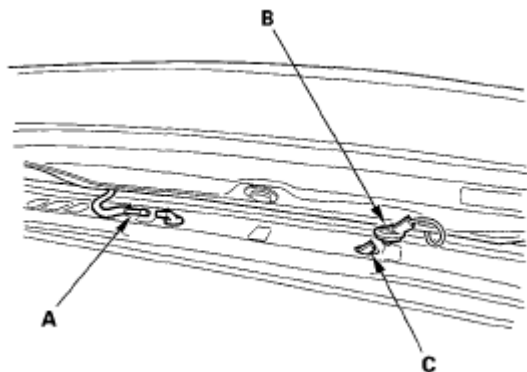


Fig. 24: Identifying Connector Grommet, Washer Tube And Radio Antenna Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the access cap (A) from the tailgate, and remove the nuts (B) and bolts (C) securing the tailgate spoiler trim.

Fastener Locations

B ● : Nut, 3 C ► : Bolt, 2

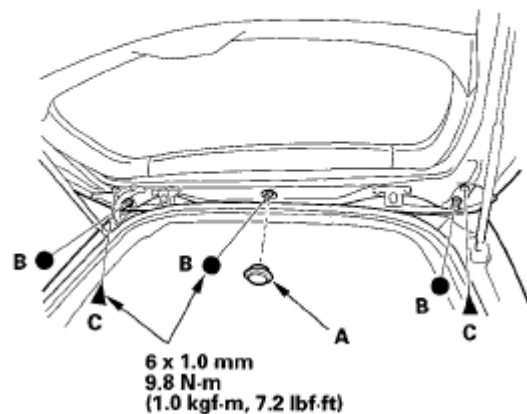


Fig. 25: Identifying Access Cap, Tailgate, Nuts And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Gently close the tailgate, and lift up on the tailgate spoiler trim (A) to detach the clips.

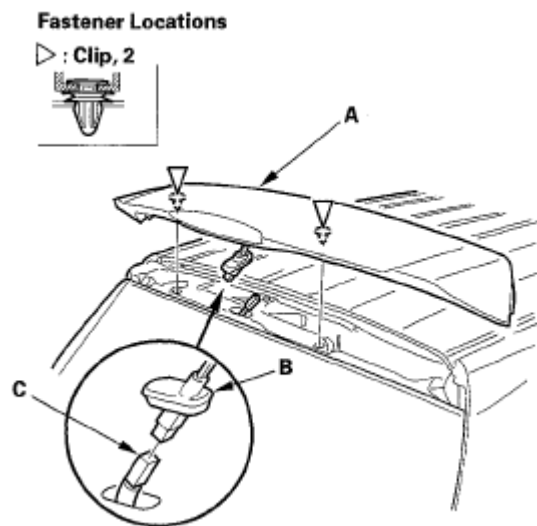


Fig. 26: Identifying Tailgate Spoiler Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the high mount brake light connector grommet (B) from the tailgate, and disconnect the high mount brake light connector (C), then remove the tailgate spoiler trim.
5. If necessary, remove damaged spacer (A) and damaged pad rubbers (B, C) from the tailgate spoiler trim (D). Clean the trim surface with a sponge dampened in alcohol, then attach new pares to the trim.

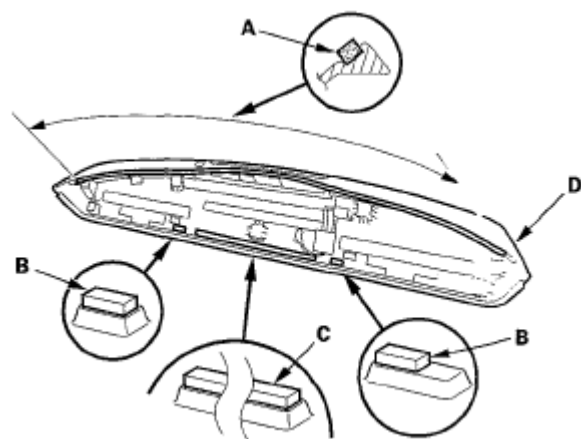


Fig. 27: Identifying Spacer, Damaged Pad Rubbers And Tailgate Spoiler Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the trim in the reverse order of removal, and note these items:
 - Make sure the radio antenna connector and high mount brake light connector are plugged in properly and the rear window washer tube is connected properly.
 - Make sure the radio antenna connector grommet and high mount brake light connector grommet are installed securely.
 - If the clips are damaged or stress-whitened, replace them with new ones.

- Push the clips into place securely.

REAR LICENSE TRIM REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the tailgate.

1. With navigation system: Remove the tailgate lower trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. With navigation system: From inside the tailgate, disconnect the rearview camera connector (A).



Fig. 28: Identifying Rearview Camera Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screws, and release both ends of the rear license trim (A) from the inner taillights (B), then remove the trim. If equipped, pull the rearview camera harness (C) out.

Without navigation system

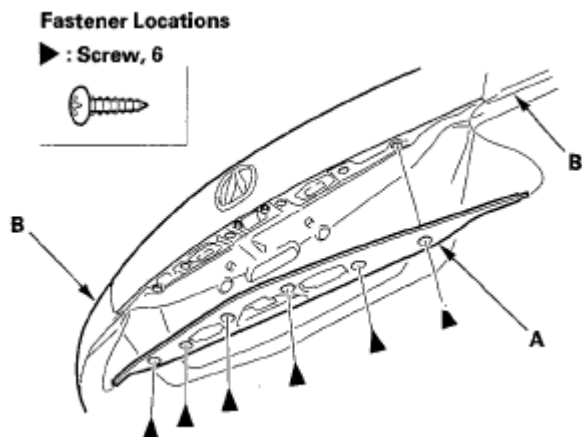


Fig. 29: Identifying Rear License Trim And Inner Taillights (Without Navigation System)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With navigation system

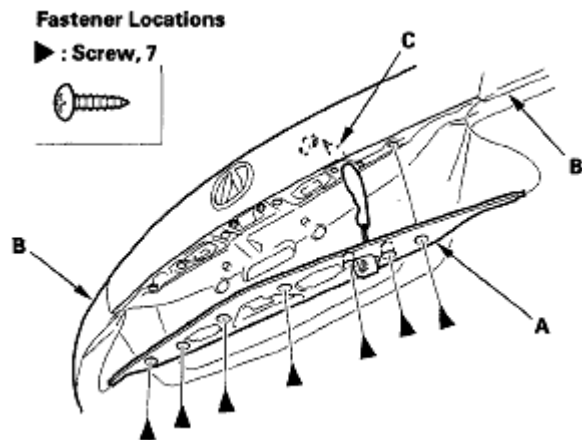


Fig. 30: Identifying Rear License Trim And Inner Taillights (With Navigation System)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screw grommets (A) from the tailgate.

NOTE:

- If the screw grommets cracked excessively, replace them with new ones.
- If the screw grommets are damaged or stress-whitened, replace them with new ones.
- If a new rear license trim will be installed, remove all of remaining screw grommets on the tailgate and discard them. The screw grommets have been installed to the new rear license trim with screws.

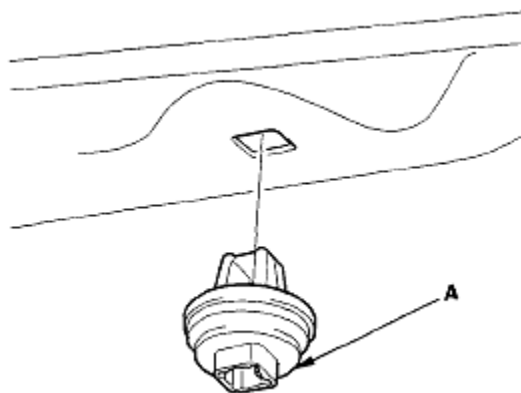


Fig. 31: Identifying Screw Grommets
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the trim in the reverse order of removal, and note these items:

- With navigation system: Make sure the rearview camera connector is plugged in properly.
- If a new rear license trim assembly (A) is to be installed, hold the trim up, and fit all the screw grommets (B) into the holes in the tailgate, then push on the trim until the grommets snap into place.

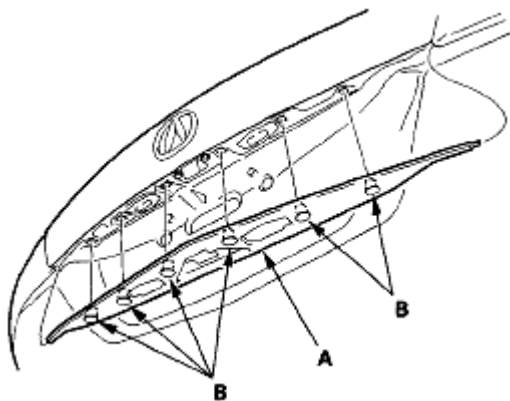
New rear license trim installation

Fig. 32: Identifying Rear License Trim Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR GUTTER COVER REPLACEMENT**Special Tools Required**

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the body.

1. Open the tailgate.
2. Separate the double-sided adhesive tape (A), and use a trim tool to detach the clip (B) and pins (C) of the rear gutter cover (D).

Without power tailgate

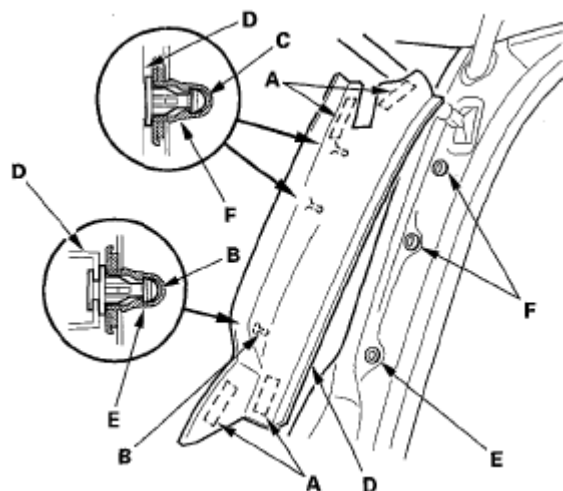


Fig. 33: Identifying Double-Sided Adhesive Tape, Clip And Pins (Without Power Tailgate)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

With power tailgate

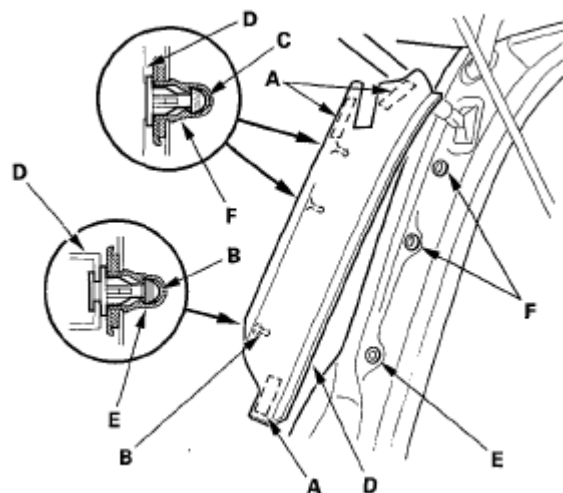


Fig. 34: Identifying Double-Sided Adhesive Tape, Clip And Pins (With Power Tailgate)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the clip and grommets (E, F) are damaged or stress-whitened, replace them with new ones.
4. Install the rear gutter cover in the reverse order of removal, and note these items:
 - Scrape off the remaining double-sided adhesive tape from the cover and body, then clean the cover and body surface with a sponge dampened in alcohol.
 - Apply new adhesive tape (A) to the rear gutter cover (B).
 - Push the adhesive portions, clips, and pins into place securely.

Adhesive tape: Thickness 1.5 mm (0.06 in.)

Width 12 mm (0.47 in.)

Length 50 mm (2.0 in.)

Without power tailgate

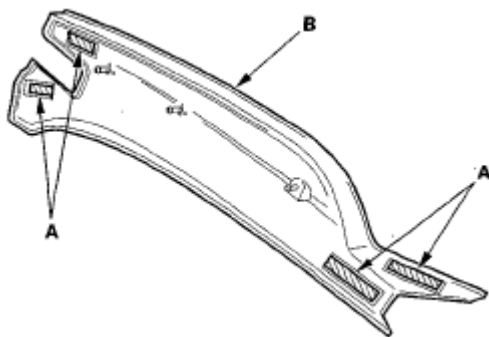


Fig. 35: Identifying Adhesive Tape And Rear Gutter Cover (Without Power Tailgate)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

With power tailgate

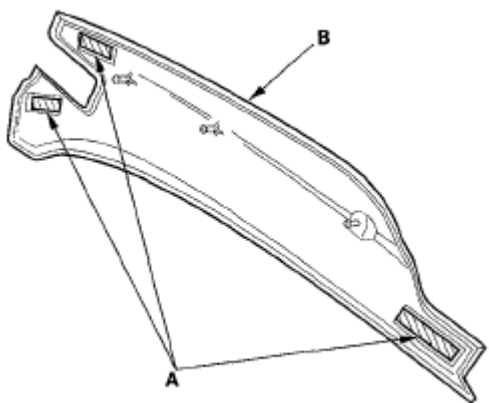


Fig. 36: Identifying Adhesive Tape And Rear Gutter Cover (With Power Tailgate)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EMBLEM/STICKER REPLACEMENT

NOTE: When removing the emblems, take care not to scratch the body.

1. To remove the front "A" emblem, remove the front grille (see **FRONT GRILLE REPLACEMENT**).
2. Clean the body surface with a sponge dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
3. Apply the emblems where shown.
 - ACURA/MDX emblems: Remove the adhesive backing. Put the ACURA/MDX emblems with the

2008 Acura MDX

2008-9 ACCESSORIES AND EQUIPMENT Exterior Trim - MDX

application guide foam on the tailgate as shown, then press the emblem into place. Remove the film and application guide foam.

- When installing the ULEV sticker on the inside surface of the left quarter glass, align the sticker with the edge of the black ceramic as shown, then press the sticker into place, and remove the application tape.

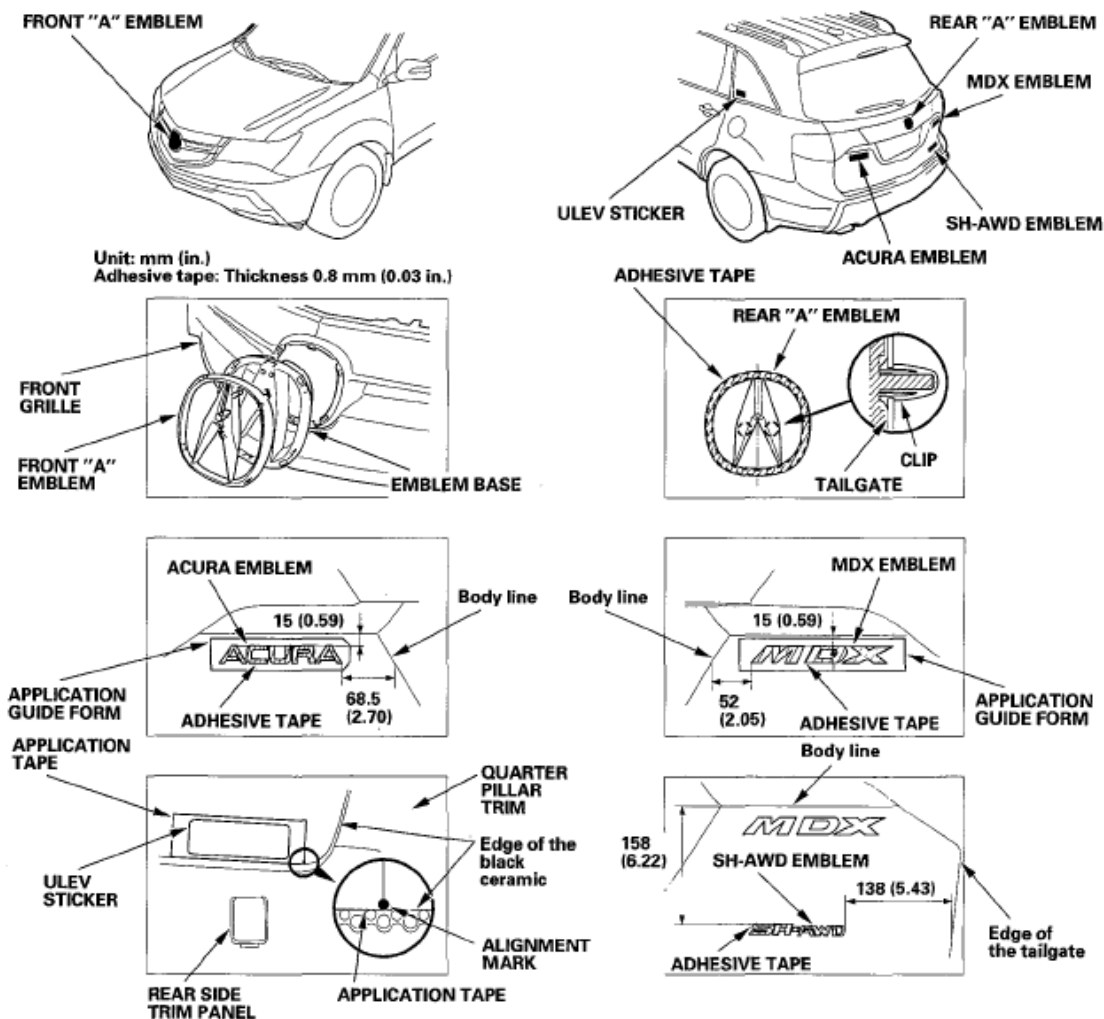


Fig. 37: Emblem And Sticker Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Fenderwell - MDX

FRONT INNER FENDER REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body.

1. Remove the front inner fender (A).
 1. On the back of the wheel arch, remove the screws (B), then remove the splash guard (C).
 2. From under the front bumper (D), remove the bolt (E) and clips (F) securing the front bumper and front inner fender.
 3. From the wheel arch, remove the screw (G) securing the front bumper.
 4. From the wheel arch, remove the clip (H) securing the front splash shield (I) and front inner fender, and remove the clips (J) securing the front inner fender on the body.
 5. Pull out the front inner fender.

Fastener Locations

B, G ▶ : Screw
Left, 6
Right, 5

E ▶ : Bolt, 1

F, H ▶ : Clip, 3

J ▶ : Clip, 7

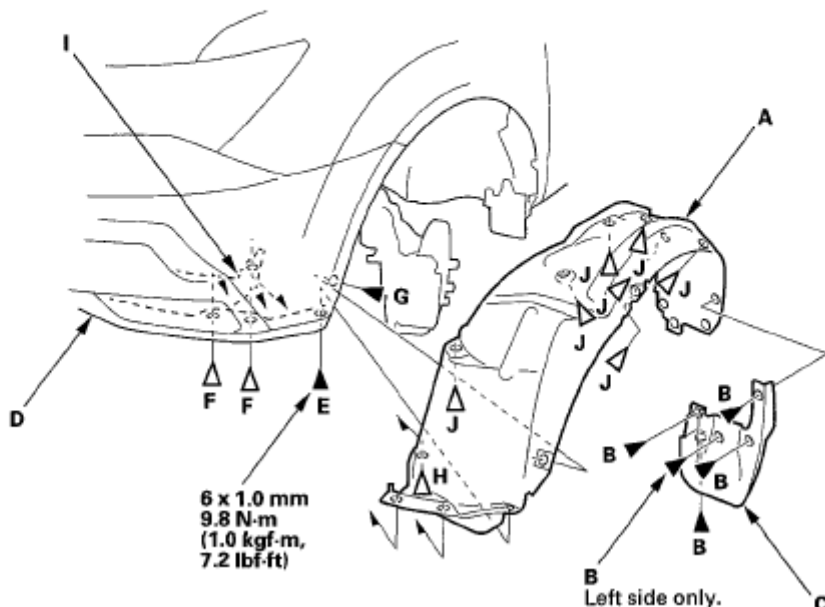


Fig. 1: Identifying Front Inner Fender Screw And Clips With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the inner fender in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

SPLASH SHIELD REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body.

1. Remove the splash shield (A).
 1. Remove the clips (B) that secure the front inner fender (C) and splash shield.
 2. From under the front bumper (D), remove the clips (E).
 3. From under the body, remove the clips (F) that secure the front undercover (G) and splash shield, and remove the clips (H) that secure the splash shield on the front suspension subframe (I).
 4. Pull the splash shield out.

Fastener Locations

B, E ▷ : Clip, 7 F ▷ : Clip, 2 H ▷ : Clip, 4

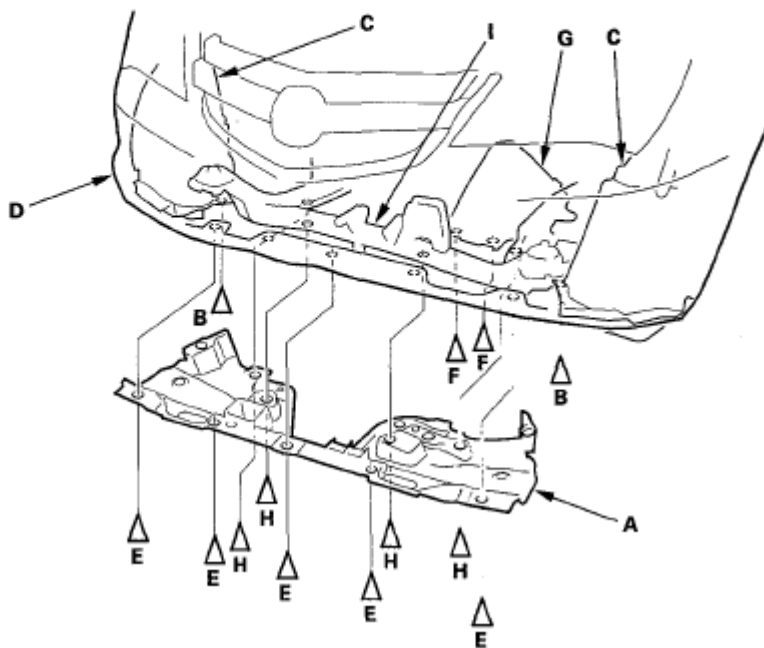


Fig. 2: Identifying Splash Shield, Clips And Front Inner Fender
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the splash shield in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

FRONT UNDERCOVER REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body.

1. Remove the bolts (A), and clips (B), then remove the front undercover (C) from the splash shield (D), front suspension subframe (E), and front subframe stiffener (F).

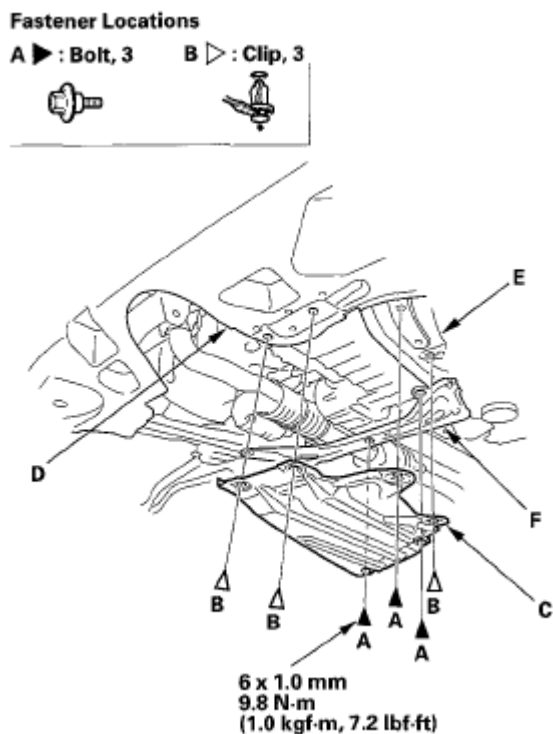


Fig. 3: Identifying Front Undercover Bolts And Clips With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the undercover in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

FRONT STRAKE REPLACEMENT

NOTE:

Take care not to scratch the body.

1. Remove the bolts, then remove the front strake (A) from the front inner fender (B).

Fastener Locations

▶ : Bolt, 3

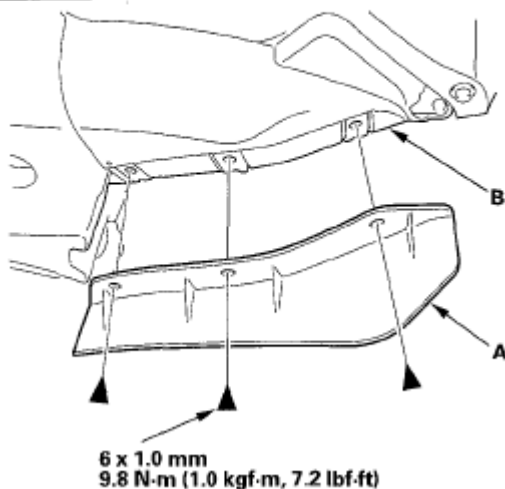


Fig. 4: Identifying Front Strake Of Front Inner Fender With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the strake in the reverse order of removal.

FRONT FENDER FAIRING REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body.

1. Remove the front inner fender as needed (see **FRONT INNER FENDER REPLACEMENT**).
2. Pull out and remove the front fender fairing (A).

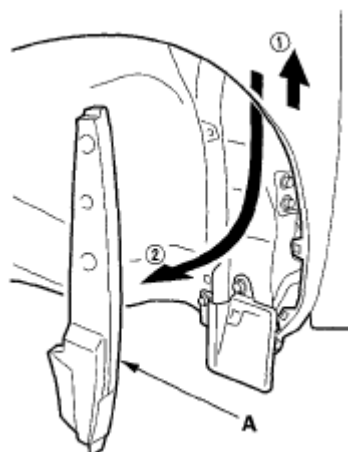


Fig. 5: Identifying Front Fender Fairing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

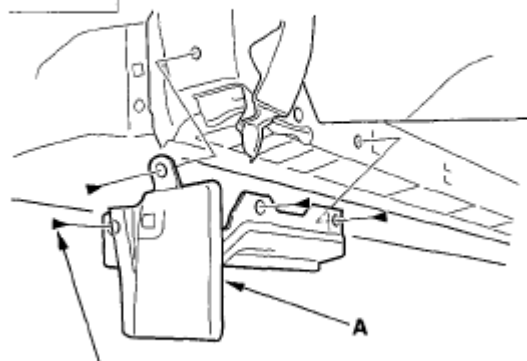
3. Install the fender fairing in the reverse order of removal.

LEFT FRONT SPLASH GUARD REINFORCEMENT REPLACEMENT

1. Remove these items:
 - Left front inner fender, as needed (see **FRONT INNER FENDER REPLACEMENT**)
 - Left side sill panel (see **SIDE SILL PANEL REPLACEMENT**)
2. Remove the bolts, then remove the left front splash guard reinforcement (A). Take care not to scratch the body.

Fastener Locations

► : Bolt, 4



10 x 1.25 mm
38 N-m
(3.9 kgf-m, 28 lbf-ft)

Fig. 6: Identifying Left Front Splash Guard Reinforcement Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the reinforcement in the reverse order of removal.

REAR FENDER COVER REPLACEMENT

NOTE:

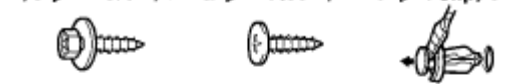
- Put on gloves to protect your hands.
- Take care not to scratch the body and related parts.

1. Remove the rear fender cover (A).
 1. Remove the screw (B) that secure the fender cover and the rear strake (C) from the front of the rear wheel arch.
 2. Remove the screws (D, E) and clip (F) that secure the rear bumper (G) and fender cover from the rear of the rear wheel arch.
 3. Remove the bolts (H) and clip(s) (I) from the rear wheel arch.
 4. Pull out the rear fender cover.

Left

Fastener Locations

B, D ▶ : Screw, 3 E ▶ : Screw, 2 F ▶ : Clip, 1



H ▶ : Bolt, 6 I ▶ : Clip, 2

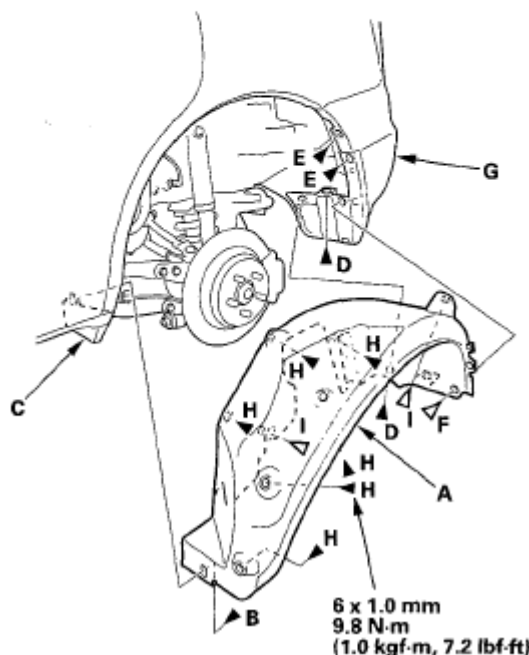
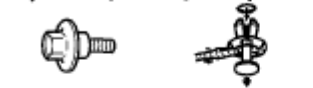


Fig. 7: Identifying Rear Fender Cover Bolt And Screws With Torque Specification (Left)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right

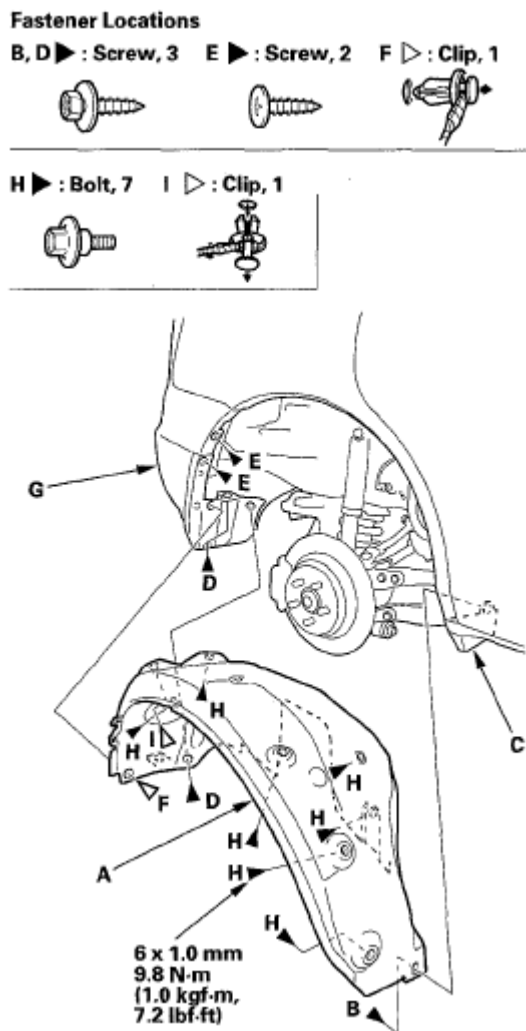


Fig. 8: Identifying Rear Fender Cover Bolt And Screws With Torque Specification (Right)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the fender cover in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

REAR STRAKE REPLACEMENT

1. Remove the screw (A) and clips (B), then remove the rear strake (C) from the rear fender cover (D) and side sill panel (E).

Fastener Locations

A ▶ : Screw, 1 B ▶ : Clip, 2

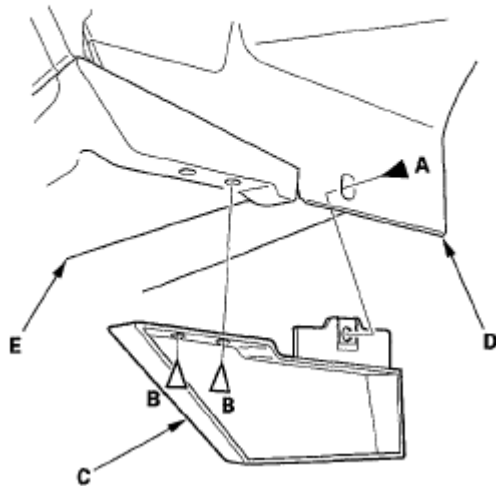


Fig. 9: Identifying Rear Strake, Rear Fender Cover And Side Sill Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the strake in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

REAR AIR OUTLET REPLACEMENT

1. Remove the rear bumper (see **FRONT BUMPER SKID TRIM REPLACEMENT**).
2. Detach the hooks (A), then remove the rear air outlet (B). Take care not to scratch the body.

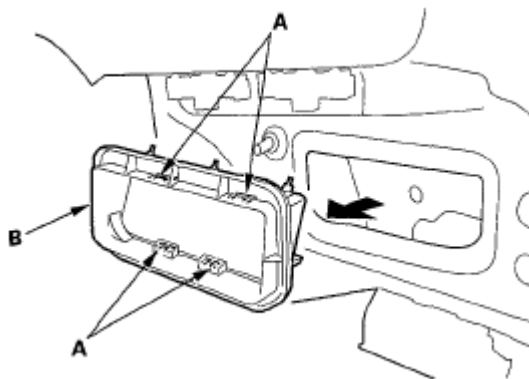


Fig. 10: Identifying Rear Air Outlet And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX
2007-09 ACCESSORIES AND EQUIPMENT Fenderwell - MDX

3. Install the air outlet by pushing on the hook portions until the hooks snap into place.

2007-09 ACCESSORIES AND EQUIPMENT

Frame - MDX

SPARE TIRE HOIST REPLACEMENT

1. Remove the spare tire.
2. Remove the bolts, then remove the spare tire hoist (A). Take care not to bend the cable (B).

Fastener Locations

► : Bolt, 7

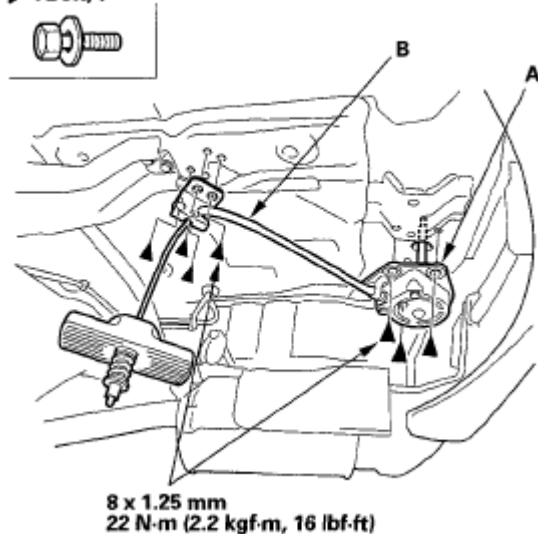


Fig. 1: Identifying Spare Tire Hoist And Cable With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the hoist in the reverse order of removal.

SPARE TIRE SUPPORT BRACKET REPLACEMENT

SPARE TIRE SUPPORT BRACKET TORQUE

Fastener Locations

► : Bolt, 6



SPARE TIRE
SUPPORT BRACKET

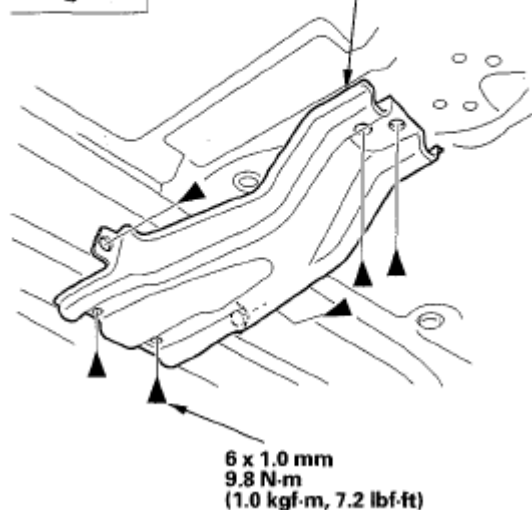


Fig. 2: Identifying Spare Tire Support Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR WHEELHOUSE GUSSET REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body and related parts.

1. Remove these items:

- Rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA)
- Third row seat (see THIRD ROW SEAT REMOVAL/INSTALLATION)

2. Pull the carpet back as needed.

3. Remove the rear wheelhouse gusset (A).

1. Remove the ground bolt (B) and release the harness clip (C).
2. Remove the bolts (D).
3. From outside the vehicle, remove the nuts (E).

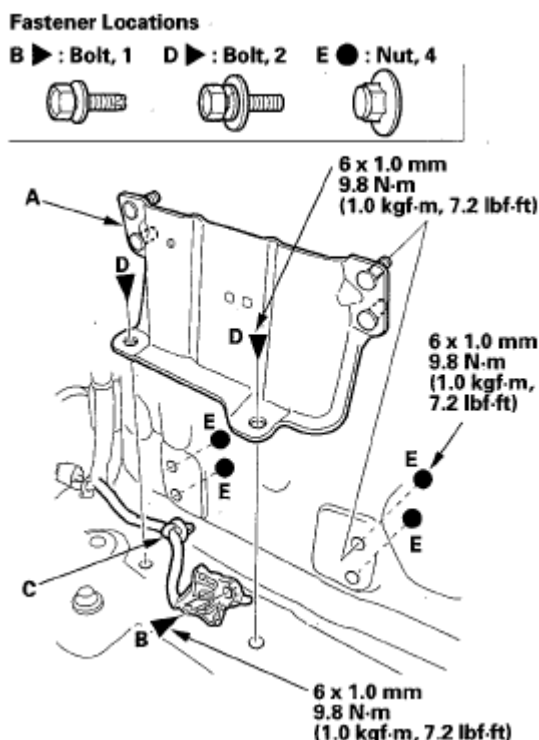


Fig. 3: Identifying Rear Wheelhouse Gusset, Harness Clip, Bolts And Nuts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the gusset in the reverse order of removal.

CARGO LID SUPPORT REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body and related parts.

1. Remove these items:

- Rear side trim panel, both sides (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA)
- Rear side trim panel support bracket (see step 11 on REAR SIDE TRIM PANEL REMOVAL/INSTALLATION)
- Cargo rear trim panel (see TRIM REMOVAL/INSTALLATION - CARGO AREA)
- XM receiver (see ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION)
- Active damper control unit (see ACTIVE DAMPER CONTROL UNIT REPLACEMENT)

2. Remove the clips fastening the rear differential breather box (see REAR DIFFERENTIAL BREATHER BOX AND HOSE REPLACEMENT).

3. Remove the bolts, then remove the cargo lid support (A)

Fastener Locations

► : Bolt, 5

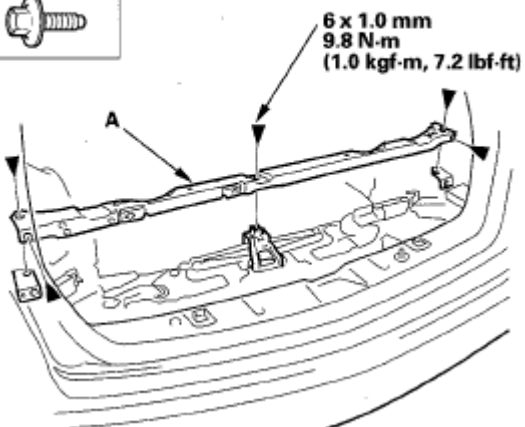


Fig. 4: Identifying Cargo Lid Support And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the support in the reverse order of removal.

SUBFRAME REPLACEMENT

FRONT SUBFRAME TORQUE

After removing the subframe mounting bolts and front subframe stiffener mounting bolts, be sure to replace them with new ones.

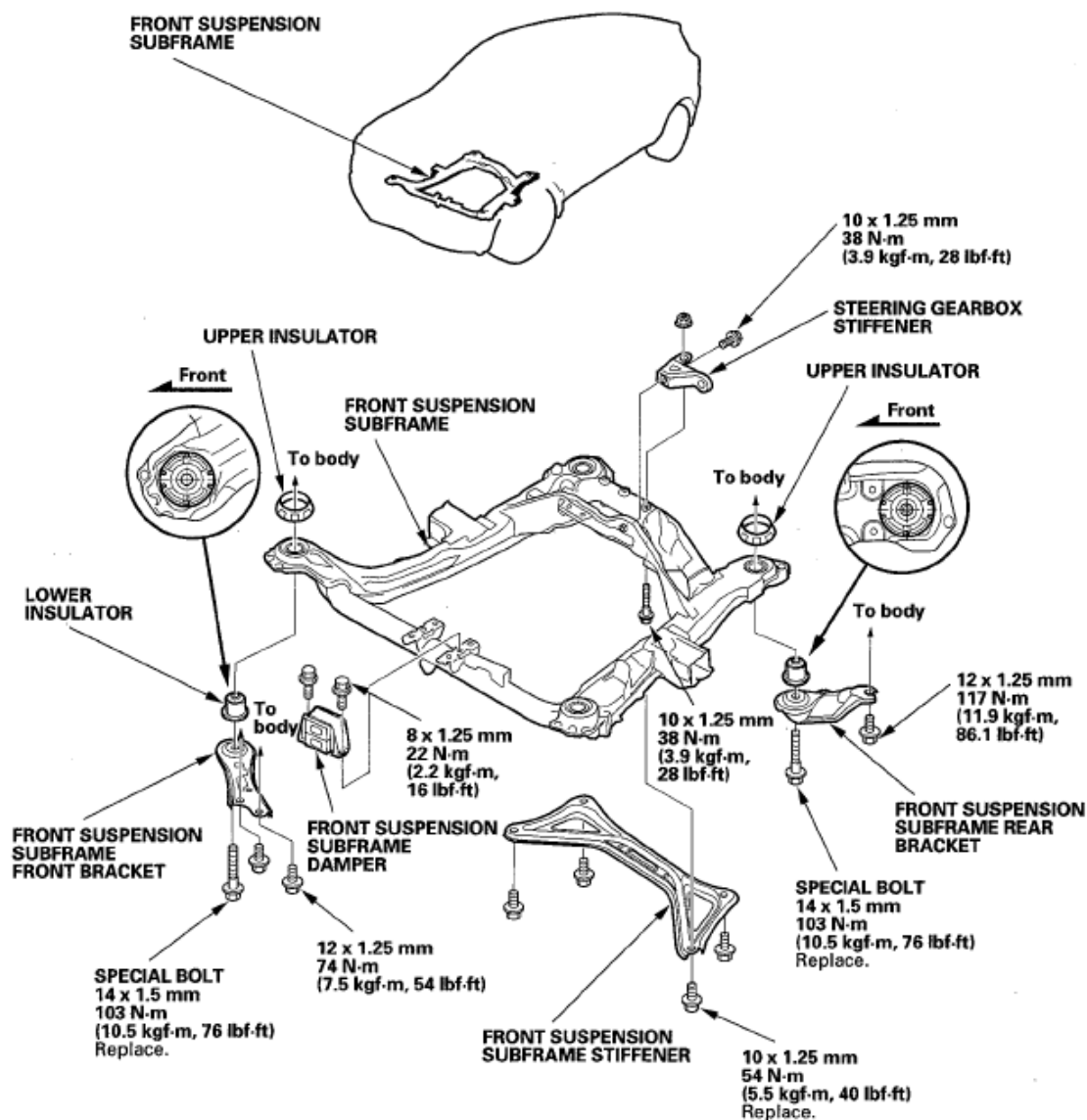


Fig. 5: Exploded View Of Subframe With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SUBFRAME ALIGNMENT

NOTE:

- After mounting the subframe and brackets loosely, align all of the installation reference holes in the subframe, in the subframe front bracket, and in the body using a screwdriver or tapered punch as a guide, then tighten the bolts.
- After reinstalling all removed parts, check and adjust the front wheel alignment (see WHEEL ALIGNMENT).

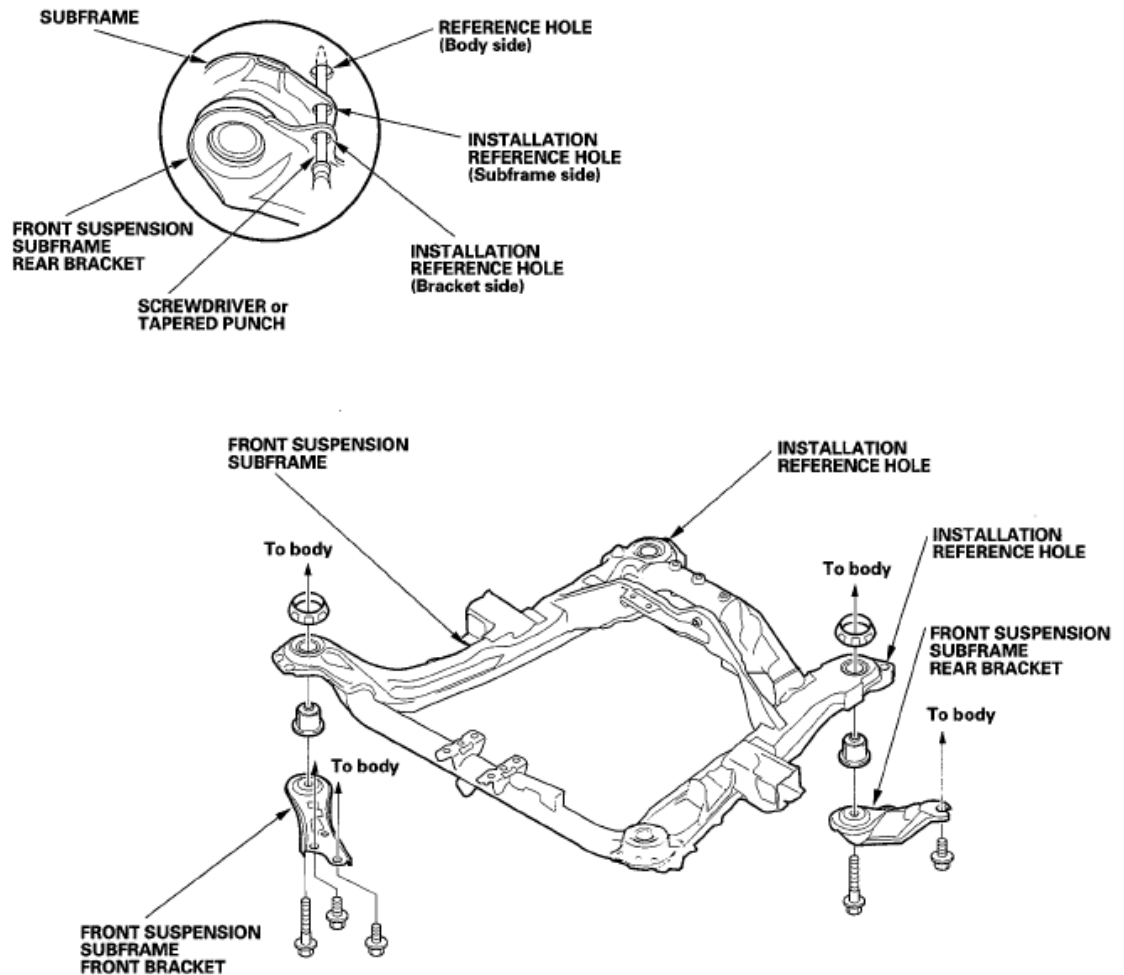


Fig. 6: Exploded View Of Front Subframe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR SUBFRAME TORQUE

NOTE:

- When installing, align both installation reference holes in the subframe with the reference holes in the body using a screwdriver or tapered punch as a guide.
- After removing the subframe mounting bolts, be sure to replace them with new ones.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Frame - MDX

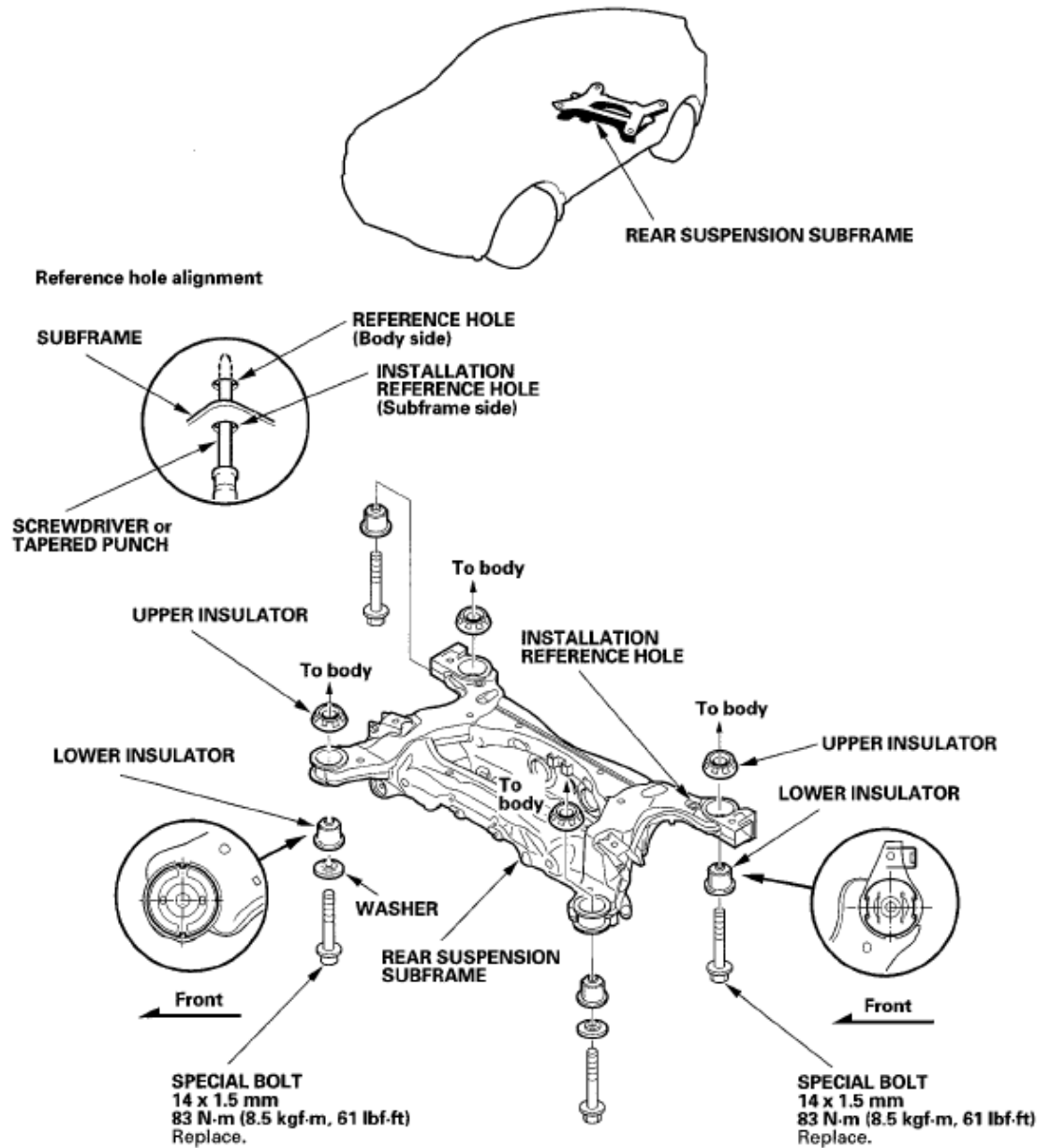


Fig. 7: Identifying Rear Subframe Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRAME REPAIR CHART

TOP VIEW

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Frame - MDX

Unit: mm (in.)

ø: Inner diameter

- a For bumper beam mount ø11 (0.43)
- b1 For front subframe mount ø15 (0.59) forward
- b2 For front subframe mount ø15 (0.59) rearward
- c For engine side mount ø13 (0.51)
- d Front damper center hole ø80 (3.15)
- e Side frame gusset locating hole ø28 (1.1)

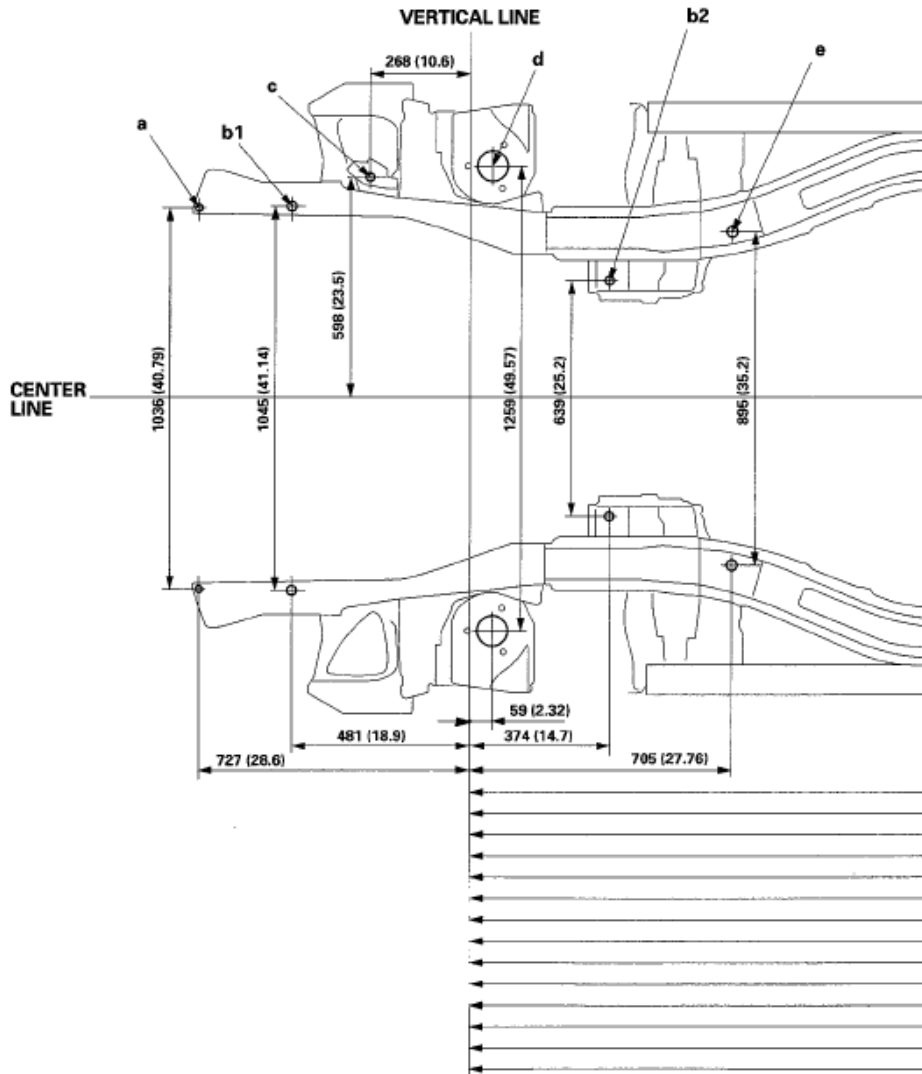


Fig. 8: Frame Repair Chart - Top View (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Frame - MDX

- | | | | |
|----|--|----|--|
| f | For propeller shaft mount ø12 (0.47) | j | Rear frame locating hole ø23 (0.91) forward |
| g1 | For fuel tank mount ø15 (0.59) left side forward | k1 | For rear subframe mount ø16 (0.63) forward |
| g2 | For fuel tank mount ø15 (0.59) right side forward | k2 | For rear subframe mount ø16 (0.63) rearward |
| g3 | For fuel tank mount ø15 (0.59) right side rearward | l | For rear damper mount center |
| g4 | For fuel tank mount ø15 (0.59) left side rearward | m | Lower arm stopper bracket locating hole ø11 (0.43) |
| h1 | For trailing arm mount ø17 (0.67) outside | n | Rear frame locating hole ø25 (0.98) rearward |
| h2 | For trailing arm mount ø17 (0.67) center side | o | For spare tire hoist mount ø9 (0.35) forward |
| i | Floor frame extension locating hole ø25 (0.98) | p | For spare tire hoist mount ø9 (0.35) rearward |

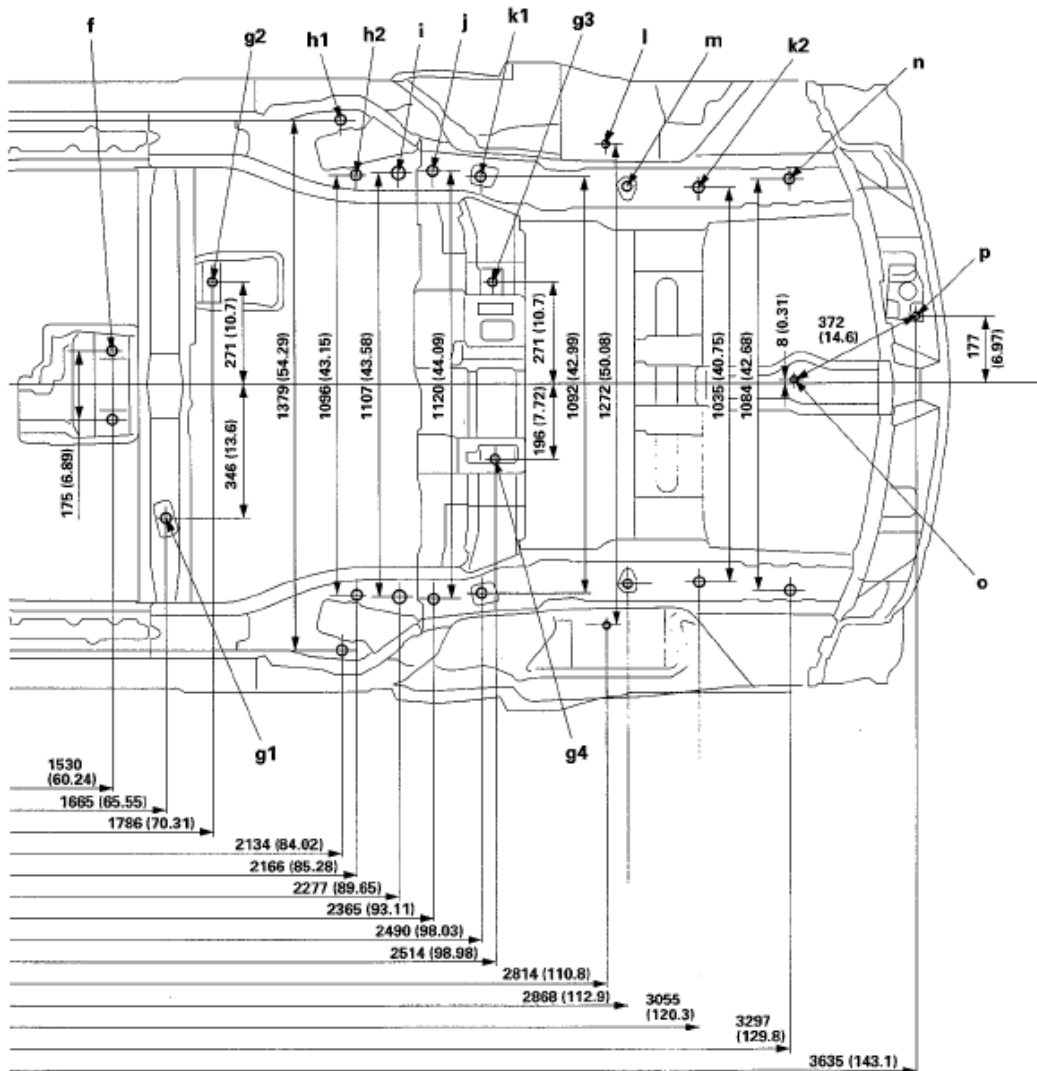


Fig. 9: Frame Repair Chart - Top View (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SIDE VIEW

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Frame - MDX

Unit: mm (in.)

ø: Inner diameter

- a For bumper beam mount ø11 (0.43)
- b1 For front subframe mount ø15 (0.59) forward
- b2 For front subframe mount ø15 (0.59) rearward
- c For engine side mount ø13 (0.51)
- d Front damper center hole ø80 (3.15)
- e Side frame gusset locating hole ø28 (1.1)

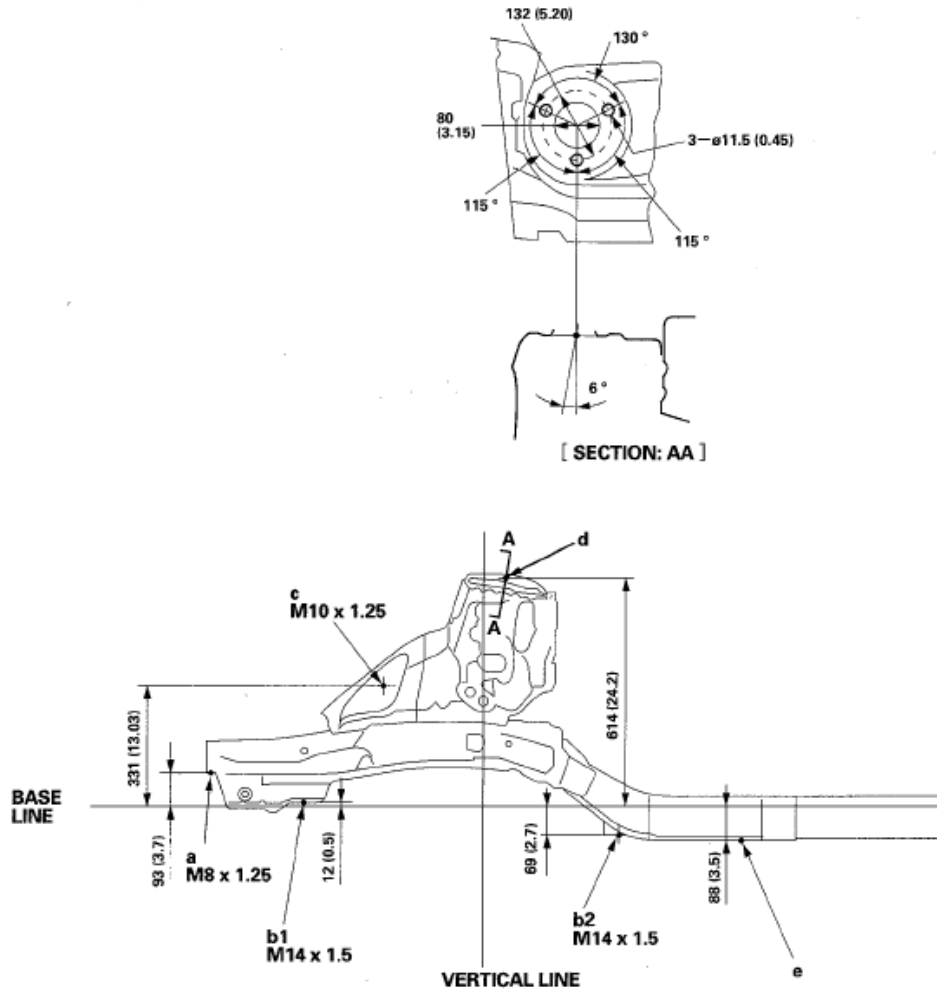


Fig. 10: Frame Repair Chart - Top View (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Frame - MDX

- | | | | |
|----|--|----|--|
| f | For propeller shaft mount ø12 (0.47) | j | Rear frame locating hole ø23 (0.91) forward |
| g1 | For fuel tank mount ø15 (0.59) left side forward | k1 | For rear subframe mount ø16 (0.63) forward |
| g2 | For fuel tank mount ø15 (0.59) right side forward | k2 | For rear subframe mount ø16 (0.63) rearward |
| g3 | For fuel tank mount ø15 (0.59) right side rearward | l | For rear damper mount center |
| g4 | For fuel tank mount ø15 (0.59) left side rearward | m | Lower arm stopper bracket locating hole ø11 (0.43) |
| h1 | For trailing arm mount ø17 (0.67) outside | n | Rear frame locating hole ø25 (0.98) rearward |
| h2 | For trailing arm mount ø17 (0.67) center side | | |
| i | Floor frame extension locating hole ø25 (0.98) | | |

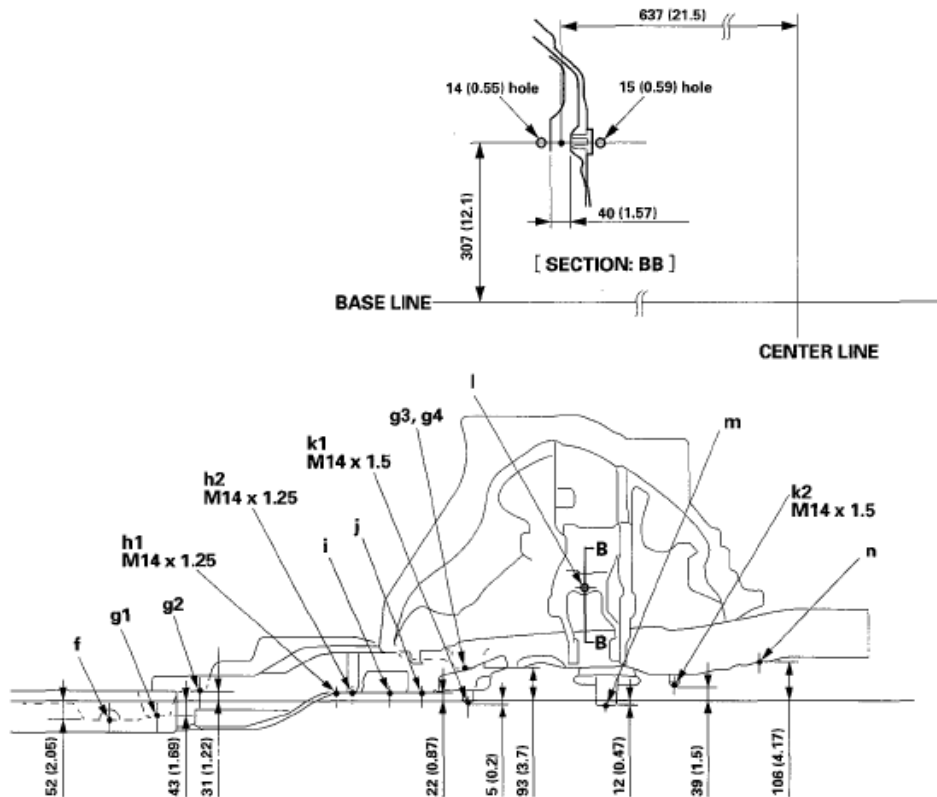


Fig. 11: Frame Repair Chart - Side View (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 SUSPENSION

Front Suspension - MDX

KNUCKLE/HUB BEARING UNIT REPLACEMENT

EXPLODED VIEW

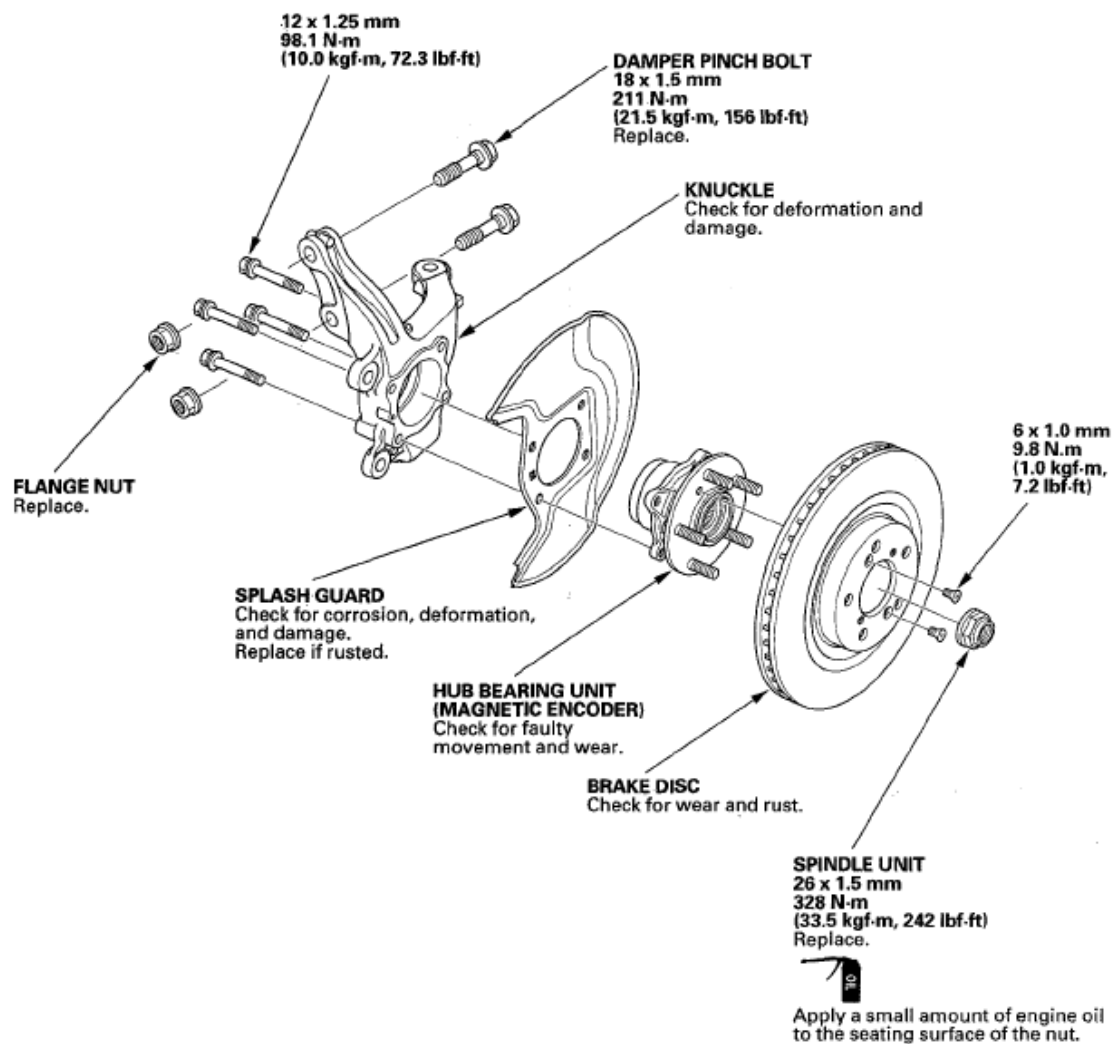


Fig. 1: Exploded View Of Knuckle/Hub Bearing Unit With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Ball joint remover, 32 mm 07MAC-SL0A102
- Ball joint remover, 28 mm 07MAC-SLOA202
- Ball joint thread protector, 14 mm 071AF-S3VA000

HUB BEARING UNIT REPLACEMENT

1. Raise the front of "the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the wheel nuts (A) and the front wheel.

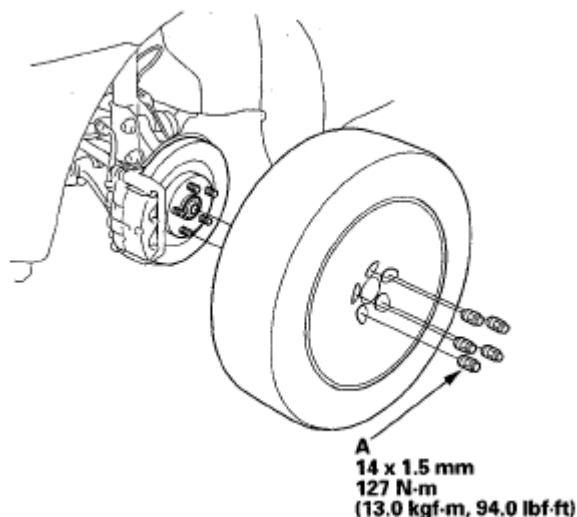


Fig. 2: Identifying Wheel Nuts And Front Wheel With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the brake hose mounting bolt (A) from the damper.

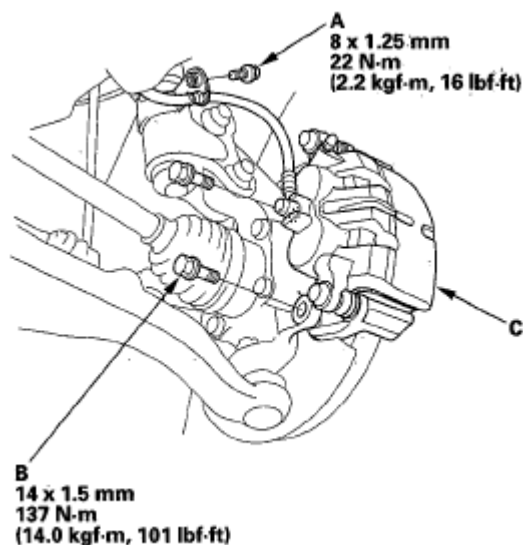


Fig. 3: Identifying Brake Hosing Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the

knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

5. Raise the stake (A), then remove the spindle nut (B).

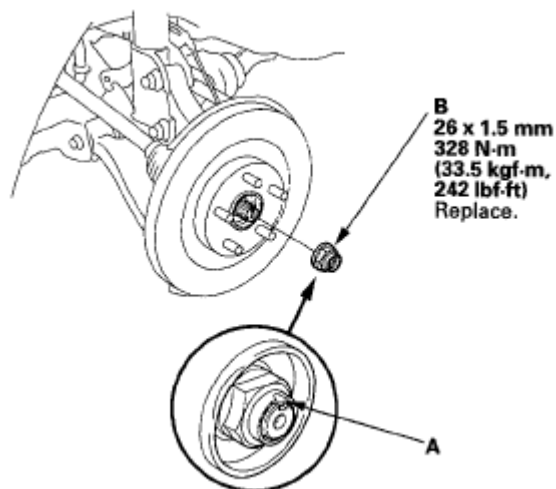


Fig. 4: Identifying Spindle Nut With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc (see **FRONT BRAKE DISC REPLACEMENT**).
7. Remove the hub bearing unit (A) and the splash guard (B) from the knuckle.

NOTE:

- Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.
- During installation, apply grease to the mating surfaces of the hub bearing unit and driveshaft outboard joint (see **FRONT DRIVESHAFT INSTALLATION**).

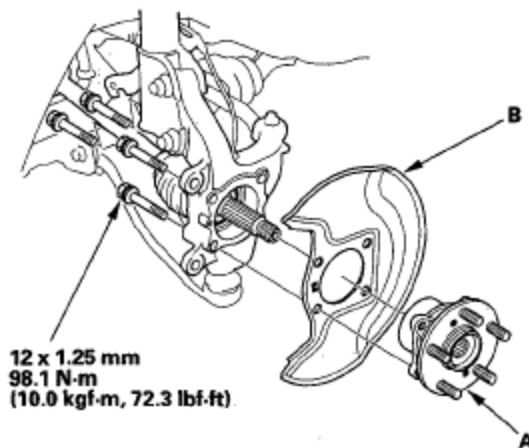


Fig. 5: Identifying Hub Bearing Unit And Splash Guard From Knuckle

With Torque Specification**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

8. Check the hub bearing unit for damage and cracks.
9. Install the hub bearing unit in the reverse order of removal, and note these items:
 - Use the new spindle nut during reassembly.
 - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
 - Before installing the brake disc, clean the mating surfaces of the hub bearing unit and the inside of the brake disc.
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.
 - Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

KNUCKLE REPLACEMENT

1. Remove the hub bearing unit.
2. Remove the wheel speed sensor (A) from the knuckle (B). Do not disconnect the wheel speed sensor connector.

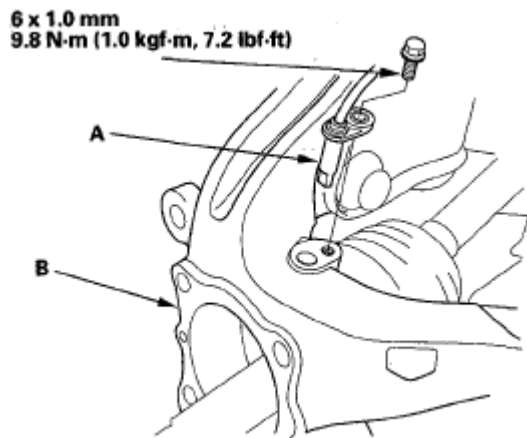


Fig. 6: Identifying Wheel Speed Sensor From Knuckle With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B).

NOTE: During installation, install the new cotter pin after tightening the nut, and bend its end as shown.

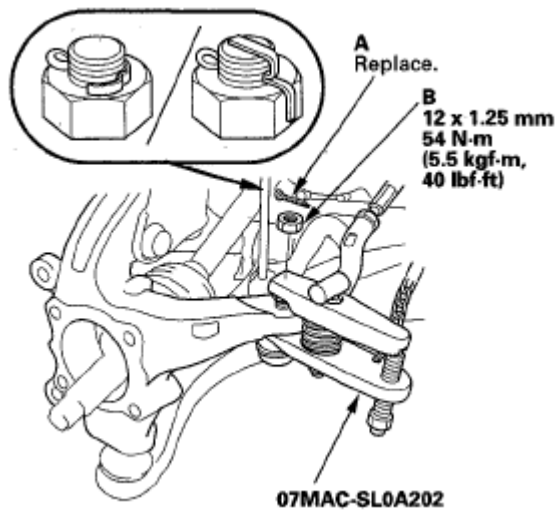


Fig. 7: Identifying Tie-Rod End Ball Joint From Knuckle With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the tie-rod end ball joint from the knuckle using the ball joint remover (see **BALL JOINT REMOVAL**).
5. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B).

NOTE: During installation, install the lock pin as shown after tightening the new castle nut.

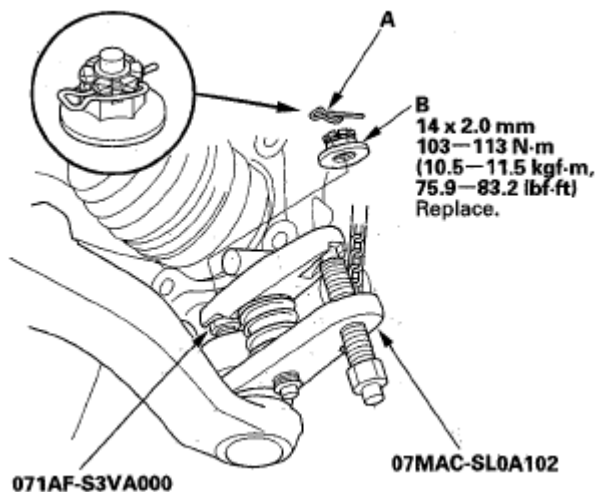


Fig. 8: Identifying Lower Arm Ball Joint From Knuckle With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the lower arm ball joint from the knuckle using the ball joint thread protector, and the ball joint remover (see **BALL JOINT REMOVAL**).
7. Remove the damper pinch bolts (A) and flange nuts (B) from the damper, then remove the knuckle (C).

NOTE: During installation, install new damper pinch bolts and new flange nuts.

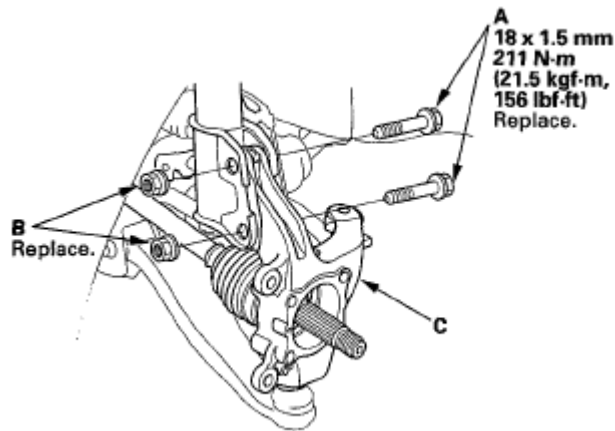


Fig. 9: Identifying Damper Pinch Bolts And Flange Nuts From Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the knuckle in the reverse order of removal, and note these items:
 - First install all the components, and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
 - Be careful not to damage the ball joint boot when connecting the knuckle.
 - Before connecting the lower arm ball joint to the knuckle, degrease the threaded section and tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section and mating surfaces of the castle nut.
 - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.
 - Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

BALL JOINT BOOT REPLACEMENT

Special Tools Required

Hub dis/assembly tool, 42 mm 07GAF-SD40200

1. Remove the lower arm (see LOWER ARM REMOVAL/INSTALLATION).
2. Remove the boot.
3. Pack the interior and lip (A) of a new boot with grease. Keep the grease off of the boot-to-lower arm mating surfaces (B).

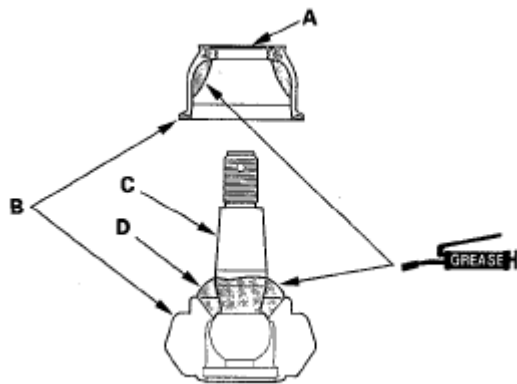


Fig. 10: Identifying Grease Applying Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Wipe the grease off the tapered portion of the ball joint pin (C), and pack fresh grease into the base (D). Do not let dirt or other foreign materials get into the boot.
5. Install the boot on the ball joint, then squeeze it gently to force out any air.
6. Press the boot with the hub dis/assembly tool until the bottom seats on the lower arm (A) all the way around.

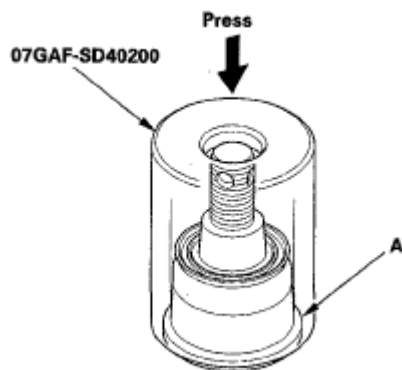


Fig. 11: Identifying Boot With Hub Dis/Assembly Tool

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. After installing a boot, wipe any grease off the exposed portion of the ball joint pin.
8. Install the lower arm (see LOWER ARM REMOVAL/INSTALLATION).

LOWER ARM REMOVAL/INSTALLATION

Special Tools Required

- Ball joint remover, 32 mm 07MAC-SL0A102
- Ball joint thread protector, 14 mm 071AF-S3VA000

REMOVAL/INSTALLATION

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. With active damper system: Remove the suspension stroke sensor (A) from the lower arm (B).

NOTE: Use the new nut during reassembly.

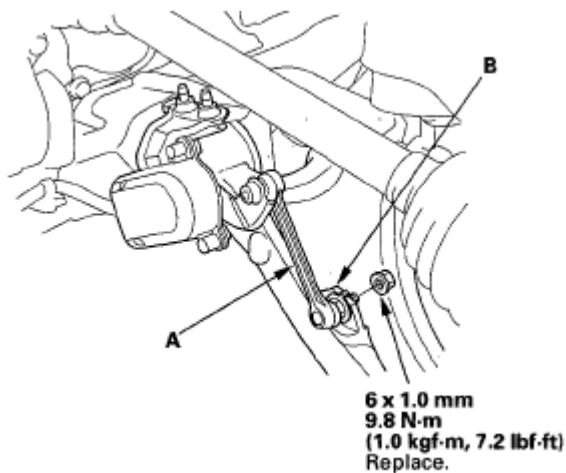


Fig. 12: Identifying Suspension Stroke Sensor From Lower Arm With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B).

NOTE: During installation, install the lock pin as shown after tightening the new castle nut.

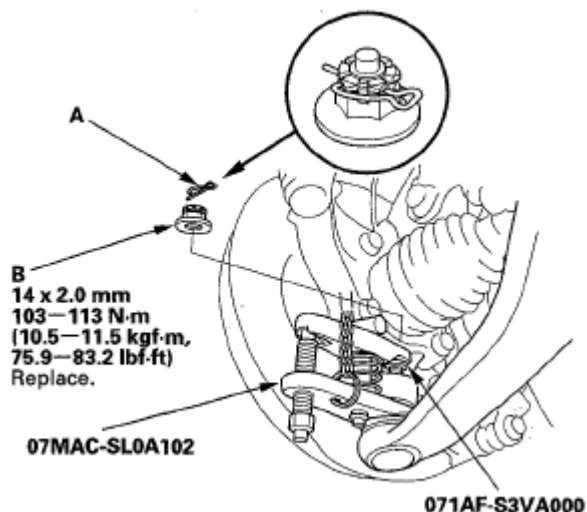


Fig. 13: Identifying Lower Arm Ball Joint From Knuckle With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the lower arm ball joint from the knuckle using the ball joint thread protector and the ball joint remover (see **BALL JOINT REMOVAL**).
6. Remove the stabilizer bar bushing holder mounting bolt (A).

NOTE: During installation, install the mounting bolt after tightening the lower arm mounting 14 mm bolts to the specified torque value.

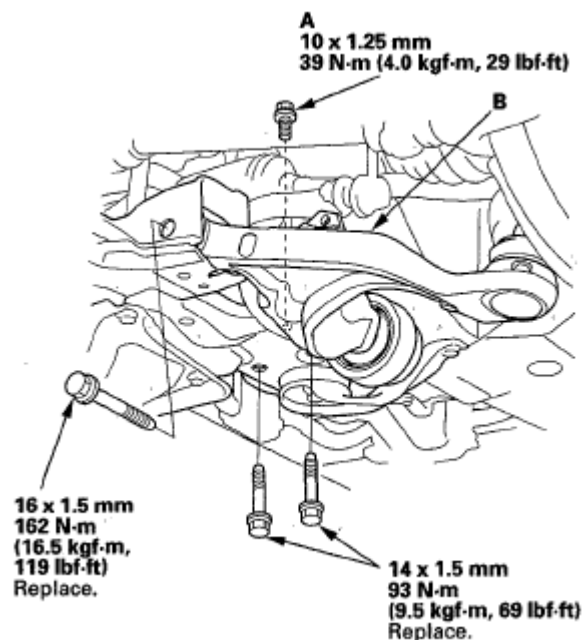


Fig. 14: Identifying Stabilizer Bar Bushing Holder Mounting Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the lower arm mounting 14 mm and 16 mm bolts, then remove the lower arm (B) from the front suspension subframe.

NOTE: Use the new mounting bolts during reassembly.

8. Remove the lower arm stops (A).

NOTE: During installation, align the slot (B) on the lower arm stop with the lug portion (C) on the front side of lower arm bushing.

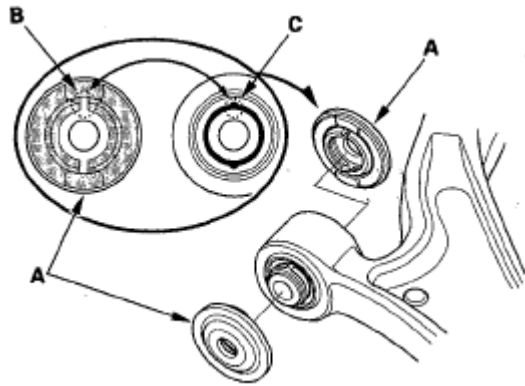


Fig. 15: Identifying Lower Arm Stops

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the lower arm in the reverse order of removal, and note these items:
 - First install all the components, and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
 - Be careful not to damage the ball joint boot when connecting the knuckle.
 - Before connecting the lower arm ball joint to the knuckle, degrease the threaded section and tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section and mating surfaces of the castle nut.
 - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.
 - Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).
10. With active damper system/Left side: Do the headlight initial position learning procedure (see **HEADLIGHT INITIAL POSITION LEARNING PROCEDURE**).

BUSHING REPLACEMENT

1. Remove the self-locking nut (A), then remove the rear side of lower arm bushing with bracket (B).

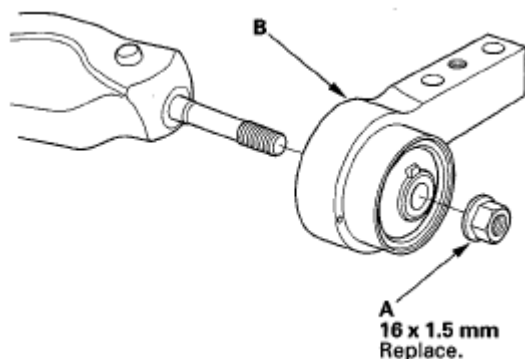


Fig. 16: Identifying Lower Arm Bushing With Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Align the angle of the lower arm center line (A) and the under edge line (B) of the bushing bracket.

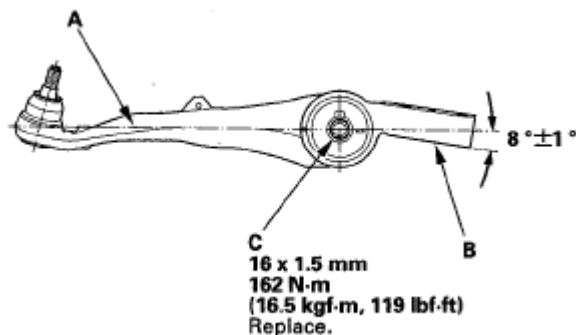


Fig. 17: Identifying Angle Of Lower Arm Center Line And Under Edge Line With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install a new self-locking nut (C), then tighten the nut to the specified torque value.

STABILIZER LINK REMOVAL/INSTALLATION

- Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
- Remove the front wheel.
- Remove the flange nuts (A) while holding the respective joint pin (B) with a hex wrench (C), then remove the stabilizer link (D).

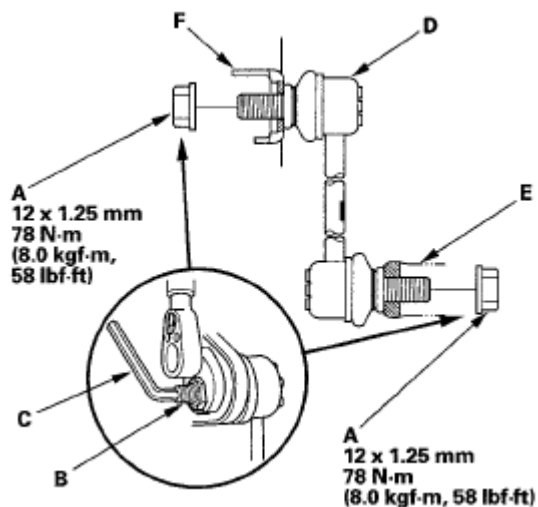


Fig. 18: Identifying Respective Joint Pin With Hex Wrench With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the stabilizer link on the stabilizer bar (E) and the damper (F) with the joint pins set at the center of their range of movement.
5. Install the flange nuts, and lightly tighten them.
6. Place a jack under the lower arm, and raise the suspension to load it with the vehicle's weight.
7. Tighten the flange nuts to the specified torque value while holding the respective joint pin with a hex wrench.
8. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.
9. Test-drive the vehicle.

STABILIZER BAR REPLACEMENT

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Disconnect both stabilizer links from the stabilizer bar (see **STABILIZER LINK REMOVAL/INSTALLATION**).
4. Remove the flange bolts (A) and the bushing holders (B), then remove the bushings (C) and the stabilizer bar (D) from the front suspension subframe (E).

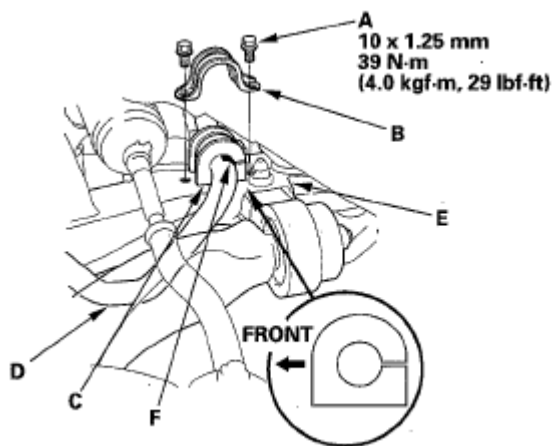


Fig. 19: Identifying Bushings And Stabilizer Bar With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the stabilizer bar in the reverse order of removal, and note these items:
 - Note the right and left direction of the stabilizer bar.
 - Align the paint marks (F) on the stabilizer bar with the sides of the bushings.
 - Note the direction of installation for the bushings.
 - Refer to the **STABILIZER LINK REMOVAL/INSTALLATION** to connect the stabilizer bar to the links .
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.

- Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

DAMPER/SPRING REMOVAL AND INSTALLATION

NOTE: Except where called out, the illustrations show without active damper system.

REMOVAL

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the front wheel.
3. With active damper system: Disconnect the damper coil connector (A), and remove the flange bolt (B), and the harness clip (C).

NOTE: Be careful not to damage or contaminate the damper coil connector.

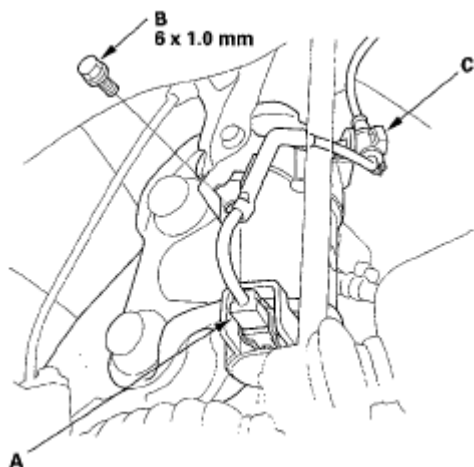


Fig. 20: Identifying Damper Coil Connector With Flange Bolt And Harness Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the wheel speed sensor harness (A) and the brake hose (B) from the damper (C). Do not disconnect the wheel speed sensor connector.

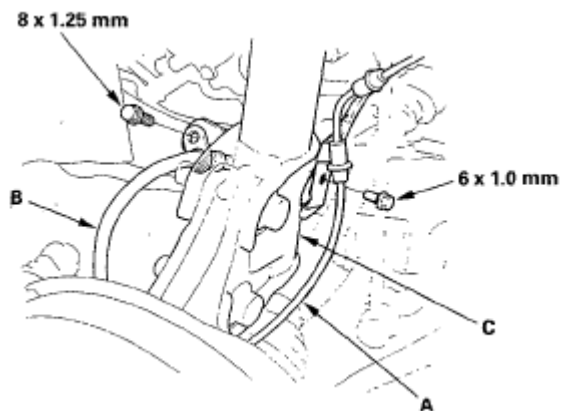


Fig. 21: Identifying Wheel Speed Sensor Harness And Brake Hose From Damper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange nut (A), while holding the joint pin (B) with a hex wrench (C), and disconnect the stabilizer link (D) from the damper.

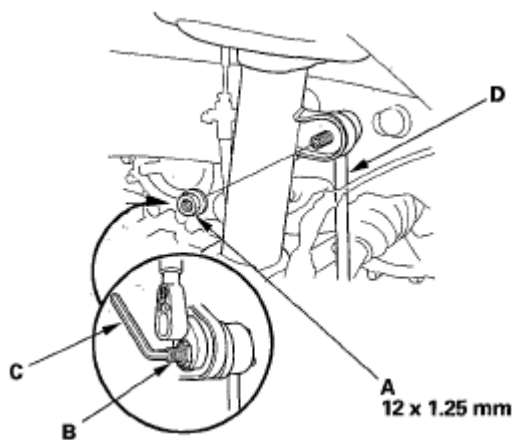


Fig. 22: Identifying Flange Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the damper pinch bolts (A) and flange nuts (B) from the damper.

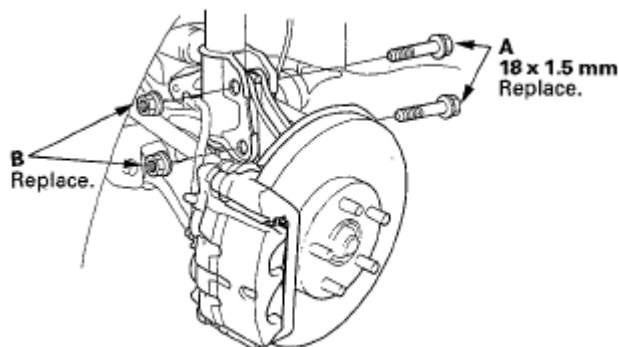


Fig. 23: Identifying Damper Pinch Bolts And Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the cover (A) and the service caps (B).

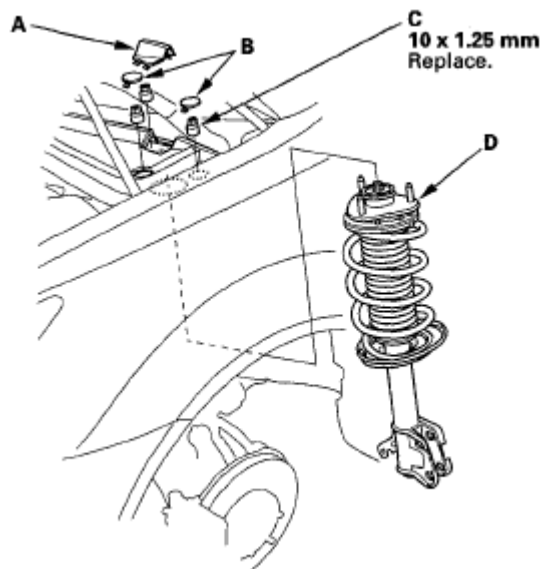


Fig. 24: Identifying Cover And Service Caps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the flange nuts (C) from the top of the damper.
9. Remove the damper assembly (D).

NOTE:

- The damper springs are different, left and right. Mark the springs L and R before you continue.
- Be careful not to damage the body.

INSTALLATION

1. Install the damper assembly (A) on to the frame. Note the direction of the damper mounting base as shown.

NOTE:

Be careful not to damage the body.

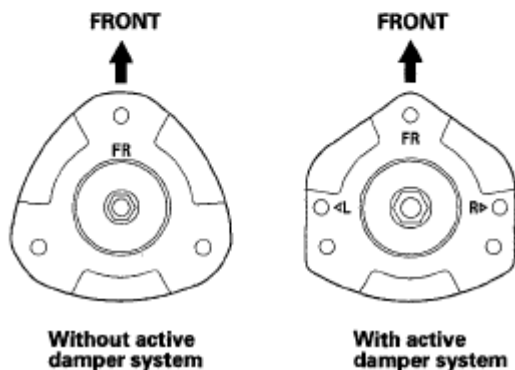
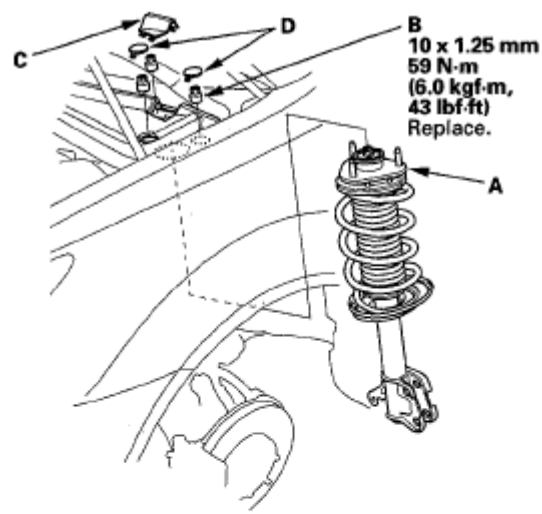


Fig. 25: Identifying Damper Assembly On Frame With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Loosely install the new flange nuts (B) to the top of the damper.

NOTE: Install the cover (C) and the service caps (D) after tightening the flange nuts to the specified torque value.

- Loosely install new damper pinch bolts (A) and new flange nuts (B) to the damper (C).

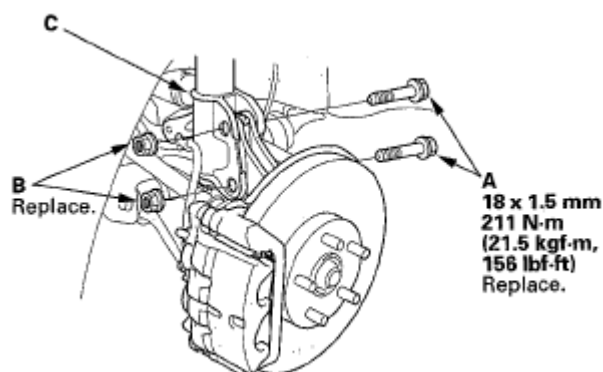


Fig. 26: Identifying Damper Pinch Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect the stabilizer link (A) to the damper (B), and loosely install a new flange nut (C).

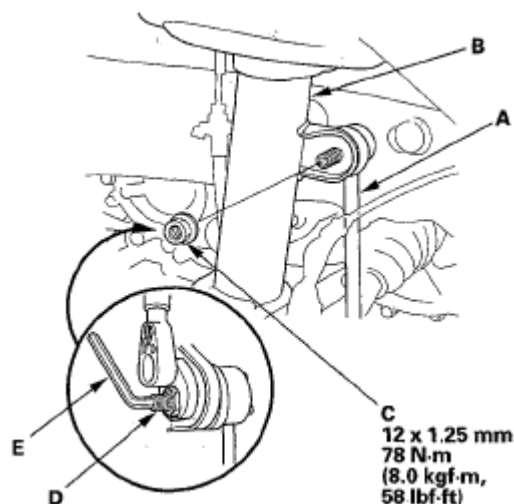


Fig. 27: Identifying Stabilizer Link To Damper With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Raise the front suspension with a floor jack to load the suspension with the vehicle's weight.
6. Tighten the flange nut to the specified torque value, while holding the joint pin (D) with the hex wrench (E)
7. Tighten the flange nuts on top of the damper to the specified torque value.
8. Tighten the damper pinch bolts and the flange nuts to the specified torque value.
9. Install the cover and the service caps.
10. Install the wheel speed sensor harness (A) and the brake hose (B) to the damper (C).

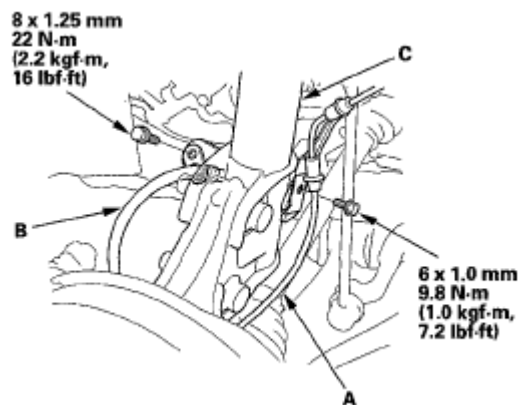


Fig. 28: Identifying Wheel Speed Sensor Harness And Brake Hose With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. With active damper system: Connect the damper coil connector (A), and install the flange bolt (B), and the harness clip (C).

NOTE: Be careful not to damage or contaminate the damper coil connector.

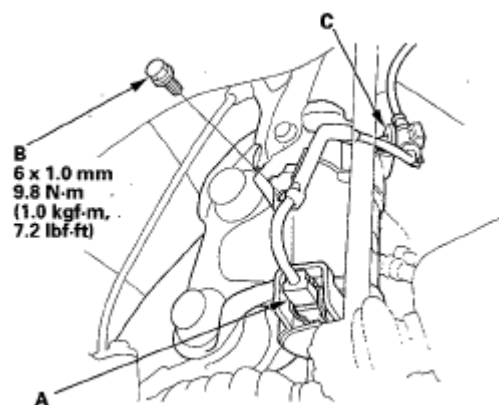


Fig. 29: Identifying Damper Coil Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.
13. With active damper system: Start the engine, then make sure there are no active damper system DTCs with the HDS (see **INTERMITTENT FAILURES**).
14. With active damper system: Do the DAMPER FORCE OPERATION in the ACTIVE DAMPER SYSTEM INSPECTION MENU with the HDS, then make sure the all four damper units function normally.
15. Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

DAMPER/SPRING DISASSEMBLY, INSPECTION, AND REASSEMBLY

EXPLODED VIEW-WITHOUT ACTIVE DAMPER SYSTEM

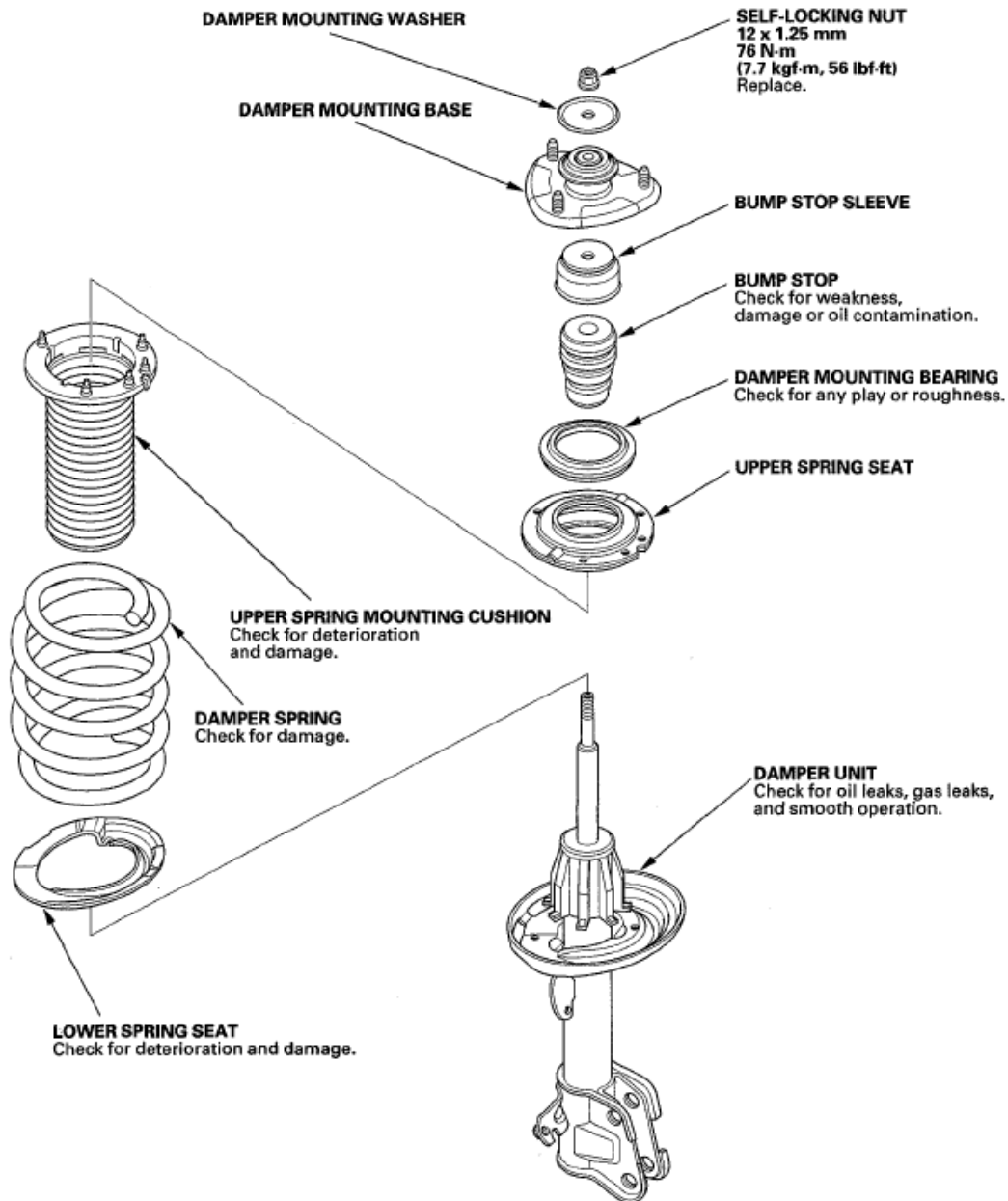


Fig. 30: Exploded View Of Damper/Spring (Without Active Damper System) With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXPLODED VIEW-WITH ACTIVE DAMPER SYSTEM

2008 Acura MDX

2007-09 SUSPENSION Front Suspension - MDX

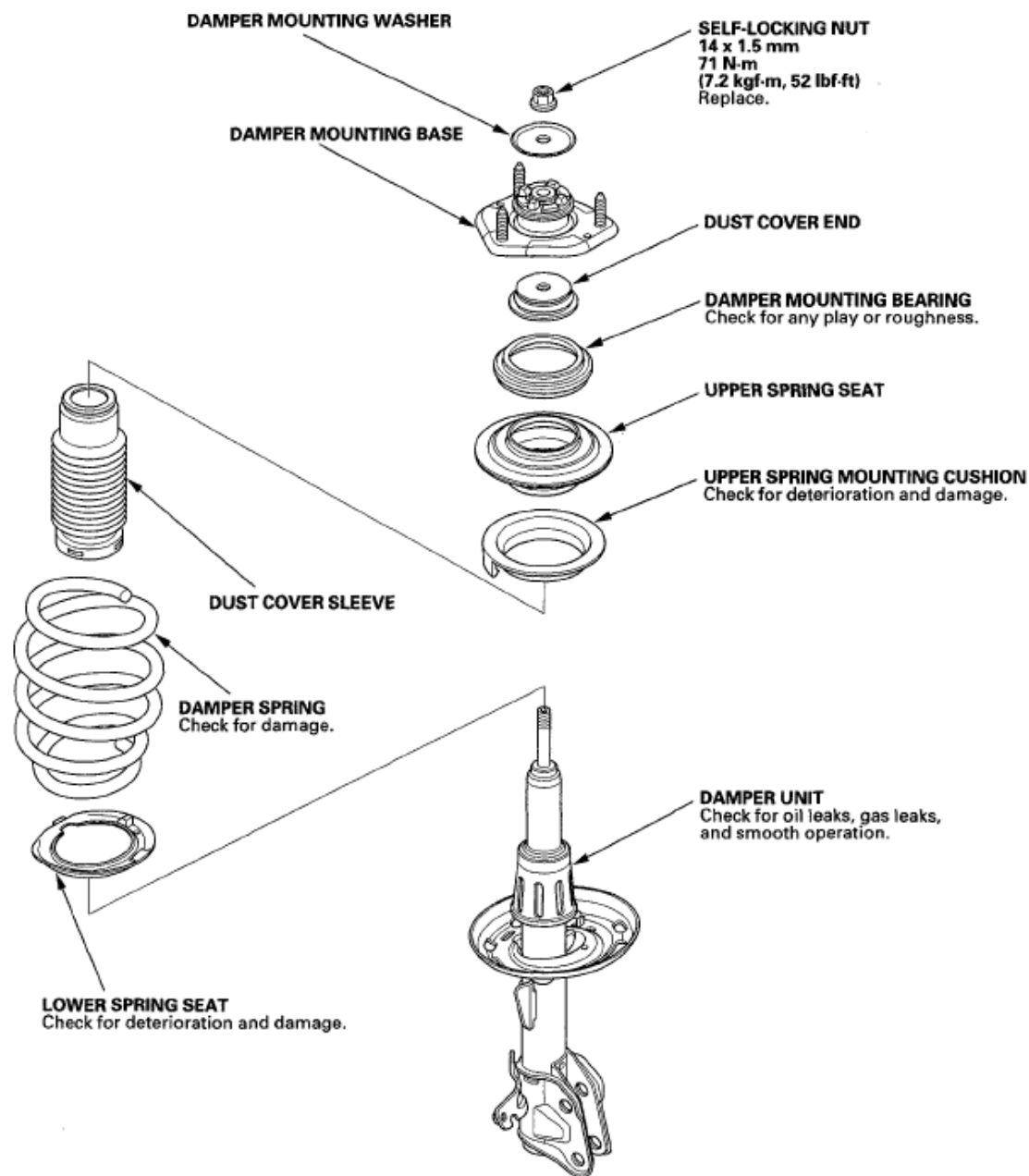


Fig. 31: Exploded View Of Damper/Spring (With Active Damper System) With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- When compressing the damper spring, use a commercially available strut spring compressor (Branick MST-580A or Model 7200, or equivalent) according to the manufacturer's instructions.
- Except where called out, the illustrations are shown without active damper system.

DISASSEMBLY

1. Compress the damper spring, then remove the self-locking nut (A) while holding the damper shaft with a hex wrench or TORX wrench (B). Do not compress the damper spring more than necessary to remove the nut.

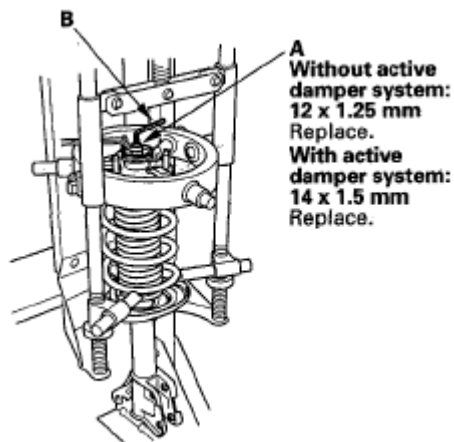


Fig. 32: Identifying Self-Locking Nut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Release the pressure from the strut spring compressor, then disassemble the damper as shown in the Exploded View.

INSPECTION

1. Reassemble the damper mounting base, the damper mounting washer, and the self-locking nut.
2. Compress the damper assembly by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.

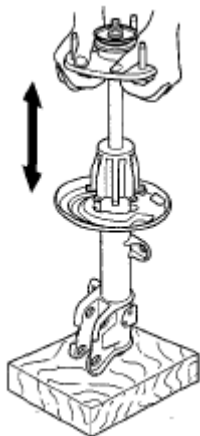


Fig. 33: Compressing Damper Assembly By Hand

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for oil leaks, abnormal noises, and binding during these tests.

REASSEMBLY

1. Install the damper spring (A) on the upper spring mounting cushion (B), then align the upper end (C) of the damper spring with the cushion stop (D) or the cushion end (E).

Without active damper system

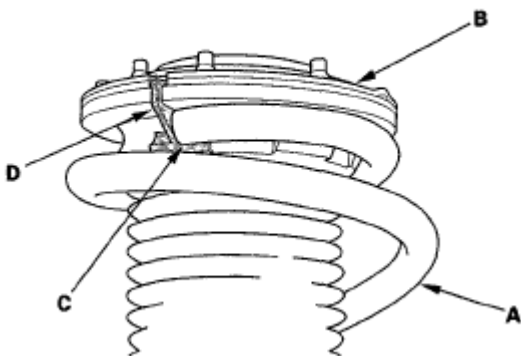


Fig. 34: Identifying Damper Spring On Upper Spring Mounting Cushion (Without Active Damper Spring System)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

With active damper system

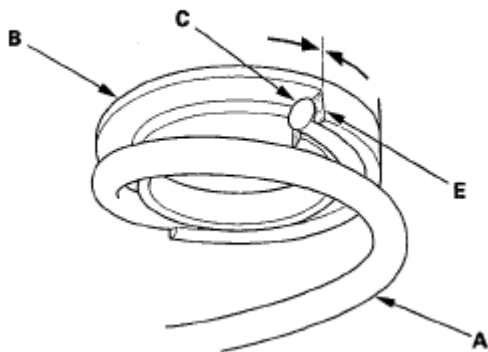


Fig. 35: Identifying Damper Spring On Upper Spring Mounting Cushion (With Active Damper Spring System)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Compress the damper spring.
3. Install the tab (A) on the lower spring seat (B) in the locating hole (C) on the damper unit (D).

Without active damper system

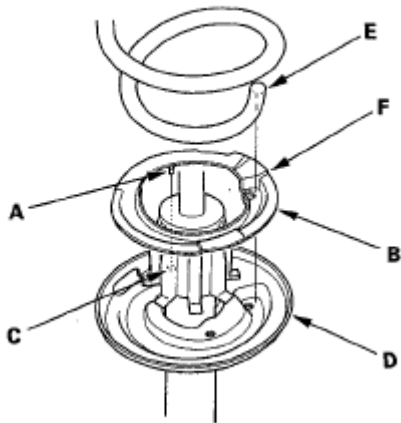


Fig. 36: Identifying Tab On Lower Spring Seat In Locating Hole (Without Active Damper Spring System)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

With active damper system

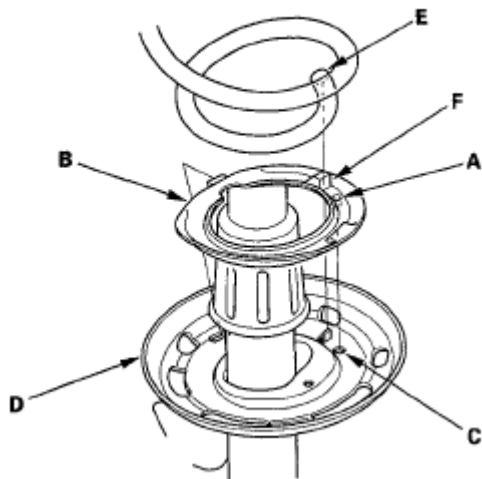


Fig. 37: Identifying Tab On Lower Spring Seat In Locating Hole (With Active Damper Spring System)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Align the lower end (E) of the damper spring with the stepped part (F) of the lower spring seat.
5. Install all the parts except the damper mounting washer and self-locking nut onto the damper unit (A) by referring to the **EXPLODED VIEW**.

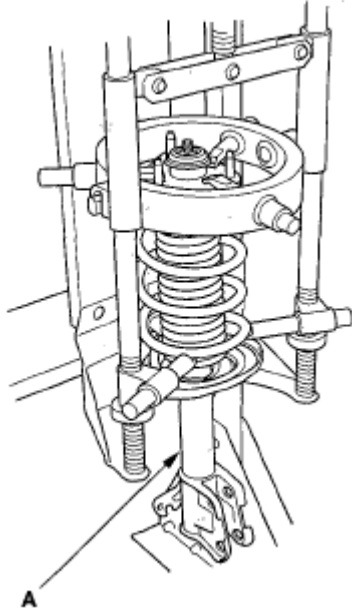
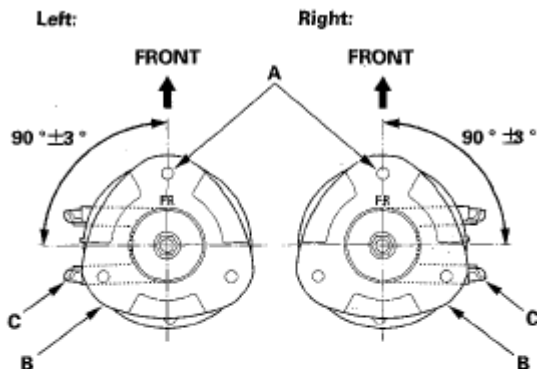


Fig. 38: Identifying Damper Unit

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Align the angle of the stud bolt (A) on the damper mounting base (B) and the damper bracket (C) as shown.

Without active damper system



With active damper system

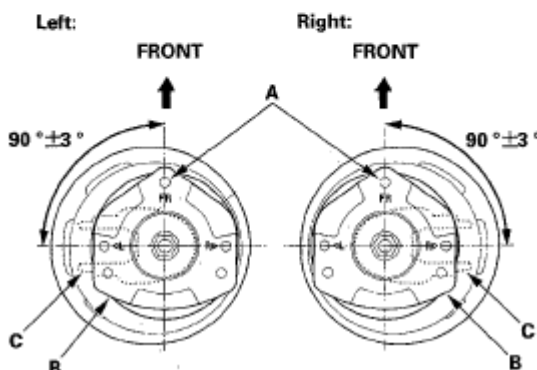


Fig. 39: Identifying Damper Mounting Base And Damper Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the damper mounting washer (A) and a new self-locking nut (B).

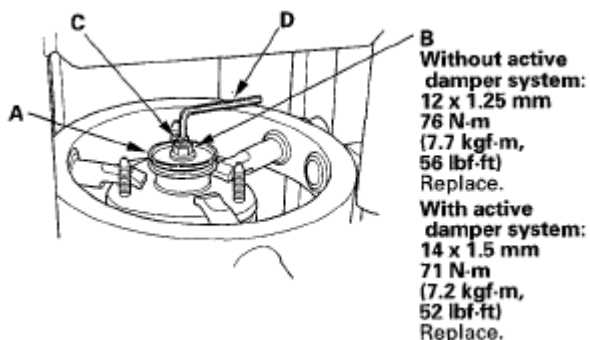


Fig. 40: Identifying Damper Mounting Washer And Self-Locking Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Hold the damper shaft (C) using a hex wrench or TORX wrench (D), and tighten the self-locking nut to the specified torque value.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

2007-09 ENGINE PERFORMANCE

Fuel and Emissions Systems - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07AAA-S0XA100	Fuel Sender Wrench	1
②	07AAJ-S6MA150	Fuel Pressure Gauge Attachment Set	1
③	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 in.Hg	1
④	07NAJ-P07010A	Pressure Gauge Adapter	1
⑤	07ZAJ-S5AA200	Oil Pressure Hose	1
⑥-1	07406-0020201	A/T Pressure Hose	1
⑥-2	07406-0070301	A/T Low Pressure Gauge W/Panel	1
⑥-3	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	1
⑥-4	07MAJ-PY40120	A/T Pressure Hose, Adapter	1
⑦	07406-004000B	Fuel Pressure Gauge	1

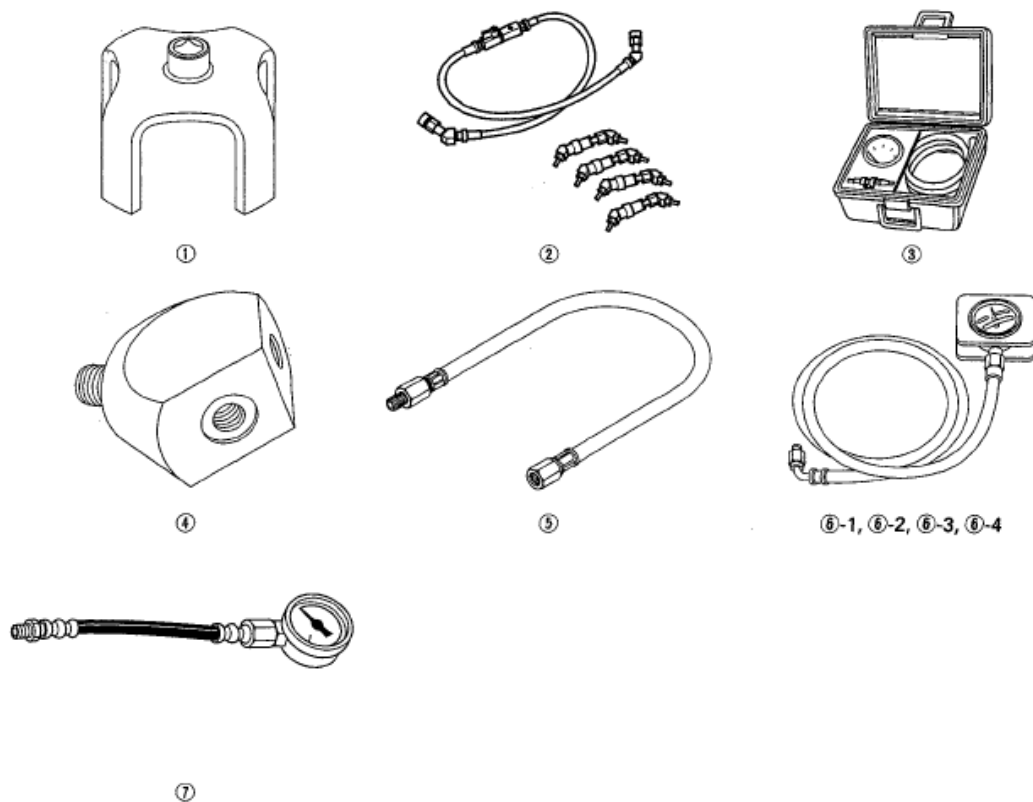


Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the

malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose pins at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

SERVICE INFORMATION

Some DTCs or symptoms can be caused by a combination of PCM software and specific driving habits. Periodically, new PCM software or new service procedures may become available. Always check on-line for the latest software or service information related to the DTCs or symptoms you are troubleshooting.

OPENS AND SHORTS

"Open" and "short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see HOW TO SET READINESS CODES).

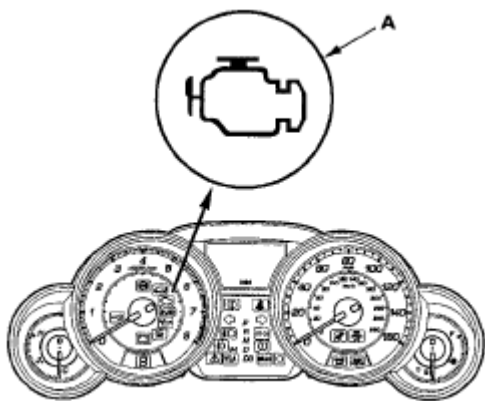


Fig. 2: Identifying Malfunction Indicator Lamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

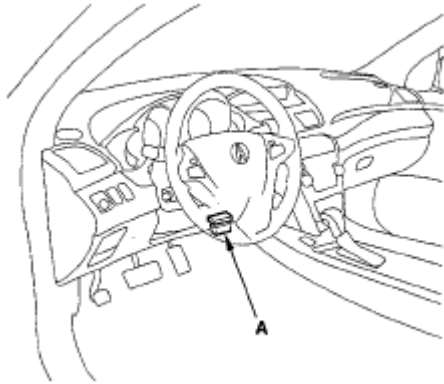


Fig. 3: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTCs troubleshooting, and begin the appropriate troubleshooting procedure.

NOTE:

- Freeze data indicates the engine conditions when the first system malfunction, misfire, or fuel trim malfunction that activated the MIL was detected.
- The HDS can read the DTCs, freeze data, on-board snapshot, current data, and other powertrain control module (PCM) data.
- For specific operations, refer to the user's manual that came with the HDS.

6. If no DTCs are found, go to MIL circuit troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the code, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced PCM.

HDS CLEAR COMMAND

The PCM stores various specific data to correct the system even if there is no electrical power such as when the

battery negative terminal is disconnected. Stored data based on failed parts should be cleared by using the "CLEAR COMMAND" of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, PCM reset, and crank (CKP) pattern clear. DTC clear command erases all stored DTC codes, freeze data, on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting.

The PCM reset command erases all stored DTC codes, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except crank (CKP) pattern. If the crank (CKP) pattern data in the PCM was cleared, you must do the crank (CKP) pattern learn procedure. The crank (CKP) pattern clear command erases only crank (CKP) pattern data. This command is for repair of a misfire or the CKP sensor.

SCAN TOOL CLEAR COMMAND

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the PCM, and it clears all commands at the same time (crank (CKP) pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**); crank (CKP) pattern learn procedure; Test-drive to set readiness codes to complete (see **HOW TO SET READINESS CODES**).

DTC CLEAR

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

PCM RESET

1. Reset the PCM with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.
5. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

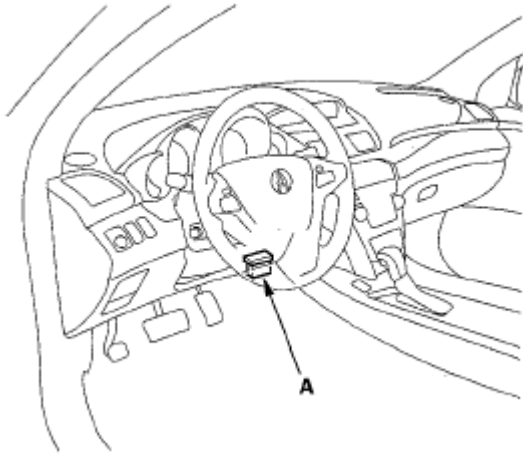


Fig. 4: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm down to 1,000 rpm with the transmission in D position.
3. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 5,000 rpm down to 3,000 rpm with the transmission in D position.
4. Repeat step 2 and 3 several times.
5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II), and wait 30 seconds.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the PCM with the HDS.
2. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch OFF.
4. Disconnect the HDS from the DLC.

NOTE: **The PCM is part of the immobilizer system. If you replace the PCM, it will have a different immobilizer code. In order for the engine to start, you**

must rewrite the immobilizer code with the HDS (IMMOBILIZER SYSTEM--MDX article).

HOW TO TROUBLESHOOT CIRCUITS AT THE PCM CONNECTORS

NOTE:

- The PCM overwrites data and monitors the EVAP system for up to about 40 minutes after the ignition switch is turned OFF. Jumping the SCS line after turning the ignition switch OFF cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.
- PCM connectors A, B, and C have symbols (A= $\square$ B= Δ , C= $\circ$) embossed on them for identification.

1. Jump the SCS line with the HDS.
2. Remove the bracket (D), then free the A/C discharge line (E) from the clip (F) and remove the A/C suction line mounting bracket bolt (G).

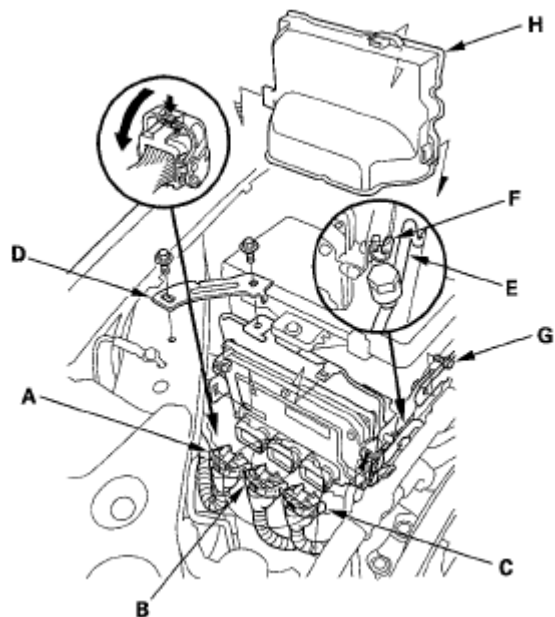


Fig. 5: Identifying A/C Discharge Line, Bracket And A/C Suction Line Mounting Bracket Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the cover (H), then disconnect the PCM connector A, B, and C.
4. When diagnosis/troubleshooting is made at the PCM connector, use the measurement hole (A) above the terminal you need to check.

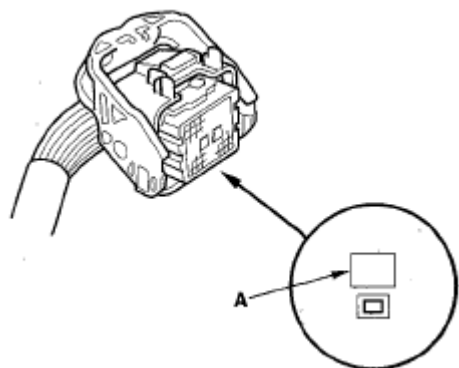


Fig. 6: Identifying Measurement Hole

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect one side of the patch cord (A) terminals to a commercially available digital multimeter (B), and connect the other side of the patch cord terminals to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (C).

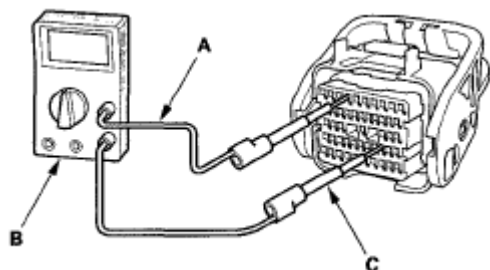


Fig. 7: Connecting Side Of Patch Cord Terminals To Digital Multimeter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Gently contact the pin probe (male) at the terminal test port from the terminal side. Do not force the tips into the terminals.

NOTE:

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

SUBSTITUTING THE PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester

- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE: **Use this procedure when you need to substitute a known-good PCM during troubleshooting procedures.**

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

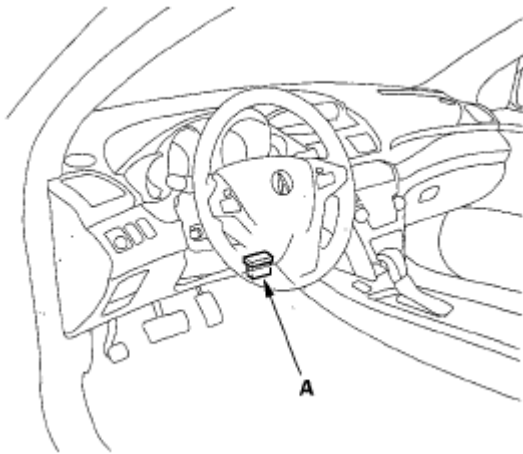


Fig. 8: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from DLC circuit troubleshooting, skip step 4 to 5, then clean the throttle body after substituting the PCM (see **THROTTLE BODY CLEANING**).
4. USA, Canada models: Select the INSPECTION MENU with the HDS.
5. USA, Canada models: Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

NOTE: **USA, Canada models: If the TP POSITION CHECK indicates FAILED, continue this procedure.**

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Remove the bracket (D), then free the A/C discharge line (E) from the clip (F) and remove the A/C suction line mounting bracket bolt (G).

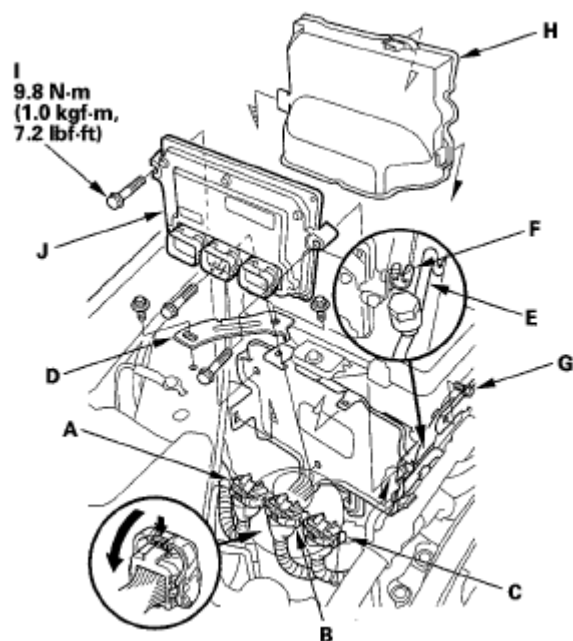


Fig. 9: Identifying A/C Discharge Line, Clip, Bracket And A/C Suction Line Mounting Bracket Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the cover (H), then disconnect the PCM connectors A, B, and C.

NOTE: PCM connectors A, B, and C have symbols (A= $\square$, B= Δ , C= $\circ$) embossed on them for identification.

10. Remove the bolts (I), then remove the PCM (J).
11. Install the parts in the reverse order of removal.
12. Open the SCS with the HDS.
13. Turn the ignition switch ON (II).

NOTE: USA, Canada models: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.

14. USA, Canada models: Manually input the VIN to the PCM with the HDS.
15. Update the PCM if it does not have the latest software.
16. Select the IMMOBI SYSTEM with the HDS.
17. Enter the immobilizer code with the PCM replacement procedure in the HDS; it allows you to start the engine.
18. Reset the PCM with the HDS.
19. USA, Canada models: If the TP POSITION CHECK failed in step 6, clean the throttle body (see

THROTTLE BODY CLEANING).

20. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
21. Do the CKP pattern learn procedure.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- **PASSED:** The on board diagnosis is successfully finished.
- **FAILED:** The on board diagnosis has finished but failed.
- **EXECUTING:** The vehicle is in enable criteria conditions for the DTC and the on board diagnosis is running.
- **NOT COMPLETED:** The on board diagnosis was running but is out of the enable conditions for the DTC.
- **OUT OF CONDITION:** The vehicle has stayed out of the enable conditions for the DTC.

DTC TROUBLESHOOTING INDEX

DTC TROUBLESHOOTING CHART

DTC (MIL indication (2))	Two Drive Cycle Detection	Detection Item	MIL
<u>P0101 (50)</u>	o	Mass Air Flow (MAF) Sensor Range/Performance Problem	ON
<u>P0102 (50)</u>	--	Mass Air Flow (MAF) Sensor Circuit Low Voltage	ON
<u>P0103 (50)</u>	--	Mass Air Flow (MAF) Sensor Circuit High Voltage	ON
<u>P0107 (3)</u>	--	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage	ON
<u>P0108 (3)</u>	--	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage	ON
<u>P0111 (10)</u>	o	Intake Air Temperature (IAT) Sensor Circuit Range/Performance Problem	ON
<u>P0112 (10)</u>	--	Intake Air Temperature (IAT) Sensor Circuit Low Voltage	ON
<u>P0113 (10)</u>	--	Intake Air Temperature (IAT) Sensor Circuit High Voltage	ON
<u>P0116 (86)</u>	o	Engine Coolant Temperature (ECT) Sensor 1	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		Range/Performance Problem	
<u>P0117 (6)</u>	--	Engine Coolant Temperature (ECT) Sensor 1 Circuit Low Voltage	ON
<u>P0118 (6)</u>	--	Engine Coolant Temperature (ECT) Sensor 1 Circuit High Voltage	ON
<u>P0122 (7)</u>	--	Throttle Position (TP) Sensor A Circuit Low Voltage	ON
<u>P0123 (7)</u>	--	Throttle Position (TP) Sensor A Circuit High Voltage	ON
<u>P0125 (86)</u>	o	Engine Coolant Temperature (ECT) Sensor 1 Malfunction/Slow Response	ON
<u>P0128 (87)</u>	o	Cooling System Malfunction	ON
<u>P0133 (157)</u>	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Response Malfunction/Slow Response	ON
<u>P0134 (151)</u>	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater System Malfunction	ON
<u>P0135 (151)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction	ON
<u>P0137 (161)</u>	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit Low Voltage	ON
<u>P0138 (161)</u>	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Circuit High Voltage	ON
<u>P0139 (161)</u>	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Slow Response	ON
<u>P0141 (163)</u>	--	Rear Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 1, Sensor 2)) Heater Circuit Malfunction	ON
<u>P0153 (158)</u>	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Response Malfunction/Slow Response	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

<u>P0154 (152)</u>	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater System Malfunction	ON
<u>P0155 (152)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction	ON
<u>P0157 (162)</u>	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit Low Voltage	ON
<u>P0158 (162)</u>	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Circuit High Voltage	ON
<u>P0159 (162)</u>	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Slow Response	ON
<u>P0161 (164)</u>	--	Front Secondary Heated Oxygen Sensor (Secondary HO2S (Bank 2, Sensor 2)) Heater Circuit Malfunction	ON
<u>P0171 (153)</u>	o	Rear Bank (Bank 1) Fuel System Too Lean	ON
<u>P0172 (153)</u>	o	Rear Bank (Bank 1) Fuel System Too Rich	ON
<u>P0174 (154)</u>	o	Front Bank (Bank 2) Fuel System Too Lean	ON
<u>P0175 (154)</u>	o	Front Bank (Bank 2) Fuel System Too Rich	ON
<u>P0222 (7)</u>	--	Throttle Position (TP) Sensor B Circuit Low Voltage	ON
<u>P0223 (7)</u>	--	Throttle Position (TP) Sensor B Circuit High Voltage	ON
<u>P0300 (77)</u> and any combination of following <u>P0301 (71)</u> <u>P0302 (72)</u> <u>P0303 (73)</u> <u>P0304 (74)</u> <u>P0305 (75)</u> <u>P0306 (76)</u>	o	Random Misfire Detected	ON
<u>P0301 (71)</u>	o	No. 1 Cylinder Misfire Detected	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

<u>P0302 (72)</u>	o	No. 2 Cylinder Misfire Detected	ON
<u>P0303 (73)</u>	o	No. 3 Cylinder Misfire Detected	ON
<u>P0304 (74)</u>	o	No. 4 Cylinder Misfire Detected	ON
<u>P0305 (75)</u>	o	No. 5 Cylinder Misfire Detected	ON
<u>P0306 (76)</u>	o	No. 6 Cylinder Misfire Detected	ON
<u>P0325 (23)</u>	--	Knock Sensor Circuit Malfunction	ON
<u>P0335 (4)</u>	--	Crankshaft Position (CKP) Sensor A No Signal	ON
<u>P0339 (4)</u>	--	Crankshaft Position (CKP) Sensor A Intermittent Interruption	ON
<u>P0340 (9)</u>	--	Camshaft Position (CMP) Sensor No Signal	ON
<u>P0344 (9)</u>	--	Camshaft Position (CMP) Sensor Intermittent Interruption	ON
<u>P0385 (54)</u>	--	Crankshaft Position (CKP) Sensor B No Signal	ON
<u>P0389 (54)</u>	--	Crankshaft Position (CKP) Sensor B Intermittent Interruption	ON
<u>P0401 (80)</u>	o	Exhaust Gas Recirculation (EGR) Insufficient Flow	ON
<u>P0404 (12)</u>	o	Exhaust Gas Recirculation (EGR) Control Circuit Range/Performance Problem	ON
<u>P0406 (12)</u>	--	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit High Voltage	ON
<u>P0420 (165)</u>	o	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1)	ON
<u>P0430 (166)</u>	o	Front Bank Catalyst System Efficiency Below Threshold (Bank 2)	ON
<u>P0443 (92)</u>	--	Evaporative Emission (EVAP) Canister Purge Valve Circuit Malfunction	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

<u>P0451 (91)</u>	o	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON
<u>P0452 (91)</u>	o	Fuel Tank Pressure (FTP) Sensor Circuit Low Voltage	ON
<u>P0453 (91)</u>	o	Fuel Tank Pressure (FTP) Sensor Circuit High Voltage	ON
<u>P0455 (90)</u>	o	Evaporative Emission (EVAP) System Very Large Leak Detected	ON
<u>P0456 (90)</u>	o	Evaporative Emission (EVAP) System Very Small Leak Detected	ON
<u>P0457 (90)</u>	--	Evaporative Emission (EVAP) System Leak Detected/Fuel Fill Cap Loose or Missing	OFF
<u>P0461 (121)</u>	--	Fuel Level Sensor (Fuel Gauge Sending Unit) Range/Performance Problem	OFF
<u>P0462 (121)</u>	--	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF
<u>P0463 (121)</u>	--	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF
<u>P0496 (92)</u>	o	Evaporative Emission (EVAP) System High Purge Flow	ON
<u>P0497 (90)</u>	o	Evaporative Emission (EVAP) System Low Purge Flow	ON
<u>P0498 (117)</u>	--	Evaporative Emission (EVAP) Canister Vent Shut Valve Control Circuit Low Voltage	ON
<u>P0499 (117)</u>	--	Evaporative Emission (EVAP) Canister Vent Shut Valve Control Circuit High Voltage	ON
<u>P0506 (14)</u>	o	Idle Control System RPM Lower than Expected	ON
<u>P0507 (14)</u>	o	Idle Control System RPM Higher than Expected	ON
<u>P050A (167)</u>	o	Cold Start Idle Air Control System Performance Problem	ON
<u>P050B (167)</u>	o	Cold Start Ignition Timing Performance Problem	ON
<u>P0562 (34)</u>	--	Charging System Low Voltage	OFF

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

<u>P0563 (34)</u>	--	Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	OFF
<u>P0602 (196)</u>	--	Powertrain Control Module (PCM) Programming Error	ON
<u>P060A (131)</u>	--	Powertrain Control Module (PCM) (A/T System) Internal Control Module Malfunction	ON
<u>P0615 (198)</u>	--	Starter Cut Relay STRLD Circuit Malfunction	OFF
<u>P0627 (169)</u>	--	Fuel Pump Control Module System Malfunction	ON
<u>P062F (131)</u>	--	Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error	ON
<u>P0630 (139)</u>	--	VIN Not Programmed or Mismatch	ON
<u>P0685 (135)</u>	o	Powertrain Control Module (PCM) Power Control Circuit/Internal Circuit Malfunction	ON
<u>P1077 (106)</u>	o	Intake Manifold Tuning (IMT) Valve Stuck in High RPM Position	ON
<u>P1078 (106)</u>	o	Intake Manifold Tuning (IMT) Valve Stuck in Low RPM Position	ON
<u>P1109 (13)</u>	--	Barometric Pressure (BARO) Sensor Circuit Out of Range High	ON
<u>P1116 (86)</u>	o	Engine Coolant Temperature (ECT) Sensor 1 Range/Performance Problem	ON
<u>P1128 (5)</u>	o	Manifold Absolute Pressure (MAP) Sensor Signal Lower Than Expected	ON
<u>P1129 (5)</u>	o	Manifold Absolute Pressure (MAP) Sensor Signal Higher Than Expected	ON
<u>P1172 (157)</u>	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Circuit Out of Range High	ON
<u>P1174 (158)</u>	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1)	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		Circuit Out of Range High	
<u>P1297 (20)</u>	--	Electrical Load Detector (ELD) Circuit Low Voltage	OFF
<u>P1298 (20)</u>	--	Electrical Load Detector (ELD) Circuit High Voltage	OFF
<u>P1454 (91)</u>	0	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON
<u>P145C (90)</u>	0	Evaporative Emission (EVAP) System Purge Flow Malfunction (Vacuum Line)	ON
<u>P1549 (34)</u>	--	Charging System High Voltage	OFF
<u>P1658 (40)</u>	--	Electronic Throttle Control System (ETCS) Control Relay ON Malfunction	ON
<u>P1659 (40)</u>	--	Electronic Throttle Control System (ETCS) Control Relay OFF Malfunction	ON
<u>P1683 (40)</u>	--	Throttle Valve Default Position Spring Performance Problem	ON
<u>P1684 (40)</u>	--	Throttle Valve Return Spring Performance Problem	ON
<u>P16BB (116)</u>	--	Alternator B Terminal Circuit Low Voltage	OFF
<u>P16BC (116)</u>	--	Alternator FR Terminal Circuit/IGP Circuit Low Voltage	OFF
<u>P16BD (198)</u>	--	Starter Cut Relay 2 Malfunction	OFF
<u>P16BE (198)</u>	--	Starter Cut Relay 1 Malfunction	OFF
<u>P16BF (198)</u>	--	Starter Cut Relay STRLY Circuit Malfunction	OFF
<u>P2101 (40)</u>	--	Electronic Throttle Control System (ETCS) Malfunction	ON
<u>P2118 (40)</u>	--	Throttle Actuator Current Range/Performance Problem	ON
<u>P2122 (37)</u>	--	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low Voltage	ON
<u>P2123 (37)</u>	--	Accelerator Pedal Position	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		(APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High Voltage	
<u>P2127 (37)</u>	--	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit Low Voltage	ON
<u>P2128 (37)</u>	--	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit High Voltage	ON
<u>P2135 (7)</u>	--	Throttle Position (TP) Sensor A/B Voltage Incorrect Correlation	ON
<u>P2138 (37)</u>	--	Accelerator Pedal Position (APP) Sensor A/B (Throttle Position (TP) Sensor D/E) Incorrect Voltage Correlation	ON
<u>P2176 (40)</u>	--	Throttle Actuator Control System Idle Position Not Learned	ON
<u>P2183 (192)</u>	o	Engine Coolant Temperature (ECT) Sensor 2 Range/Performance Problem	ON
<u>P2184 (192)</u>	--	Engine Coolant Temperature (ECT) Sensor 2 Circuit Low Voltage	ON
<u>P2185 (192)</u>	--	Engine Coolant Temperature (ECT) Sensor 2 Circuit High Voltage	ON
<u>P2195 (155)</u>	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Signal Stuck Lean	ON
<u>P2197 (156)</u>	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Signal Stuck Lean	ON
<u>P2227 (13)</u>	o	Barometric Pressure (BARO) Sensor Range/Performance Problem	ON
<u>P2228 (13)</u>	--	Barometric Pressure (BARO) Sensor Circuit Low Voltage	ON
<u>P2229 (13)</u>	--	Barometric Pressure (BARO) Sensor Circuit High Voltage	ON
<u>P2237 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) IP	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		Circuit High Voltage	
<u>P2238 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1t Sensor 1) IP Circuit Low Voltage	ON
<u>P2240 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit High Voltage	ON
<u>P2241 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) IP Circuit Low Voltage	ON
<u>P2243 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Circuit High Voltage	ON
<u>P2245 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VCENT Circuit Low Voltage	ON
<u>P2247 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Circuit High Voltage	ON
<u>P2249 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage	ON
<u>P2251 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit High Voltage	ON
<u>P2252 (155)</u>	--	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) VS Circuit Low Voltage	ON
<u>P2254 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit High Voltage	ON
<u>P2255 (156)</u>	--	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) VS Circuit Low Voltage	ON
<u>P2270 (161)</u>	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 1, Sensor 2) Circuit Signal Stuck Lean	ON
<u>P2271 (161)</u>	o	Rear Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 1, Sensor 2) Circuit Signal Stuck Rich	ON
<u>P2272 (162)</u>	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 2, Sensor 2)	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		Circuit Signal Stuck Lean	
<u>P2273 (162)</u>	o	Front Secondary Heated Oxygen Sensor (Secondary HO2S) (Bank 2, Sensor 2) Circuit Signal Stuck Rich	ON
<u>P2279 (109)</u>	o	Intake Air System Leak	ON
<u>P2413 (12)</u>	o	Exhaust Gas Recirculation (EGR) System Malfunction	ON
<u>P2422 (117)</u>	o	Evaporative Emission (EVAP) Canister Vent Shut Valve Close Malfunction	ON
<u>P2610 (132)</u>	--	Powertrain Control Module (PCM) Internal Power Off Timer Performance Problem	ON
<u>P2646 (22)</u>	--	Rocker Arm Oil Pressure Switch Circuit Low Voltage	ON
<u>P2647 (22)</u>	--	Rocker Arm Oil Pressure Switch Circuit High Voltage	ON
<u>P2648 (21)</u>	--	Rocker Arm Oil Control Solenoid Circuit Low Voltage	ON
<u>P2649 (21)</u>	--	Rocker Arm Oil Control Solenoid Circuit High Voltage	ON
<u>P2A00 (157)</u>	o	Rear Air Fuel Ratio (A/F) Sensor (Bank 1, Sensor 1) Range/Performance Problem	ON
<u>P2A03 (158)</u>	o	Front Air Fuel Ratio (A/F) Sensor (Bank 2, Sensor 1) Range/Performance Problem	ON
<u>U0028 (126)</u>	--	F-CAN Malfunction (BUS-OFF (Powertrain Control Module (PCM)))	ON
<u>U0114 (126)</u>	--	F-CAN Malfunction (Powertrain Control Module (PCM)-SH-AWD Control Unit)	OFF
<u>U0122 (126)</u>	--	F-CAN Malfunction (Powertrain Control Module (PCM)-VSA Modulator-Control Unit)	OFF
<u>U0155 (126)</u>	--	F-CAN Malfunction (Powertrain Control Module (PCM)-Gauge Control Module)	ON
<u>U0300 (131)</u>	--	PGM-FI System and A/T System Program Version	ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

Mismatch

- (1) The above following DTCs are indicated when the PGM-FI system is selected in the HDS. Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the A/T system, and check for automatic transmission DTCs.
- (2) These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS.

SYMPTOM TROUBLESHOOTING INDEX

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Engine will not start (MIL works OK, no DTCs set)	1. Test the battery (see <u>BATTERY TEST</u>). 2. Test the starter (see <u>STARTER PERFORMANCE TEST</u>). 3. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>).	• Low compression • No ignition spark • Intake air leaks • Locked up engine • Broken timing belt • Contaminated fuel
Engine will not start (MIL comes on and stays on, or never comes on at all, no DTCs set)	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>).	• Low compression • No ignition spark • Intake air leaks • Locked up engine • Broken timing belt • Contaminated fuel • No power to PCM • No ground to PCM • Shorted reference voltage
MIL comes on and stays on, or never comes on at all, no DTCs set	Troubleshoot the MIL circuit (see <u>MIL CIRCUIT TROUBLESHOOTING</u>).	
Engine will not start (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system (see <u>SYSTEM CHECK</u>).	
Engine starts but stalls immediately (MIL works	Check the immobilizer system (see <u>SYSTEM</u>	• Jumped timing belt • Low compression

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

OK, no DTCs set, immobilizer indicator stays on or flashes)	<u>CHECK</u>).	• Intake air leaks • Contaminated fuel • Weak spark
Engine is hard to start (MIL works OK, no DTCs set)	1. Test the battery (see <u>BATTERY TEST</u>). 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Clean the throttle body (see <u>THROTTLE BODY CLEANING</u>).	• Low compression • Intake air leaks • Contaminated fuel • Weak spark
Cold fast idle too low (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see <u>PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Clean the throttle body (see <u>THROTTLE BODY CLEANING</u>).	• Incorrect valve adjustment • ECT sensor • Fuel contamination
Cold fast idle too high (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see <u>PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Do the throttle position learning check (see <u>THROTTLE BODY TEST</u>).	• Incorrect valve adjustment • Intake air leaks
Idle speed fluctuates (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see <u>PCM IDLE LEARN PROCEDURE</u>). 2. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 3. Do the carbon accumulation check (see <u>THROTTLE BODY TEST</u>). 4. Troubleshoot the A/C signal circuit (see <u>A/C SIGNAL CIRCUIT TROUBLESHOOTING</u>).	Intake air leaks
After warming up, idle speed is below specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see <u>ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING</u>). 2. Do the carbon accumulation check (see <u>THROTTLE BODY TEST</u>).	• Incorrect valve adjustment • Intake vacuum leaks
After warming up, idle speed is above specification without load (MIL works OK, no DTCs set)	1. Troubleshoot the alternator FR signal circuit (see <u>ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING</u>). 2. Inspect the APP sensor (see <u>APP SENSOR SIGNAL INSPECTION</u>). 3. Troubleshoot the power steering switch signal	Intake vacuum leaks

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

	circuit (see <u>PSP SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>).	
After warming up, idle speed drops when steering wheel is turning (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see <u>PCM IDLE LEARN PROCEDURE</u>). 2. Troubleshoot the PSP switch signal circuit (see <u>PSP SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>). 3. Do the carbon accumulation check (see <u>THROTTLE BODY TEST</u>).	Power steering system problems
Low power (MIL works OK, no DTCs set)	Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>).	• Low compression • Incorrect camshaft timing • Incorrect engine oil level • Restricted exhaust • Fuel contamination
Engine stalls (MIL works OK, no DTCs set)	1. Do the PCM idle learn procedure (see <u>PCM IDLE LEARN PROCEDURE</u>). 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Check the idle speed (see <u>IDLE SPEED INSPECTION</u>). 4. Troubleshoot the brake pedal position switch signal circuit (see <u>BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING</u>).	• Intake air leaks • Faulty harness and sensor connections • Fuel contamination
Difficult to refuel (MIL works OK, no DTCs set)	1. Check the fuel tank vapor control valve hose between the EVAP canister and the fuel tank. 2. Check the fuel tank vapor recirculation tube between the fuel filler pipe and the fuel tank. 3. Inspect the fuel filler neck for restrictions. 4. Replace the fuel tank (see <u>FUEL TANK REPLACEMENT</u>).	• Malfunctioning gas station filling nozzle. • Filler neck restriction • Fuel tank vapor control valve
Fuel overflows during refueling (No DTCs set)	1. Inspect the fuel filler neck for restrictions. 2. Replace the fuel tank (see <u>FUEL TANK REPLACEMENT</u>).	Malfunctioning gas station filling nozzle.
HDS does not communicate with the PCM or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>).	
Fuel cap warning message	Troubleshoot the fuel cap warning message system	

comes on and stays on (MIL works OK, no DTCs set)	(see <u>FUEL CAP WARNING MESSAGE SYSTEM TROUBLESHOOTING</u>).	
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SYSTEM DESCRIPTION

ELECTRONIC CONTROL SYSTEM

The functions of the fuel and emission control systems are managed by the powertrain control module (PCM).

Self-diagnosis

The PCM detects a signal failure from a sensor or from another control unit and stores a Temporary DTC or a DTC. Depending on the failure, a DTC is stored in either the first or the second drive cycle (for DTC P0457, the DTC is set in the beginning of the third drive cycle). When a DTC is stored, the PCM turns on the malfunction indicator lamp (MIL) by sending a signal to the gauge via F-CAN.

- **One Drive Cycle Detection Method**

When an abnormality occurs in the signal from a sensor or from another control unit, the PCM stores a DTC for the failure and turns on the MIL immediately.

- **Two Drive Cycle Detection Method**

When an abnormality occurs in the signal from a sensor or from another control unit in the first drive cycle, the PCM stores a Temporary DTC for the failure. The MIL does not come on at this time. If the failure continues in the second drive cycle, the PCM stores a DTC and turns on the MIL.

Fail-safe Function

When an abnormality occurs in the signal from a sensor or from another control unit, the PCM ignores that signal and substitutes a pre-programmed value that allows the engine to continue running. This causes a DTC to be stored and the MIL to come on.

MIL Bulb Check and Readiness Code Condition

When the ignition switch is turned ON (II), the PCM turns on the MIL via the F-CAN circuit for about 15 to 20 seconds to check the bulb condition. If any readiness codes are not set to complete, the MIL flashes five times. If all readiness codes are set to complete, the MIL goes off.

Self Shut Down (SSD) Mode

After the ignition switch is turned OFF, the PCM stays on (up to 40 minutes). If the PCM connector is disconnected during this time, the PCM may be damaged. To cancel this mode, disconnect the negative cable from the battery or jump the SCS line with the HDS after the ignition switch is turned OFF.

PCM Electrical Connections

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

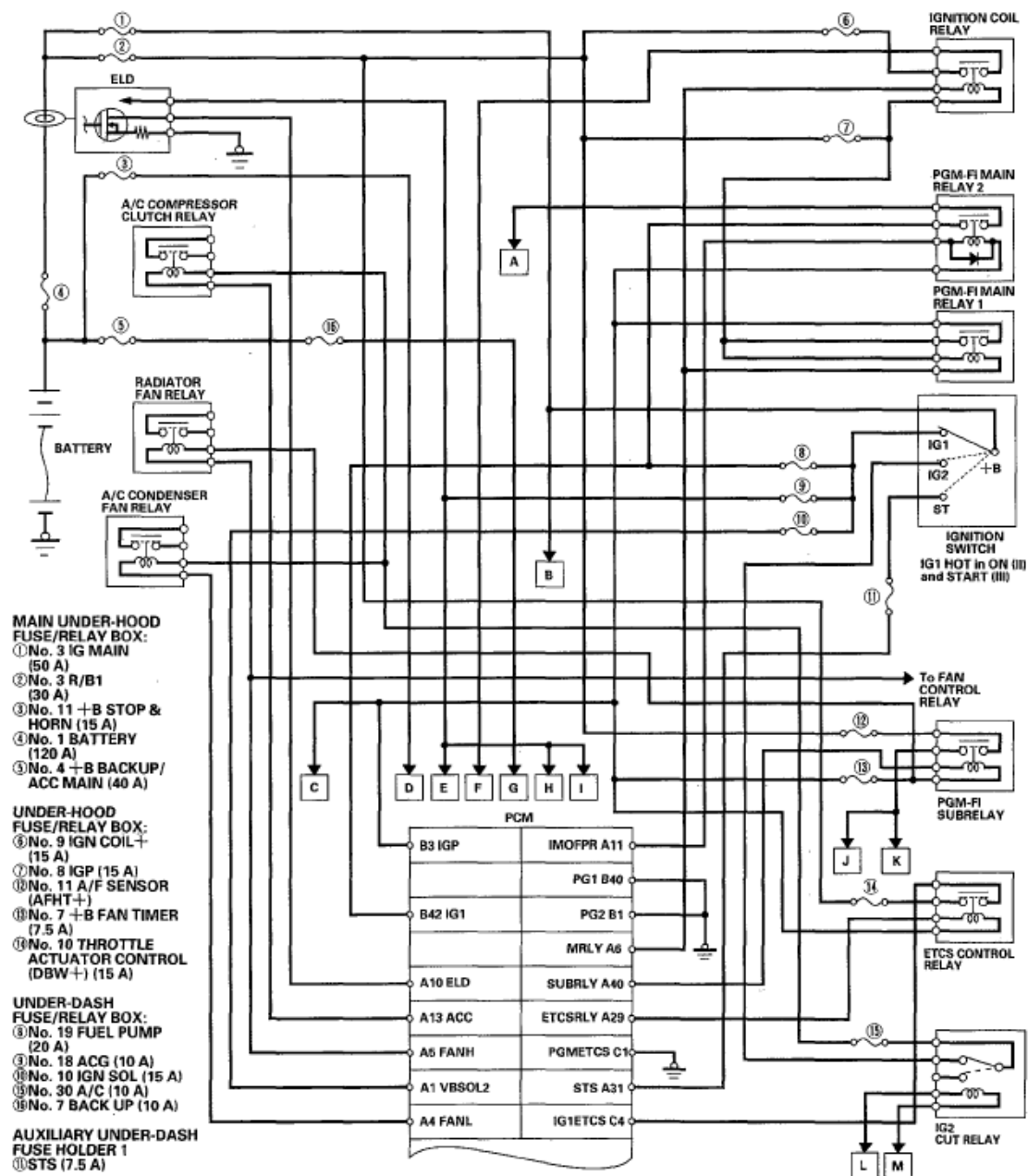


Fig. 10: PCM Electrical Connections - Wiring Diagram (1 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

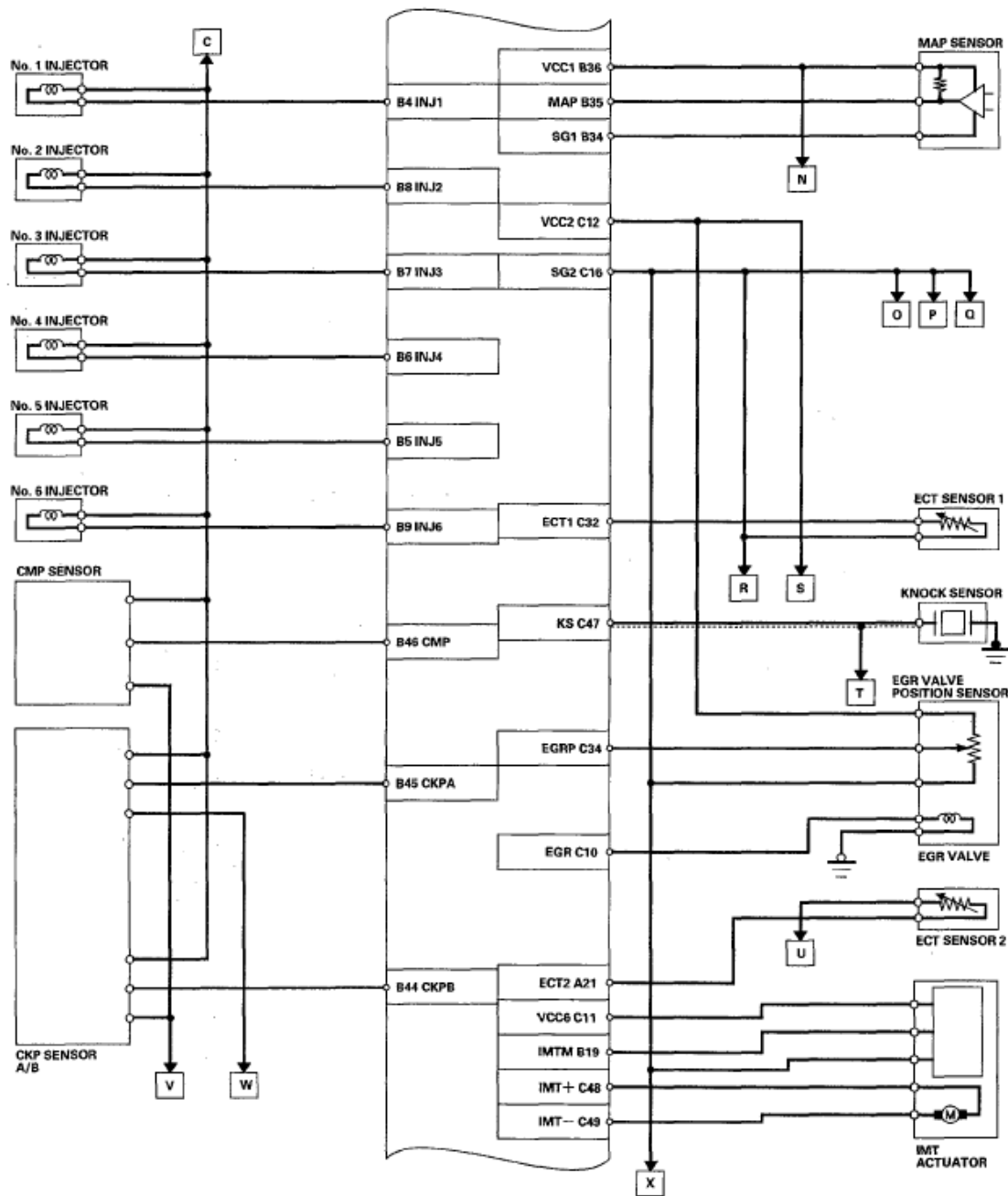


Fig. 11: PCM Electrical Connections - Wiring Diagram (2 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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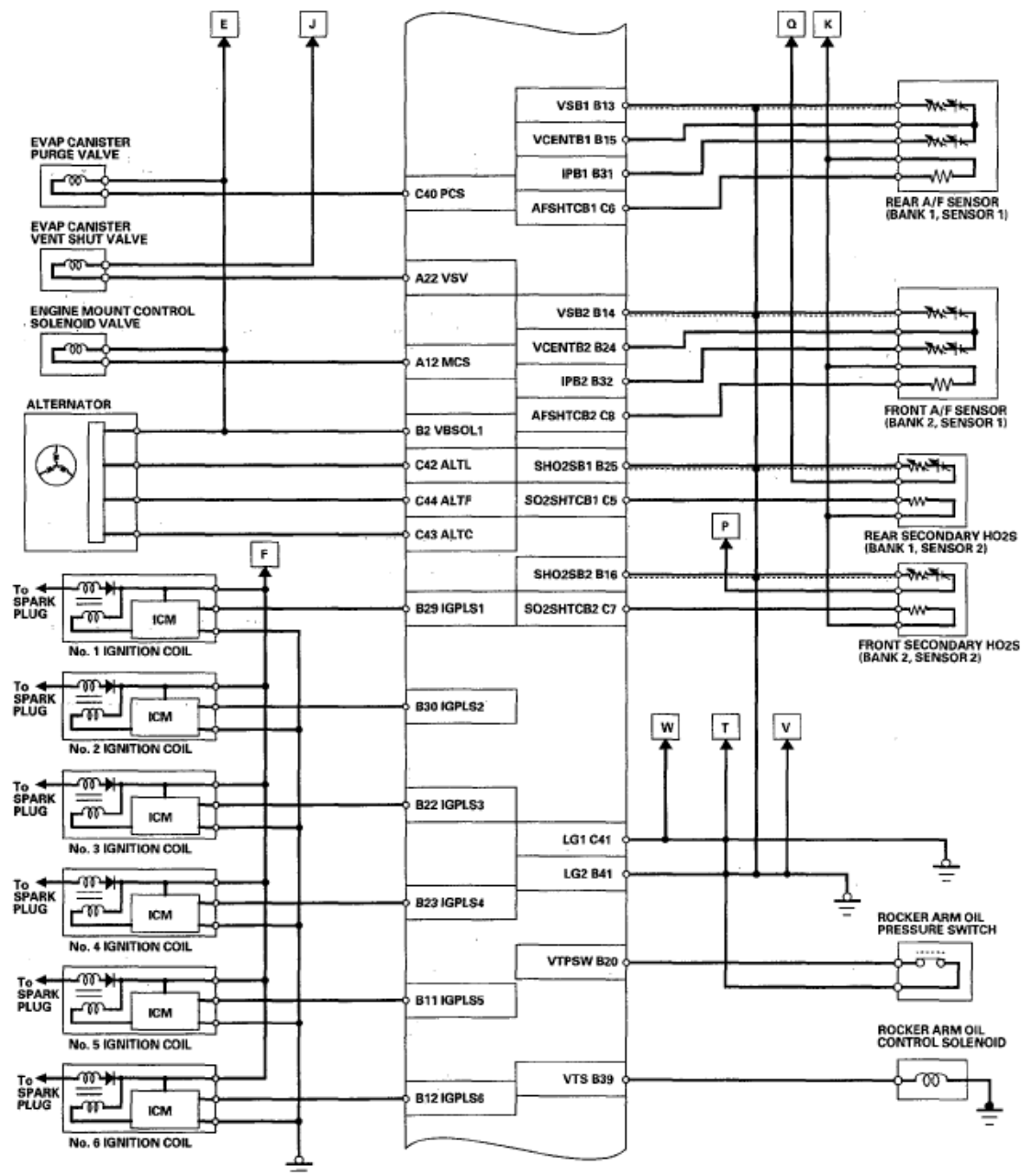


Fig. 12: PCM Electrical Connections - Wiring Diagram (3 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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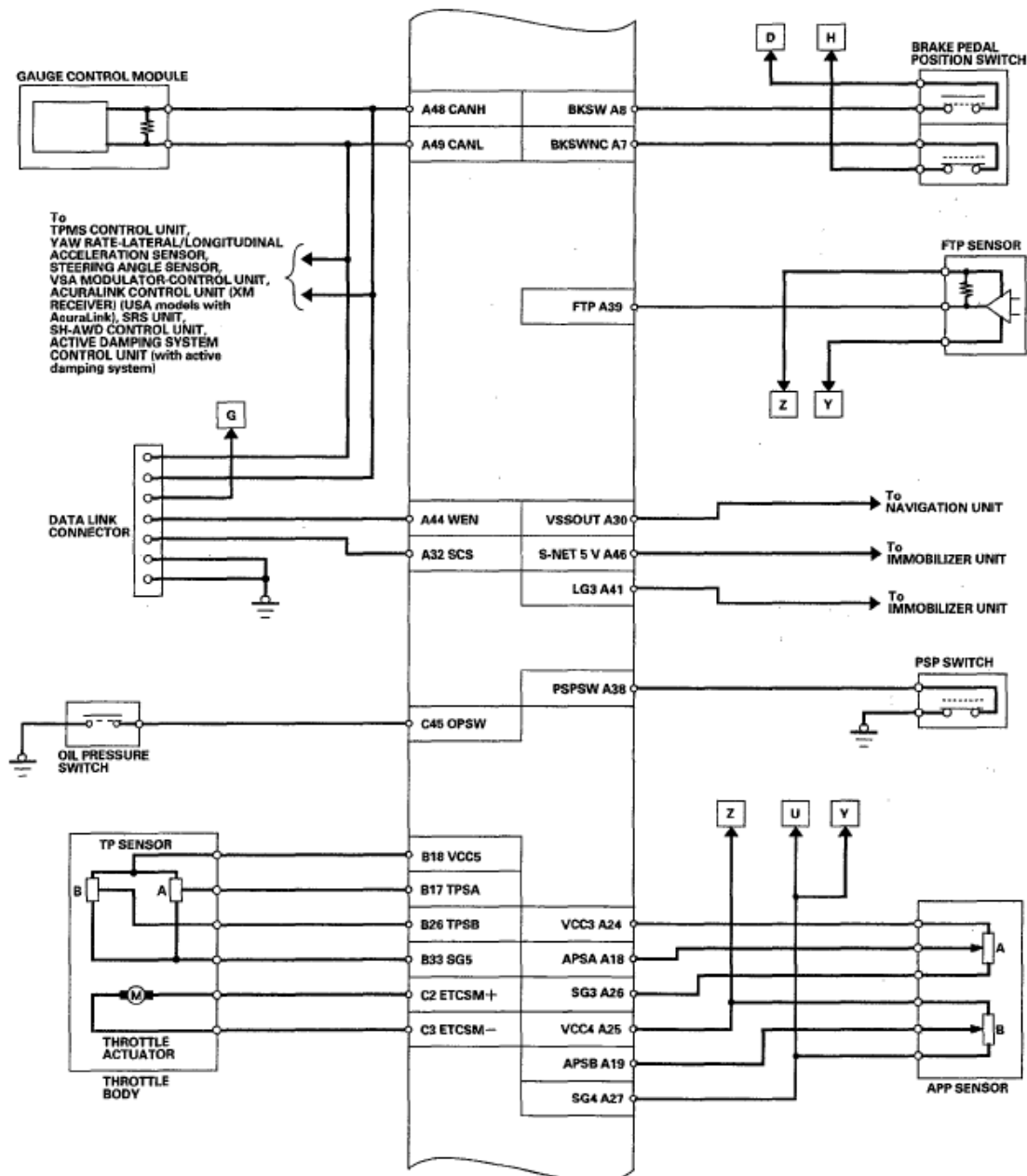


Fig. 13: PCM Electrical Connections - Wiring Diagram (4 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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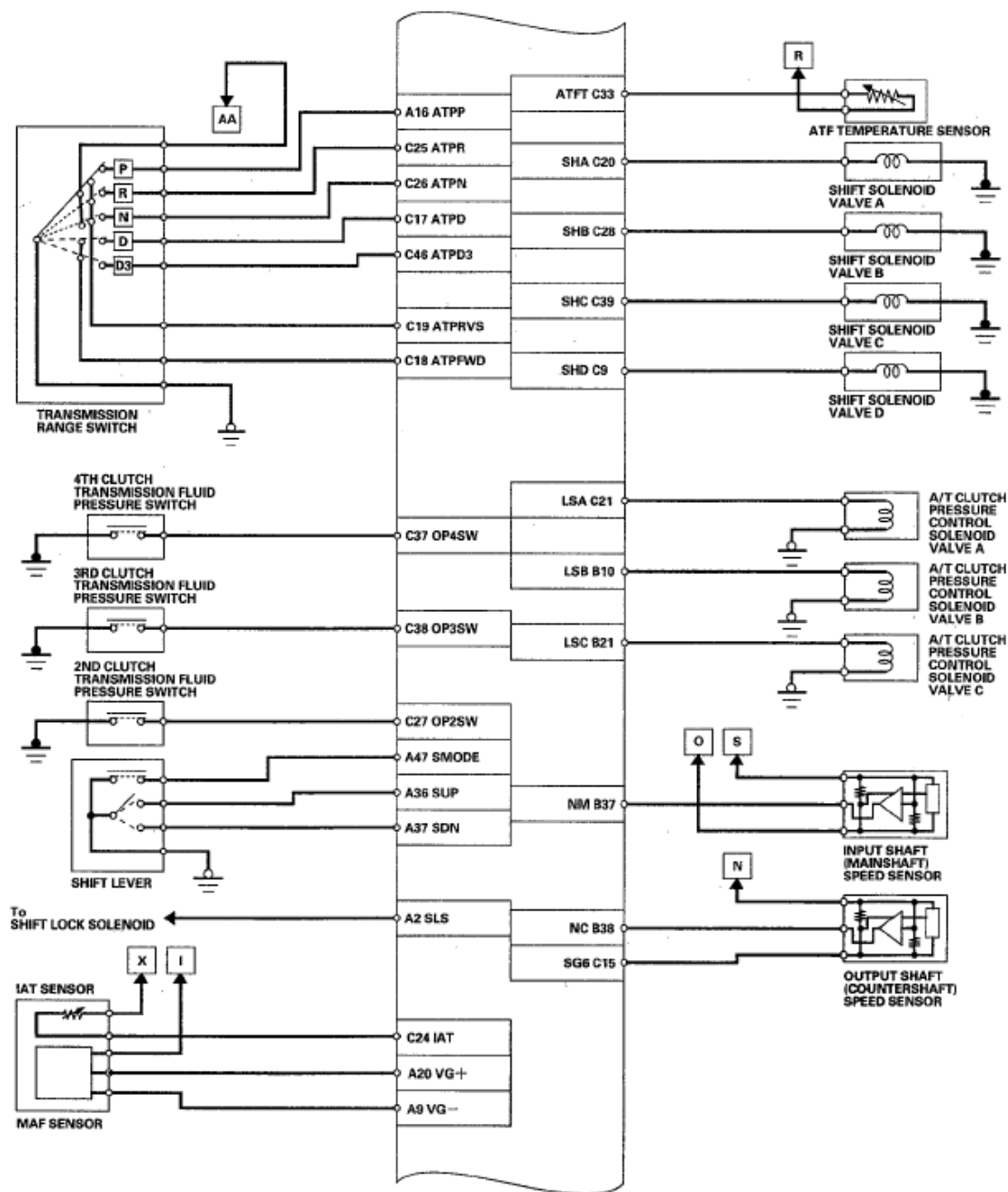


Fig. 14: PCM Electrical Connections - Wiring Diagram (5 Of 6)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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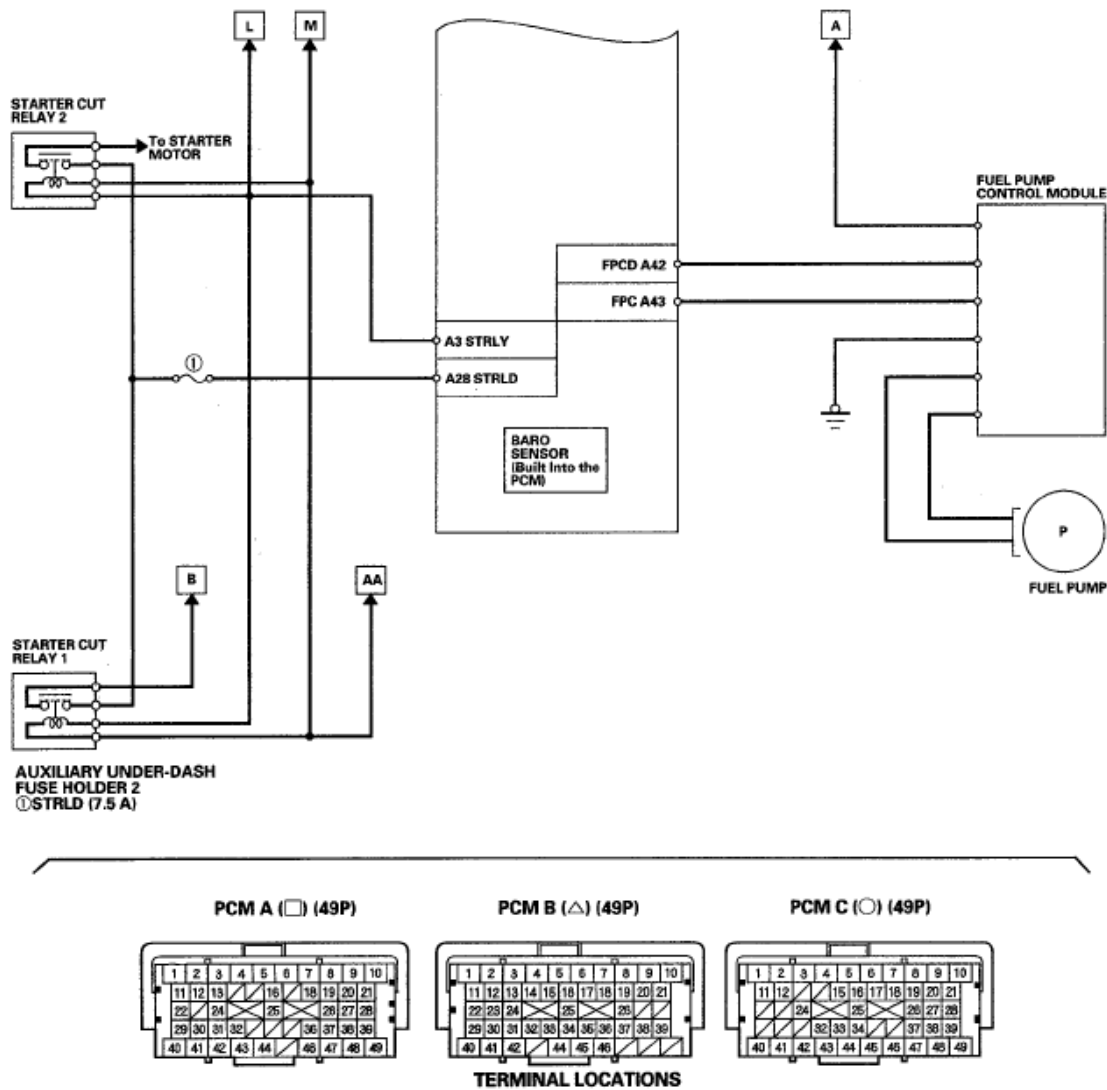


Fig. 15: PCM Electrical Connections - Wiring Diagram (6 Of 6)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM HOSE ROUTING

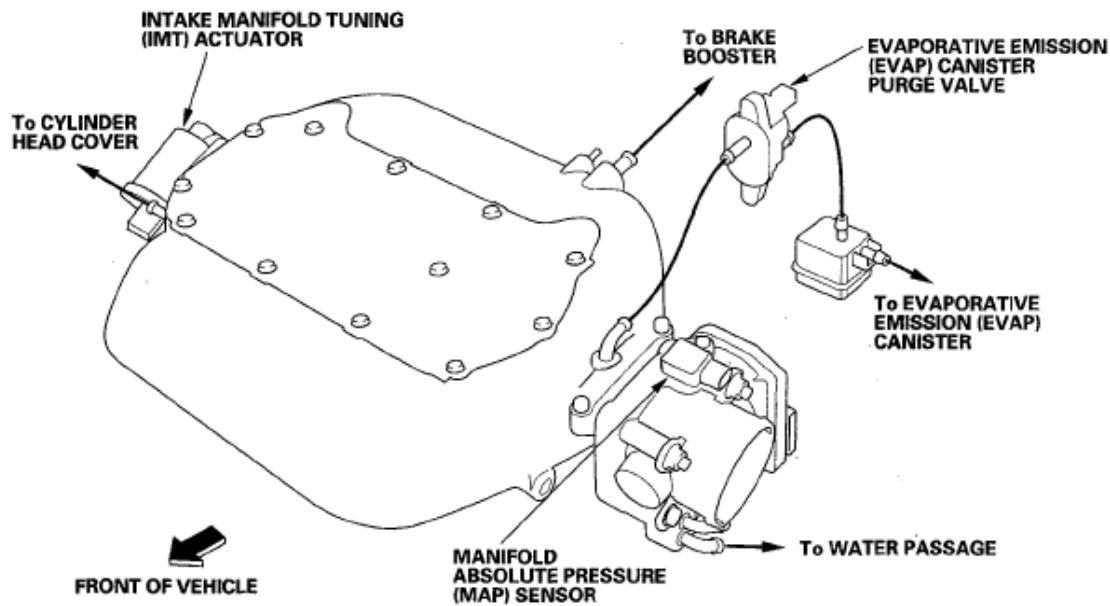
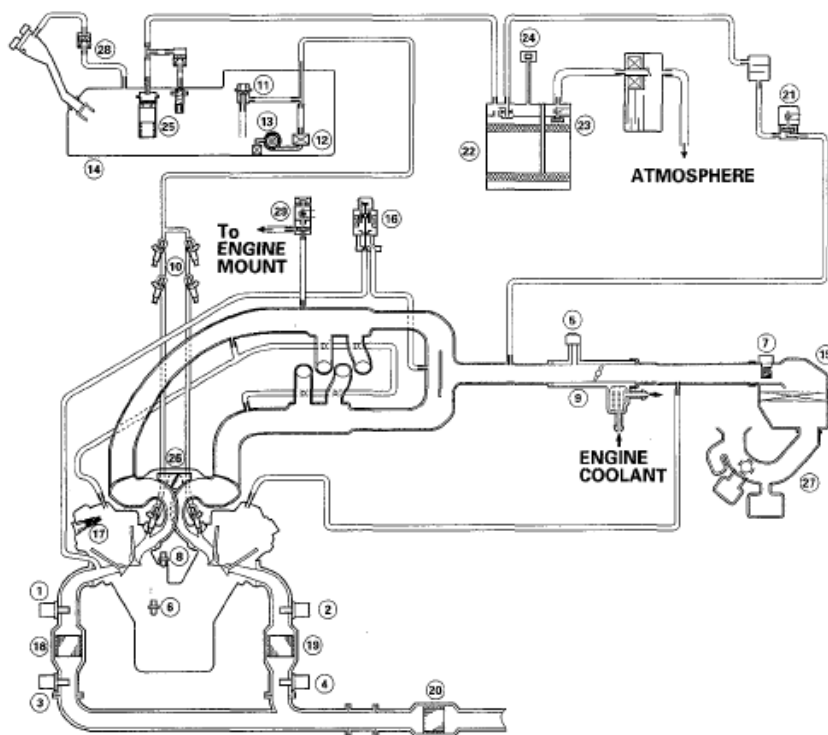


Fig. 16: Identifying Vacuum Hose Routing Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VACUUM DISTRIBUTION

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- | | |
|--|---|
| ① FRONT AIR FUEL RATIO (A/F) SENSOR 2 (BANK 2, SENSOR 1) | ⑮ AIR CLEANER |
| ② REAR AIR FUEL RATIO (A/F) SENSOR 1 (BANK 1, SENSOR 1) | ⑯ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR |
| ③ FRONT SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK 2, SENSOR 2) | ⑰ POSITIVE CRANKCASE VENTILATION (PCV) VALVE |
| ④ REAR SECONDARY HEATED OXYGEN SENSOR 2 (SECONDARY HO2S) (BANK 1, SENSOR 2) | ⑱ FRONT WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 2) |
| ⑤ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR | ⑲ REAR WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC) (BANK 1) |
| ⑥ ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 | ⑳ UNDER-FLOOR THREE WAY CATALYTIC CONVERTER (TWC) |
| ⑦ MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR | ㉑ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE |
| ⑧ KNOCK SENSOR | ㉒ EVAPORATIVE EMISSION (EVAP) CANISTER |
| ⑨ THROTTLE BODY | ㉓ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE |
| ⑩ INJECTOR | ㉔ FUEL TANK PRESSURE (FTP) SENSOR |
| ⑪ FUEL PRESSURE REGULATOR | ㉕ FUEL TANK VAPOR CONTROL VALVE |
| ⑫ FUEL FILTER | ㉖ INTAKE MANIFOLD TUNING (IMT) VALVE |
| ⑬ FUEL PUMP | ㉗ RESONATOR |
| ⑭ FUEL TANK | ㉘ FUEL TANK VAPOR RECIRCULATION TUBE |
| | ㉙ ENGINE MOUNT CONTROL SOLENOID VALVE |

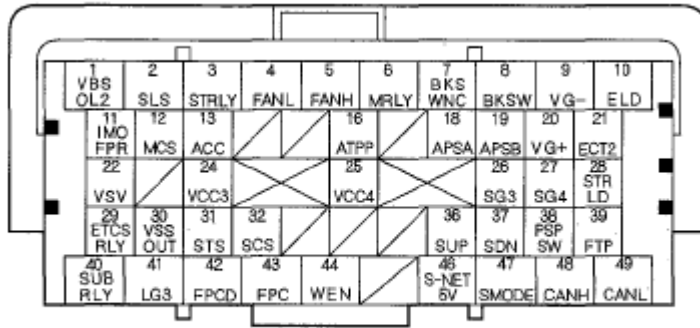
Fig. 17: Vacuum Distribution - System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM INPUTS AND OUTPUTS AT CONNECTOR A (I) (49P)

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Terminal side of female terminals

Fig. 18: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

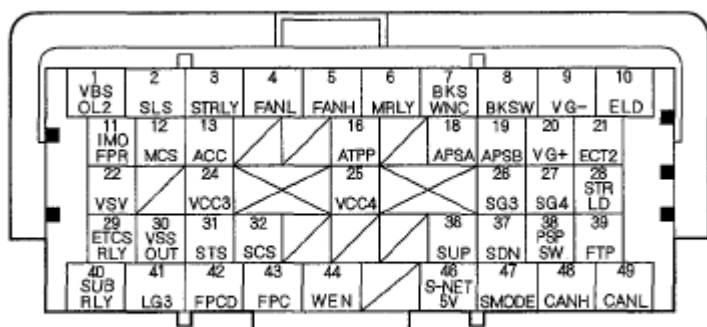
Terminal number	Wire color	Terminal name	Description	Signal
1	WHT	VBSOL2 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valve	With ignition switch ON (II): battery voltage
2	PNK	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in the P position, brake pedal pressed, and accelerator released: about 0 V
3	LTGRN	STRLY (STARTER RELAY)	Drives starter cut relay 2	With ignition switch ON (II): about 0 V
4	WHT	FANL (RADIATOR FAN CONTROL)	Drives A/C condenser fan relay	With condenser fan running: about 0 V With condenser fan stopped: battery voltage
5	PUR	FANH (RADIATOR FAN CONTROL)	Drives radiator fan relay	With radiator fan running: about 0 V With radiator fan stopped: battery voltage
6	GRN	MRLY (PGM-FI MAIN RELAY 1)	Drives PGM-FI main relay 1 power source for the DTC memory)	With ignition switch ON (II): about 0 V With ignition switch OFF: battery voltage
7	BRN	BKSWNC (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With ignition switch ON (II) and brake pedal released: battery voltage With ignition switch ON (II) and brake pedal pressed: about 0 V

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

8	LTGRN	BKSW (BREAK PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With brake pedal released: about 0 V With brake pedal pressed: battery voltage
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PCM INPUTS AND OUTPUTS AT CONNECTOR A (II) (49P)



Terminal side of female terminals

Fig. 19: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

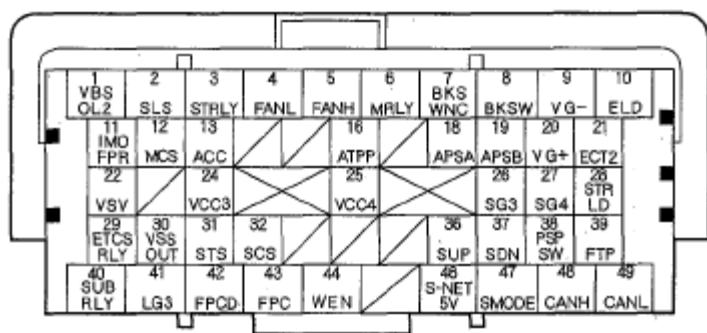
Terminal number	Wire color	Terminal name	Description	Signal
9	BLK	VG - (MASS AIR FLOW (MAF) SENSOR - SIDE)	Ground for MAF sensor signal	
10	ORN	ELD (ELECTRICAL LOAD DETECTOR (ELD))	Detects ELD signal	With ignition switch ON (II): about 0.1 - 4.8 V (depending on electrical load)
11	BRN	IMOFPR (IMMOBILIZER FUEL PUMP RELAY)	Drives PGM-FI main relay 2	About 0 V for 2 seconds after turning ignition switch ON (II), then battery voltage With the engine running: about 0 V
12	BLU	MCS (ENGINE MOUNT CONTROL SOLENOID VALVE)	Drives engine mount control solenoid valve	At idle: about 0 V About idle: battery voltage
13	RED	ACC (A/C COMPRESSOR CLUTCH RELAY)	Drives A/C compressor clutch relay	With compressor ON: about 0 V With compressor OFF: battery voltage
16	GRN	ATPP (TRANSMISSION RANGE SWITCH P	Detects transmission range switch P	In P: about 0 V In any position other than P:

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		POSITION)	position signal	battery voltage
18	PUR	APSA (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II) and accelerator pedal pressed: about 4.7 V With ignition switch ON (II) and accelerator pedal released: about 1.0 V

PCM INPUTS AND OUTPUTS AT CONNECTOR A (II) (49P)



Terminal side of female terminals

Fig. 20: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

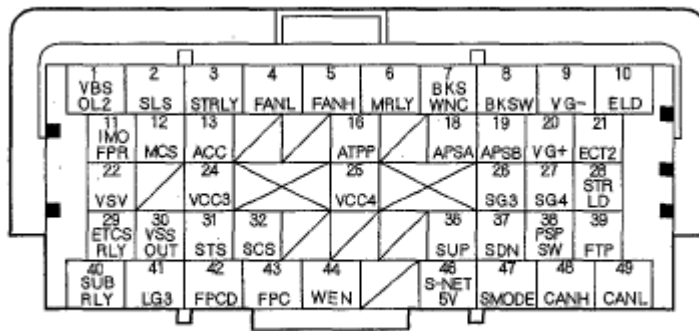
Terminal number	Wire color	Terminal name	Description	Signal
19	LTGRN	APSB (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II) and accelerator pedal pressed: about 2.3 V With ignition switch ON (II) and accelerator pedal released: about 0.5 V
20	RED	VG + (MASS AIR FLOW (MAF) SENSOR + SIDE)	Detects MAF sensor signal	At idle: about 1.1 - 1.6 V (between VG + terminal and VG - terminal)
21	PUR	ECT2 (ENGINE COOLANT TEMPERATURE SENSOR (ECT) SENSOR 2)	Detects ECT sensor 2 signal	With ignition switch ON (II): about 0.1 - 4.8 V (depending on engine coolant temperature)
22	LTGRN	VSV (EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE)	Drives EVAP canister vent shut valve	With ignition switch ON (II): battery voltage

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

24	RED	VCC3 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
25	ORN	VCC4 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
26	WHT	SG3 (SENSOR GROUND)	Sensor around	Less than 0.5 V at all times
27	GRN	SG4 (SENSOR GROUND)	Sensor ground	Less than 0.5 V at all times

PCM INPUTS AND OUTPUTS AT CONNECTOR A (I) (49P)



Terminal side of female terminals

Fig. 21: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

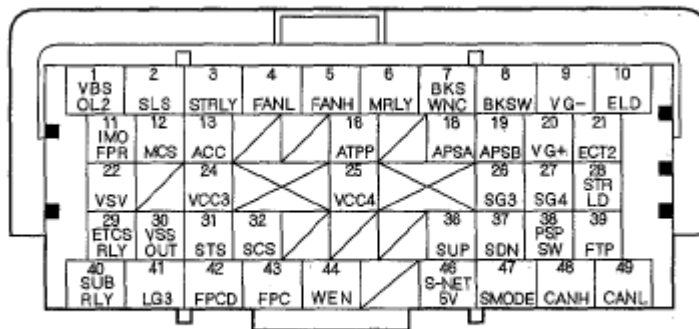
Terminal number	Wire color	Terminal name	Description	Signal
28	PNK	STRLD (STARTER SIGNAL LOAD)	Detects starter cut relay	With starter ON: battery voltage
29	BLU	ETCSRLY (ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY)	Drives electronic throttle control system (ETCS) control relay	With ignition switch ON (II): about 0 V
30	BLU	VSSOUT (VEHICLE SPEED SIGNAL OUTPUT)	Sends output shaft (countershaft) speed sensor signal	Depending on vehicle speed: pulses
31	LT BLU	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal	With starter switch ON (II): battery voltage With starter switch OFF: about 0 V
32	BRN	SCS (SERVICE CHECK)	Detects service check	With the service check signal shorted with the HDS: about 0 V

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		SIGNAL)	signal	With the service check signal opened: about 5.0 V
36	BLU	SUP (TRANSMISSION GEAR SELECTION SWITCH UPSHIFT SWITCH)	Detects transmission gear selection switch upshift switch signal	In M and shift lever pushed toward upshift position: about 0 V In M and shift lever in N: battery voltage
37	GRN	SDN (TRANSMISSION GEAR SELECTION SWITCH DOWNSHIFT SWITH)	Detects transmission gear selection switch downshift switch signal	In M and shift lever pushed toward downshift position: about 0 V In M and shift lever in N: battery voltage

PCM INPUTS AND OUTPUTS AT CONNECTOR A (I) (49P)



Terminal side of female terminals

Fig. 22: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

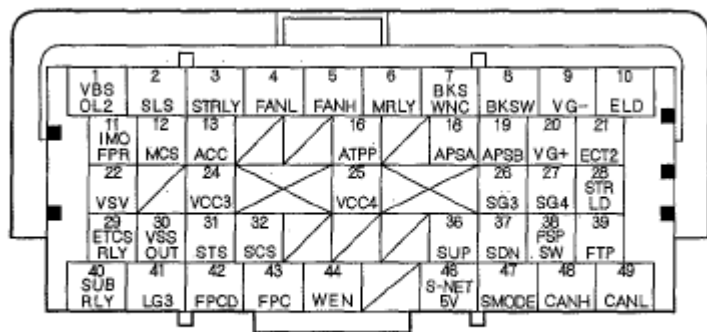
Terminal number	Wire color	Terminal name	Description	Signal
38	PNK	PSPSW (POWER STEERING PRESSURE SWITCH SIGNAL)	Detects PSP switch signal	At idle with steering wheel in straight ahead position: about 0 V At idle with steering wheel at full lock: battery voltage
39	LTGRN	FTP (FUEL TANK PRESSURE (FTP) SENSOR	Detects FTP sensor signal	With ignition switch ON (II) and fuel fill cap removed: about 2.5 V
			Drives PGM-FI	With ignition switch ON

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

40	RED	SUBRLY(PGM-FI SUBRELAY)	subrelay	(II): about 0 V
41	BRN	LG3 (LOGIC GROUND)	Ground circuit for the immobilizer unit	Less than 0.5 V at all time
42	LT BLU	FPCD (FUEL PUMP CONTROL MODULE DIAGNOSIS)	Detects fuel pump control diagnosis	With ignition switch ON (II): about 5.0 V At idle: about 10.0 V
43	PNK	FPC (FUEL PUMP CONTROL)	Detects fuel pump control signal	With ignition switch ON: pulses With ignition switch OFF: about 0 V
44	GRY	WEN (WRITE ENABLE SIGNAL)	Detects write enable signal	With ignition switch ON (II): about 0 V
46	LTGRN	S-NET5V (SERIAL COMMUNICATION FOR IMMOBILIZER)	Sends serial communication signal	With ignition switch ON (II): pulses With ignition switch OFF: about 5.0 V

PCM INPUTS AND OUTPUTS AT CONNECTOR A (I) (49P)



Terminal side of female terminals

Fig. 23: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

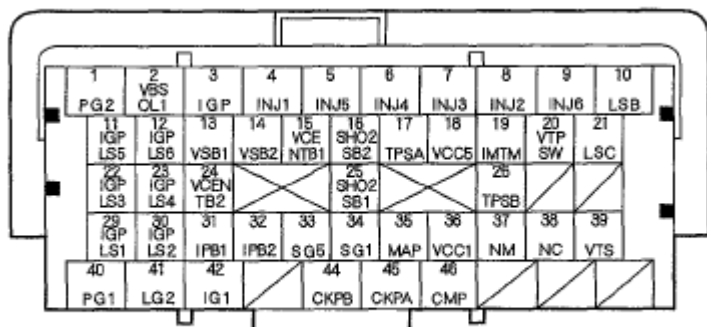
Terminal number	Wire color	Terminal name	Description	Signal
47	PUR	SMODE (SEQUENTIAL SPORTSHIFT MODE)	Detects sequential sportshift mode switch signal	In M: about 0 V In any position other than M: battery voltage
48	WHT	CANH (CAN COMMUNICATION SIGNAL)	Sends communication signal	With ignition switch ON (II): pulses

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		HIGH)		
49	RED	CANL(CAN COMMUNICATION SIGNAL LOW)	Sends communication signal	With ignition switch ON (II): pulses

PCM INPUTS AND OUTPUTS AT CONNECTOR B (DELTA) (49P)



Terminal side of female terminals

Fig. 24: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

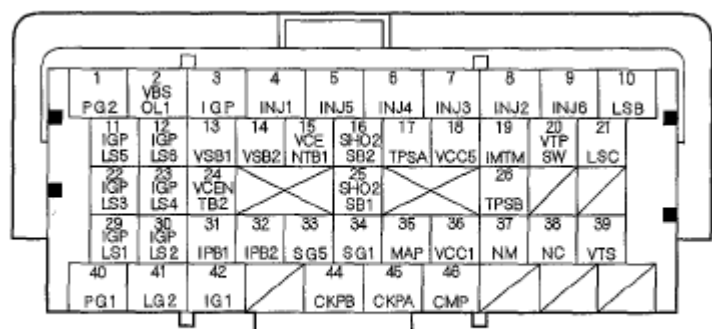
VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	PG2 (POWER GROUND)	Ground circuit for PCM circuit	Less than 0.5 V at all times
2	BLK/YEL	VBSOL1 (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valve	With ignition switch ON (II): battery voltage
3	YEL/BLK	IGP (POWER SOURCE)	Power source for PCM circuit	With ignition switch ON (II): battery voltage
4	BRN	INJ1 (No. 1 INJECTOR)	Drives No. 1 injector	At idle: duty controlled With ignition switch ON (II): battery voltage
5	BLK/RED	INJ5 (No. 5 INJECTOR)	Drives No. 5 injector	
6	YEL	INJ4 (No. 4 INJECTOR)	Drives No. 4 injector	
7	BLU	INJ3 (No. 3 INJECTOR)	Drives No. 3 injector	
8	RED	INJ2 (No. 2 INJECTOR)	Drives No. 2 injector	
9	WHT/BLU	INJ6 (No. 6 INJECTOR)	Drives No. 6 injector	With ignition switch ON (II): current controlled
10	BRN/WHT	LSB (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE B)	Drives A/T clutch pressure control solenoid valve B	

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

PCM INPUTS AND OUTPUTS AT CONNECTOR B (DELTA) (49P)



Terminal side of female terminals

Fig. 25: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
11	BLK/RED	IGPLS5 (No. 5 IGNITION COIL PULSE)	Drives No. 5 ignition coil	With ignition switch ON (II): about 0 V
12	BRN/WHT	IGPLS6 (No. 6 IGNITION COIL PULSE)	Drives No. 6 ignition coil	With engine running: pulses
13	BLU	VSB1 (VS CELL+ BANK 1)	Detects the rear A/F sensor (BANK 1, sensor 1) VS CELL signal	With engine running: about 3.4 - 4.8 V
14	RED/BLU	VSB2 (VSCELL + BANK2)	Detects front A/F sensor (BANK 1, sensor 1) VS CELL signal	With fully warmed up engine running: about 3.4 - 4.8 V
15	RED	VCENTB1 (VIRTUAL GROUND BANK 1)	Reference voltage supply for rear A/F sensor (BANK 1, sensor 1)	With fully warmed up engine running: about 3.4 - 3.8 V
16	WHT	SHO2SB2 (FRONT SECONDARY HEATED OXYGEN SENSOR (FRONT SECONDARY HO2S) BANK 2, SENSOR 2)	Detects front secondary HO2S (Bank 2, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: about 0.6 V With throttle quickly closed: below 0.4 V
		TPSA (THROTTLE POSITION	Detects TP sensor A	With throttle fully open: about 3.9 V

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17	RED/BLK	(TP) SENSOR A)	signal	With throttle fully closed: about 0.9 V
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PCM INPUTS AND OUTPUTS AT CONNECTOR B (DELTA) (49P)

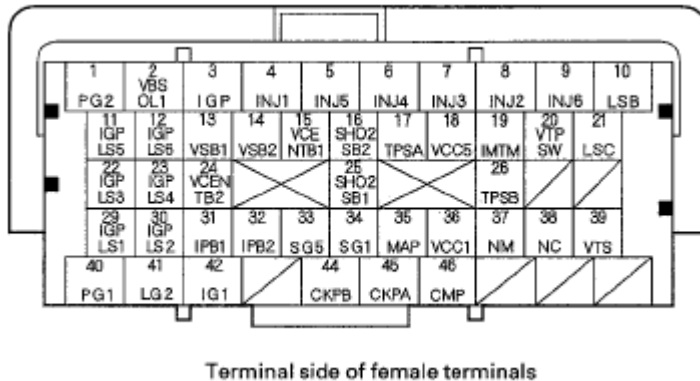


Fig. 26: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
18	BLU	VCC5 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
19	WHT/BLK	IMTM (INTAKE MANIFOLD TUNING (IMT) VALVE MONITOR)	Detects IMT valve position	With ignition switch ON (II): about 0 V With engine speed above 3,800 rpm: about 5.0 V
20	BLU/WHT	VTPSW (ROCKER ARM OIL PRESSURE SWITCH)	Detects rocker arm oil pressure switch	With engine at low speed: about 0 V With engine at high speed: battery voltage
21	GRN/RED	LSC (AT CLUTCH PRESSURE CONTROL SOLENOID VALVE C)	Drives A/T clutch pressure control solenoid valve C	With ignition switch ON (II): current controlled
22	WHT/BLU	IGPLS3 (No. 3 IGNITION COIL PULSE)	Drives No. 3 ignition coil	With ignition switch ON (II): about 0 V
23	BRN	IGPLS4 (No. 4 IGNITION COIL PULSE)	Drives No. 4 ignition coil	With engine running: pulses
24	RED/WHT	VCENTB2 (VIRTUAL GROUND BANK 2)	Reference voltage supply for front A/F sensor (Bank 2, sensor 1)	With fully warmed up engine at idle: about 3.4 - 4.8 V

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

PCM INPUTS AND OUTPUTS AT CONNECTOR B (DELTA) (49P)

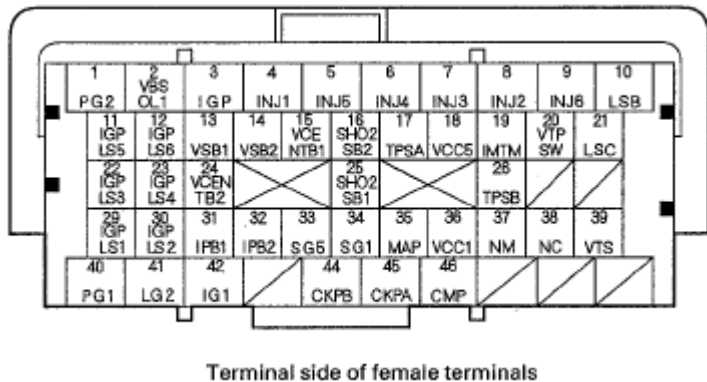


Fig. 27: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
25	GRN	SHO2SB1 (REAR SECONDARY HEATED OXYGEN SENSOR (REAR SECONDARY HO2S) BANK 1, SENSOR 2)	Detects rear secondary HO2S (Bank 1, sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: about 0.6 V With throttle quickly closed: below 0.4 V
26	RED/BLU	TPSB (THROTTLE POSITION (TP) SENSOR B)	Detects TP sensor B signal	With throttle fully open: about 4.1 V With throttle fully closed: about 1.7 V
29	YEL/GRN	IGPLS1 (No. 1 IGNITION COIL PULSE)	Drives No. 1 ignition coil	With ignition switch ON (II): about 0 V
30	BLU/RED	IGPLS2 (No. 2 IGNITION COIL PULSE)	Drives No. 2 ignition coil	With engine running: pulses
31	GRN	IPB1 (IP CELL + BANK1)	Detects rear A/F sensor (Bank 1, sensor 1) pump cell	With engine running: about 2.0-5.6 V
32	GRN/RED	IPB2 (IP CELL + BANK2)	Detects front A/F sensor (Bank 2, sensor 1) pump cell	With engine running: about 2.0-5.6 V
33	GRN	SG5 (SENSOR GROUND)	Sensor ground	Less than 0.5 V at all times
34	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 0.5 V at all times

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

35	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR)	Detects MAP sensor signal	With ignition switch ON (II): about 3.0 V At idle: about 1.0 V (depending on engine speed)
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PCM INPUTS AND OUTPUTS AT CONNECTOR B (DELTA) (49P)

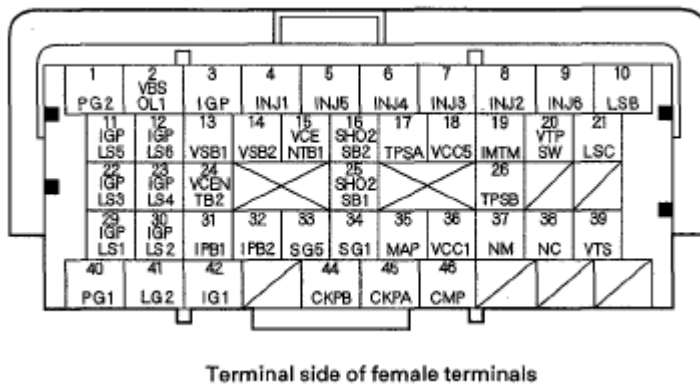


Fig. 28: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

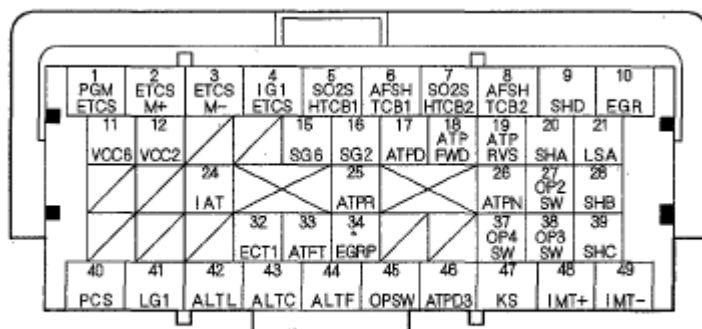
Terminal number	Wire color	Terminal name	Description	Signal
36	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	Ignition switch ON: about 5.0 V
37	RED	NM (INPUT SHAFT (MAINSHAFT) SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signals	With ignition switch ON (II): about 0 V or about 5.0 V With engine running in N: about 2.5 V
38	BLU	NC (OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	With ignition switch ON (II) and front wheels rotated by hand: about 0 V or 5.0 V While driving: pulses
39	GRN/YEL	VTS (ROCKER ARM OIL CONTROL SOLENOID)	Drives rocker arm oil control solenoid	At idle: about 0 V
40	BLK	PG1 (POWER GROUND)	Ground circuit for PCM circuit	Less than 0.5 V at all times
41	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM circuit	Less than 0.5 V at all times

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

42	BLK/YEL	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II): battery voltage
44	BLU/RED	CKPB (CRANKSHAFT POSITION (CKP) SENSOR B)	Detects CKP sensor B signal	With engine running: pulses
45	BLU	CKPA (CRANKSHAFT POSITION (CKP) SENSOR A)	Detects CKP sensor A signal	With engine running: pulses
46	YEL	CMP (CAMSHAFT POSITION (CMP) SENSOR)	Detects CMP sensor signal	With engine running: pulses

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (49P)



Terminal side of female terminals

Fig. 29: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

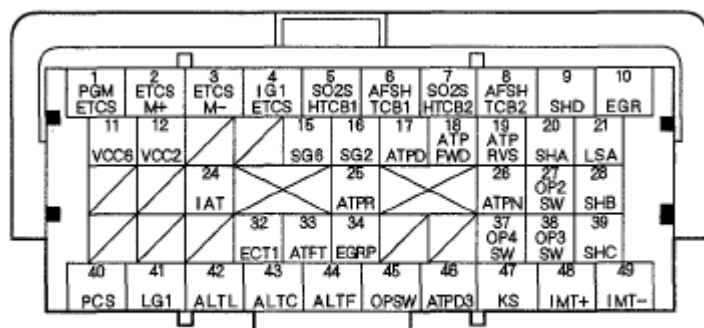
Terminal number	Wire color	Terminal name	Description	Signal
1	BLK	PGMETCS (POWER GROUND ETCS)	Ground circuit for PCM circuit	Less than 0.5 V at all times
2	BLU	ETCSM + (THROTTLE ACTUATOR + SIDE)	Drives throttle actuator	With ignition switch ON (II): about 0 V
3	GRN	ETCSM - (THROTTLE ACTUATOR - SIDE)	Ground for throttle actuator	With ignition switch ON (II): about 0 V
4	YEL/GRN	IG1 ETCS (IGNITION SIGNAL ETCS)	Detects ignition signal	With ignition switch ON (II): battery voltage
5	BLK/WHT	SO2SHTCB1 (REAR SECONDARY HEATED OXYGEN	Drives rear secondary HO2S heater (Bank	With ignition switch ON (II): battery voltage

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

		SENSOR (REAR SECONDARY HO2S) HEATER)	1, sensor 2)	With fully warmed up engine running: duty controlled
6	BLK/WHT	AFSHTCB1 (REAR AIR FUEL RATIO (REAR A/F) SENSOR HEATER CONTROL BANK 1, SENSOR 1)	Drives rear A/F sensor heater (Bank 1, sensor 1)	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V or pulses

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (49P)



Terminal side of female terminals

Fig. 30: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

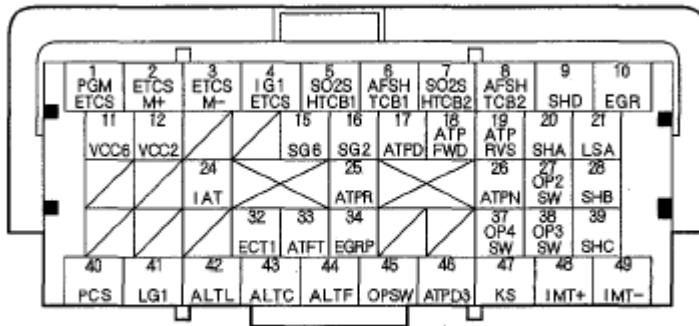
Terminal number	Wire color	Terminal name	Description	Signal
7	GRN/RED	SO2SHTCB2 (FRONT SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) HEATER)	Drives front secondary HO2S heater (Bank 2, sensor 2)	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
8	GRN/WHT	AFSHTCB2 (FRONT AIR FUEL RATIO (FRONT A/F) SENSOR HEATER CONTROL BANK 2, SENSOR 1)	Drives front A/F sensor heater (Bank 2, sensor 1)	With ignition switch ON (II): battery voltage With fully warmed up engine running: about 0 V or pulses
				With engine running in N, and in D and D3 during no lock-up condition: about 0 V

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

9	GRN/RED	SHD (SHIFT SOLENOID VALVE D)	Drives shift solenoid valve D	With engine running in P and R, and in D and D3 during lock-up condition: battery voltage
10	BLU/RED	EGR (EXHAUST GAS RECIRCULATION (EGR) VALVE)	Drives EGR valve	With EGR operating: duty controlled With EGR not operating: about 0 V
11	YEL/BLU	VCC6 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
12	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage	With ignition switch ON (II): about 5.0 V
15	GRN/YEL	SG6 (SENSOR GROUND)	Sensor ground	Less than 0.5 V at all times

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (49P)



Terminal side of female terminals

Fig. 31: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

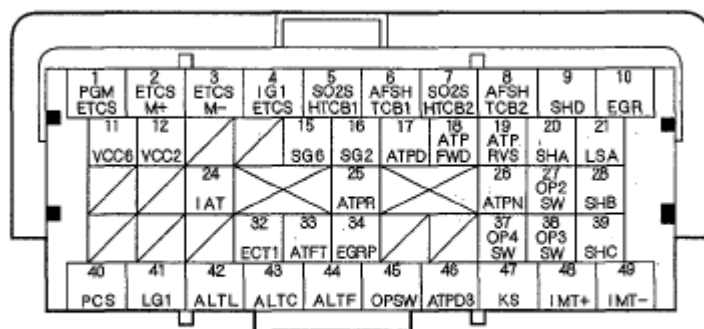
Terminal number	Wire color	Terminal name	Description	Signal
16	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 0.5 V at all times
17	YEL/GRN	ATPD (TRANSMISSION RANGE SWITCH D)	Detects transmission range switch D position signal input	In D: about 0 V In any position other than D: battery voltage
18	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH D/D3 POSITION)	Detects transmission range switch D, D3 position signal	In D and D3: about 0 V In any position other than D and D3: battery voltage

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

19	RED/WHT	ATPRVS (TRANSMISSION RANGE SWITCH R POSITION)	Detects transmission range switch P, R, N position signal input	In P, R, and N: about 0 V In any position other than P, R, and N: battery voltage
20	BLU/YEL.	SHA (SHIFT SOLENOID VALVE A)	Drives shift solenoid valve A	With engine running in R, and in D3 and D (in 2nd, and 3rd gears): battery voltage With engine running in P and N, D, and D3 (in 1st gear), and D (4th and 5th gears): about 0 V
21	RED	LSA (A/T CLUTCH PRESSURE CONTROL SOLENOID VALVE A)	Drives A/T clutch pressure control solenoid valve A	With ignition switch ON (II): current controlled
24	RED/YEL	IAT (INTAKE AIR TEMPERATURE (IAT) SENSOR)	Detects IAT sensor signal	With ignition switch ON (II): about 0.1-4.8 V (depending on intake air temperature)
25	WHT	ATPR (TRANSMISSION RANGE SWITCH R)	Detects transmission range switch R position signal input	In R: about 0 V In any position other than R: battery voltage

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (44P)



Terminal side of female terminals

Fig. 32: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
		ATPN (TRANSMISSION.	Detects transmission range	In N: about 0 V

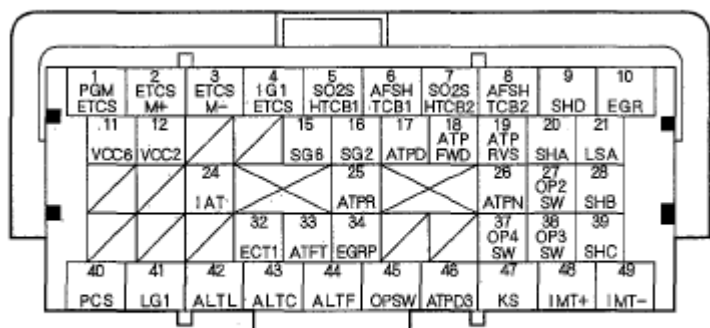
2008 Acura MDX**2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX**

26	RED/BLK	RANGE SWITCH N)	switch N position signal input	In any position other than N: battery voltage
27	BLU/BLK	OP2SW (2ND CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 2nd clutch transmission fluid pressure switch input	With ignition switch ON (II): • Without 2nd clutch pressure: about 5.0 V • With 2nd clutch pressure: about 0 V
28	GRN/WHT	SHB (SHIFT SOLENOID VALVE B)	Drives shift solenoid valve B	With engine running in P, R, and N and D and D3 (in 1st, 2nd, and 5th gears): battery voltage With engine running in D and D3 (in 3rd gear), and D (in 4th gear): about 0 V
32	RED/WHT	ECT1 (ENGINE COOLANT TEMPERATURE SENSOR (ECT) SENSOR 1)	Detects ECT sensor 1 signal	With ignition switch ON (II): about 0.1-4.8 V (depending on engine coolant temperature)
33	BLU/YEL	ATFT (ATF TEMPERATURE SENSOR)	Detects AFT temperature signal	With ignition switch ON (II): about 0.2-4.0 V (about 1.8 V at operating temperature) (depending on ATF temperature)
34	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: about 1.2-3.0 V (depending on EGR valve lift)
37	BLU/YEL	OP4SW (4TH CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 4th clutch transmission fluid pressure switch input	With ignition switch ON (II): • Without 4th clutch pressure: about 5.0 V • With 4th clutch pressure: about 0 V

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (49P)

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX



Terminal side of female terminals

Fig. 33: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

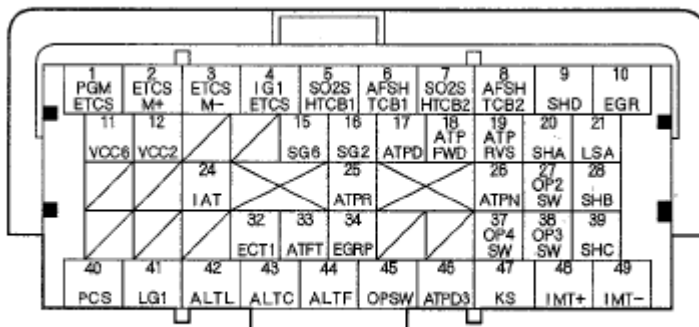
Terminal number	Wire color	Terminal name	Description	Signal
38	BLU/WHT	OP3SW (3RD CLUTCH TRANSMISSION FLUID PRESSURE SWITCH)	Detects 3rd clutch transmission fluid pressure switch input	With ignition switch ON (II): - Without 3rd clutch pressure: about 5.0 V - With 3rd clutch pressure: about 0 V
39	GRN	SHC (SHIFT SOLENOID VALVE C)	Drives shift solenoid valve C	With engine running in D and D3 (in 1st and 3rd gears), D (in 5th gear): battery voltage With engine running in P, R, and N, D, and D3 (2nd gear), and D (4th gears): about 0 V
40	RED/YEL	PCS (EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE)	Drives EVAP canister purge valve	With engine running, engine coolant below 140°F (60°C): battery voltage With engine running, engine coolant above 140°F (60°C): duty controlled
41	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM circuit	Less than 0.5 V at all times
42	WHT/BLU	ALTL (ALTERNATOR L SIGNAL)	Detects alternator L signal	With ignition switch ON (II): about 0 V With engine running: battery voltage

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

43	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal	With fully warmed up engine running battery voltage (depending on electrical load)
44	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal	With engine running: about 0-5.0 V (depending on electrical load)
45	BLU/YEL	OPSW (OIL PRESSURE SWITCH)	Detects engine oil pressure signal	With ignition switch ON (II): about 0 V With engine running: battery voltage

PCM INPUTS AND OUTPUTS AT CONNECTOR C (O) (49P)



Terminal side of female terminals

Fig. 34: Identifying PCM Inputs And Outputs Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Standard battery voltage is about 12 V.

VOLTAGE REFERENCE CHART

Terminal number	Wire color	Terminal name	Description	Signal
46	RED	ATPD3 (TRANSMISSION RANGE SWITCH D3)	Detects transmission switch D3 signal input	In D3: about 0 V In any position other than D3: battery voltage
47	RED/BLU	KS (KNOCK SENSOR)	Detects knock sensor signal	With engine knocking: pulses
48	WHT/BLU	IMT + (INTAKE MANIFOLD TUNING (IMT) ACTUATOR + SIDE)	Drives IMT actuator	With ignition switch ON (II): battery voltage
49	WHT/RED	IMT - (INTAKE MANIFOLD TUNING (IMT) ACTUATOR - SIDE)	Drives IMT actuator	With ignition switch ON (II): battery voltage

PGM-FI SYSTEM

The programmed fuel injection (PGM-FI) system is a sequential multiport fuel injection system.

Alternator Control

The alternator signals the PCM during charging.

Air Conditioning (A/C) Compressor Clutch Relay

When the PCM receives a demand for cooling from the A/C system, it delays the compressor from being energized, and enriches the mixture to assure smooth transition to the A/C mode.

Air Fuel Ratio (A/F) Sensor

The A/F sensor operates over a wide air/fuel range. The A/F sensor is installed upstream of the warm up the three way catalytic converter (WU-TWC), and sends signals to the PCM which varies the duration of fuel injection accordingly.



Fig. 35: Identifying Ceramic Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Barometric Pressure (BARO) Sensor

The BARO sensor is inside the PCM. It converts atmospheric pressure into a voltage signal that modifies the basic duration of the fuel injection discharge.

Camshaft Position (CMP) Sensor

The CMP sensor input is used by the PCM to determine ignition timing at start up (cranking) and when crank angle is abnormal.

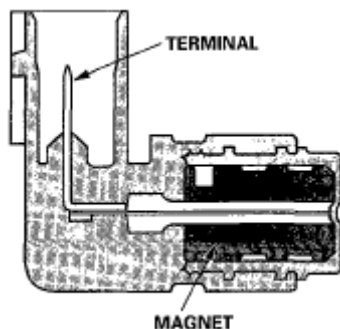


Fig. 36: Identifying Camshaft Position (CMP) Sensor Terminal And Magnet

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Crankshaft Position (CKP) Sensor

The CKP sensor detects crankshaft speed and is used by the PCM to determine ignition timing and timing for fuel injection of each cylinder, as well as detecting engine misfire.

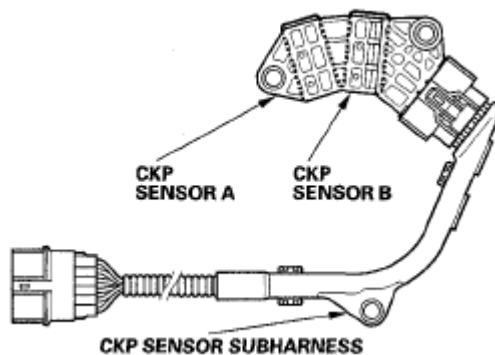


Fig. 37: Identifying Crankshaft Position (CKP) Sensor Subharness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Engine Coolant Temperature (ECT) Sensor 1 and 2

ECT sensors 1 and 2 are temperature dependent resistors (thermistors). The resistance decreases as the engine coolant temperature increases.

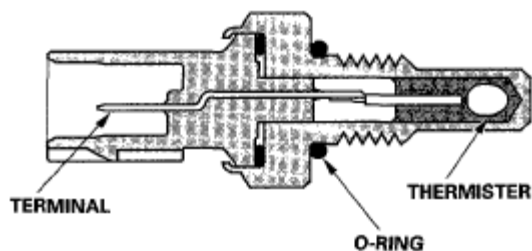


Fig. 38: Identifying Engine Coolant Temperature (ECT) Sensor Thermister And Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Ignition Timing Control

The PCM contains the memory for basic ignition timing at various engine speeds and manifold absolute pressures. It also adjusts the timing according to engine coolant temperature.

Injector Timing and Duration

The PCM contains the memory for basic discharge duration at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

By monitoring long term fuel trim, the PCM detects long term malfunctions in the fuel system and sets a diagnostic trouble code (DTC).

Knock Sensor

The knock control system adjusts the ignition timing to minimize knock.

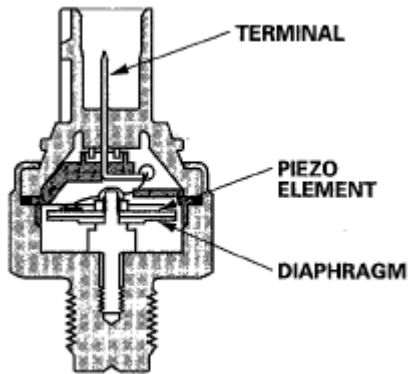


Fig. 39: Identifying Knock Sensor Terminal And Diaphragm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the PCM has been reset, these codes are reset. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not complete. To set each code, drive the vehicle or run the engine as described in the procedures (see **HOW TO SET READINESS CODES**).

Manifold Absolute Pressure (MAP) Sensor

The MAP sensor converts manifold absolute pressures into electrical signals to the PCM.

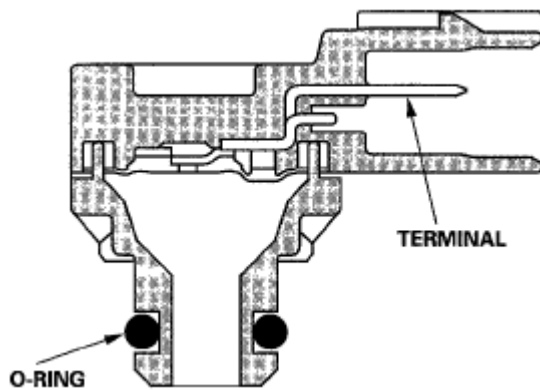


Fig. 40: Identifying Manifold Absolute Pressure (MAP) Sensor Terminal And O-Ring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mass Air Flow (MAF) Sensor/Intake Air Temperature (IAT) Sensor

The mass airflow (MAF) sensor/intake air temperature (IAT) sensor contains a hot wire and a thermistor. It is located in the intake air passage. The resistance of the hot wire and thermistor change due to intake air temperature and airflow. The control circuit in the MAF sensor controls the current to keep the hot wire at a set temperature. The current is converted to voltage in the control circuit, then output to the PCM.

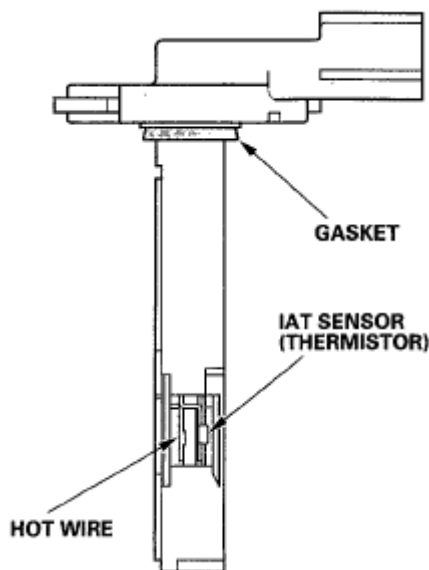


Fig. 41: Identifying Intake Air Temperature Sensor Thermistor And O-Ring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Output Shaft (Countershaft) Speed Sensor

This sensor detects countershaft speed.

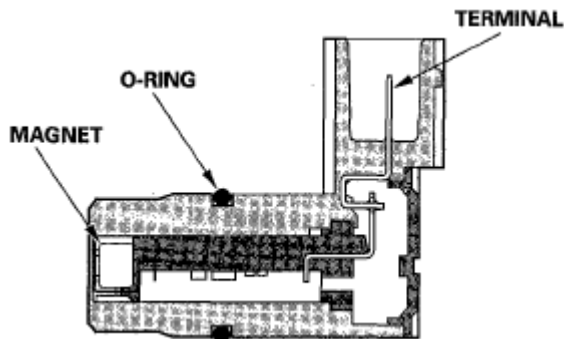


Fig. 42: Identifying Output Shaft (Countershaft) Speed Sensor Magnet And O-Ring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Secondary Heated Oxygen Sensor (Secondary HO2S)

The secondary HO2S detects the oxygen content in the exhaust gas downstream of the warm up three way catalytic converter (WU-TWC), and sends signals to the PCM. To stabilize its output, the sensor has an internal heater. The PCM compares the HO2S output with the A/F sensor output to determine catalyst efficiency. The secondary HO2S is on the WU-TWC.

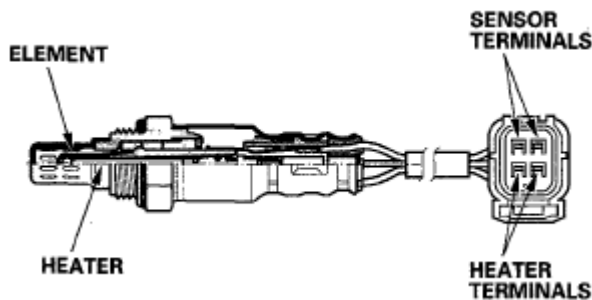


Fig. 43: Identifying Secondary Heated Oxygen Sensor Element And Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRONIC THROTTLE CONTROL SYSTEM

The throttle is electronically controlled by the electronic throttle control system. Refer to the system diagram to see a functional layout of the system.

Idle control: When the engine is idling, the PCM controls the throttle actuator to maintain the proper idle speed according to engine loads.

Acceleration control: When the accelerator pedal is pressed, the PCM opens the throttle valve depending on the accelerator pedal position (APP) sensor signal.

Cruise control: The PCM controls the throttle actuator to maintain the set speed when cruise control is operating. The throttle actuator takes the place of the cruise control actuator.

Accelerator Pedal Position (APP) Sensor

As the accelerator pedal position changes, the sensor varies the signal voltage to the PCM.

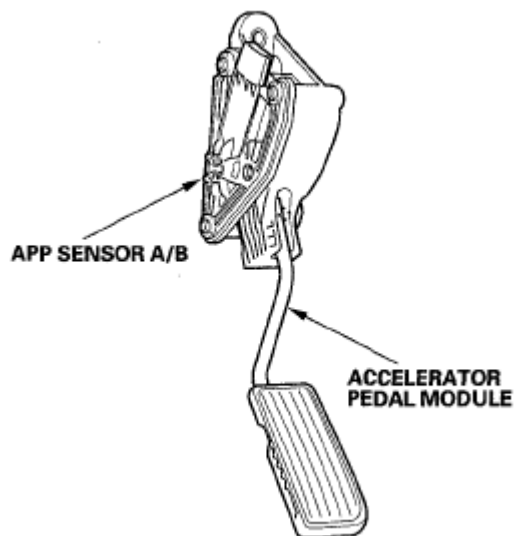


Fig. 44: Identifying Accelerator Pedal Module And APP Sensor A/B
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Throttle Body

The throttle body is a single-barrel side draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head to prevent icing of the throttle plate.

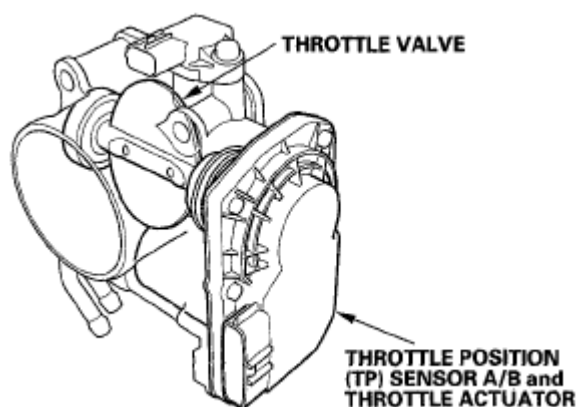


Fig. 45: Identifying Throttle Body Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

IDLE CONTROL SYSTEM

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is pressed, the power steering load is high, or the alternator is charging, the PCM sends signals to the throttle actuator to maintain the correct idle speed.

Brake Pedal Position Switch

The brake pedal position switch signals the PCM when the brake pedal is pressed.

Power Steering Pressure (PSP) Switch

The PSP switch signals the PCM when the power steering load is high.

FUEL SUPPLY SYSTEM**Fuel Cutoff Control**

During deceleration with the throttle valve closed, current to the injectors is cut off to improve fuel economy at engine speeds over 850 rpm. Fuel cutoff control also occurs when the engine speed exceeds 6,600 rpm, regardless of the position of the throttle valve, to protect the engine from over-revving. When the vehicle is stopped, the PCM cuts the fuel at engine speeds over 5,000 rpm. On a cold engine, fuel cut occurs at a lower engine speed.

Fuel Pump Control

When the ignition switch is turned on, the PCM grounds PGM-FI main relay 2 which feeds current to the fuel pump control module. The PCM sends a signal to the fuel pump control module to operate the fuel pump for 2 seconds to pressurize the fuel system. With the engine running, the fuel pump speed is controlled in four levels by the fuel pump control module. The PCM decides the fuel pump speed by the calculation of the injector activation time and engine speed and sends a operation command signal to the fuel pump control module. This operation made possible to decrease fuel pump noise at low engine speed.

PGM-FI Main Relay 1 and 2

PGM-FI main relay 1 is energized whenever the ignition switch is ON (II) to supply battery voltage to the PCM, power to the injectors, and power for PGM-FI main relay 2. PGM-FI main relay 2 is energized to supply power to the fuel pump (fuel pump control module) for 2 seconds when the ignition switch is turned ON (II), and when the engine is cranking or running.

CATALYTIC CONVERTER SYSTEM**Warm Up/Three Way Catalytic Converter (WU-TWC) and Under-Floor Three Way Catalytic Converter (TWC)**

The WU-TWC/TWC converts hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to carbon dioxide (CO₂), nitrogen (N₂), and water vapor.

WU-TWC

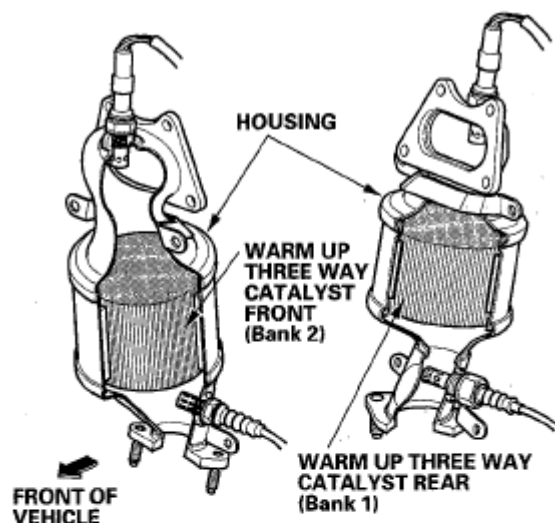
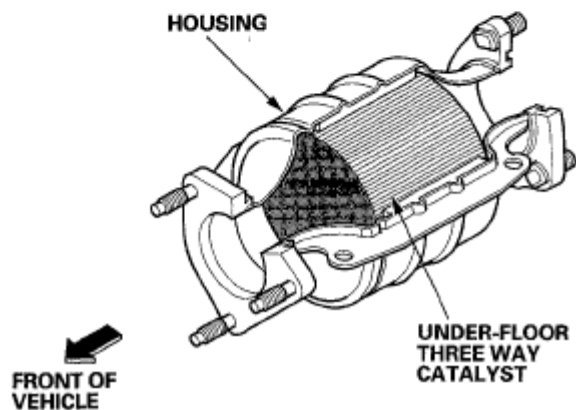
WU-TWC**TWC**

Fig. 46: Identifying Warm Up/Three Way Catalyst Front And Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

Refer to the system diagram to see a functional layout of the system.

EGR Valve

The EGR valve lowers peak combustion temperatures and reduces oxides of nitrogen emissions (NO_x) by recirculating exhaust gas through the intake manifold and into the combustion chambers.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM

The PCV valve prevents blow-by gasses from escaping into the atmosphere by venting them into the intake manifold.

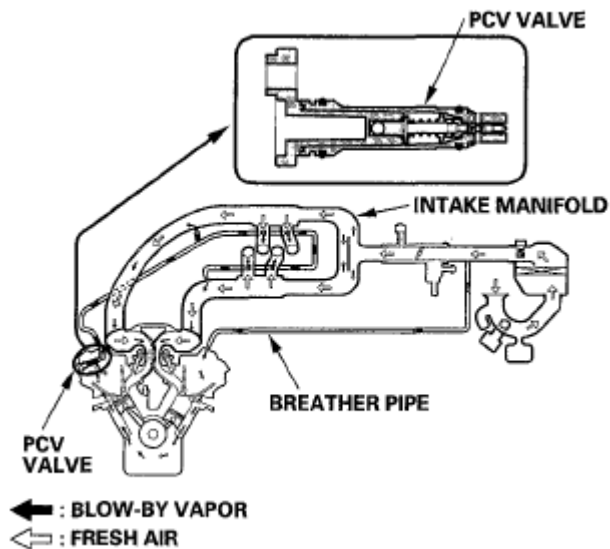


Fig. 47: Identifying Positive Crankcase Ventilation Valve And Breather Pipe
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM

Refer to the system diagram to see a functional layout of the system.

EVAP Canister

The EVAP canister temporarily stores fuel vapor from the fuel tank until it can be purged back into the engine and burned.

EVAP Canister Purge Valve

When the engine coolant temperature is below 140°F (60°C), the PCM turns off the EVAP canister purge valve which cuts vacuum to the EVAP canister.

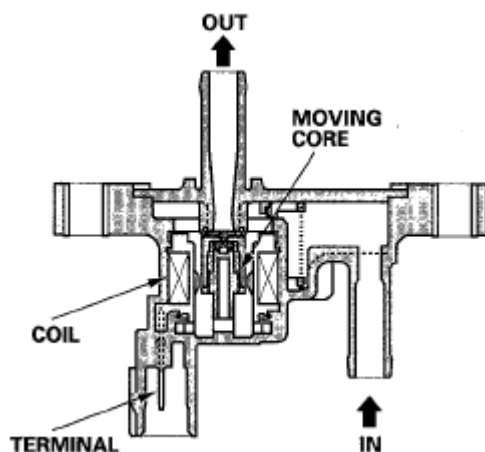


Fig. 48: Identifying EVAP Canister Purge Valve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fuel Tank Pressure (FTP) Sensor

The FTP sensor converts fuel tank absolute pressure into an electrical input to the PCM.

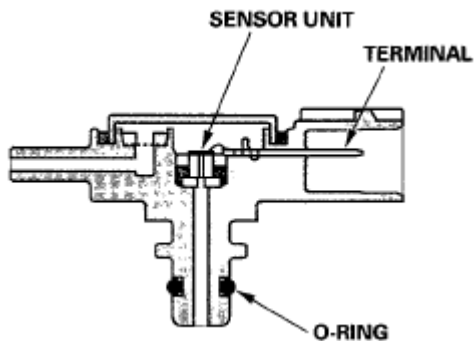


Fig. 49: Identifying Fuel Tank Pressure (FTP) Sensor Unit And Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAP CANISTER VENT SHUT VALVE

The EVAP canister vent shut valve is on the EVAP canister.

The EVAP canister vent shut valve controls the venting of the EVAP canister.

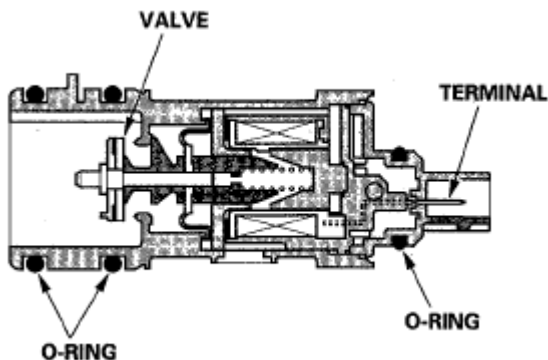


Fig. 50: Identifying EVAP Canister Vent Shut Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL CAP WARNING MESSAGE

The PCM detects a loose or missing fuel fill cap as an evaporative system leak and alerts the driver by showing a warning message in the multi-information display.

First drive cycle

The first time a leak is detected a "TIGHTEN FUEL CAP" message appears in the multi-information display

(A). To scroll to another message, press the select/reset button. The "TIGHTEN FUEL CAP" message will appear each time you restart the engine until the system turns the message off. Turn the engine off then replace or tighten the fuel fill cap until it clicks at least once.

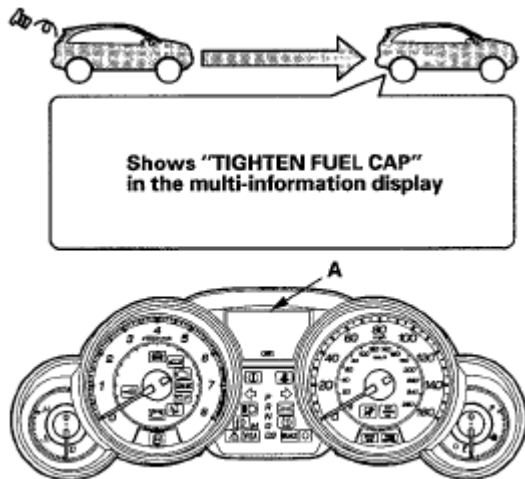


Fig. 51: Identifying Fuel Cap Warning Message
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TO MAKE THE MESSAGE GO OFF (WITH THE HDS)

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Clear the Temporary DTC with the HDS.
3. Verify there is no leak by doing the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

TO MAKE THE MESSAGE GO OFF (WITHOUT THE HDS)

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Start the engine, then turn the ignition switch OFF.
3. Repeat step 2 two more times.

ELECTRONIC THROTTLE CONTROL SYSTEM DIAGRAM

The electronic throttle control system consists of the throttle actuator, throttle position (TP) sensor A/B, accelerator pedal position (APP) sensor A/B, the electronic throttle control system (ETCS) control relay, and the PCM.

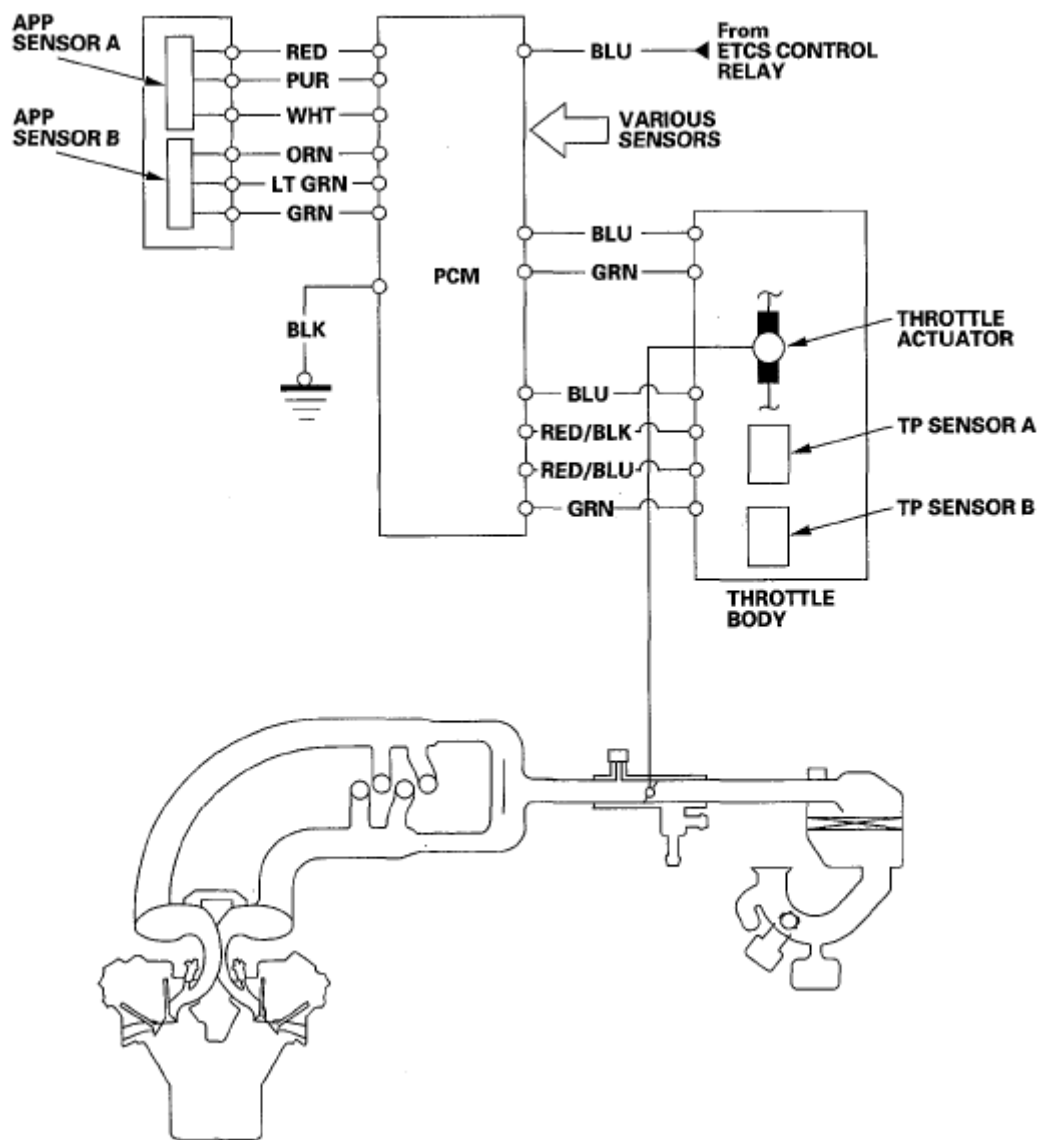


Fig. 52: Electronic Throttle Control System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTAKE MANIFOLD TUNING (IMT) VALVE SYSTEM

Engine power is adjusted by opening and closing the intake manifold tuning (IMT) actuator. When the valve is closed, there is high torque at low engine speed. When the valve is open, there is high torque at high engine speed.

The intake manifold tuning (IMT) valve actuator contains a sensor that detects the IMT valve position and sends it to the PCM.

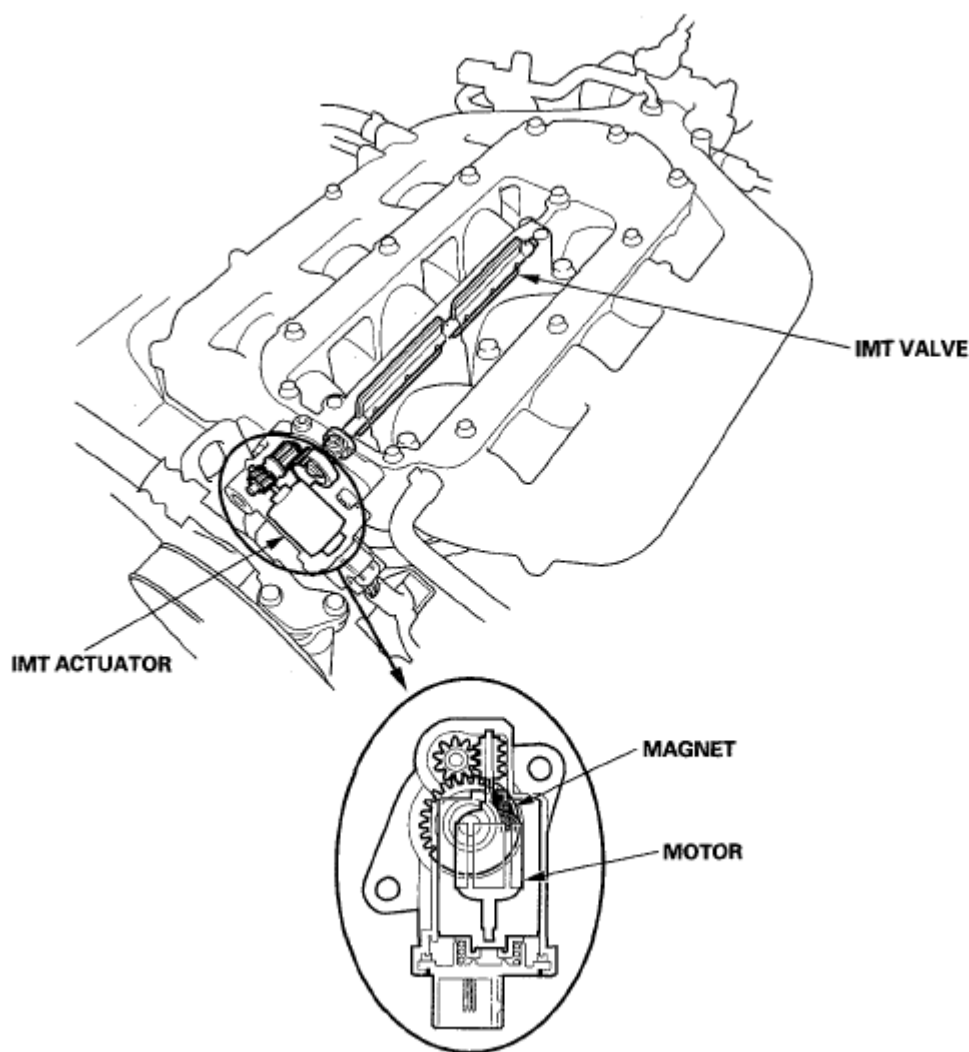


Fig. 53: Identifying Intake Manifold Tuning (IMT) Valve And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM DIAGRAM

The EGR system reduces oxides of nitrogen (NO_x) emissions by recirculating exhaust gas through the EGR valve and the intake manifold into the combustion chambers. The PCM memory contains the ideal EGR valve position for various operating conditions.

The EGR valve position sensor detects the amount of EGR valve lift, and sends it to the PCM. The PCM then compares it with the ideal lift in its memory (based on signals sent from other sensors). If there is any difference between the two, the PCM cuts current to the EGR valve.

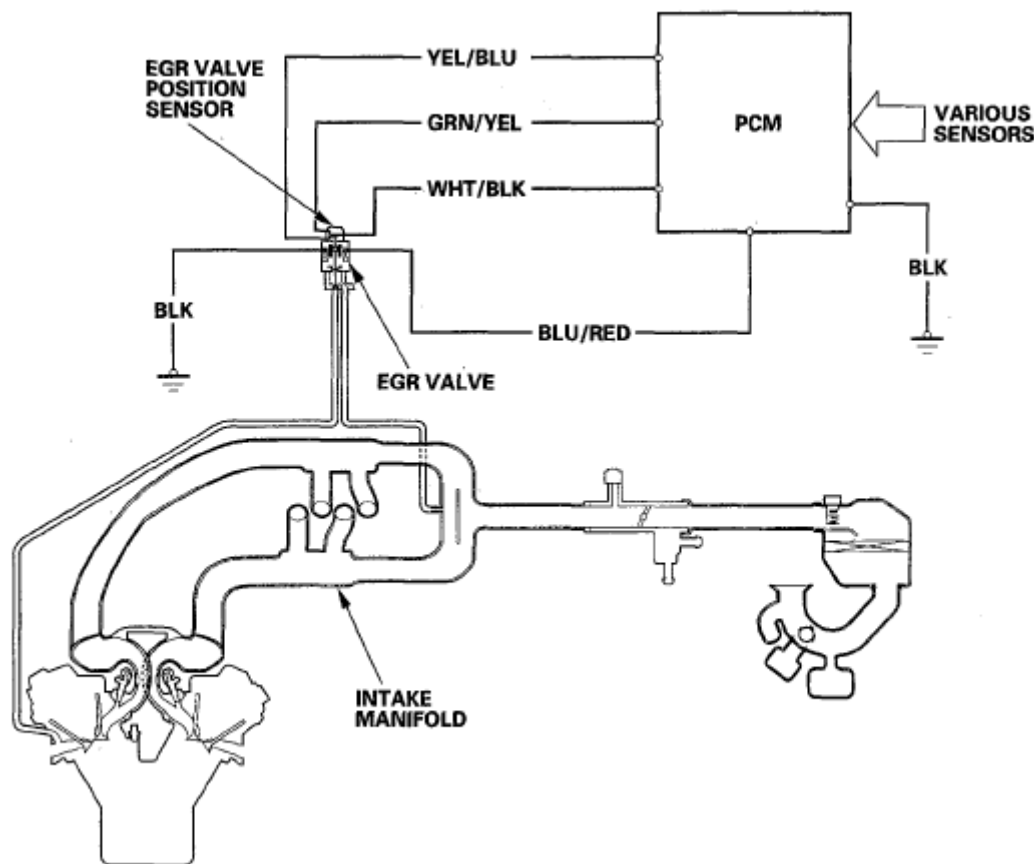


Fig. 54: Exhaust Gas Recirculation (EGR) System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

EVAPORATIVE EMISSION (EVAP) CONTROL DIAGRAM

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

- The EVAP canister is purged by drawing fresh air through it and into a port on the intake manifold.

The purging vacuum is controlled by the EVAP canister purge valve, which operates whenever engine coolant temperature is above 140°F (60°C).

- During refueling, the fuel tank vapor control valve opens with the pressure in the fuel tank, and feeds the fuel vapor to the EVAP canister.

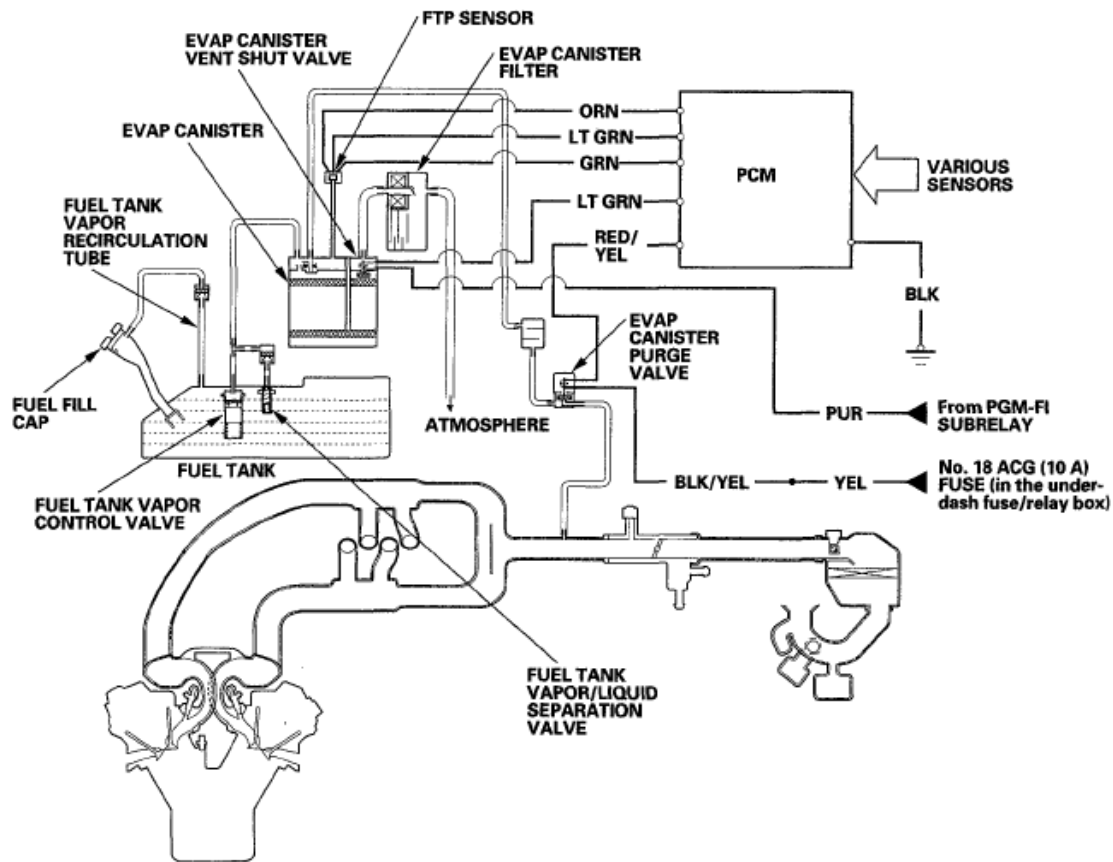


Fig. 55: Evaporative Emission (EVAP) Control Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCM Circuit Diagram

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

PCM Circuit Diagram

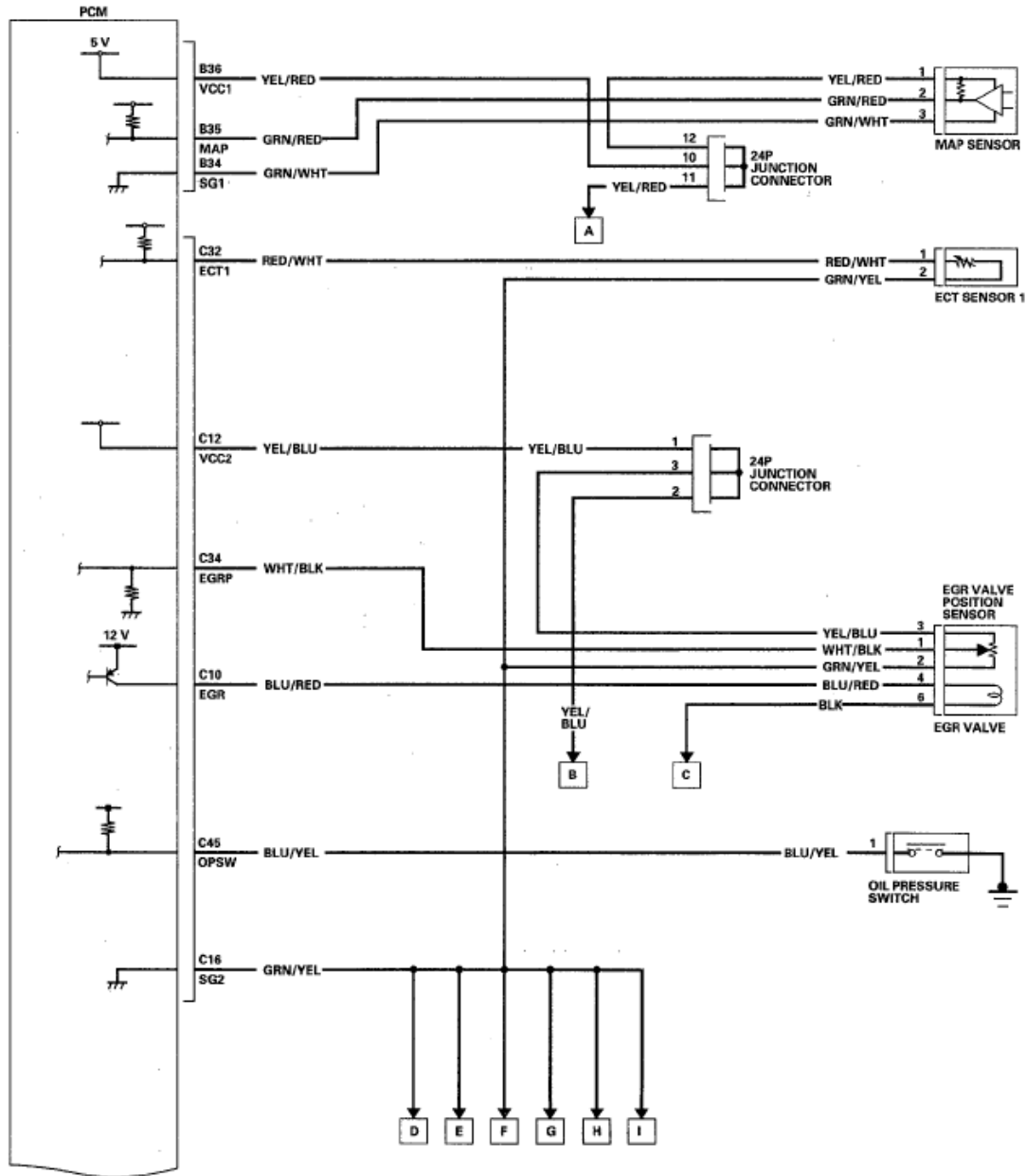


Fig. 56: PCM Circuit Diagram (1 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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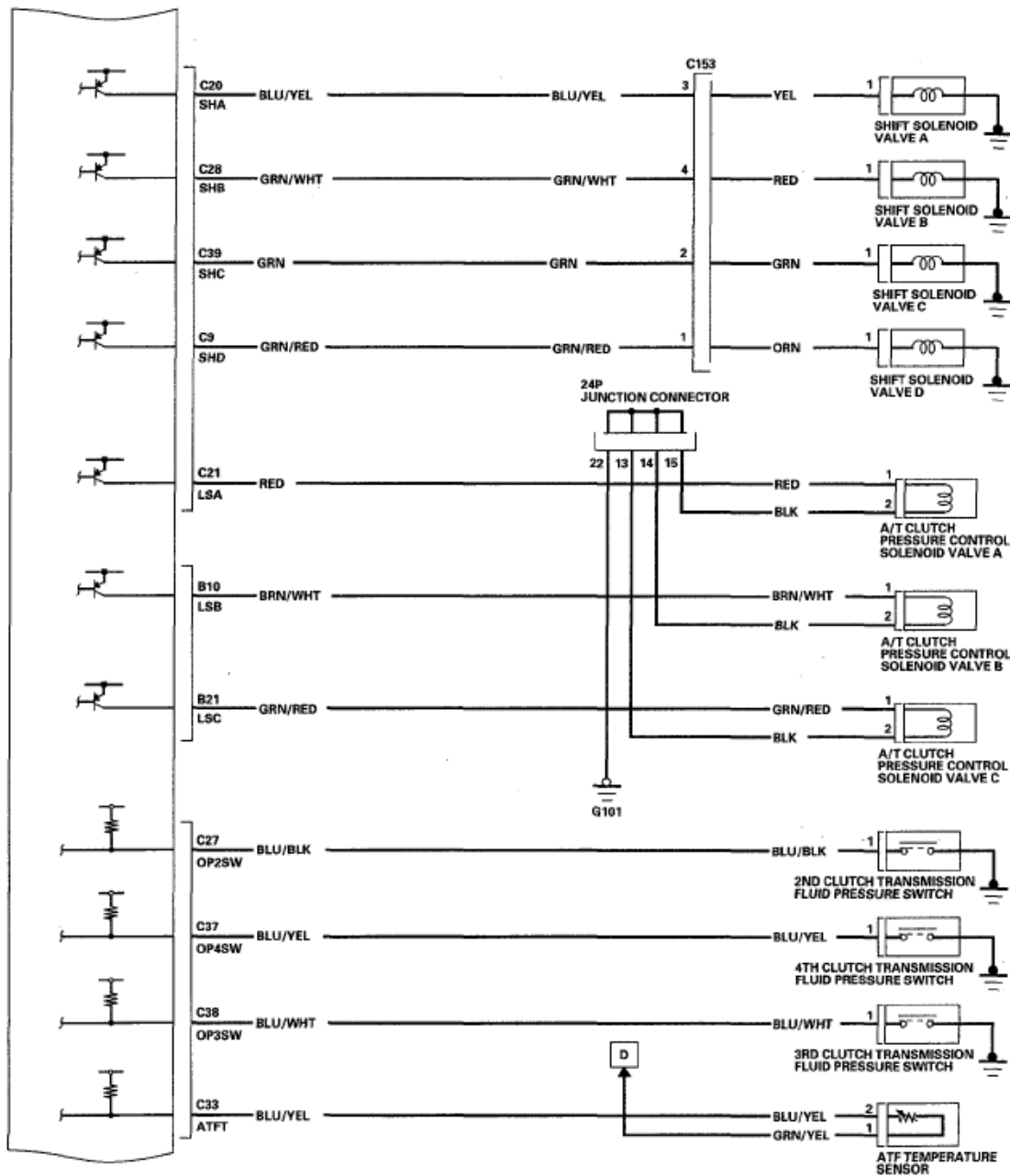


Fig. 57: PCM Circuit Diagram (2 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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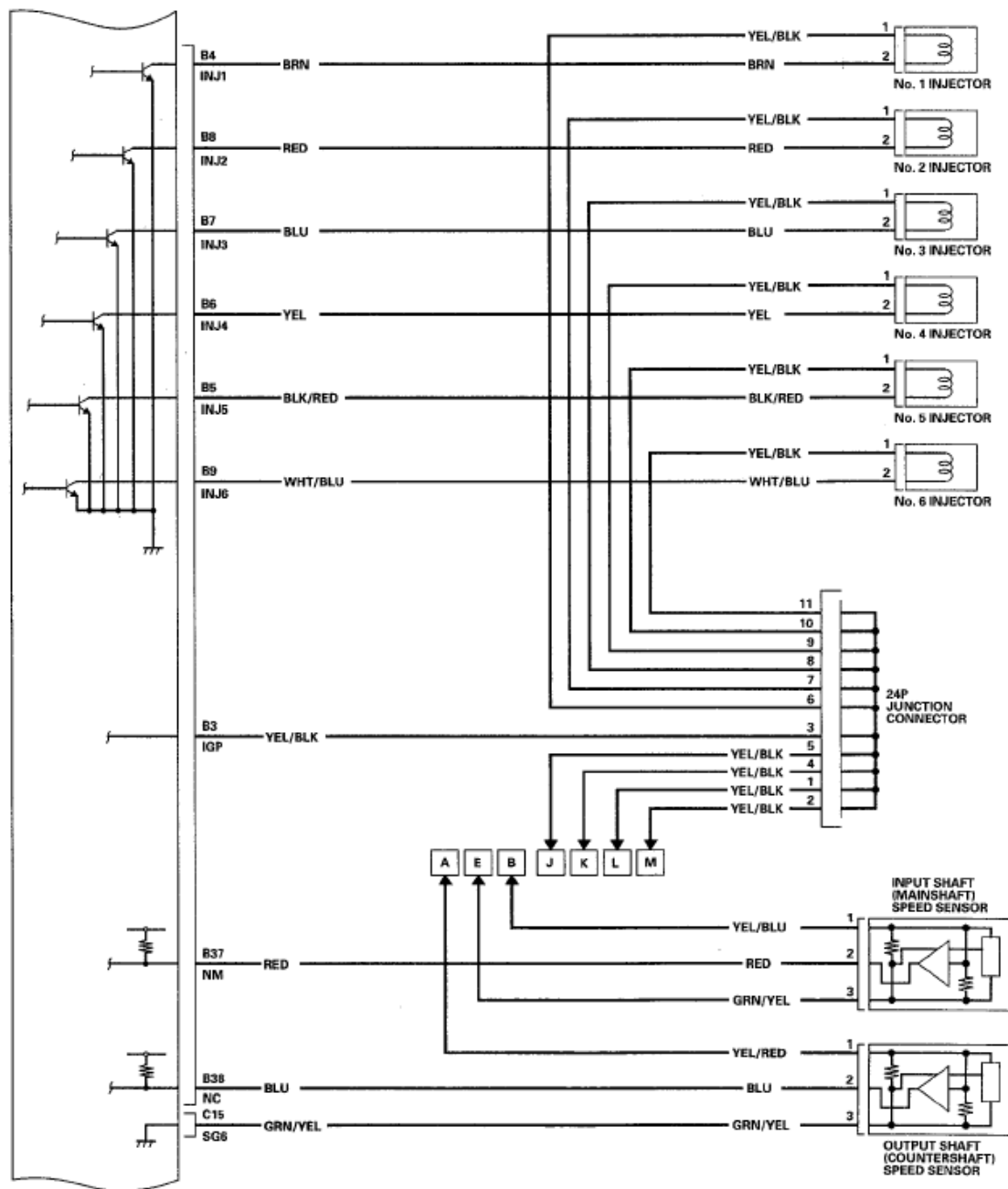


Fig. 58: PCM Circuit Diagram (3 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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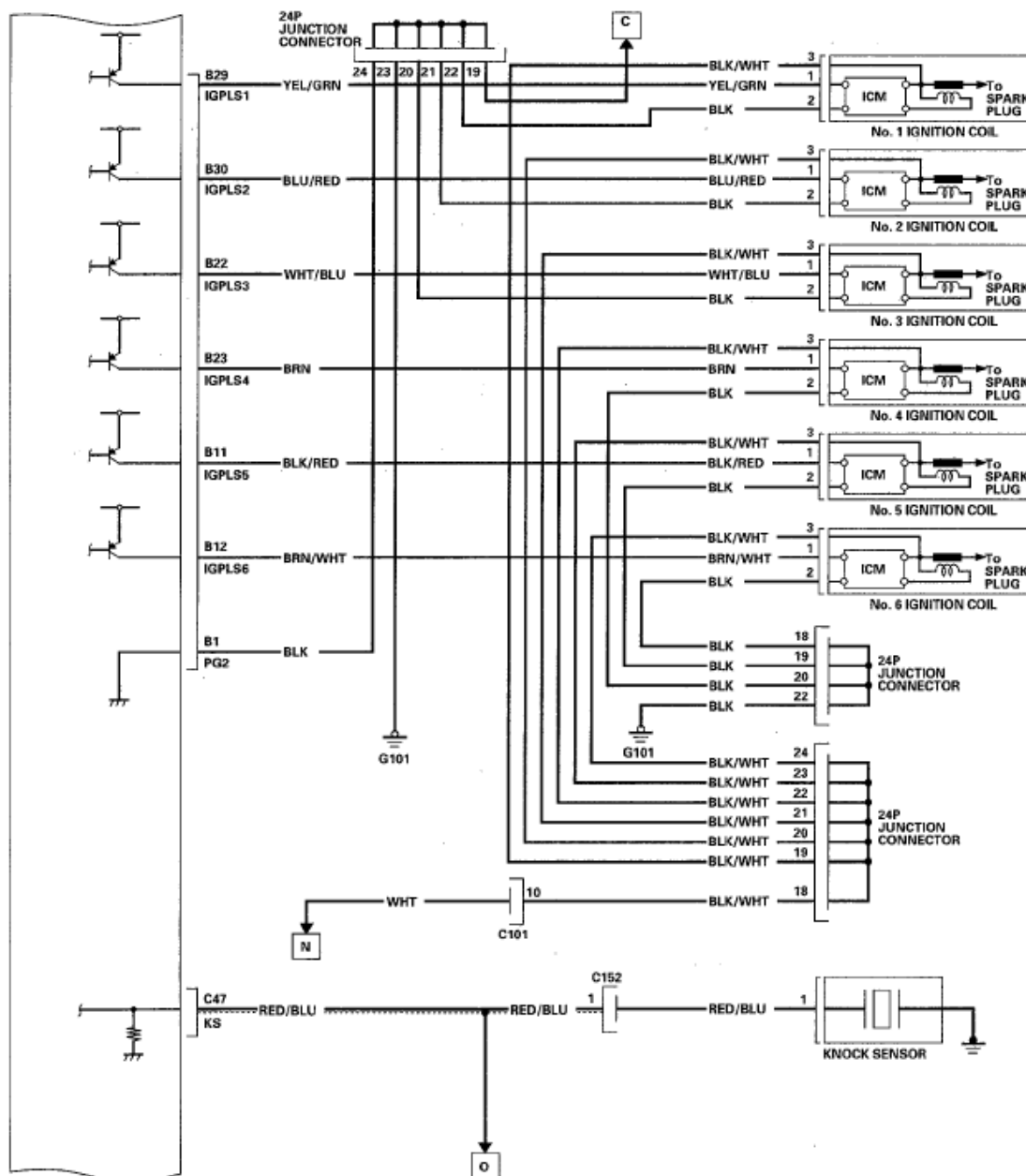


Fig. 59: PCM Circuit Diagram (4 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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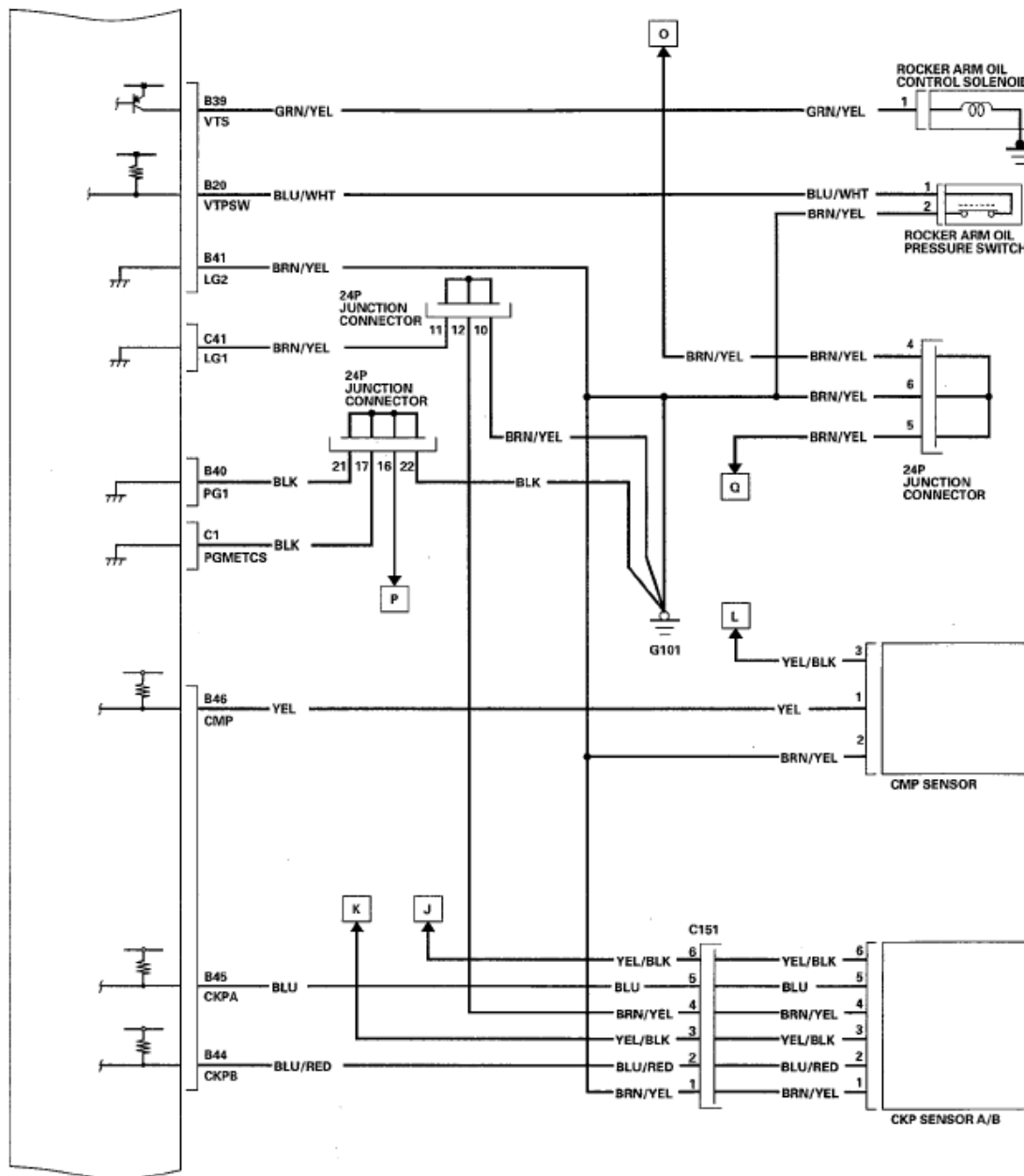


Fig. 60: PCM Circuit Diagram (5 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

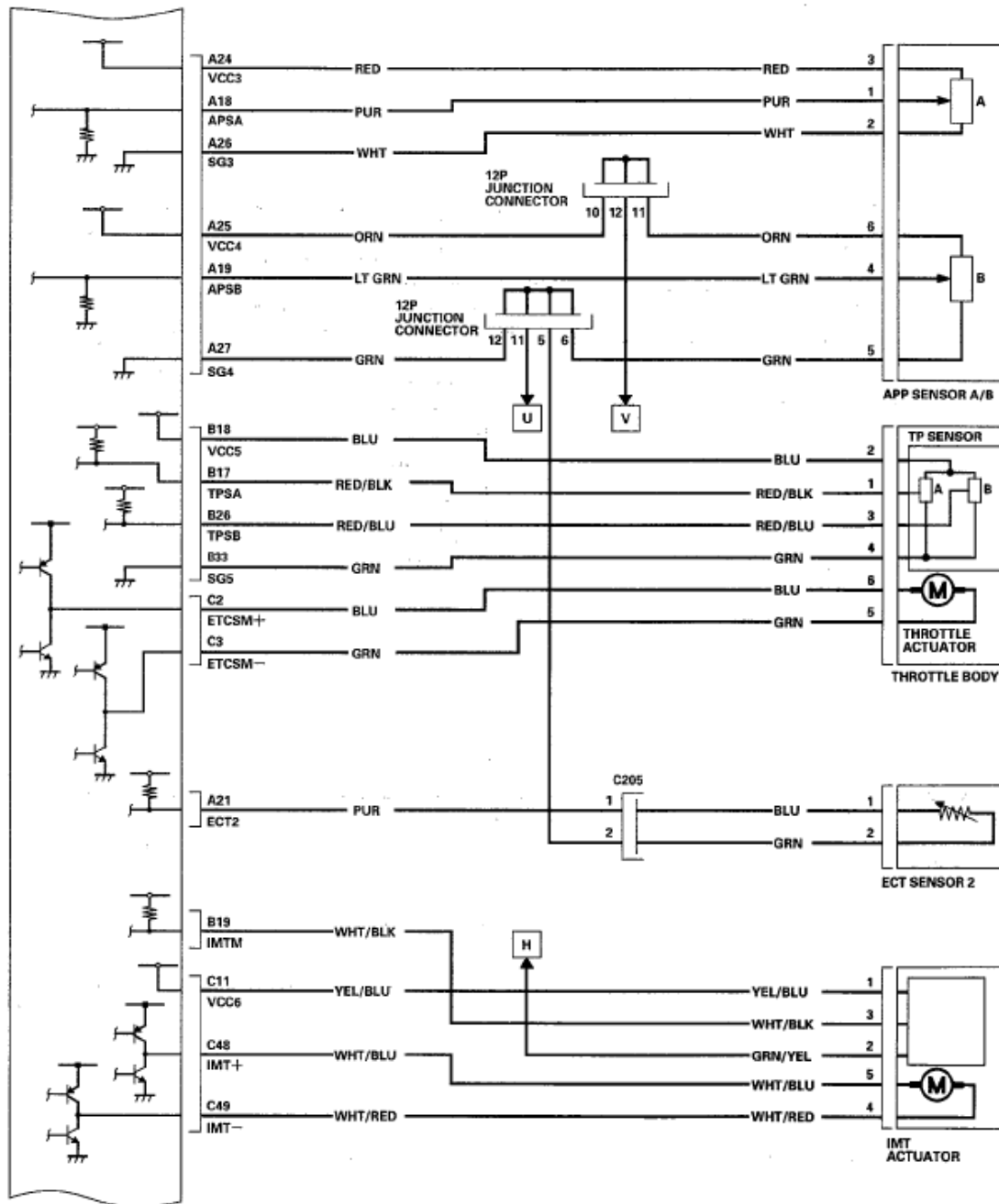


Fig. 62: PCM Circuit Diagram (7 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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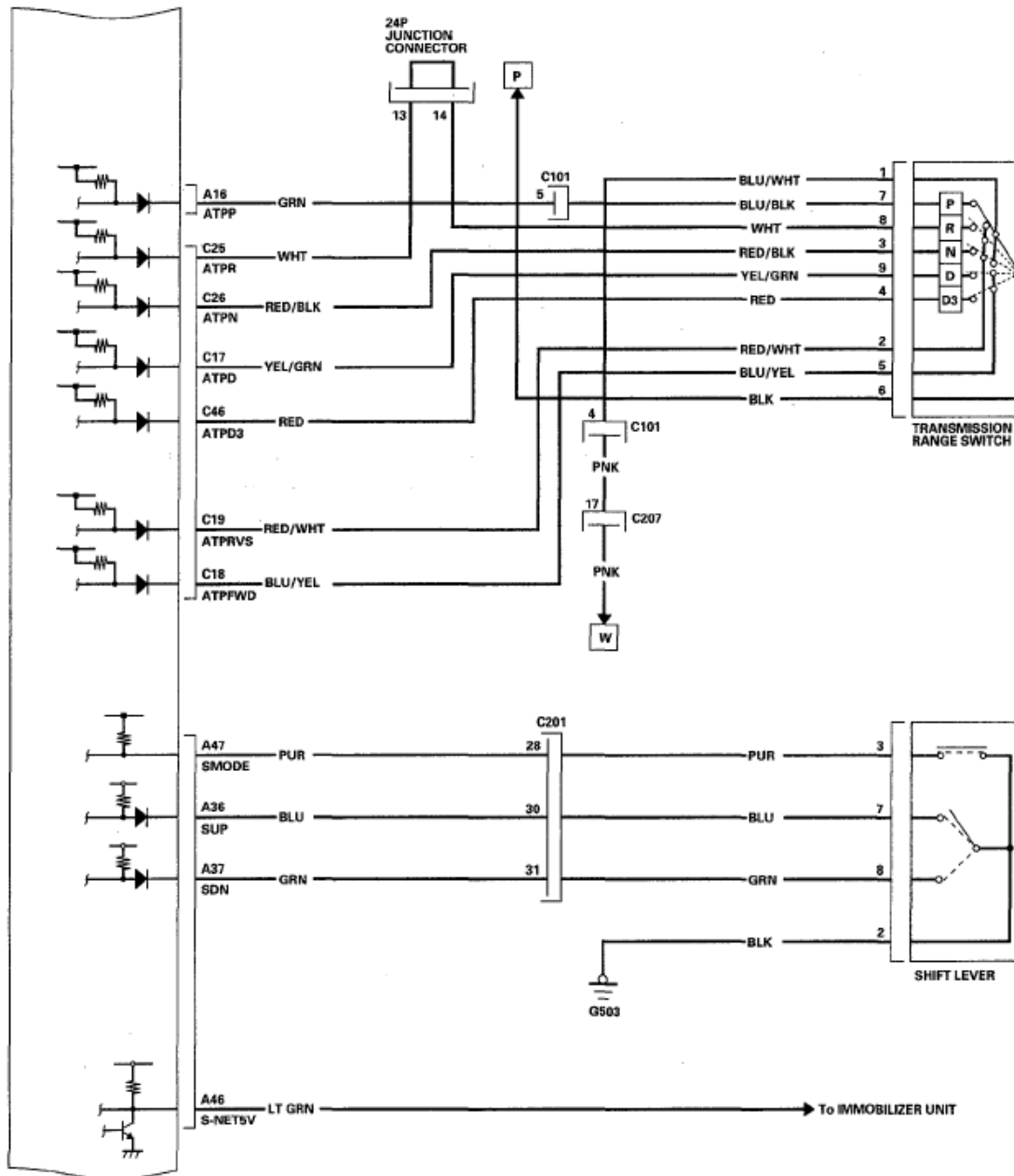


Fig. 63: PCM Circuit Diagram (8 Of 13)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

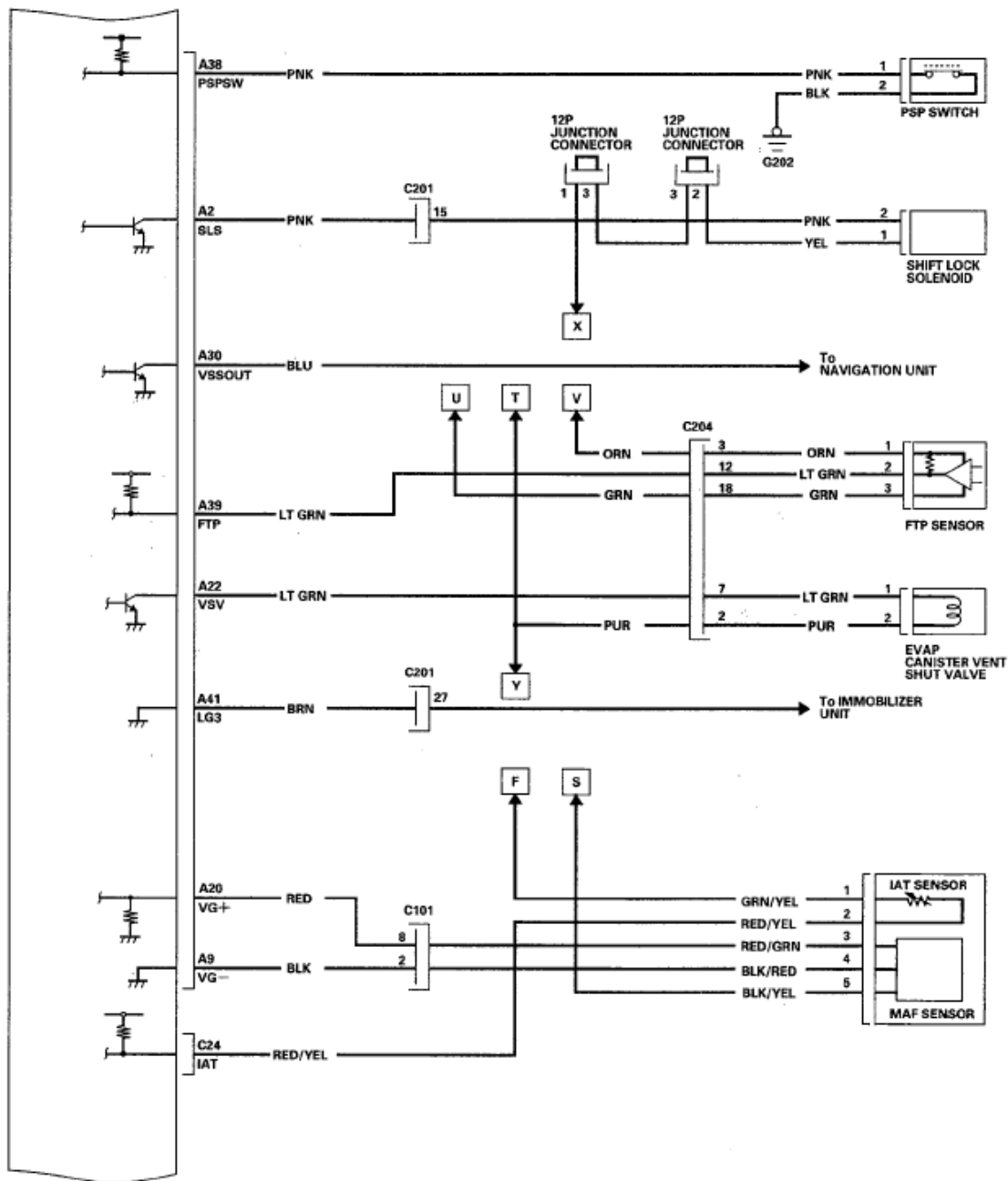


Fig. 64: PCM Circuit Diagram (9 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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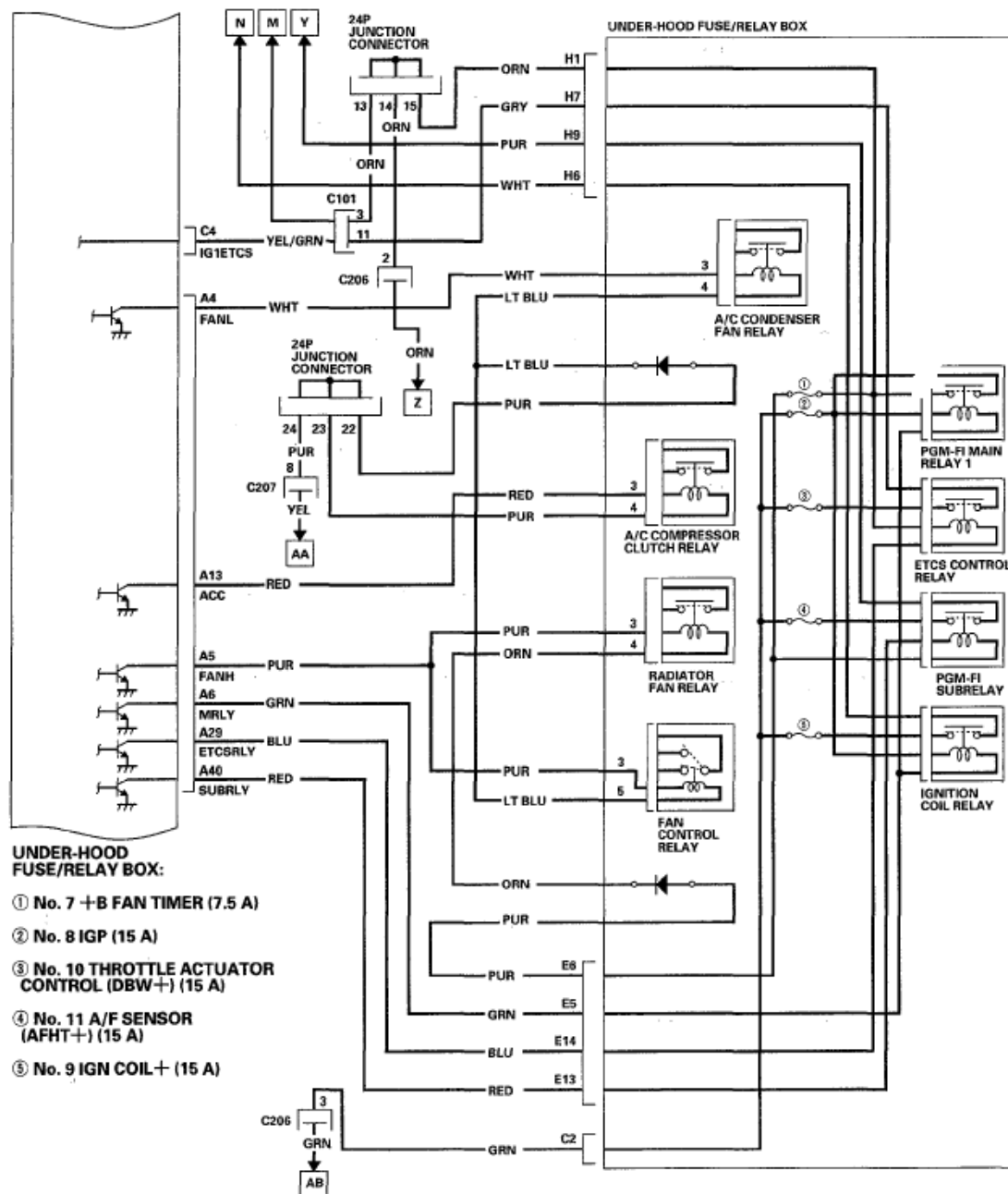


Fig. 65: PCM Circuit Diagram (10 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

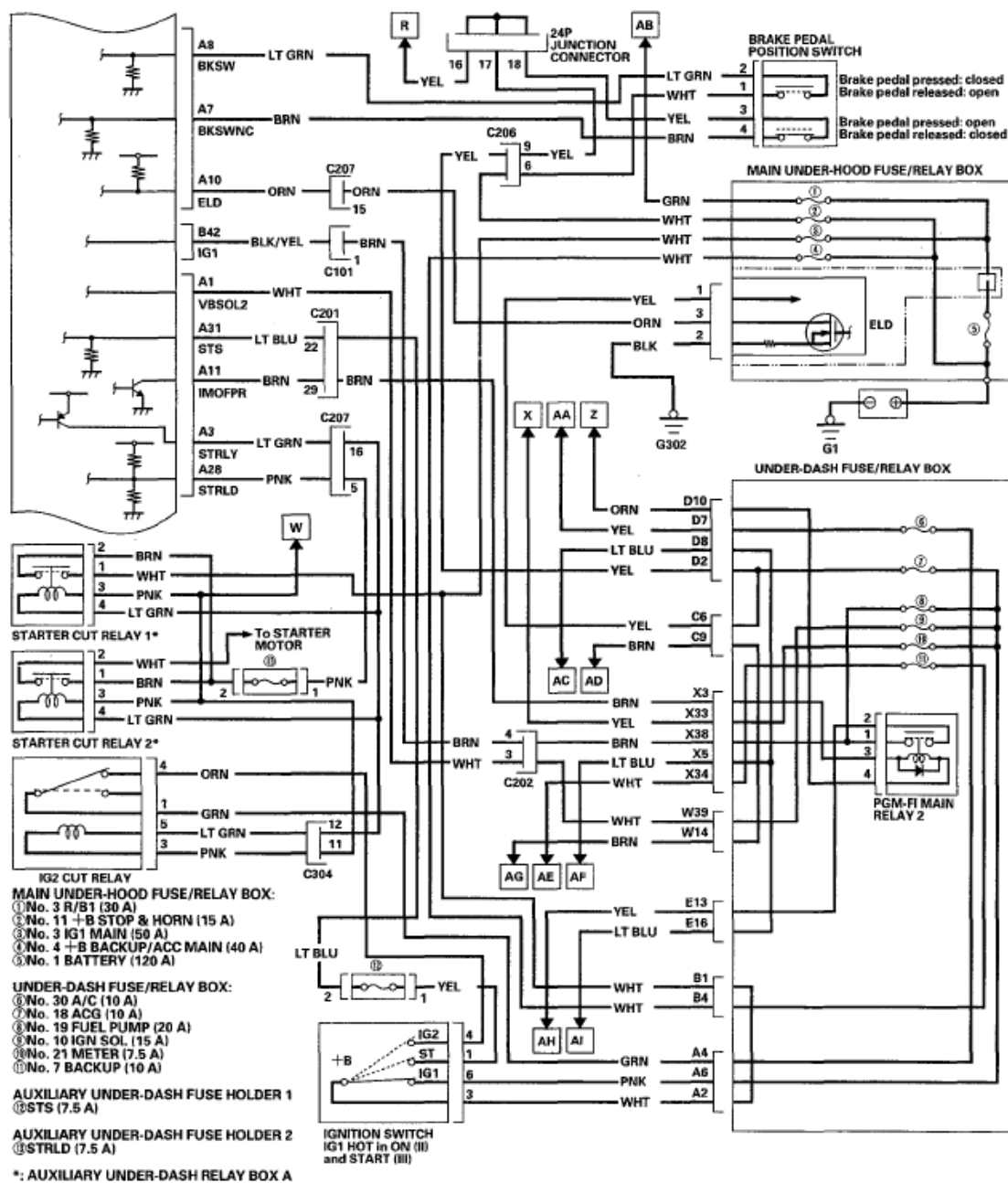


Fig. 66: PCM Circuit Diagram (11 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

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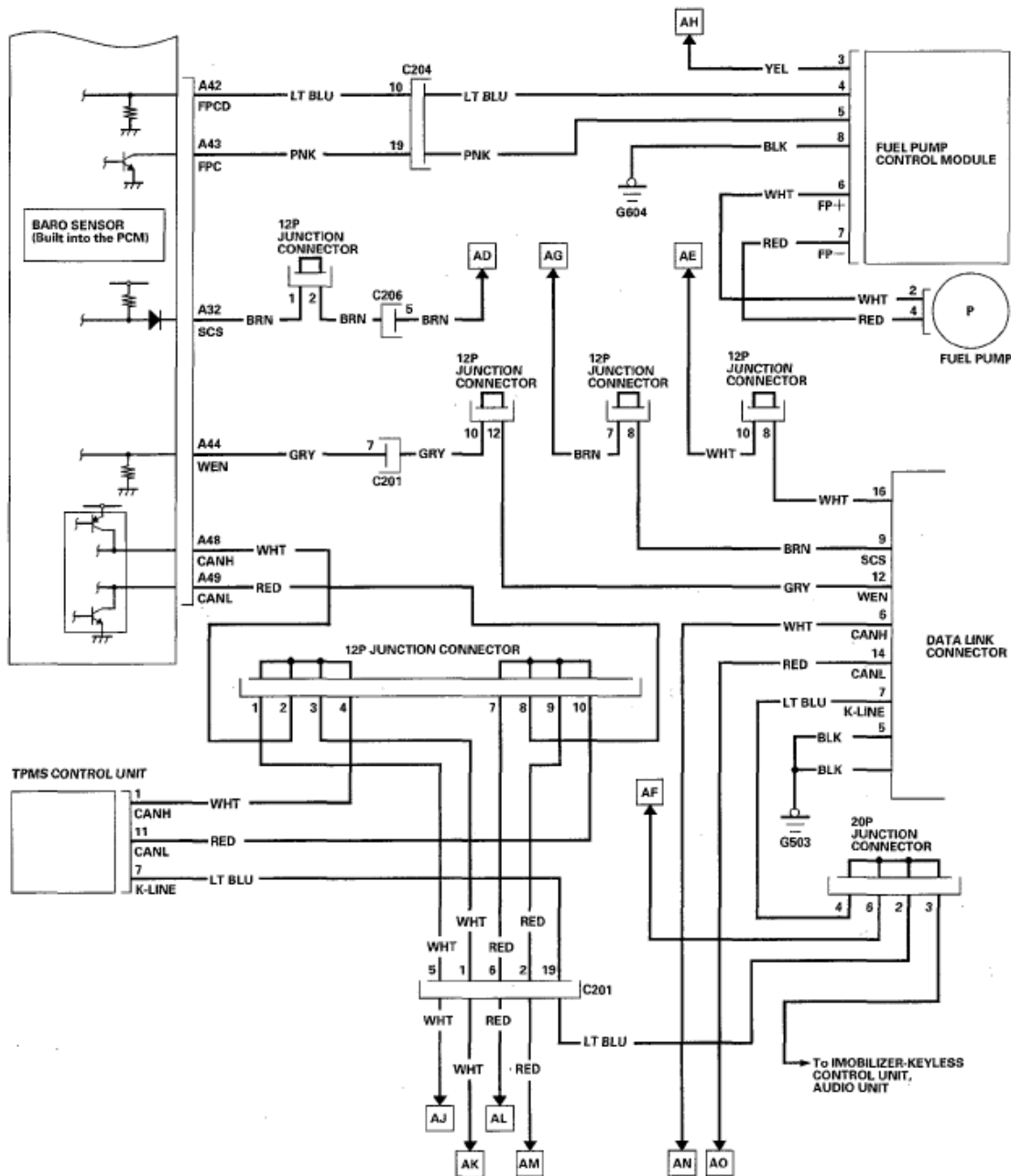


Fig. 67: PCM Circuit Diagram (12 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

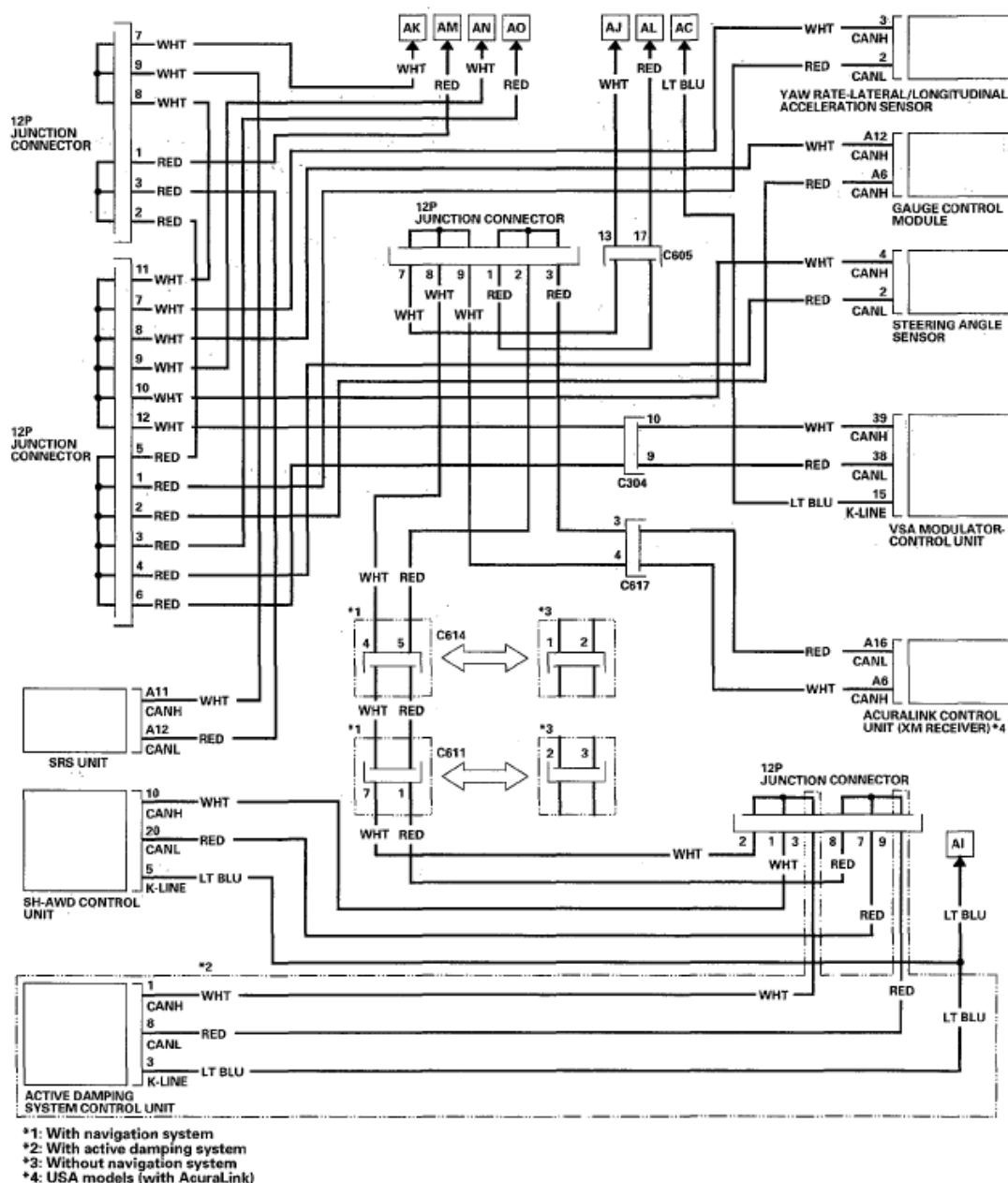


Fig. 68: PCM Circuit Diagram (13 Of 13)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO SET READINESS CODES

MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)

The vehicle has certain "readiness codes" that are part of the on-board diagnostics for the emissions systems. If the vehicle's battery has been disconnected or gone dead, if the DTCs have been cleared, or if the PCM has been reset, these readiness codes are reset to incomplete. In some states, part of the emissions testing is to make sure

these codes are set to complete. If all of them are not set to complete, the vehicle may fail the emission test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch ON (II), but do not start the engine. The MIL will come on for 15-20 seconds. If it then goes off, the readiness codes are set to complete. If it flashes five times, one or more readiness codes are not set to complete. To set readiness codes from incomplete to complete, do the procedure for the appropriate code.

To check the status of a specific DTC system, check the OBD status in the DTC MENU with the HDS (see **OBD STATUS**). This screen displays the code, the current data list of the enable criteria, and the status of the readiness testing.

CATALYTIC CONVERTER MONITOR AND READINESS CODE

NOTE:

- Do not turn the ignition switch off during the procedure.
- All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the PCM is reset with the HDS.
- Low ambient temperatures or excessive stop-and-go traffic may increase the drive time needed to switch the readiness code from incomplete to complete.
- The readiness code will not switch to complete until all the enable criteria are met.
- If a fault in the secondary HO2S system caused the MIL to come on, the readiness code cannot be set to complete until you correct the fault.

Enable Criteria

- ECT SENSOR 1 at 158°F (70°C) or more.
- IAT SENSOR at 20°F (-7°C) or more.
- VSS above 25 mph (40 km/h).

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC), and bring up the READINESS CODES screen for Catalyst in the DTCs MENU.
2. Start the engine.
3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. After about 5 miles (8 km), the readiness code should switch to complete.
4. If the readiness code is still not set to complete, check for a Temporary DTC with the HDS. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

EVAPORATIVE EMISSION (EVAP) CONTROL SYSTEM MONITOR AND READINESS CODE

NOTE:

All readiness codes are cleared when the battery is disconnected, if the DTCs

have been cleared, or if the PCM is reset with the HDS.

Enable Criteria

- Battery voltage is more than 10.5 V.
- Engine at idle.
- ECT SENSOR 1 and SENSOR 2 between 176°F (80°C) and 212°F (100°C).
- MAP sensor less than 46.6 kPa (14 in.Hg, 350 mmHg).
- VSS 0 mph (0 km/h).
- IAT SENSOR between 32°F (0°C) and 212°F (100°C).

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Select EVAP TEST in the INSPECTION MENU with the HDS, then select the FUNCTION TEST in the EVAP TEST MENU.
 - If the result is normal, readiness is complete.
 - If the result is not normal, go to the next step.
4. Check for a Temporary DTC. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR MONITOR AND READINESS CODE**NOTE:**

- **Do not turn the ignition switch off during the procedure.**
- **All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the PCM is reset with the HDS.**

Enable Criteria

ECT SENSOR 1 at 140°F (60°C) or more.

Procedure

1. Start the engine.
2. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. During the drive, decelerate (with the throttle fully closed) for 5 seconds. After about 3.5 miles (5.6 km), the readiness code should switch from incomplete to complete.
3. Check the readiness codes screen for the AIR FUEL RATIO (A/F) SENSOR in the DTCs MENU with the HDS.
 - If the screen shows complete, readiness is complete.
 - If the screen shows not complete, go to the next step.

4. Check for a Temporary DTC. If there is no DTC, the enable criteria was probably not met. Select the DATA LIST MENU. Check the ECT SENSOR 1 in the ALL DATA LIST with the HDS. If the ECT SENSOR 1 is less than 140°F (60°C), run the engine until it is more than 140°F (60°C), then repeat the procedure.

AIR FUEL RATIO (A/F) SENSOR HEATER MONITOR READINESS CODE

NOTE: All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the PCM is reset with the HDS.

Procedure

1. Start the engine, and let it idle for 1 minute. The readiness code should switch from incomplete to complete.
2. If the readiness code is still not set to complete, check for a Temporary DTC. If there is no DTC, repeat the procedure.

MISFIRE MONITOR AND READINESS CODE

- This readiness code is always set to available because misfiring is continuously monitored.
- Monitoring pauses, and the misfire counter resets, if the vehicle is driven over a rough road.
- Monitoring also pauses, and the misfire counter holds at its current value, if the throttle position changes more than a predetermined value, or if driving conditions fall outside the range of any related enable criteria.

FUEL SYSTEM MONITOR AND READINESS CODE

- This readiness code is always set to available because the fuel system is continuously monitored during closed loop operation.
- Monitoring pauses when the catalytic converter, EVAP control system, and A/F sensor monitors are active.
- Monitoring also pauses when any related enable criteria are not being met. Monitoring resumes when the enable criteria is again being met.

COMPREHENSIVE COMPONENT MONITOR AND READINESS CODE

This readiness code is always set to available because the comprehensive component monitor is continuously running whenever the engine is cranking or running.

EGR MONITOR AND READINESS CODE

- NOTE:**
- Do not turn the ignition switch off during the procedure.
 - All readiness codes are cleared when the battery is disconnected, if the DTCs have been cleared, or if the PCM is reset with the HDS.

2008 Acura MDX
2007-09 ENGINE PERFORMANCE Fuel and Emissions Systems - MDX

Enable Criteria

ECT SENSOR 1 at 176°F (80°C) or more.

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Drive at a steady speed with the transmission in D position, at 50-62 mph (80-100 km/h) or above for more than 10 seconds.
4. With the transmission in D position, decelerate from 62 mph (100 km/h) or above by completely releasing the throttle for at least 5 seconds. If the engine is stopped during this procedure, go to step 3 and do the procedure again.
5. Check the OBD status screen for DTC P0401 in the DTCs MENU with the HDS.
 - If it is passed, readiness is complete.
 - If it is not passed, go to step 3 and retest.

2007-09 ENGINE PERFORMANCE

Fuel Supply System - MDX

COMPONENT LOCATION INDEX

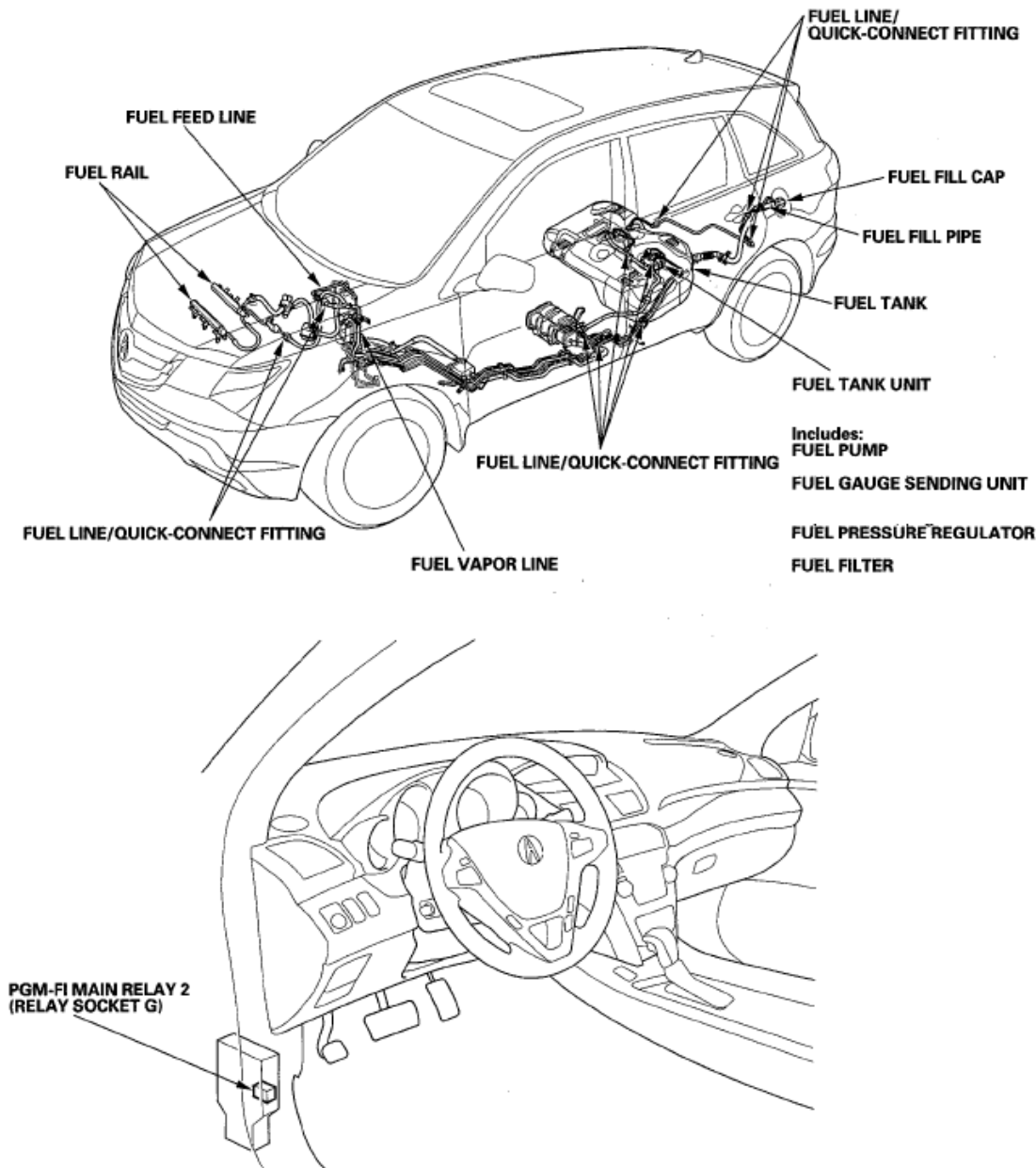


Fig. 1: Identifying Fuel Supply System Component Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel Supply System - MDX

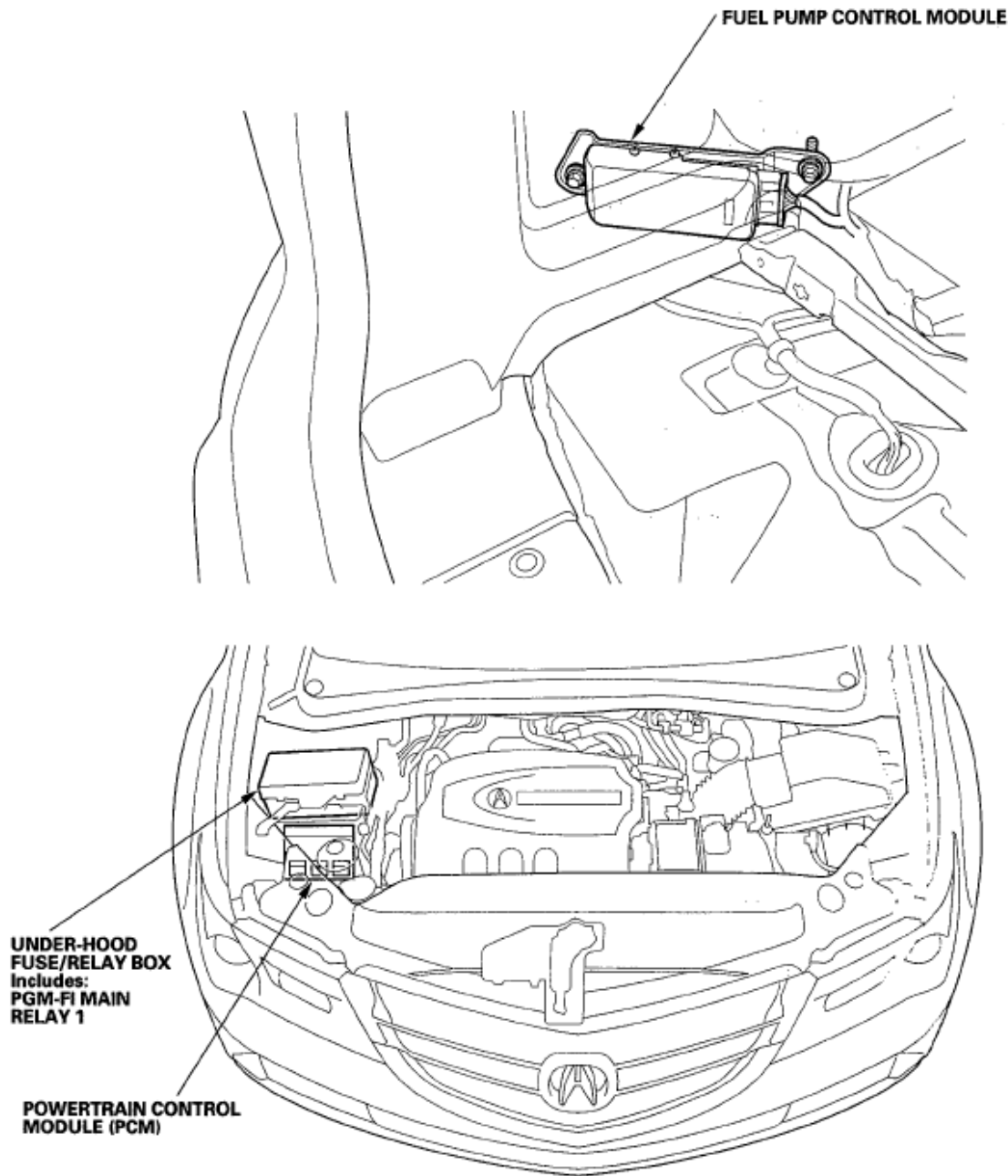


Fig. 2: Identifying Fuel Supply System Component Location (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0461: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) RANGE/PERFORMANCE PROBLEM

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- Because it requires 162 miles (260 km) of driving without refueling to complete this diagnosis, this DTC P0461 cannot be duplicated during this troubleshooting.

1. Test the fuel gauge sending unit (see FUEL GAUGE SENDING UNIT TEST).

Is the fuel gauge sending unit OK?

YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module.

NO - Replace the fuel gauge sending unit (see FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT), then go to step 2.

2. Turn the ignition switch ON (II).
3. Reset the PCM with the HDS.
4. Do the PCM idle learn procedure (see PCM IDLE LEARN PROCEDURE).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0461 indicated?

YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0462: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT LOW VOLTAGE**NOTE:**

Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0462 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit.

4. Turn the ignition switch OFF.
5. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
6. Remove the access panel from the floor.
7. Disconnect the fuel tank unit 4P connector.
8. Turn the ignition switch ON (II).
9. Clear the DTC with the HDS, and wait 5 seconds.
10. Check for Temporary DTCs or DTCs with the HDS.

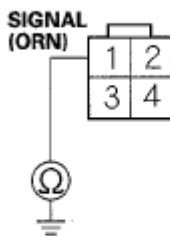
Is DTC P0463 indicated?

YES - Replace the fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**), then go to step 22.

NO - Go to step 11.

11. Turn the ignition switch OFF.
12. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
13. Disconnect gauge control module connector A (12P).
14. Check for continuity between fuel tank unit 4P connector terminal No. 1 and body ground.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Fig. 3: Identifying Continuity Between Fuel Tank Unit 4P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 23.

NO - Go to step 15.

15. Reconnect gauge control module connector A (12P).
16. Remove the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
17. Connect the fuel tank unit 4P connector.
18. Turn the ignition switch ON (II).
19. Clear the DTC with the HDS.
20. Set the float (A) to the E position.

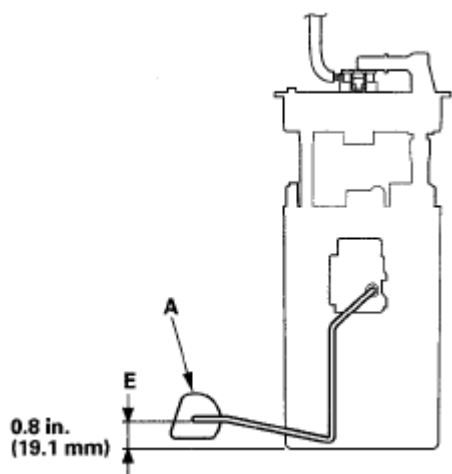


Fig. 4: Identifying Float

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21. Check the fuel gauge.

Does the fuel gauge move to the empty position?

YES - Go to step 29.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 22.

22. Turn the ignition switch OFF.
23. Install the parts in the reverse order of removal.
24. Reconnect all connectors.
25. Turn the ignition switch ON (II).
26. Reset the PCM with the HDS.
27. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0462 indicated?

YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel Supply System - MDX

module, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

29. Turn the ignition switch OFF.
30. Install the parts in the reverse order of removal.
31. Reconnect all connectors.
32. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
33. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0462 indicated?

YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

DTC P0463: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

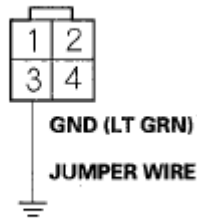
Is DTC P0463 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit.

4. Turn the ignition switch OFF.
5. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
6. Remove the access panel from the floor.
7. Disconnect the fuel tank unit 4P connector.
8. Connect fuel tank unit 4P connector terminal No. 3 to body ground with a jumper wire.

FUEL TANK UNIT 4P CONNECTOR



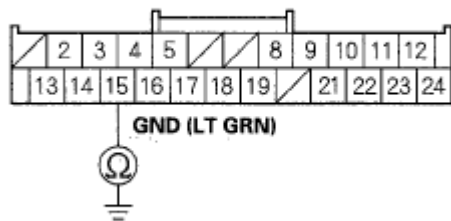
Wire side of female terminals

Fig. 5: Identifying Fuel Tank Unit 4P Connector Terminal No. 3 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
10. Disconnect gauge control module connector B (24P).
11. Check for continuity between gauge control module connector B (24P) terminal No. 15 and body ground.

GAUGE CONTROL MODULE CONNECTOR B (24P)



Wire side of female terminals

Fig. 6: Identifying Continuity Between Gauge Control Module Connector B (24P) Terminal No. 15 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

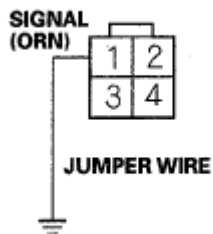
Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the gauge control module (GND line) and the fuel gauge sending unit, then go to step 24.

12. Connect fuel tank unit 4P connector terminal No. 1 to body ground with a jumper wire.

FUEL TANK UNIT 4P CONNECTOR



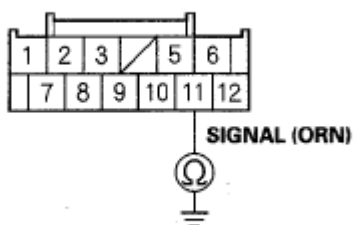
Wire side of female terminals

Fig. 7: Identifying Fuel Tank Unit 4P Connector Terminal No. 1 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between gauge control module connector A (12P) terminal No. 11 and body ground.

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 8: Identifying Continuity Between Gauge Control Module Connector A (12P) Terminal No. 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 24.

14. Remove the jumper wire from the fuel tank unit 4P connector.
15. Remove the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
16. Test the fuel gauge sending unit (see **FUEL GAUGE SENDING UNIT TEST**).

Is the fuel gauge sending unit OK?

YES - Go to step 17.

NO - Replace the fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT**).

REPLACEMENT), then go to step 24.

17. Connect the fuel tank unit 4P connector.
18. Reconnect gauge control module connector A (12P).
19. Turn the ignition switch ON (II).
20. Clear the DTC with the HDS.
21. Set the float (A) to the F position.

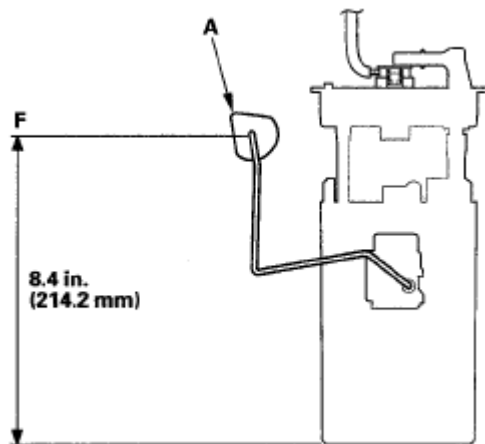


Fig. 9: Identifying Gauge Control Module Connector A (12P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Check the fuel gauge.

Does the gauge move to the full position?

YES - Go to step 30.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 24.

23. Turn the ignition switch OFF.
24. Install the parts in the reverse order of removal.
25. Reconnect all connectors.
26. Turn the ignition switch ON (II).
27. Reset the PCM with the HDS.
28. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0463 indicated?

YES - Check for poor connections or loose terminals at the gauge control module and the fuel gauge

sending unit, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

30. Turn the ignition switch OFF.
31. Install the parts in the reverse order of removal.
32. Reconnect all connectors.
33. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
34. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0463 indicated?

YES - Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs TROUBLESHOOTING**.

DTC P0627: FUEL PUMP CONTROL MODULE SYSTEM MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to the start (III) position.

NOTE: This vehicle has an auto control mode starting system. It keeps the starter motor running after the ignition switch is released for 15 seconds, or until the engine starts.

4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0627 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the fuel pump control module, PGM-FI main relay 2, the fuel tank unit, and the PCM.

5. Turn the ignition switch OFF.
6. Check the No. 19 FUEL PUMP (20 A) fuse in under-dash fuse/relay box.

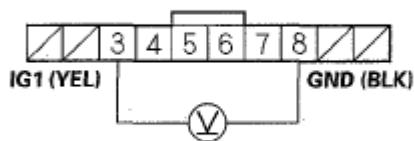
Is the fuse blown?

YES - Replace the under-dash fuse/relay box. Also replace the No. 19 FUEL PUMP (20 A) fuse, then go to step 73.

NO - Go to step 7.

7. Disconnect the fuel pump control module 10P connector (see **FUEL PUMP CONTROL MODULE REPLACEMENT**).
8. Turn the ignition switch ON (II), and measure voltage between fuel pump control module 10P connector terminals No. 3 and No. 8 within 2 seconds.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 10: Measuring Voltage Between Fuel Pump Control Module 10P Connector Terminals No. 3 And No. 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 27.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**), then remove PGM-FI main relay 2 (G) from the under-dash fuse/relay box.

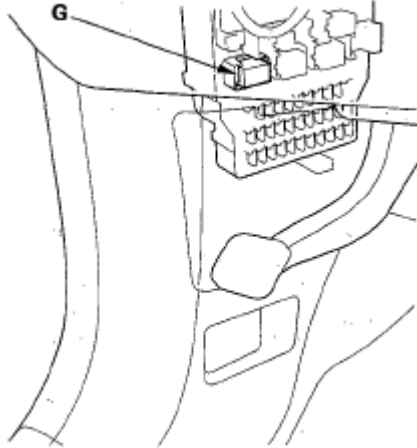


Fig. 11: Identifying PGM-FI Main Relay 2 (G) From Under-Dash Fuse/Relay Box
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Test PGM-FI main relay 2 (see **POWER RELAY TEST**).

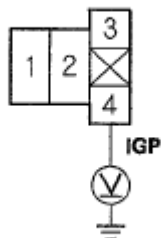
Is PGM-FI main relay 2 OK?

YES - Go to step 12.

NO - Replace PGM-FI main relay 2, then go to step 73.

12. Turn the ignition switch ON (II).
13. Measure voltage between PGM-FI main relay 2 4P connector terminal No. 4 and body ground.

PGM-FI MAIN RELAY 2 4P CONNECTOR



Terminal side of female terminals

Fig. 12: Identifying Voltage Between PGM-FI Main Relay 2 4P Connector Terminal No. 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

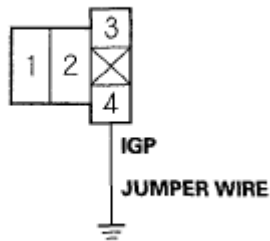
Is there battery voltage?

YES - Go to step 18.

NO - Go to step 14.

14. Turn the ignition switch OFF.
15. Disconnect under-hood fuse/relay box connector H (9P).
16. Connect PGM-FI main relay 2 4P connector terminal No. 4 to body ground with a jumper wire.

PGM-FI MAIN RELAY 2 4P CONNECTOR



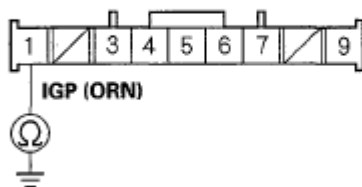
Terminal side of female terminals

Fig. 13: Identifying PGM-FI Main Relay 2 4P Connector Terminal No. 4 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check for continuity between under-hood fuse/ relay box connector H (9P) terminal No. 1 and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR H (9P)



Wire side of female terminals

Fig. 14: Identifying Continuity Between Under-Hood Fuse/ Relay Box Connector H (9P) Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 74.

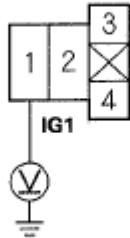
NO -

- Repair open in the wire between the under-hood fuse/relay box and the under-dash fuse/relay box, then go to step 74.
- If needed, replace the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION**), then

go to step 74.

18. Measure voltage between PGM-FI main relay 2 4P connector terminal No. 1 and body ground.

PGM-FI MAIN RELAY 2 4P CONNECTOR



Terminal side of female terminals

Fig. 15: Identifying Voltage Between PGM-FI Main Relay 2 4P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

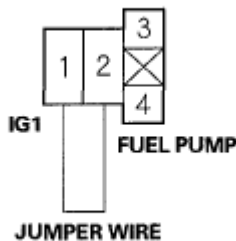
Is there battery voltage?

YES - Go to step 19.

NO - Replace the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION**), then go to step 73.

19. Turn the ignition switch OFF.
20. Connect PGM-FI main relay 2 4P connector terminals No. 1 and No. 2 with a jumper wire.

PGM-FI MAIN RELAY 2 4P CONNECTOR



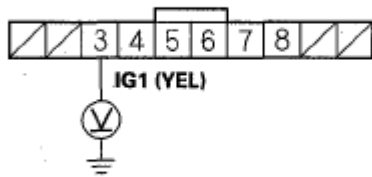
Terminal side of female terminals

Fig. 16: Identifying PGM-FI Main Relay 2 4P Connector Terminals No. 1 And No. 2 With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Turn the ignition switch ON (II), and measure voltage between fuel pump control module 10P connector terminal No. 3 and body ground within 2 seconds.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 17: Identifying Voltage Between Fuel Pump Control Module 10P Connector Terminal No. 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

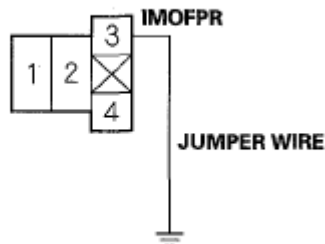
YES - Go to step 22.

NO -

- Repair open in the wire between the under-dash fuse/relay box and the fuel pump control module, then go to step 73.
- If needed, replace the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION**), then go to step 73.

22. Turn the ignition switch OFF.
23. Jump the SCS line with the HDS.
24. Disconnect PCM connector A (49P).
25. Connect PGM-FI main relay 2 4P connector terminal No. 3 to body ground with a jumper wire.

PGM-FI MAIN RELAY 2 4P CONNECTOR



Terminal side of female terminals

Fig. 18: Identifying PGM-FI Main Relay 2 4P Connector Terminal No. 3 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Check for continuity between PCM connector terminal A11 and body ground.

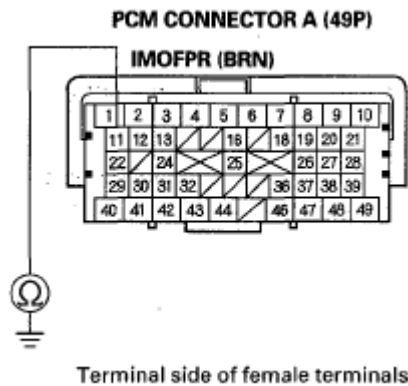


Fig. 19: Identifying Continuity Between PCM Connector Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 79.

NO - Repair open in the wire between the PCM (A11) and PGM-FI main relay 2, then go to step 73.

27. Turn the ignition switch OFF.
28. Reconnect the fuel pump control module 10P connector (see **FUEL PUMP CONTROL MODULE REPLACEMENT**).
29. Turn the ignition switch ON (II).
30. Clear the DTC with the HDS.
31. Turn the ignition switch OFF.
32. Turn the ignition switch ON (II), and check for sound from the fuel pump within 2 seconds.

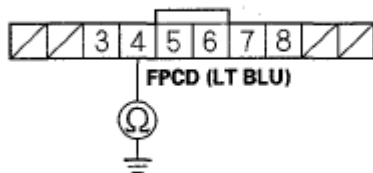
Does the fuel pump operate?

YES - Go to step 33.

NO - Go to step 53.

33. Turn the ignition switch OFF.
34. Disconnect the fuel pump control module 10P connector.
35. Check for continuity between fuel pump control module 10P connector terminal No; 4 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 20: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No; 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

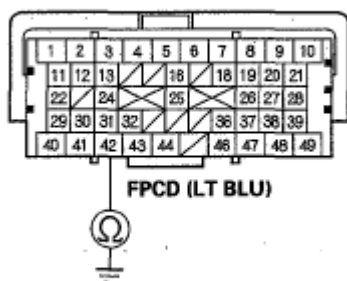
Is there continuity?

YES - Go to step 36.

NO - Go to step 39.

36. Jump the SCS line with the HDS.
37. Disconnect PCM connector A (49P).
38. Check for continuity between PCM connector terminal A42 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 21: Identifying Continuity Between PCM Connector Terminal A42 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

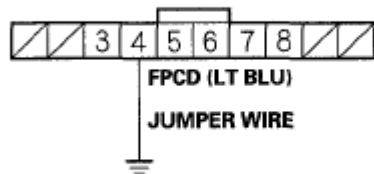
Is there continuity?

YES - Repair short in the wire between the PCM (A42) and the fuel pump control module, then go to step 73.

NO - Go to step 79.

39. Jump the SCS line with the HDS.
40. Disconnect PCM connector A (49P).
41. Connect fuel pump control module 10P connector terminal No. 4 to body ground with a jumper wire.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



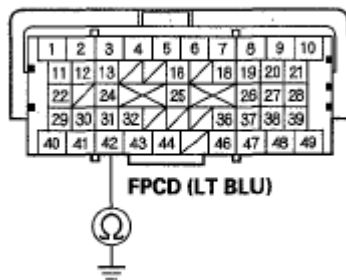
Wire side of female terminals

Fig. 22: Identifying Fuel Pump Control Module 10P Connector Terminal No. 4 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Check for continuity between PCM connector terminal A42 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 23: Identifying Continuity Between PCM Connector Terminal A42 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

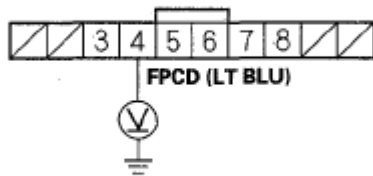
YES - Go to step 43.

NO - Repair open in the wire between the PCM (A42) and the fuel pump control module, then go to step 73.

43. Remove the jumper wire from the fuel pump control module 10P connector.
44. Reconnect the fuel pump control module 10P connector and PCM connector A (49P).
45. Turn the ignition switch ON (II).

46. Measure voltage between fuel pump control module 10P connector terminal No. 4 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 24: Identifying Voltage Between Fuel Pump Control Module 10P Connector Terminal No. 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

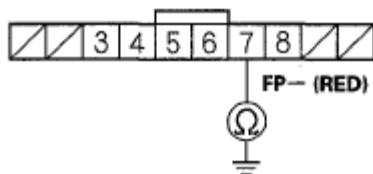
Is there about 8 V or more?

YES - Go to step 47.

NO - Replace the fuel pump control module (see **FUEL PUMP CONTROL MODULE REPLACEMENT**), then go to step 73.

47. Turn the ignition switch OFF.
 48. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
 49. Remove the access panel from the floor.
 50. Disconnect the fuel tank unit 4P connector.
 51. Disconnect the fuel pump control module 10P connector.
 52. Check for continuity between fuel pump control module 10P connector terminal No. 7 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 25: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No. 7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

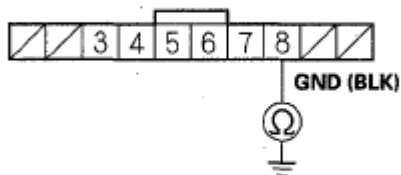
Is there continuity?

YES - Repair short in the wire between the fuel pump control module (FP- line) and the fuel tank unit, then go to step 73.

NO - Substitute a known-good fuel pump control module (see **FUEL PUMP CONTROL MODULE REPLACEMENT**), then go to step 73 and recheck. If DTC P0627 is not indicated, replace the original fuel pump control module (see **FUEL PUMP CONTROL MODULE REPLACEMENT**), then go to step 73. If DTC P0627 is indicated, go to step 80.

53. Turn the ignition switch OFF.
54. Disconnect the fuel pump control module 10P connector (see **FUEL PUMP CONTROL MODULE REPLACEMENT**).
55. Check for continuity between fuel pump control module 10P connector terminal No. 8 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 26: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No. 8 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

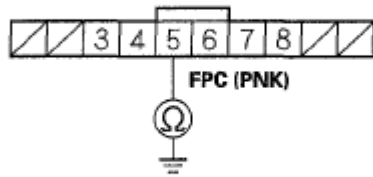
Is there continuity?

YES - Go to step 56.

NO - Repair open in the wire between the fuel pump control module (GND line) and G604, then go to step 73.

56. Check for continuity between fuel pump control module 10P connector terminal No. 5 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 27: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No. 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

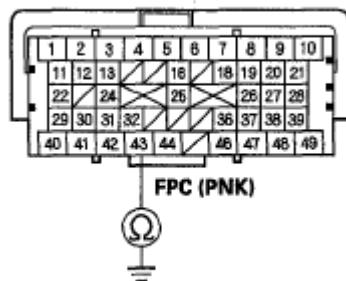
Is there continuity?

YES - Go to step 57.

NO - Go to step 60.

57. Jump the SCS line with the HDS.
58. Disconnect PCM connector A (49P).
59. Check for continuity between PCM connector terminal A43 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 28: Identifying Continuity Between PCM Connector Terminal A43 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

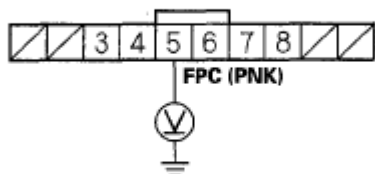
Is there continuity?

YES - Repair short in the wire between the PCM (A43) and the fuel pump control module, then go to step 73.

NO - Go to step 79.

60. Reconnect the fuel pump control module 10P connector.
61. Turn the ignition switch ON (II), and measure voltage between fuel pump control module 10P connector terminal No. 5 and body ground within 2 seconds.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 29: Identifying Voltage Between Fuel Pump Control Module 10P Connector Terminal No. 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

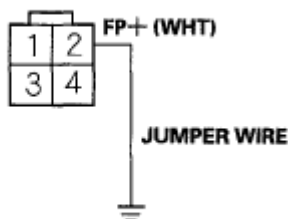
Is there battery voltage?

YES - Go to step 62.

NO - Replace the fuel pump control module (see **FUEL PUMP CONTROL MODULE REPLACEMENT**), then go to step 73.

62. Turn the ignition switch OFF.
63. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
64. Remove the access panel from the floor.
65. Disconnect the fuel tank unit 4P connector.
66. Disconnect the fuel pump control module 10P connector (see **FUEL PUMP CONTROL MODULE REPLACEMENT**).
67. Connect between fuel tank unit 4P connector terminal No. 2 to body ground with a jumper wire.

FUEL TANK UNIT 4P CONNECTOR



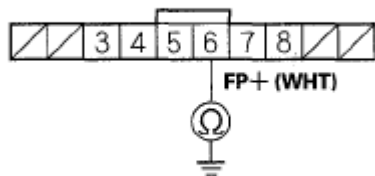
Wire side of female terminals

Fig. 30: Identifying Fuel Tank Unit 4P Connector Terminal No. 2 To Body Ground With Jumper

Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

68. Check for continuity between fuel pump control module 10P connector terminal No. 6 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR

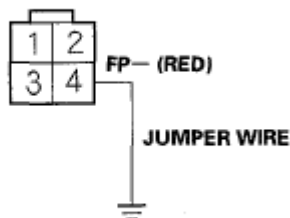
Wire side of female terminals

Fig. 31: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No. 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Go to step 69.**NO** - Repair open in the wire between the fuel pump control module (FP+ line) and the fuel tank unit, then go to step 73.

69. Connect between fuel tank unit 4P connector terminal No. 4 to body ground with a jumper wire.

FUEL TANK UNIT 4P CONNECTOR

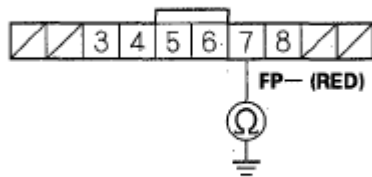
Wire side of female terminals

Fig. 32: Identifying Fuel Tank Unit 4P Connector Terminal No. 4 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

70. Check for continuity between fuel pump control module 10P connector terminal No. 7 and body ground.

FUEL PUMP CONTROL MODULE 10P CONNECTOR



Wire side of female terminals

Fig. 33: Identifying Continuity Between Fuel Pump Control Module 10P Connector Terminal No. 7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

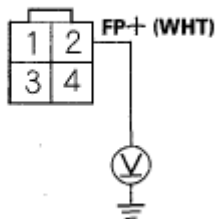
Is there continuity?

YES - Go to step 71.

NO - Repair open in the wire between the fuel pump control module (FP- line) and the fuel tank unit, then go to step 73.

71. Remove the jumper wire from the fuel tank unit 4P connector terminal No. 4, and reconnect the fuel pump control module 10P connector.
72. Turn the ignition switch ON (II), and measure voltage between fuel tank unit 4P connector terminal No. 2 and body ground within 2 seconds.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Fig. 34: Identifying Voltage Between Fuel Tank Unit 4P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**), then go to step 73.

NO - Substitute a known-good fuel pump control module (see **FUEL PUMP CONTROL MODULE**

REPLACEMENT), then go to step 73 and recheck. If DTC P0627 is not indicated, replace the original fuel pump control module (see **FUEL PUMP CONTROL MODULE REPLACEMENT**), then go to step 73. If DTC P0627 is indicated, go to step 80.

73. Turn the ignition switch OFF.
74. Reconnect all connectors.
75. Turn the ignition switch ON (II).
76. Reset the PCM with the HDS.
77. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
78. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0627 indicated?

YES - Check for poor connections or loose terminals at the fuel pump control module, PGM-FI main relay 2, the fuel tank unit, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs troubleshooting**.

79. Reconnect all connectors.
80. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
81. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0627 indicated?

YES - Check for poor connections or loose terminals at the fuel pump control module, PGM-FI main relay 2, the fuel pump, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated **DTCs TROUBLESHOOTING**.

FUEL PRESSURE RELIEVING

Before disconnecting fuel lines or hoses, relieve pressure from the system by disabling the fuel pump and then disconnecting the fuel tube/quick connect fitting in the engine compartment.

WITH THE HDS

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

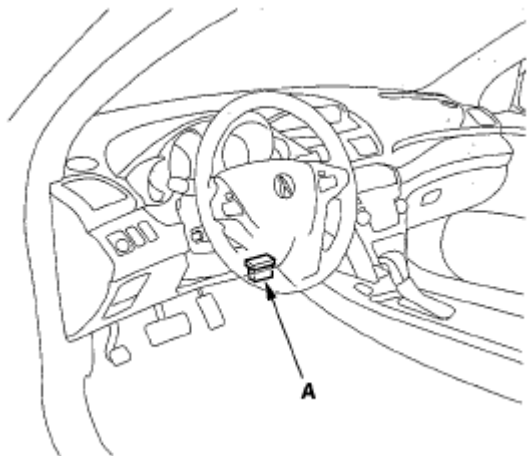


Fig. 35: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Turn the ignition switch LOCK (0).
6. Remove the fuel fill cap to relieve the pressure in the fuel tank.
7. Turn the ignition switch to ON (II).
8. From the INSPECTION MENU of the HDS, select Fuel Pump OFF, then start the engine, and let it idle until it stalls.

NOTE:

- Do not allow the engine to idle above 1,000 rpm or the PCM will continue to operate the fuel pump.
- A DTC or a Temporary DTC may be set during this procedure. Check for DTCs, and clear them as needed (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

9. Turn the ignition switch to LOCK (0).
10. Do the battery terminal disconnection procedure (See **DISCONNECTION**).
11. Remove the quick-connect fitting cover (A).

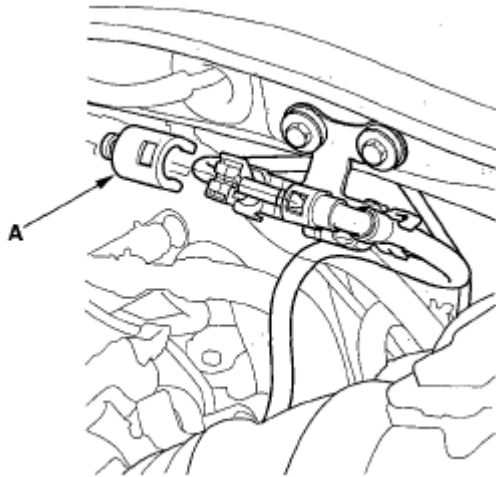


Fig. 36: Identifying Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check the fuel quick-connect fitting for dirt, and clean it if needed.
13. Place a rag or shop towel over the quick-connect fitting (A).

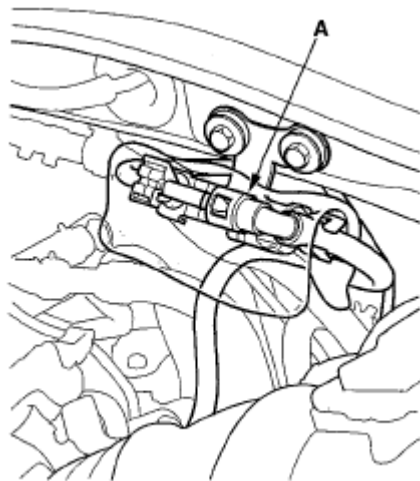


Fig. 37: Identifying Quick-Connect Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

NOTE:

- Be careful not to damage the line (E) or other parts.
- Do not use tools.
- If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.
- Do not remove the retainer from the line; once removed, the retainer

must be replaced with a new one.

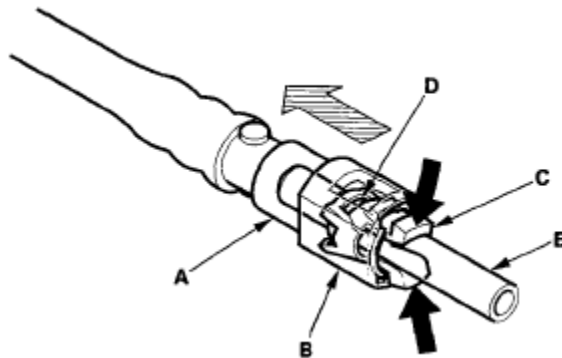


Fig. 38: Identifying Pulling And Pushing Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. After disconnecting the quick-connect fitting, check it for dirt or damage (see step 4).
16. Do the battery terminal reconnection procedure (see **RECONNECTION**).

WITHOUT THE HDS

1. Remove PGM-FI main relay 2 (G) from the under-dash fuse/relay box.

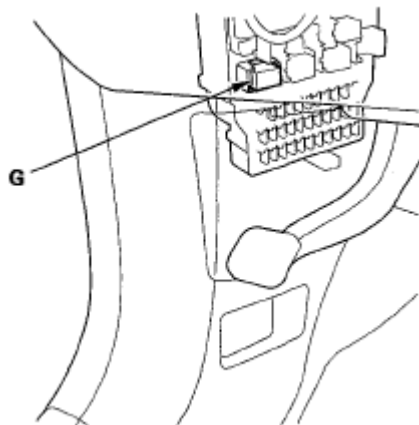


Fig. 39: Identifying PGM-FI Main Relay 2 (G) From Under-Dash Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Start the engine, and let it idle until it stalls.

NOTE: If any DTCs are stored, clear and ignore them.

3. Turn the ignition switch OFF.
4. Remove the fuel fill cap to relieve the pressure in the fuel tank.
5. Do the battery terminal disconnection procedure (see **DISCONNECTION**).

6. Remove the quick-connect fitting cover (A).

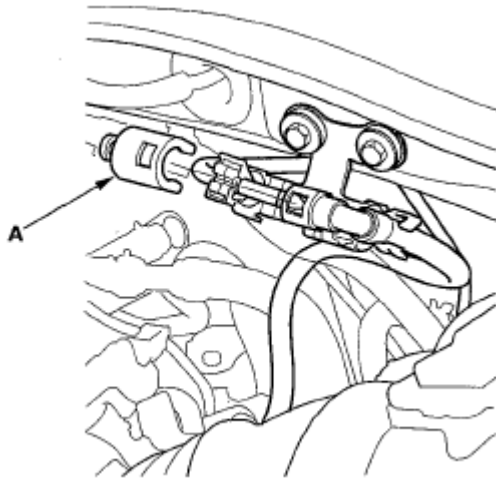


Fig. 40: Identifying Quick-Connect Fitting Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the fuel quick-connect fitting for dirt, and clean it if needed.
8. Place a rag or shop towel over the quick-connect fitting (A).



Fig. 41: Identifying Quick-Connect Fitting
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

NOTE:

- Be careful not to damage the line (E) or other parts.
- Do not use tools.
- If the connector does not move, keep the retainer tabs pressed down,

and alternately pull and push the connector until it comes off easily.

- Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.

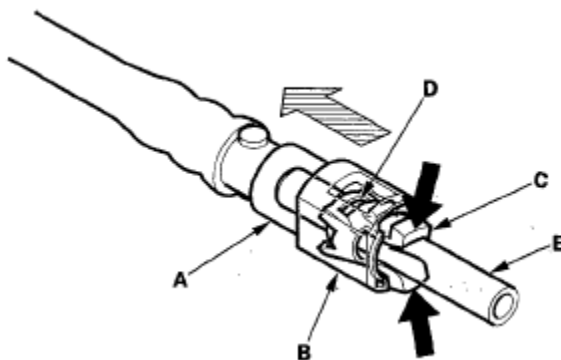


Fig. 42: Identifying Retainer Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. After disconnecting the quick-connect fitting, check it for dirt or damage (see step 4).
11. Do the battery terminal reconnection procedure (see **RECONNECTION**).

FUEL PRESSURE TEST

Special Tools Required

- Fuel pressure gauge 07406-004000B
 - Fuel pressure gauge attachment set 07AAJ-S6MA150
1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
 2. Disconnect the quick-connect fitting. Attach the fuel pressure gauge set and the fuel pressure gauge.

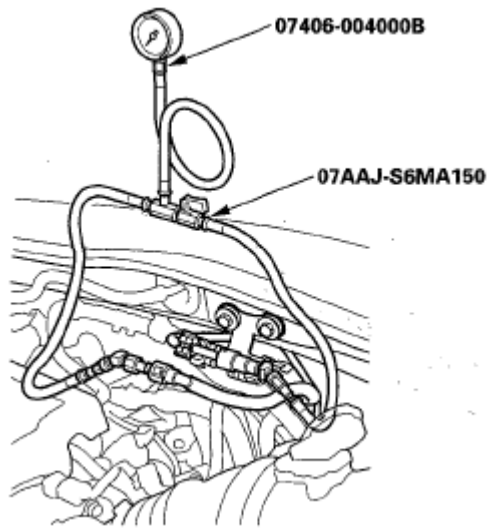


Fig. 43: Identifying Fuel Pressure Gauge Set And Fuel Pressure Gauge
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Start the engine, and let it idle.
 - If the engine starts, go to step 5.
 - If the engine does not start, go to step 4.
4. Check to see if the fuel pump is running: Listen to the fuel filler port with the fuel fill cap removed. The fuel pump should run for 2 seconds when the ignition switch is first turned on.
 - If the pump runs, go to step 5.
 - If the pump does not run, refer to the DTC troubleshooting (see **DTC P0627: Fuel Pump Control Module System Malfunction**).
5. Read the fuel pressure gauge. The pressure should be 390-440 kPa (4.0-4.5 kgf/cm² , 57-64 psi).
 - If the pressure is OK, the test is complete.
 - If the pressure is out of specification, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**) and the fuel filter (see **FUEL FILTER REPLACEMENT**), then recheck the fuel pressure.

FUEL TANK DRAINING

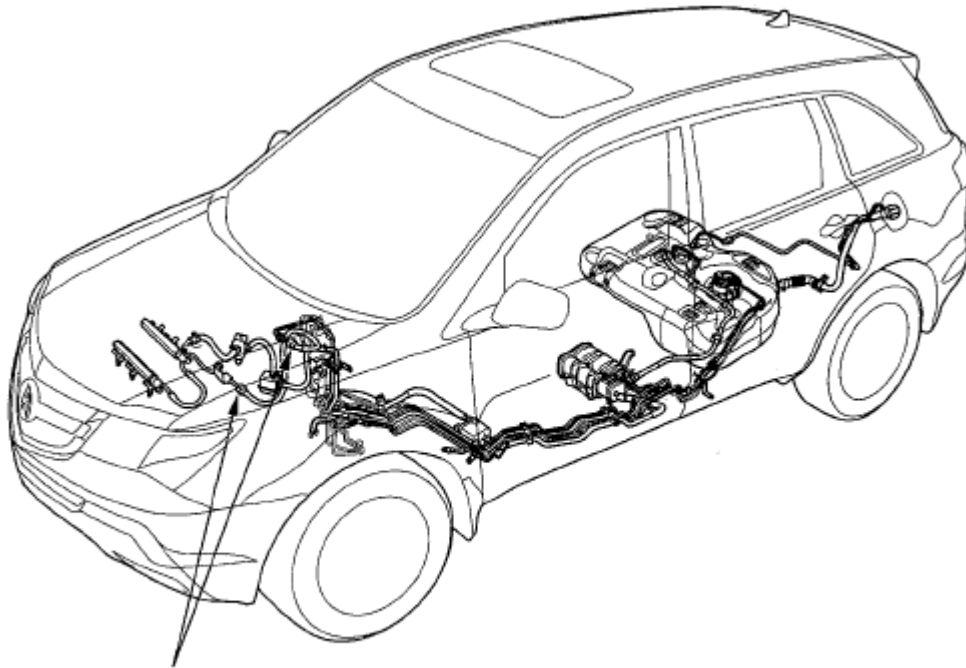
1. Remove the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
2. Using a hand pump, a hose, and a container suitable for fuel, draw the fuel from the fuel tank.
3. Reinstall the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).

FUEL LINE INSPECTION

Check the fuel system lines and hoses for damage, leaks, and deterioration. Replace any damaged parts.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel Supply System - MDX



Make sure the connections are secure and the quick-connect fitting covers are firmly locked in place.

Fig. 44: Identifying Fuel Line Routing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Check all clamps, and retighten if necessary.

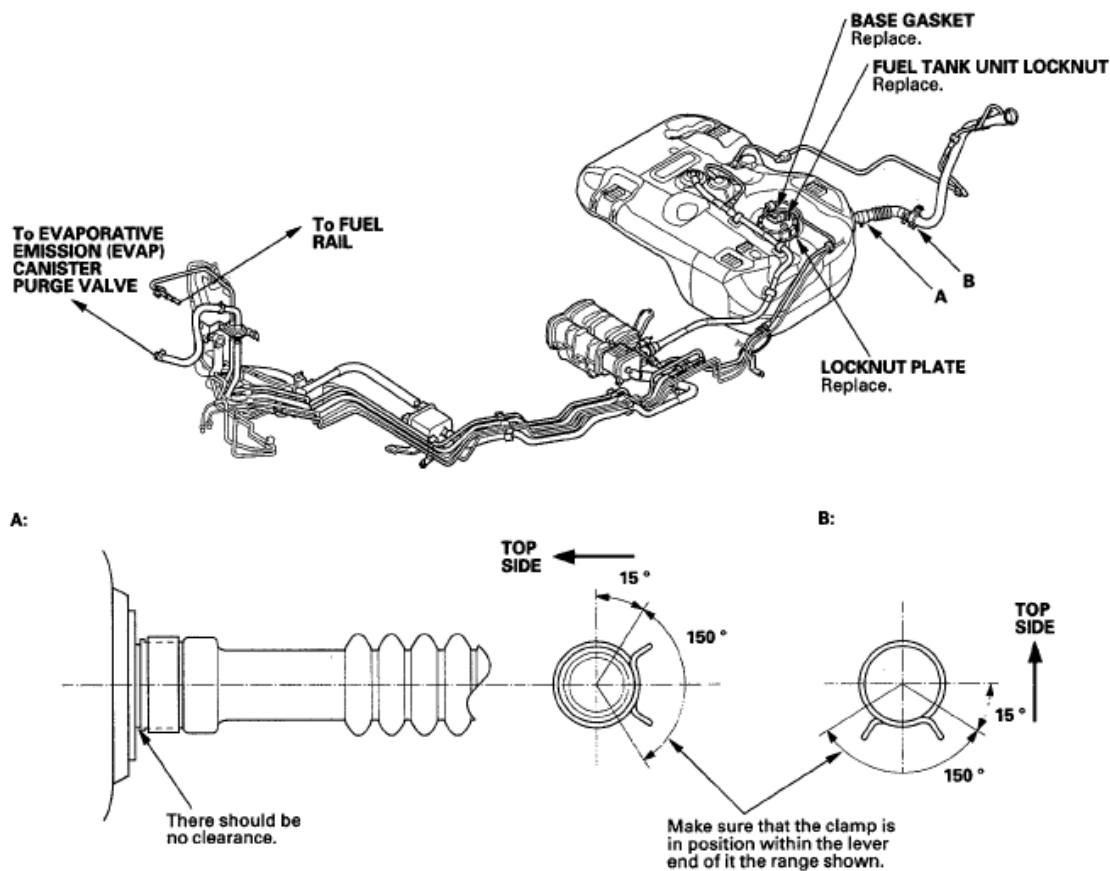


Fig. 45: Identifying Clamp Position Angle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS

The fuel line/quick-connect fittings (A), (B), (C), (D), (E), (F), (G), (H), (I), (J) connect the fuel feed hose (K) to the fuel feed hose (L), the fuel feed hose to the fuel feed line (M), the fuel feed line to the fuel feed hose (N), the fuel feed hose to the fuel tank unit (O), the fuel tank vapor recirculation tube (P) to the vent return pipe (Q), the vent return pipe to the vent return tube (R), the vent return tube to the breather pipe (S), the EVAP canister (T) to the purge tube (U), the fuel purge tube to the fuel purge line (V), the fuel tank vapor control valve hose (W) and the fuel tank vapor/liquid separation valve tube (X). When removing or installing the fuel feed hose, the fuel tank unit, the fuel tank, or the fuel tank vapor recirculation tube, it is necessary to disconnect or connect the quick-connect fittings. Pay attention to the following:

- The fuel feed hoses, fuel line, and quick-connect fittings are not heat-resistant; be careful not to damage them during welding or other heat-generating procedures.
- The fuel feed hoses, fuel line, and quick-connect fittings are not acid-proof; do not touch them with a shop towel that was used for wiping battery electrolyte. Replace them if they came into contact with electrolyte or something similar.
- When connecting or disconnecting the fuel feed hoses, fuel line, and quick-connect fittings, be careful not to bend or twist them excessively. Replace them if they are damaged.

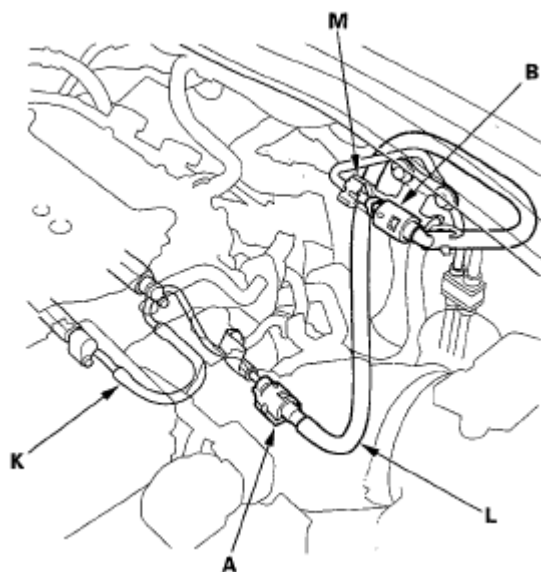


Fig. 46: Identifying Fuel Line/Quick-Connect Fittings And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

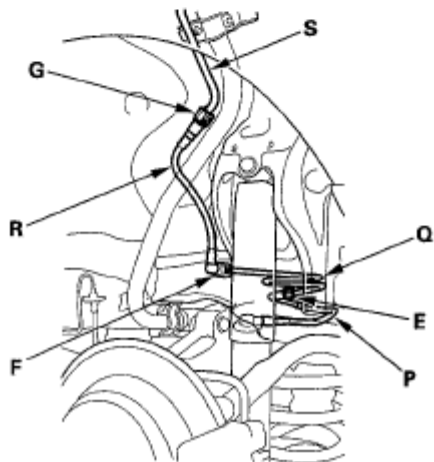
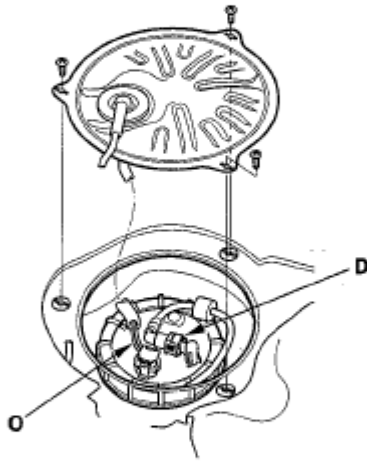
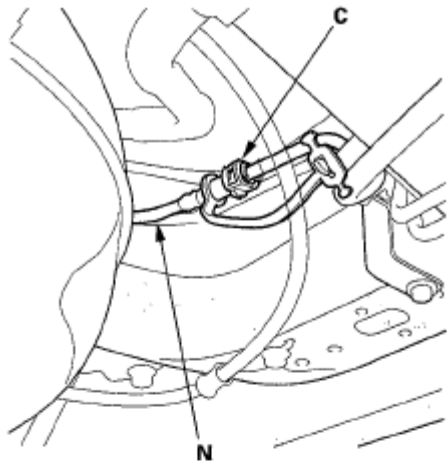


Fig. 47: Identifying Fuel Line/Quick-Connect Fittings And Fuel Feed Hose
Courtesy of AMERICAN HONDA MOTOR CO., INC.

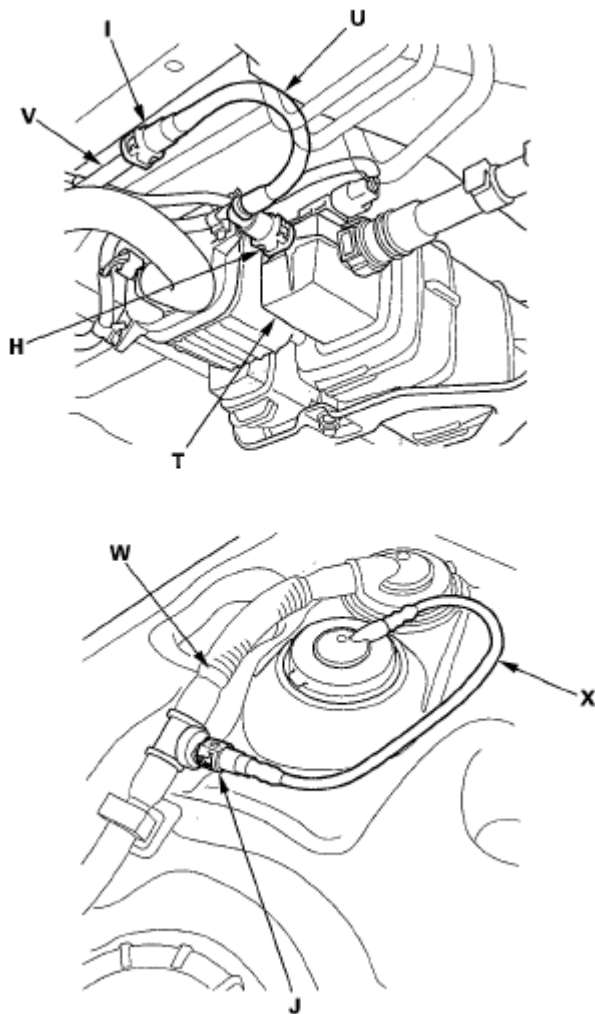


Fig. 48: Identifying Fuel Tank Unit

Courtesy of AMERICAN HONDA MOTOR CO., INC.

A disconnected quick-connect fitting can be reconnected, but the retainer on the mating line cannot be reused once it has been removed from the line. Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel feed line.
- replacing the fuel pump;
- replacing the fuel filter.
- replacing the fuel gauge sending unit.
- replacing the EVAP purge line.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- it has been removed from the line.
- it is damaged

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel Supply System - MDX

MANUFACTURER LIST

Location	Manufacturer	Retainer color	Line diameter
A	Tokai DTR	Blue green	0.31 in. (8.0 mm)
B	Tokai DTR	Blue green	0.31 in. (8.0 mm)
C	TI Automotive	Gray	0.31 in. (8.0 mm)
D	TI Automotive	Blue	0.37 in. (9.5 mm)
E	Tokai DTR	Orange	0.37 in. (9.5 mm)
F	Tokai	Orange	0.37 in. (9.5 mm)
G	Tokai	Natural	0.47 in. (12 mm)
H	TI Automotive	Blue	0.37 in. (9.5 mm)
I	TI Automotive	Natural	0.47 in. (12 mm)
J	Toyoda Gosei North America	White	0.31 in. (8.0 mm)

FUEL LINE/QUICK-CONNECT FITTING REMOVAL

NOTE: Before you work on the fuel lines and fittings, read the "Fuel Line/Quick-Connect Fitting Precautions" (see FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS).

1. Relieve the fuel pressure (see FUEL PRESSURE RELIEVING).
2. Check the fuel quick-connect fittings (A) for dirt, and clean them if needed.

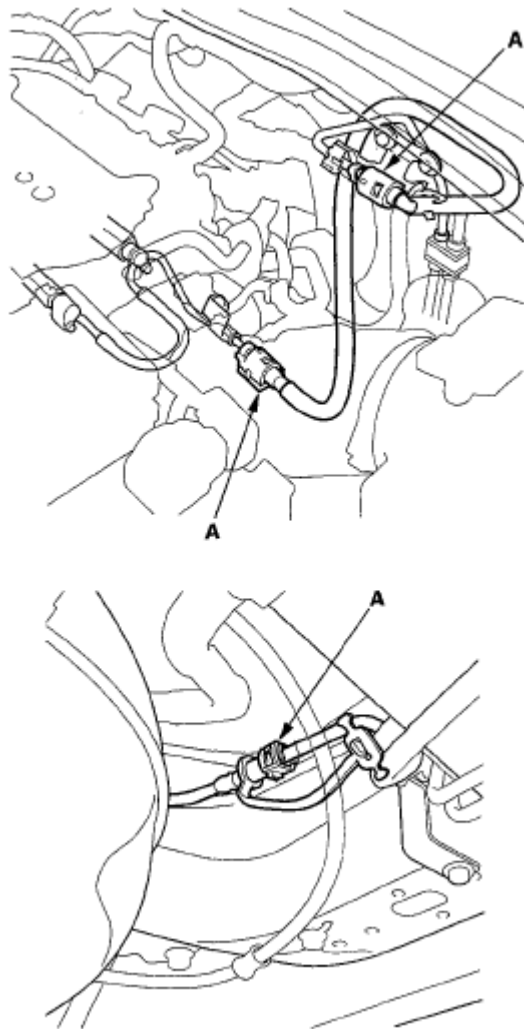


Fig. 49: Identifying Fuel Quick-Connect Fittings (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

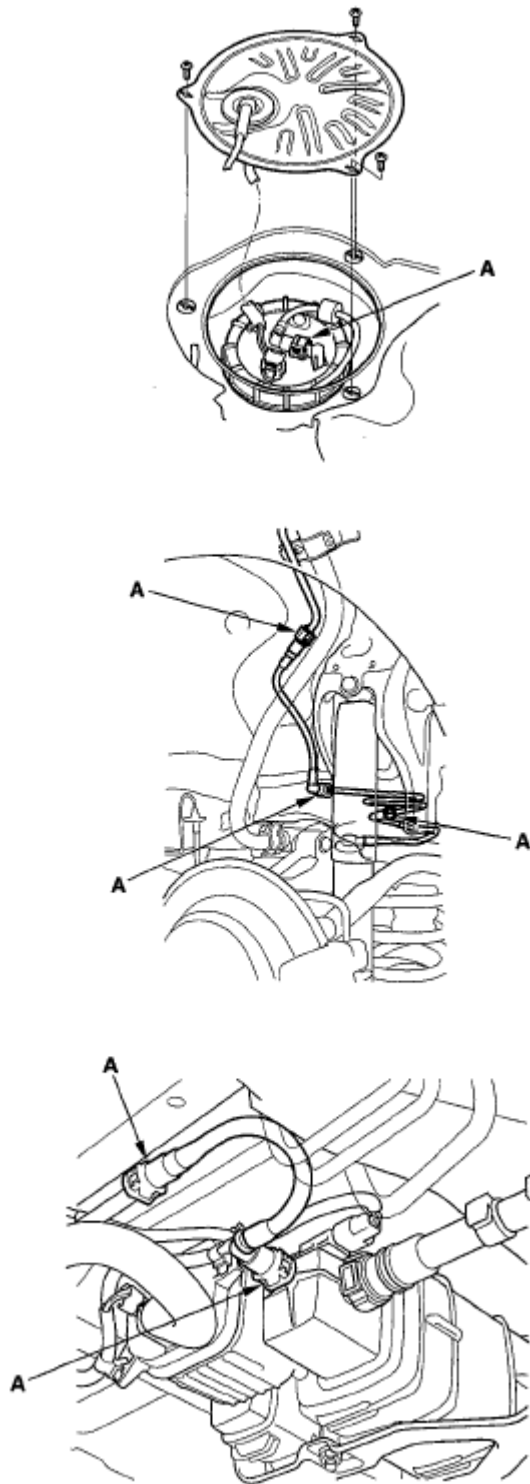


Fig. 50: Identifying Fuel Quick-Connect Fittings (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

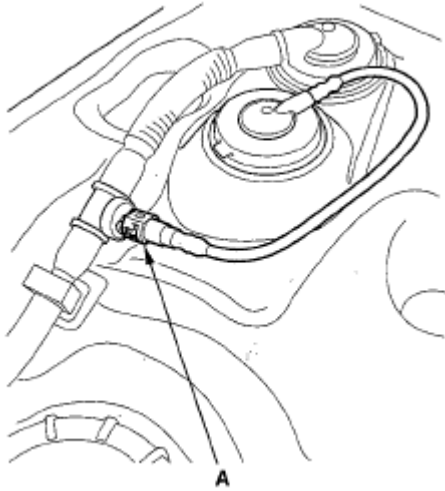


Fig. 51: Identifying Fuel Quick-Connect Fittings (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Place a rag or shop towel over the quick-connect fitting. Hold the connector (A) with one hand, and squeeze the retainer tabs (B) with the other hand to release them from the locking tabs (C). Pull the connector off.

NOTE:

- Be careful not to damage the line (D) or other parts. Do not use tools.
- If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.
- Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.

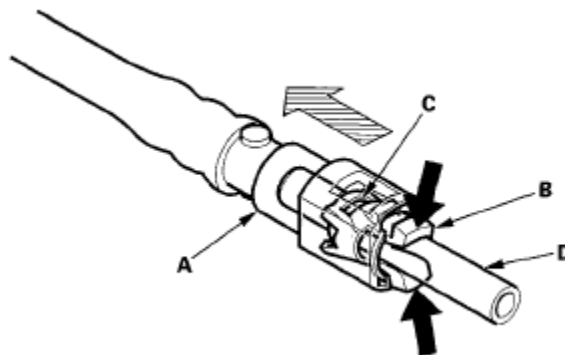


Fig. 52: Identifying Pulling And Pushing Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the contact area (A) of the line (B) for dirt or damage.
 - If it is dirty, clean the connector, and dry it with the compressed air.
 - If it is rusty or damaged, replace the fuel pump, the fuel filter, or the fuel feed line.

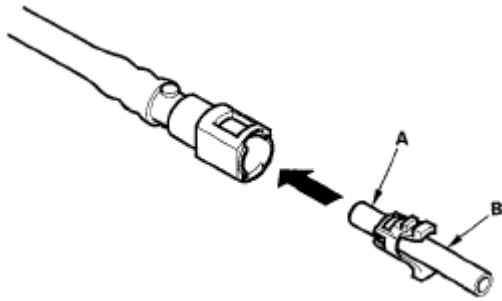


Fig. 53: Identifying Contact Area Of Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. To prevent damage and keep foreign matter out, cover the disconnected connector and line ends with plastic bags (A).

NOTE: The retainer cannot be reused once it has been removed from the line.
Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel feed line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the fuel gauge sending unit.
- replacing the EVAP purge line.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- it has been removed from the line.
- it is damaged.

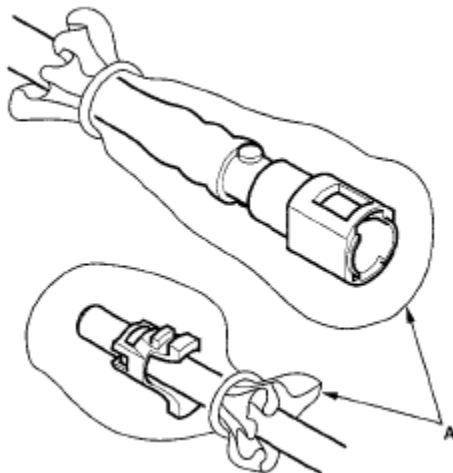


Fig. 54: Identifying Covering Connector With Plastic Bags

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUEL LINE/QUICK-CONNECT FITTING INSTALLATION

NOTE: Before you work on the fuel lines and fittings, read the "Fuel Line/Quick-Connect Fitting Precautions" (see FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS).

1. Check the contact area (A) of the line (B) for dirt or damage, and clean it if needed.

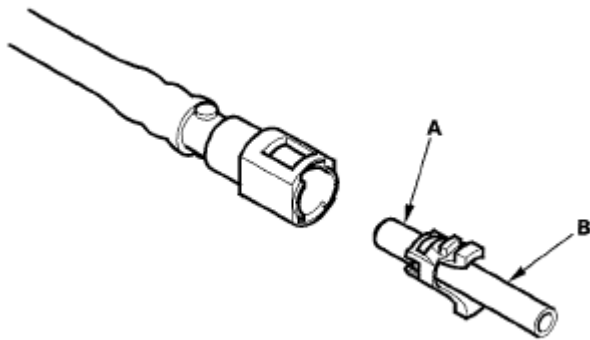


Fig. 55: Identifying Contact Area Of Line
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Insert a new retainer (A) into the connector (B) if the retainer is damaged, or after:
 - replacing the fuel rail.
 - replacing the fuel feed line.
 - replacing the fuel pump.
 - replacing the fuel filter.
 - replacing the fuel gauge sending unit.
 - replacing the EVAP purge line.
 - replacing the EVAP canister.
 - replacing the fuel fill pipe.
 - removing the retainer from the line.
- Use the same manufacturer retainer and the same size retainer when the replacing the retainer (see FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS).

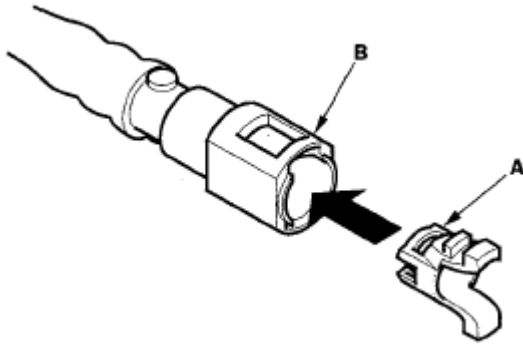


Fig. 56: Identifying Retainer Into Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Before connecting a new fuel tube/quick-connect fitting assembly (A), remove the old retainer (B) from the mating line.

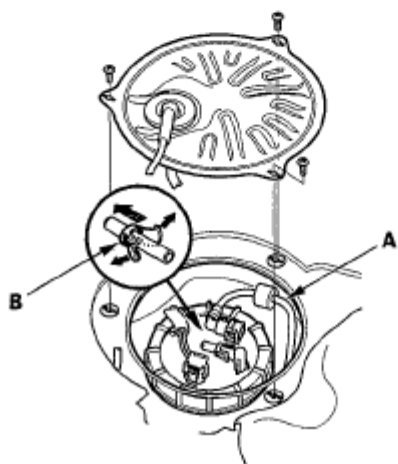
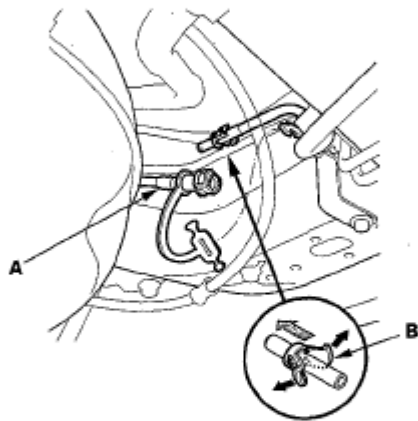
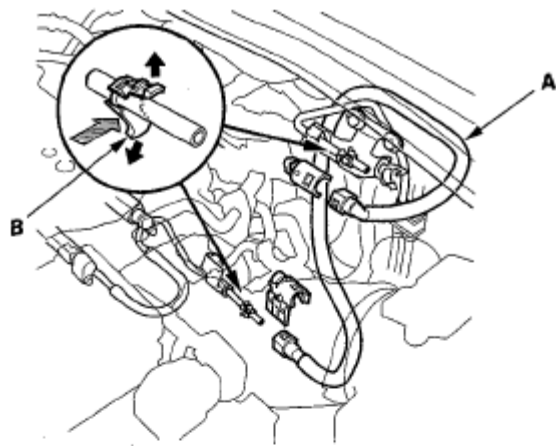


Fig. 57: Identifying Fuel Tube/Quick-Connect Fitting Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

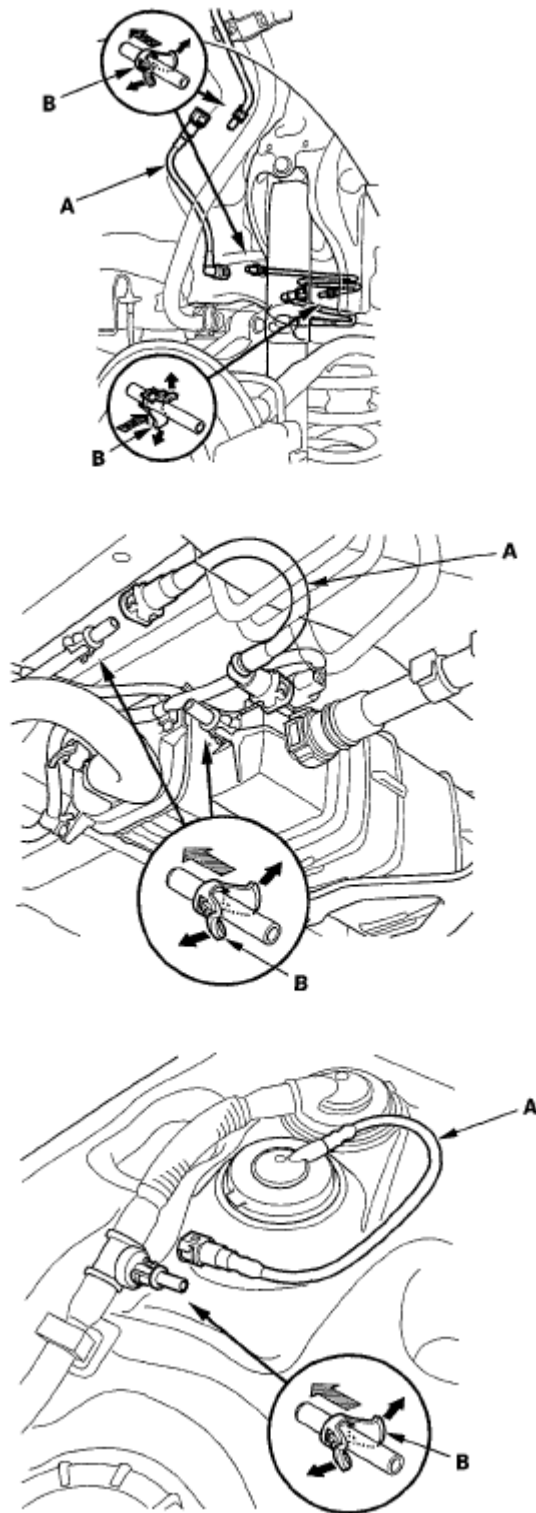


Fig. 58: Identifying Fuel Tube/Quick-Connect Fitting Assembly And Retainer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

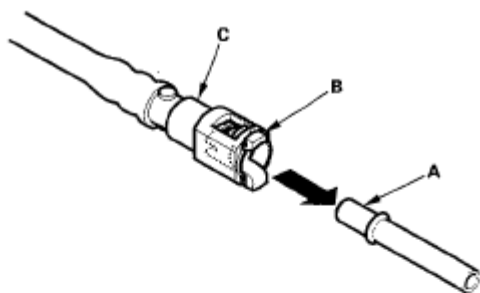
4. Align the quick-connect fittings with the line (A), and align the retainer locking tabs (B) with the

connector grooves (C). Then press the quick-connect fittings onto the line until both retainer tabs lock with a clicking sound.

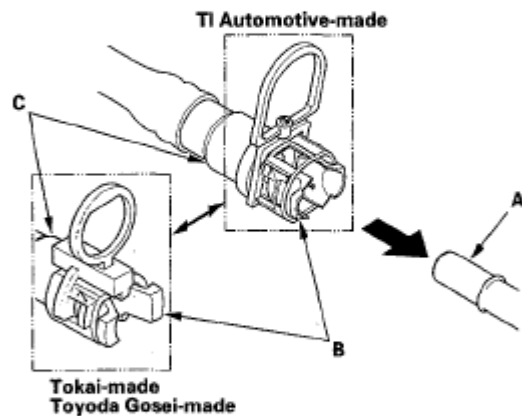
NOTE: If it is hard to connect, put a small amount of new engine oil on the line end.

Connection with new retainer

Connection with new retainer



Connection to new fuel line



Reconnection to existing retainer

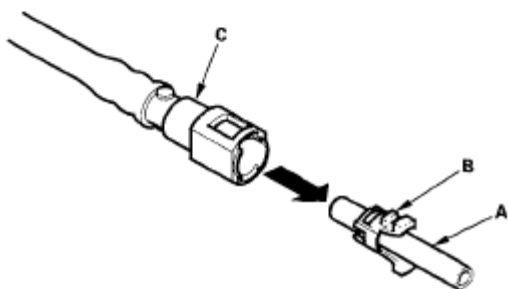


Fig. 59: Identifying Retainer Locking Tabs With Connector Grooves
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. When you are reconnecting the connector with the old retainer, make sure the connection is secure and the tabs (A) are firmly locked into place; check visually and also by pulling the connector (B). When you are replacing the fuel line with a new one, make sure you remove the ring pull (C) upwards after you confirm the connection is secure.

NOTE: Before you remove the ring pull, make sure the fuel line connection is secure. If the connection is not secure, the ring pull could break when you try to remove it.

Reconnection to existing retainer

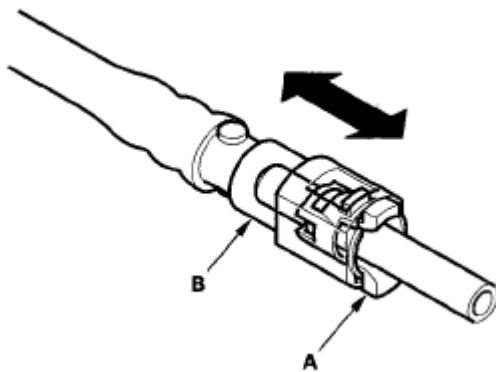


Fig. 60: Identifying Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Connection to new fuel line

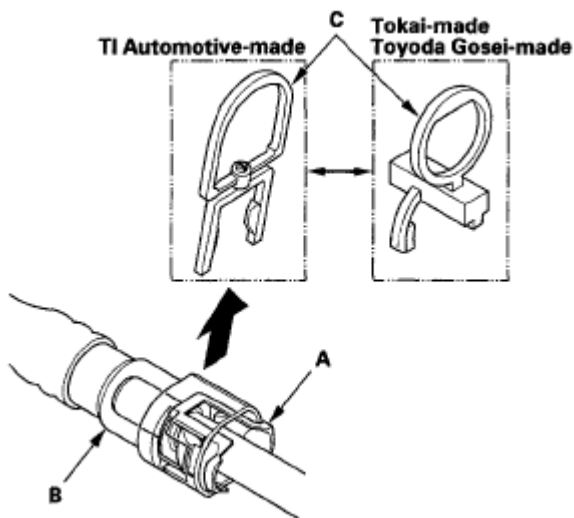


Fig. 61: Identifying Fuel Line

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Reconnect the negative cable to the battery, and turn the ignition switch ON (II) (but do not operate the

starter motor). The fuel pump will run for about 2 seconds, and fuel pressure will rise. Repeat two or three times, and check that there is no leakage in the fuel supply system.

FUEL TANK UNIT REMOVAL AND INSTALLATION

Special Tools Required

Fuel sender wrench 07AAA-S0XA100

REMOVAL

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
3. Remove the access panel (A) from the floor.

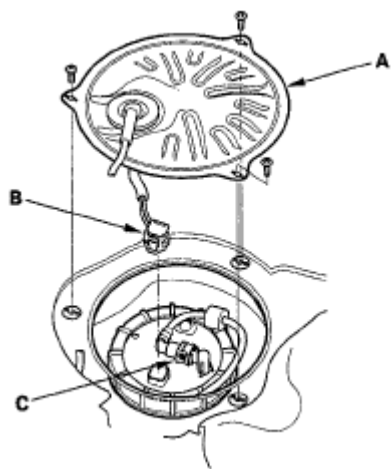


Fig. 62: Identifying Access Panel From Floor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the fuel tank unit 4P connector (B).
5. Disconnect the quick-connect fitting (C) from the fuel tank unit.
6. Using the fuel sender wrench, loosen the locknut (A).

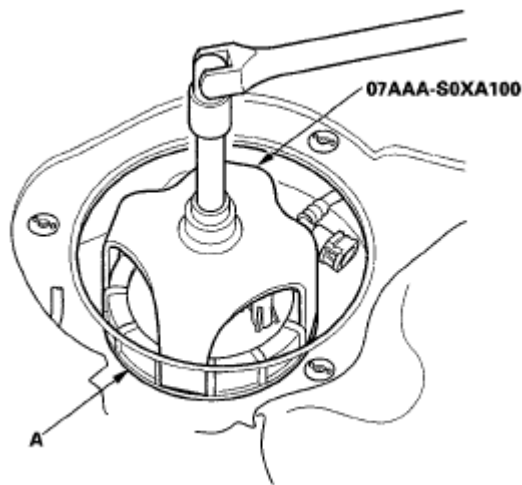


Fig. 63: Identifying Locknut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the locknut (A), locknut plate (B), and fuel tank unit (C).

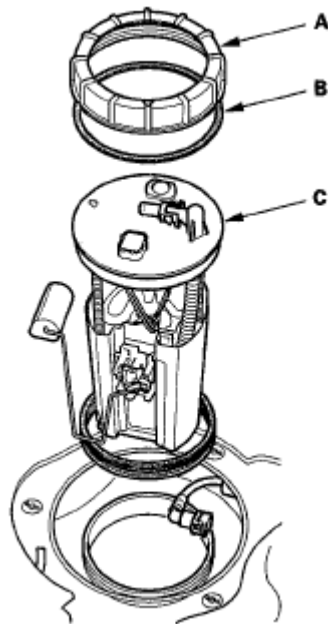


Fig. 64: Identifying Locknut, Locknut Plate, And Fuel Tank Unit

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Temporarily attach a new base gasket (A) to the fuel tank unit (B), then insert the fuel tank unit partially into the fuel tank.

NOTE:

- Be careful not to damage the new base gasket.

- Be careful not to bend the fuel gauge sending unit.
- Do not coat the base gasket with oil.

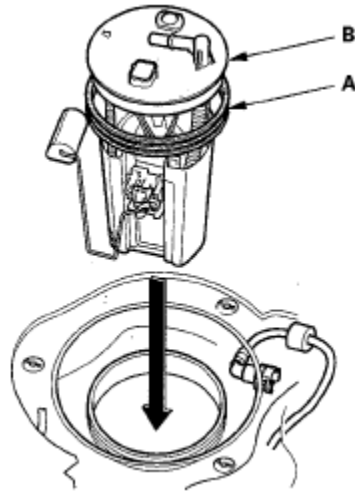


Fig. 65: Identifying Fuel Tank Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Transfer the base gasket (A) from the fuel tank unit to the fuel tank.

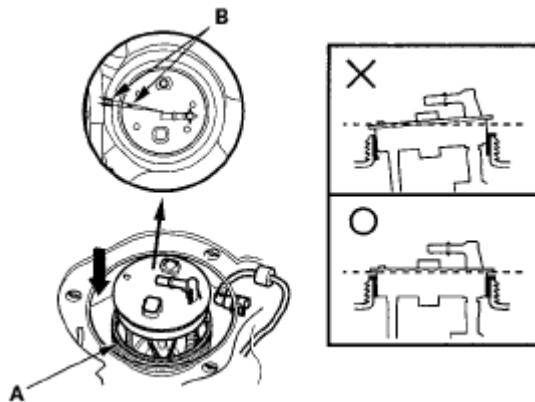


Fig. 66: Identifying Transfer Base Gasket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Align the marks (B) on the fuel tank and the fuel tank unit, then insert the fuel tank unit into the fuel tank until it sits on the base gasket.

NOTE: To prevent a fuel leak, check the base gasket, visually or by hand, to make sure it is not pinched.

4. Using the tool, tighten the new locknut (A) with a new locknut plate (B) to the specified torque.

NOTE:

- Before tightening, align the marks (C) on the fuel tank and the locknut.
- After tightening, make sure the marks are still aligned.
- After installation, check the base gasket visually or by hand to be sure it is not pinched.

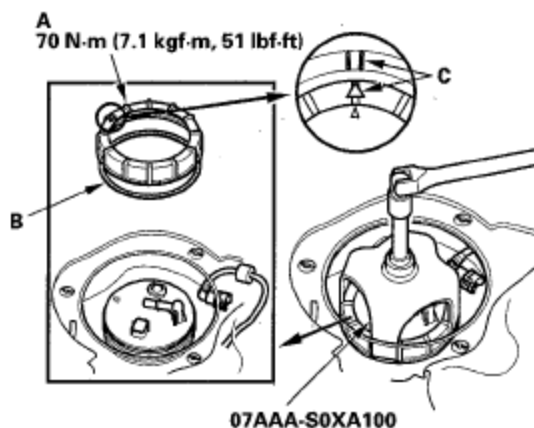


Fig. 67: Identifying Marks On Fuel Tank And Locknut With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the fuel tank unit 4P connector.
6. Reconnect the quick-connect fitting to the fuel tank unit.
7. Do the battery terminal reconnection procedure(see RECONNECTION).
8. Turn the ignition switch to ON (II) (but do not operate the starter motor). The fuel pump will run for about 2 seconds, and fuel pressure will rise. Repeat two or three times, and check that there is no leakage in the fuel supply system.
9. Install the access panel on the floor.
10. Install the second row seat (see SECOND ROW SEAT REMOVAL/INSTALLATION).

FUEL PRESSURE REGULATOR REPLACEMENT

1. Remove the fuel tank unit (see FUEL TANK UNIT REMOVAL AND INSTALLATION).
2. Remove the reservoir (A).

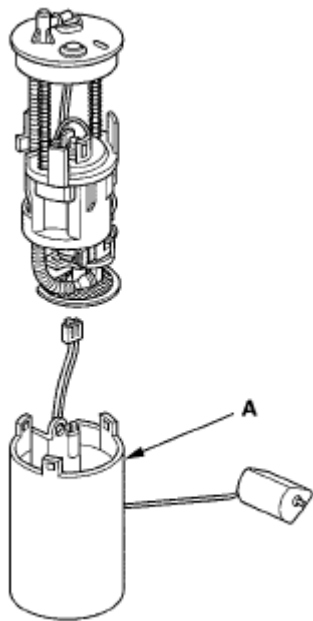


Fig. 68: Identifying Reservoir

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bracket (A).

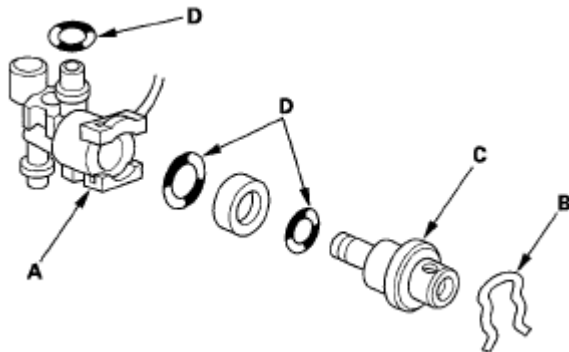


Fig. 69: Identifying Fuel Pressure Regulator, Clip And Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the clip (B).
5. Remove the fuel pressure regulator (C).
6. Install the parts in the reverse order of removal with new O-rings (D).

NOTE: Coat the O-rings with clean engine oil; do not use any other oils or fluids.
Do not pinch the O-rings during installation.

FUEL FILTER REPLACEMENT

The fuel filter should be replaced whenever the fuel pressure drops below the specified value (see **FUEL PRESSURE TEST**), after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Remove the fuel tank unit (see **FUEL TANK DRAINING**).
2. Remove the fuel filter set (A).

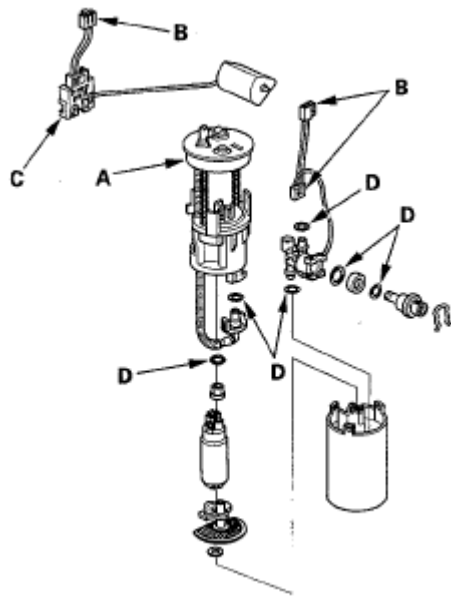


Fig. 70: Identifying Fuel Filter Set And Fuel Gauge Sending Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check these items before installing the fuel tank unit:
 - When connecting the wire harness, make sure the connection is secure and the connectors (B) are firmly locked into place.
 - When installing the fuel gauge sending unit (C), make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal with new O-rings (D). When installing the fuel tank unit, align the marks on the unit and the fuel tank (see **INSTALLATION**).

NOTE: Coat the O-rings with clean engine oil.

FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT

1. Remove the fuel tank unit (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
2. Remove the fuel level sensor (fuel sending unit) (A) from the fuel tank unit (B).

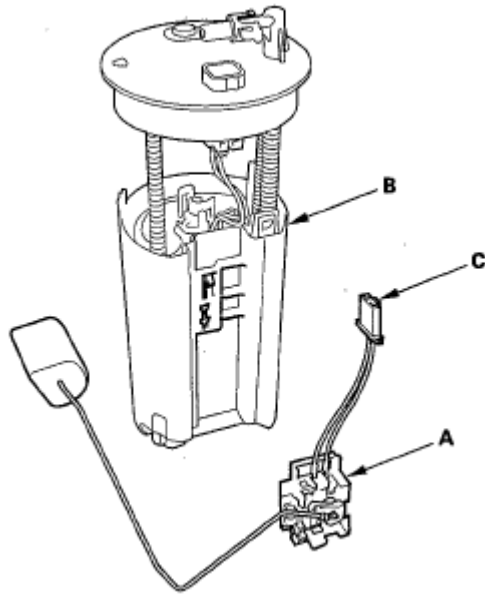


Fig. 71: Identifying Fuel Level Sensor From Fuel Tank Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check these items before installing the fuel tank unit:
 - When connecting the wire harness, make sure the connection is secure and the connector (C) is firmly locked into place.
 - When installing the fuel gauge sending unit, make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal. When installing the fuel tank unit, align the marks on the unit and the fuel tank (see **INSTALLATION**).

FUEL TANK REPLACEMENT

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Drain the fuel tank (see **FUEL TANK DRAINING**), then disconnect the fuel tank unit 4P connector and the quick-connect fittings from the fuel tank unit.
3. Raise the vehicle on a lift.
4. Remove the exhaust pipe (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
5. Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL**), and support it with jackstands.
6. Remove the fuel tank guard (A) and fuel tank protector (B).

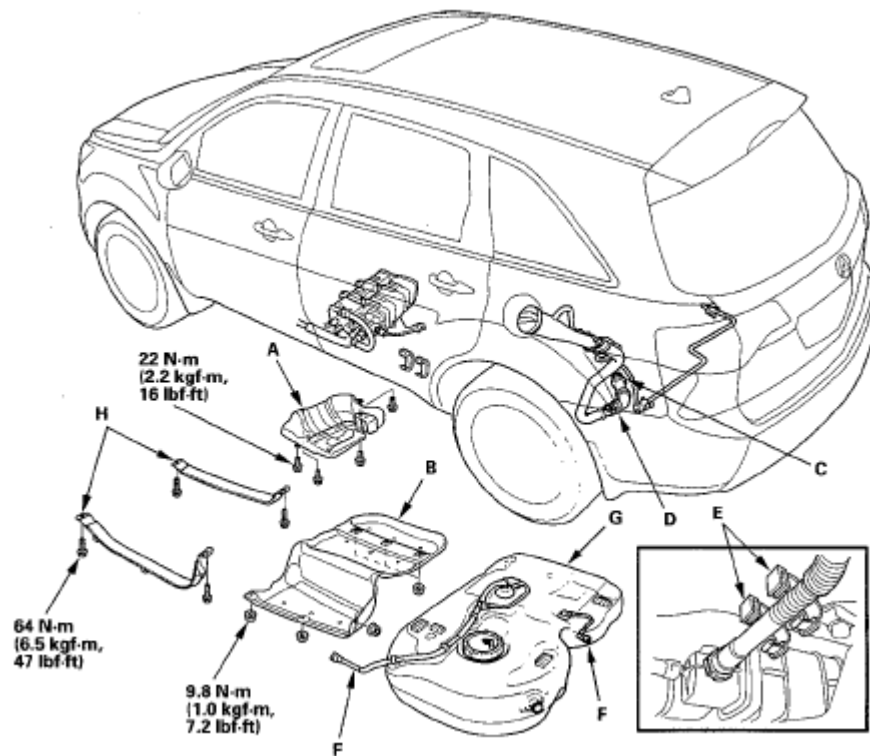


Fig. 72: Identifying Fuel Tank Guard, Fuel Tank Protector, Clamp And Hoses With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Loosen the clamp (C), and disconnect the tube (D). Slide back the clamps, then twist the hoses as you pull to avoid damaging them.
8. Open the clamps (E).
9. Disconnect the hoses (F).
10. Place a jack or other support under the fuel tank (G).
11. Remove the strap bolts and the straps (H).
12. Remove the fuel tank.
13. Install the parts in the reverse order of removal.

FUEL FILL PIPE REMOVAL/INSTALLATION

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Drain the fuel tank (see **FUEL TANK DRAINING**).
3. Remove the fuel fill cap.
4. Remove the rear fender cover (see **REAR FENDER COVER REPLACEMENT**).
5. Disconnect the fuel fill tube (A) and the quick-connector fittings (B).

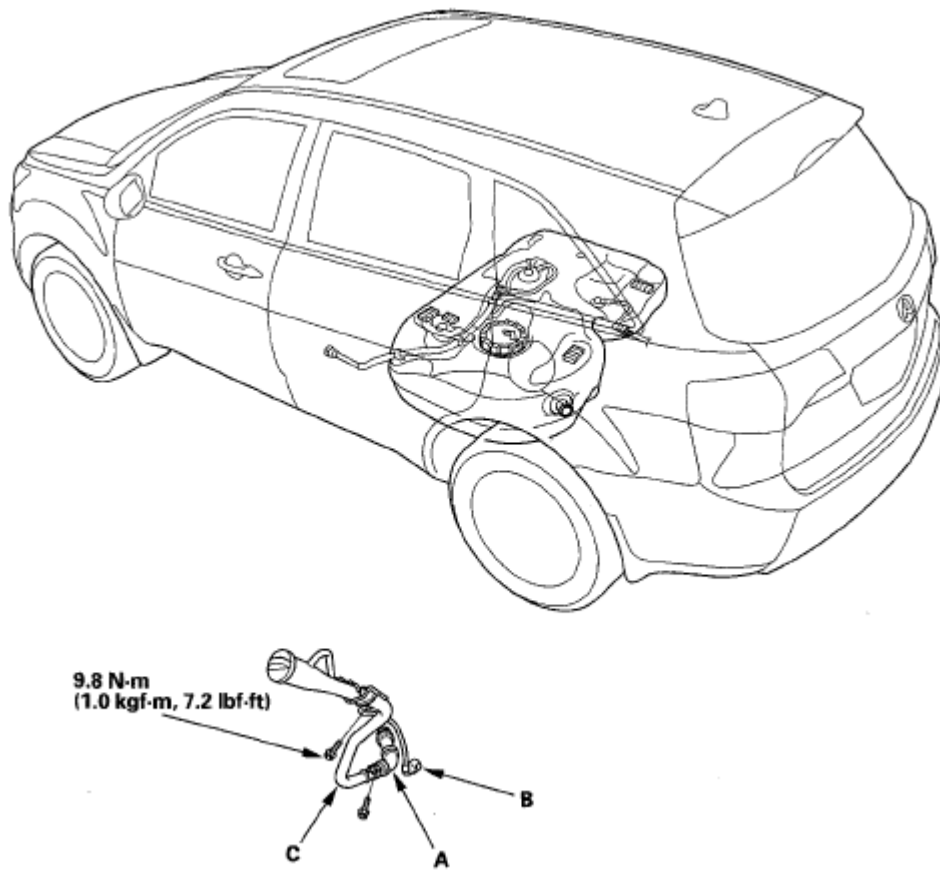


Fig. 73: Identifying Fuel Fill Tube And Quick-Connector Fittings With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the fuel fill pipe (C).
7. Install the parts in the reverse order of removal.

FUEL PUMP CONTROL MODULE REPLACEMENT

1. Remove the cargo floor lid (see step 1 **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
2. On models with active suspension, remove the active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).
3. Disconnect the fuel pump control module connector (A).

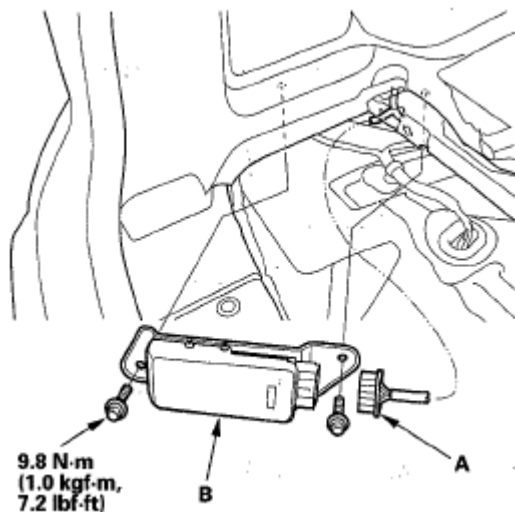


Fig. 74: Identifying Fuel Pump Control Module Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the fuel pump control module (B).
5. Install the parts in the reverse order of removal.

FUEL GAUGE SENDING UNIT TEST

NOTE: For the fuel gauge system circuit diagram, refer to the Gauges Circuit Diagram (see CIRCUIT DIAGRAM).

1. Check the No. 21 METER (7.5 A) fuse in the under-dash fuse/relay box before testing.
2. Check for body electrical system DTCs (see GENERAL TROUBLESHOOTING INFORMATION).
 - If no problem is found, go to step 3.
 - If DTC B1175 (see DTC B1175: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT OPEN) or B1176 (see DTC B1176: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT SHORT) is indicated, go to the indicated DTCS TROUBLESHOOTING.
3. Turn the ignition switch LOCK (0).
4. Remove the second row seat (see SECOND ROW SEAT REMOVAL/INSTALLATION).
5. Remove the access panel (A) from the floor.

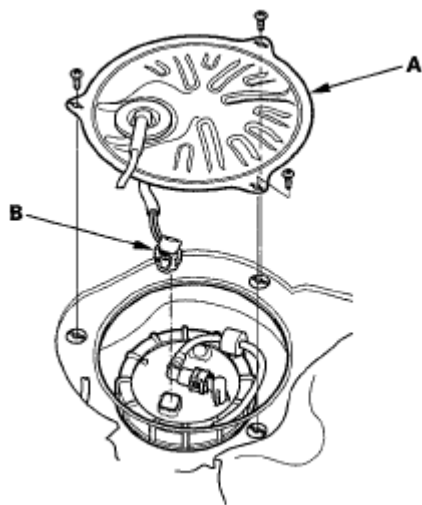
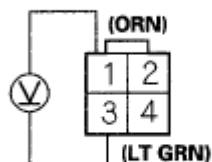


Fig. 75: Identifying Access Panel From Floor And Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the fuel tank unit 4P connector (B).
7. Measure voltage between fuel tank unit 4P connector terminals No. 1 and No. 3 with the ignition switch ON (II). There should be battery voltage.
 - If the voltage is OK, go to step 8.
 - If the voltage is not as specified, check for:
 - a short in the ORN wire to ground.
 - an open in the ORN or LT GRN wire.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Fig. 76: Identifying Voltage Between Fuel Tank Unit 4P Connector Terminals No. 1 And No. 3 With Ignition Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch OFF.
9. Remove the fuel tank unit from the fuel tank (see **FUEL TANK UNIT REMOVAL AND INSTALLATION**).
10. Measure resistance between fuel tank unit 4P connector terminals No. 1 and No. 3 with the float at E (EMPTY), LOW (LOW FUEL INDICATOR), 1/2 (HALF FULL), and F (FULL) positions. If you do not

get the following readings, replace the fuel gauge sending unit (see **FUEL PUMP/FUEL GAUGE SENDING UNIT REPLACEMENT**).

FLOAT POSITION SPECIFICATION

Float Position	F 8.4 in. (214.2 mm)	1/2 5.9 in. (149.4 mm)	LOW 2.0 in. (50.8 mm)	E 0.8 in. (19.1 mm)
Resistance (ohms)	19 to 21	203.3 to 213.3	516.4 to 629	772 to 788

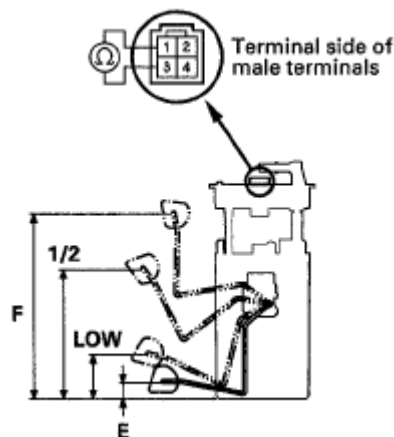


Fig. 77: Identifying Resistance Between Fuel Tank Unit 4P Connector Terminals No. 1 And No. 3 With Float

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Reconnect the fuel tank unit 4P connector.
12. Remove the No. 7 BACK UP (10 A) fuse from the under-dash fuse/relay box for at least 10 seconds, then reinstall it.
13. Turn the ignition switch ON (II).
14. Check that the pointer of the fuel gauge indicates "F" with the float at F.
 - If the pointer of the fuel gauge does not indicate "F", replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
 - If the gauge is OK, the test is complete.

NOTE:

- The pointer of the fuel gauge returns to the bottom of the gauge dial when the ignition switch is LOCK (0), regardless of the fuel level.
- Remove the No. 7 BACK UP (10 A) fuse from the under-dash fuse/relay box for at least 10 seconds after completing troubleshooting, otherwise it may take up to 20 minutes for the fuel gauge to indicate the correct fuel level.

LOW FUEL INDICATOR TEST

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Fuel Supply System - MDX

1. Do the gauge self-diagnostic test (see **SELF-DIAGNOSTIC FUNCTION**).
 - If the low fuel indicator flashes, go to step 2.
 - If the low fuel indicator does not flash, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
2. Check for body electrical system DTCs.
 - If any DTCs are indicated, do the indicated DTCs troubleshooting.
 - If no DTCs are indicated, go to step 3.
3. Do the fuel gauge sending unit test (see **FUEL GAUGE SENDING UNIT TEST**).

2007-09 ELECTRICAL**Under-Dash Fuse/Relay Box-MDX****REMOVAL AND INSTALLATION**

SRS components are located in this area. Review the SRS component locations (see **COMPONENT INDEX**) and precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before performing repairs or servicing.

REMOVAL

1. Do the battery terminal disconnection procedure, and wait at least 3 minutes.
2. Remove the left kick panel (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
3. Disconnect the connectors from the fuse side of the under-dash fuse/relay box (A).

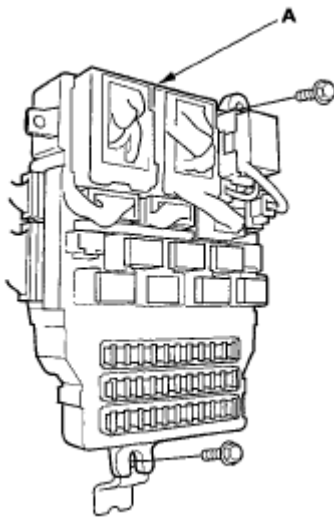


Fig. 1: Identifying Under-Dash Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the mounting bolts, and pull the fuse/relay box away from the body.
5. Disconnect the connectors from the back side of the under-dash fuse/relay box, then remove the under-dash fuse/relay box.
6. Carefully remove the relays by prying under the base of the relay.

NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start.

INSTALLATION

2008 Acura MDX

2007-09 ELECTRICAL Under-Dash Fuse/Relay Box-MDX

NOTE: The MICU which is part of the under-dash fuse/ relay box is a component of the immobilizer system. Because of this construction, the MICU must be registered when the under-dash fuse/relay box is replaced, or the vehicle will not start.

1. Install the relays and connect the connectors to the under-dash fuse/relay box, then install the under-dash fuse/relay box in the reverse order of removal.
2. Install the removed parts in the reverse order of removal.
3. Do the battery terminal reconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
4. If the under-dash fuse/relay box is replaced, go to step 5. If the original under-dash fuse/relay box is installed, go to step 10.
5. Connect the HDS to the data link connector.
6. Turn the ignition switch to ON (II).
7. Select the BODY ELECTRICAL, then enter the IMMOBILIZER SETUP.
8. Select the REPLACE MPCS/MICU/IMOES, then select the suitable menu from the HDS indications.
9. After registration, confirm that the vehicle will start.
10. Confirm that all systems work properly.

2007-09 ELECTRICAL

Under-Hood Fuse/Relay Box - MDX

DTC TROUBLESHOOTING

DTC B1051: RELAY CONTROL MODULE INTERNAL (CPU) ERROR; DTC B1052: RELAY CONTROL MODULE INTERNAL (EEPROM) ERROR

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1051 or B1052 indicated?

YES - Faulty relay control module, replace the under-hood fuse/relay box.

NO - Intermittent failure, the system is OK at this time.

DTC B1055: RELAY CONTROL MODULE LOST COMMUNICATION WITH MICU (MICU MESSAGE); DTC B1056: RELAY CONTROL MODULE LOST COMMUNICATION WITH MICU (ALARM MESSAGE); DTC B1057: RELAY CONTROL MODULE LOST COMMUNICATION WITH MICU (DOOR SW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1055, B1056, or B1057 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connection between the relay control module and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1056, B1057, B1157, B1159, B1180, B1255, B1955, B2155, B2156, and B2161 all indicated?

2008 Acura MDX

2007-09 ELECTRICAL Under-Hood Fuse/Relay Box - MDX

YES - Do the MICU input test (see MICU INPUT TEST).

NO - Do the relay control module input test (see RELAY CONTROL MODULE INPUT TEST).

DTC B1060: RELAY CONTROL MODULE LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VPS/NE MESSAGE); DTC B1061: RELAY CONTROL MODULE LOST COMMUNICATION WITH GAUGE CONTROL MODULE (A/T MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1060 and/or B1061 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the relay control module and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1011, B1032, B1060, B1061, B1205, B1206, B1207, B1906, B1956, B2157, and B2160 all indicated?

YES - Do the gauge control module input test (see GAUGE CONTROL MODULE INPUT TEST).

NO - Do the relay control module input test (see RELAY CONTROL MODULE INPUT TEST).

DTC B1062: RELAY CONTROL MODULE LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (HLSW MESSAGE); DTC B1063: RELAY CONTROL MODULE LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (WIPSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

2008 Acura MDX

2007-09 ELECTRICAL Under-Hood Fuse/Relay Box - MDX

Is DTC B1062 and/or B1063 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the relay control module and the combination switch control unit.

5. Check for DTCs with the HDS.

Are DTCs B1007, B1062, B1063, B1155, B1156, B1957, B1958, and B2969 all indicated?

YES - Do the combination switch control unit input test (see **WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST**).

NO - Do the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**).

DTC B1065: RELAY CONTROL MODULE LOST COMMUNICATION WITH DRIVER'S MPCS UNIT (DRLOCKSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTCs B1065 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the relay control module and the driver's MPCS unit.

5. Check for DTCs with the HDS.

Are DTCs B1013, B1015, B1065, B1182, and B1905 all indicated?

YES - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

NO - Do the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**).

REMOVAL AND INSTALLATION

REMOVAL

1. Do the battery terminal disconnection procedure, and wait at least 3 minutes.
2. Remove the cover of the under-hood fuse/relay box, and carefully remove the relays by prying under the base of the relay.

NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start.

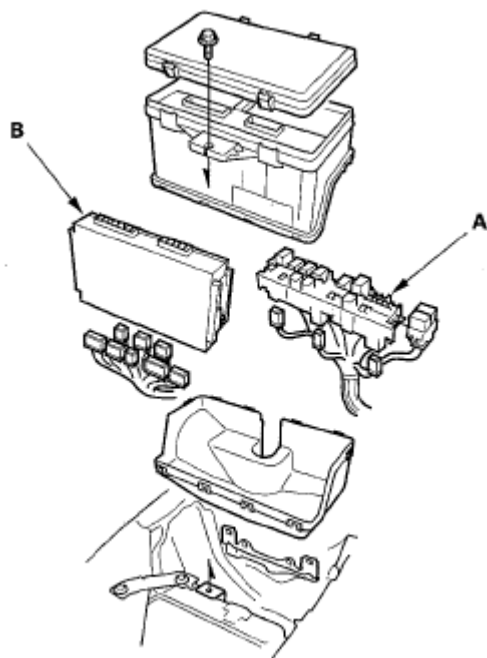


Fig. 1: Identifying Under-Hood Fuse/Relay Box Relay Block Part And Relay Control Module Part
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the under-hood fuse/relay box from the bracket.
4. Remove the relay block part (A) from the under-hood fuse/relay box.
5. Remove the relay control module part (B) from the under-hood fuse/relay box, then disconnect the connectors from the relay control module.

INSTALLATION

1. Install the relay control module and relays, then connect the connectors to the under-hood fuse/ relay box.
2. Install the cover to the bottom of the under-hood fuse/relay box.
3. Install the under-hood fuse/relay box and the removed parts in the reverse order of removal.
4. Do the battery terminal reconnection procedure.(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**)
5. Confirm that all systems work properly.

2007-09 ELECTRICAL

Fuse/Relay Boxes - MDX

CONNECTOR TO FUSE/RELAY BOX INDEX

UNDER-HOOD FUSE/RELAY BOX (AUXILIARY UNDER-HOOD RELAY BOX PART)

UNDER-HOOD FUSE/RELAY BOX REFERENCE CHART

Socket	Ref	Terminal	Connects to
Fog light relay	1	4	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)</u>)
Interior light relay	2	4	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)</u>)

2008 Acura MDX

2007-09 ELECTRICAL Fuse/Relay Boxes - MDX

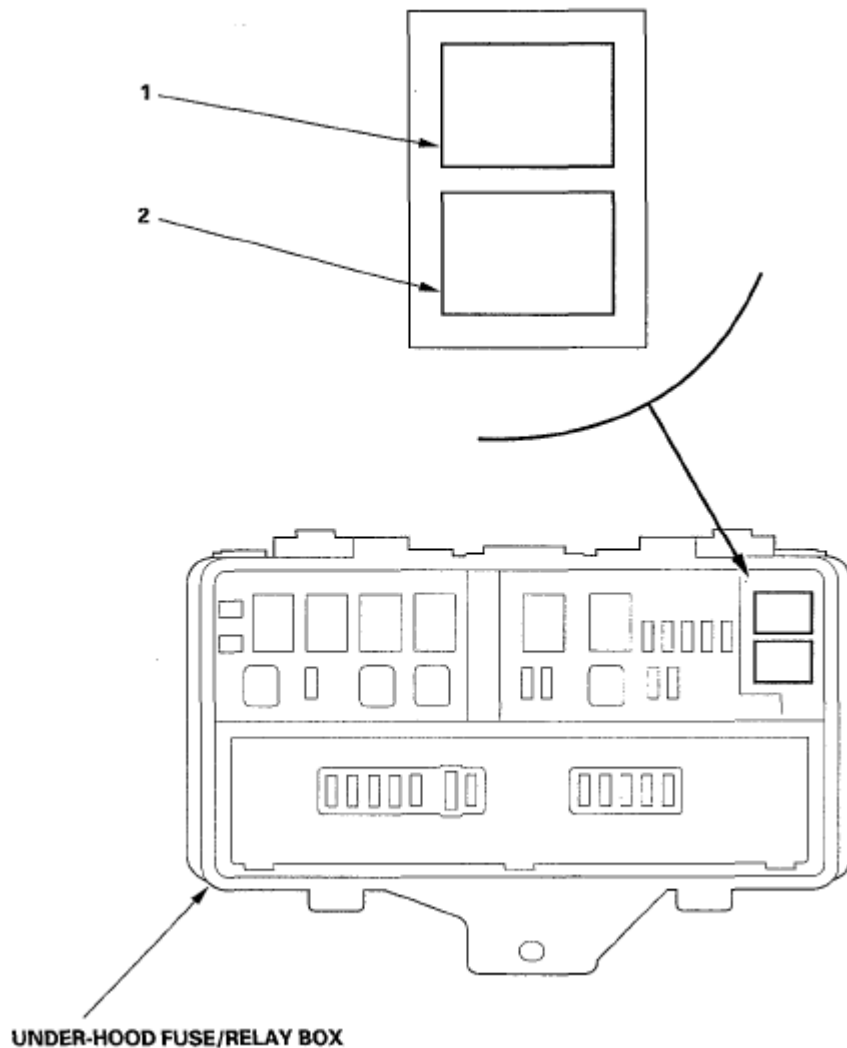


Fig. 1: Identifying Under-Hood Fuse/Relay Box Connector Terminals (Auxiliary Under-Hood Relay Box Part)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-HOOD FUSE/RELAY BOX (RELAY CONTROL MODULE PART)

UNDER-HOOD FUSE/RELAY BOX REFERENCE CHART

Socket	Ref	Terminal	Connects to
A	5	4	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)</u>)
B	2	5	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)</u>)
C	3	2	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT)</u>)

2008 Acura MDX

2007-09 ELECTRICAL Fuse/Relay Boxes - MDX

			COMPARTMENT))
D	8	10	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
E	7	14	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
F	6	1	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
G	1	4	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
H	4	9	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)

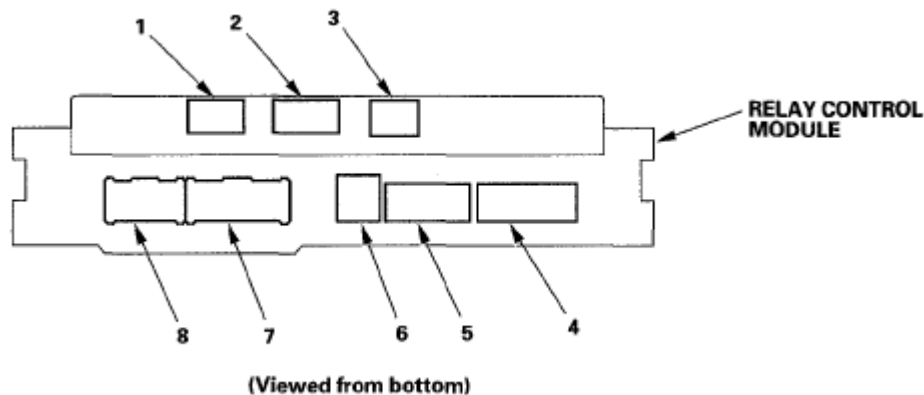


Fig. 2: Identifying Under-Hood Fuse/Relay Box Connector Terminals (Relay Control Module Part)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-HOOD FUSE/RELAY BOX (RELAY BLOCK PART)

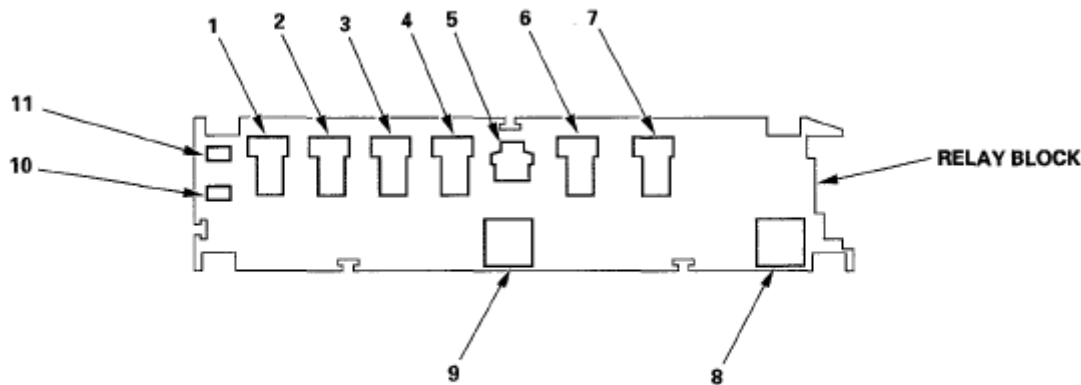
UNDER-HOOD FUSE/RELAY BOX REFERENCE CHART

Socket	Ref	Terminal	Connects to
A	9	1	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
A/C compressor clutch relay	2	4	
A/C condenser fan relay	3	4	
B	8	1	Right engine compartment wire harness (see <u>RIGHT ENGINE COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))</u>)
			Right engine compartment wire harness (see <u>RIGHT ENGINE</u>

2008 Acura MDX

2007-09 ELECTRICAL Fuse/Relay Boxes - MDX

C	5	1	COMPARTMENT WIRE HARNESS (DASH TO REAR OF ENGINE COMPARTMENT))
Diode (for A/C condenser fan relay and fan control relay)	11	-	
Diode (for radiator fan relay)	10	-	
Fan control relay	1	5	
Front blower motor relay	7	4	
Headlight low beam relay	6	4	
Radiator fan relay	4	4	



(Viewed from bottom)

Fig. 3: Identifying Under-Hood Fuse/Relay Box Connector Terminals (Relay Block Part)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNDER-DASH FUSE/RELAY BOX

UNDER-DASH FUSE/RELAY BOX REFERENCE CHART

Socket	Ref	Terminal	Connects to
A	6	6	Dash-board wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE))</u>)
Accessory power socket relay	8	4	
B	19	6	Left engine compartment wire harness (see <u>LEFT ENGINE COMPARTMENT WIRE HARNESS)</u>)
C	18	12	Left engine compartment wire harness (see <u>LEFT ENGINE COMPARTMENT WIRE HARNESS)</u>)
D	20	17	Left engine compartment wire harness (see <u>LEFT ENGINE COMPARTMENT WIRE HARNESS)</u>)
			Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT</u>

2008 Acura MDX

2007-09 ELECTRICAL Fuse/Relay Boxes - MDX

E	25	16	<u>BRANCH</u>)
F	26	14	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
Front seat heater relay	9	4	
G	21	6	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
H	24	14	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
J	16	21	Driver's door subharness (see <u>DRIVER'S DOOR WIRE HARNESS A</u>)
K	15	12	Driver's door subharness (see <u>DRIVER'S DOOR WIRE HARNESS A</u>)
M	14	3	MICU service check connector
N	2	45	Dashboard wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)</u>)
P	23	30	Dashboard wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)</u>)
PGM-FI main relay 2 (FUEL PUMP)	13	4	
Power window relay	11	4	
Q	22	14	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
R (for MES connector)	3	2	Dashboard wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)</u>)
S (for SRS)	5	2	Dashboard wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)</u>)
Short pin (for fuel pump)	10	-	
Short pin (for lumbar support)	12	-	
T	7	6	Not used
Turn signal/hazard relay	4	6	
W	17	5	Left engine compartment wire harness (see <u>LEFT ENGINE COMPARTMENT WIRE HARNESS</u>)
X	1	39	Dashboard wire harness (see <u>DASHBOARD WIRE HARNESS (VIEW OF DRIVER'S SIDE)</u>)

2008 Acura MDX

2007-09 ELECTRICAL Fuse/Relay Boxes - MDX

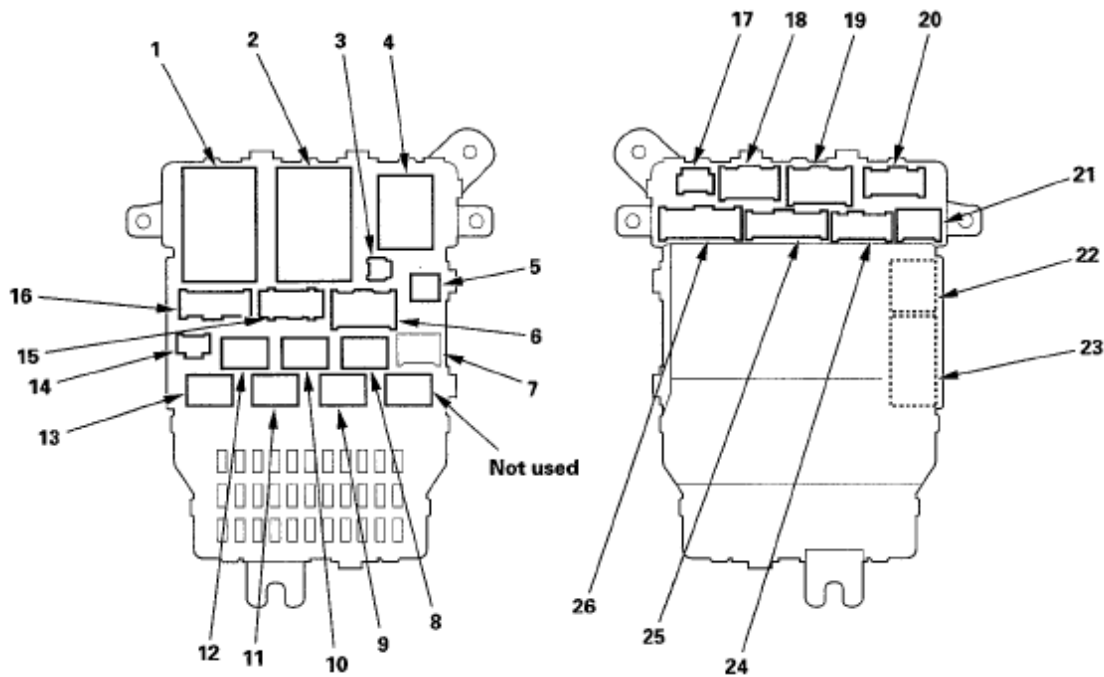


Fig. 4: Identifying Under-Dash Fuse/Relay Box Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR FUSE/RELAY BOX

REAR FUSE/RELAY BOX REFERENCE CHART

Socket	Ref	Terminal	Connects to
A	6	2	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
B	5	34	Floor wire harness (see <u>FLOOR WIRE HARNESS (LEFT BRANCH)</u>)
C	4	42	Rear wire harness (see <u>REAR WIRE HARNESS</u>)
Cargo area accessory power socket relay	1	4	Not used
D (for trailer)	7	14	
Rear window defogger relay	3	4	
SH-AWD relay	2	4	

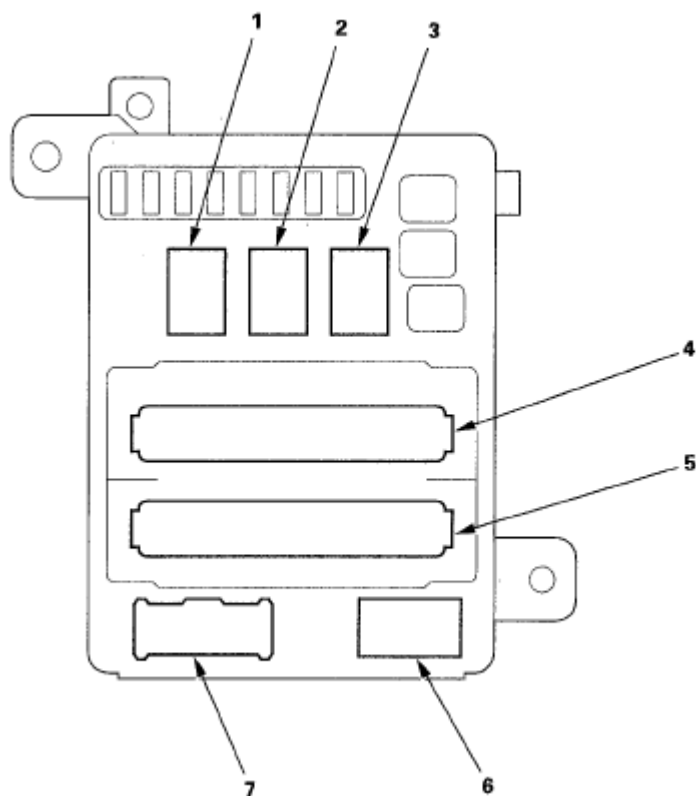


Fig. 5: Identifying Rear Fuse/Relay Box Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Gauges - MDX

COMPONENT LOCATION INDEX

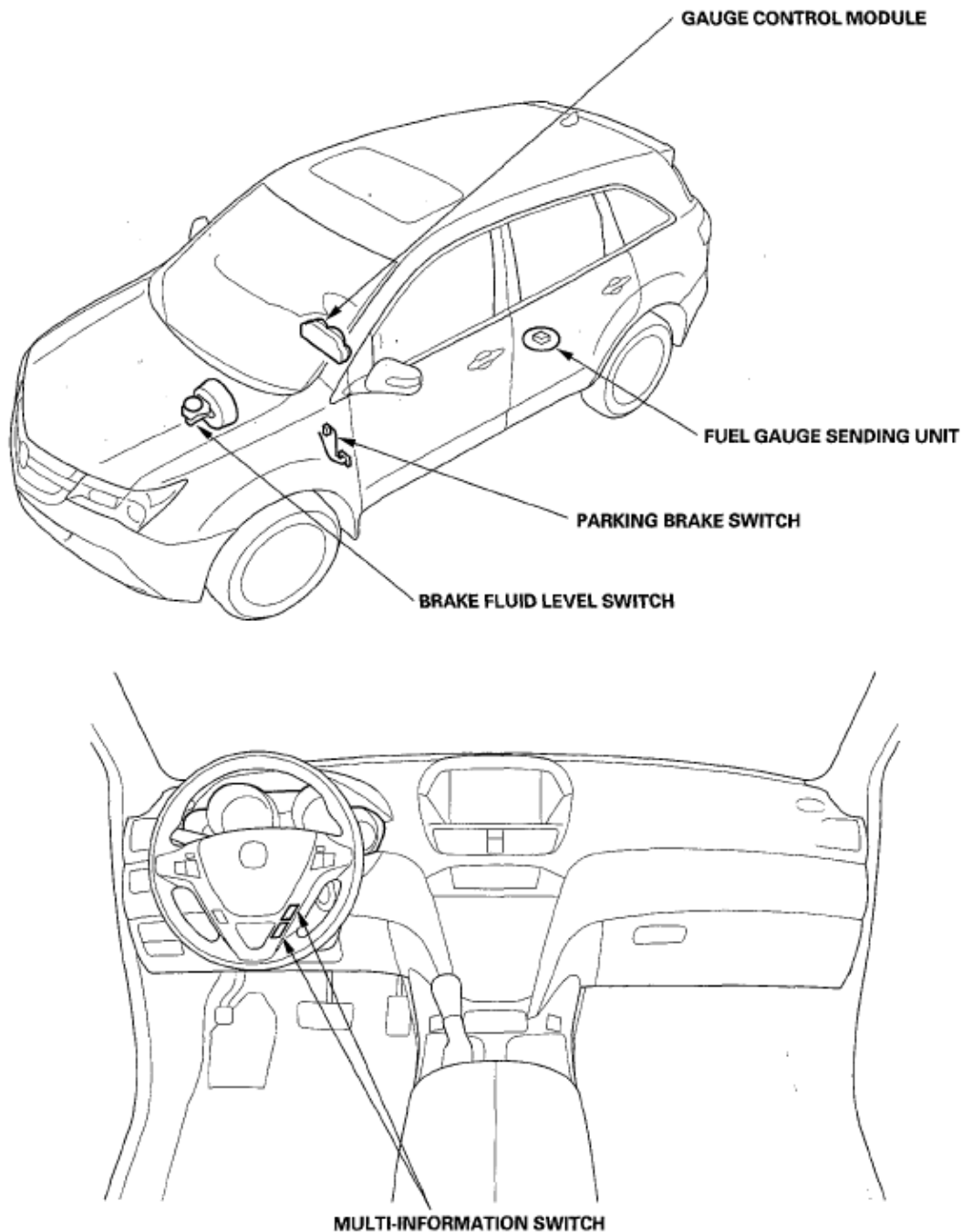


Fig. 1: Identifying Gauges Component Location (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

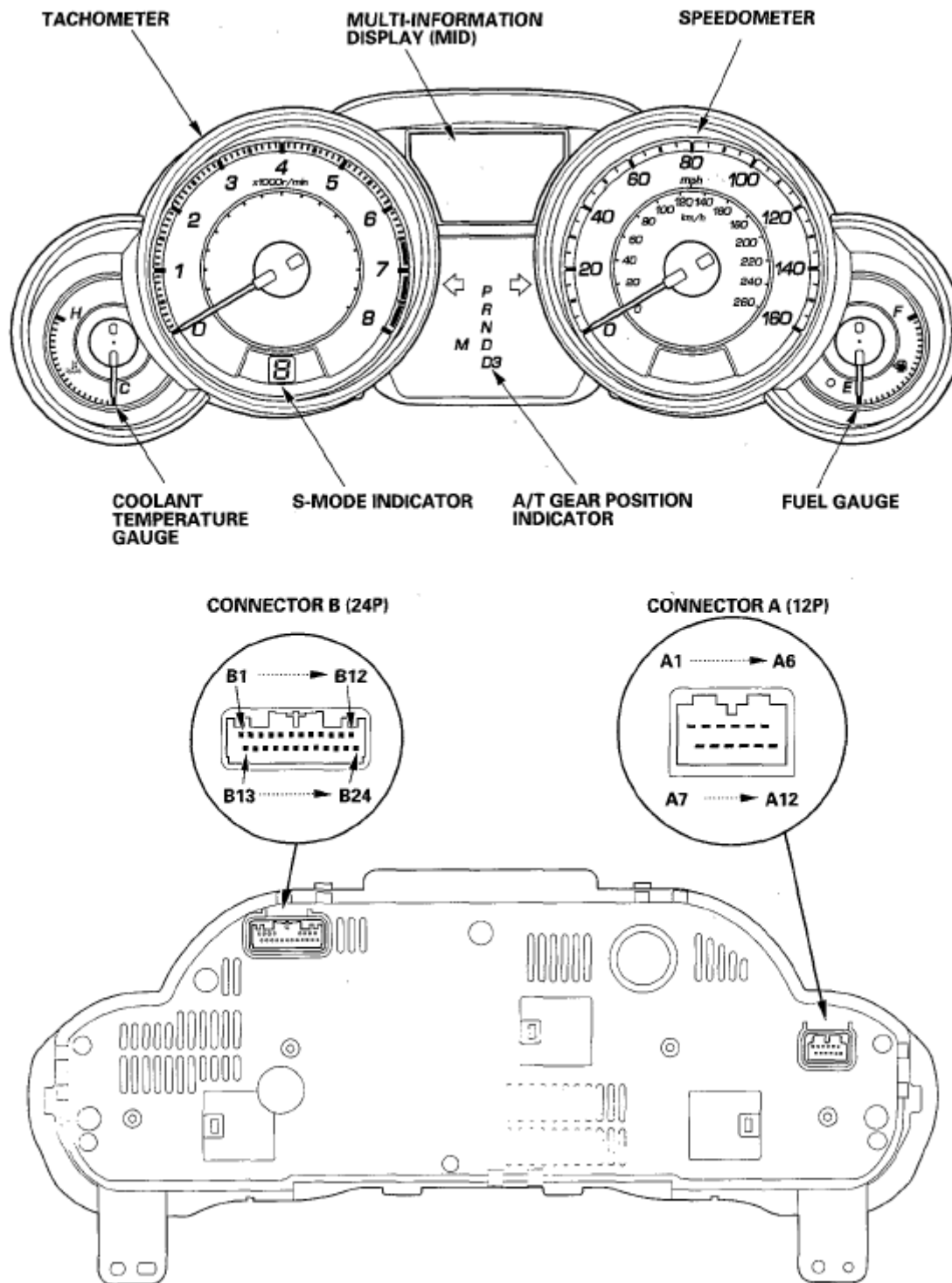


Fig. 2: Identifying Gauges Component Location (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

NOTE: Before testing the gauge system, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

The gauge control module has a self-diagnostic function.

- The beeper drive circuit check.
- The indicator drive circuit check.
- The switch input test.
- The LCD segments check.
- The gauges drive circuit check (speedometer, tachometer, fuel gauge, coolant temperature gauge).
- The communication line check (of the body-controller area network (B-CAN) communication line and the fast-controller area network (F-CAN) communication line between the gauges).

NOTE: Indicators are also controlled via the communication line.

ENTERING THE SELF-DIAGNOSTIC FUNCTION

Before doing the self-diagnostic function, check the No. 7 (10 A) fuse and the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

1. Push and hold the SEL RESET button.
2. Turn the headlights ON.
3. Turn the ignition switch ON (II).
4. Within 5 sec, turn the headlights OFF, then ON and OFF again.
5. Within 5 sec, release the SELECT button, and then push and release the button three times repeatedly.

- NOTE:**
- While in the self-diagnostic mode, the dash lights brightness controller operates normally.
 - While in the self-diagnostic mode, the SELECT button is used to start the Beeper Drive Circuit Test and the Gauge Drive Circuit Check.
 - If the vehicle speed exceeds 1.2 mph (2 km/h) or the ignition switch is turned to LOCK (0), the self-diagnostic mode ends.

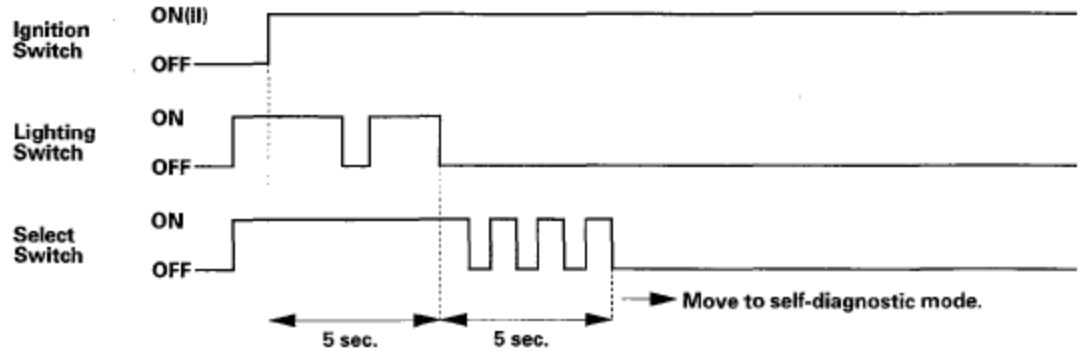


Fig. 3: Blinking Pattern - Ignition Switch (Self-Diagnostic Mode)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

THE INDICATOR DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, these indicators blink:

ABS indicator, active damper system indicator, A/T gear position indicator, brake system indicator, charging system indicator, cruise control indicator, cruise main indicator, DRL indicator, fog light indicator, high beam indicator, immobilizer indicator, lights-on indicator, low fuel indicator, malfunction indicator lamp (MIL), message indicator, oil pressure indicator, seat belt indicator, security indicator, SH-AWD indicator, Side airbag indicator, tire pressure indicator, VSA activation indicator, and VSA indicator.

SWITCH INPUT CHECK

After the intermittent beeper sounds at the initial stage of self-diagnosis, a beeper sounds continuously while any of the following switch inputs are switched from OFF to ON:

Parking brake switch, VSA OFF switch, comfort switch, cruise control master, SET, RESUME, CANCEL switches, select, previous, next switches, and dash lights brightness controller (VOL (+), VOL (-)).

THE BEEPER DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, the beeper sounds five times.

THE LCD [SPORT SHIFT AND MULTI-INFORMATION DISPLAY (MID)] SEGMENT CHECK

When entering the self-diagnostic mode, the word "Checking Now" shows on the MID.

THE GAUGE DRIVE CIRCUIT CHECK

When entering the self-diagnostic mode, the speedometer, the tachometer, the fuel gauge, and the coolant temperature gauge needles sweep from the minimum position to maximum position, then return to the minimum position.

NOTE: After the beeper stops sounding and the gauge needles return to the minimum position, pushing the select/reset button starts the Beeper Drive Circuit Check (one beep) and the Gauge Drive Circuit Check again.

The check cannot be started again until the gauge needles return to the minimum position.

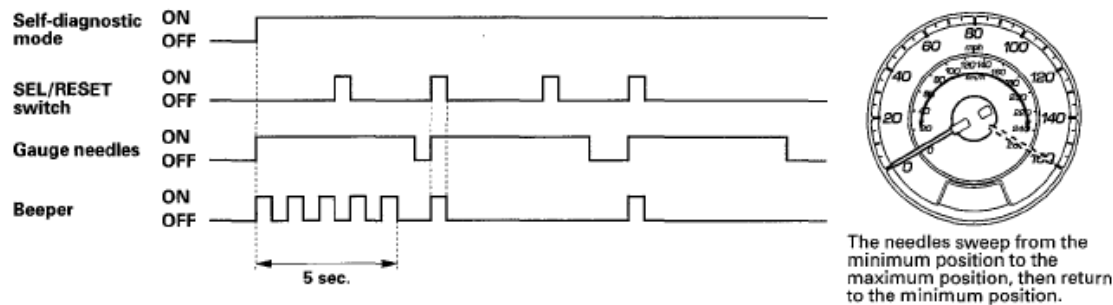


Fig. 4: Blinking Pattern - (Entering Self-Diagnostic Mode Indicators)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If any needle fails to sweep or the beeper does not sound, replace the gauge control module.

THE COMMUNICATION LINE CHECK

While in the self-diagnostic mode, the Communication Line Check starts after the LCD Segment Check.



Fig. 5: Diagnosis Screen Display - CHECKING NOW
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Indication pattern

There is a malfunction in the communication line between the F-CAN and gauge control module. The B-CAN is OK at this time. Check for DTCs in the PCM and troubleshoot any DTCs found. If no DTCs are found, go to B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

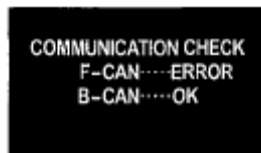


Fig. 6: Diagnosis Screen Display - COMMUNICATION CHECK

Courtesy of AMERICAN HONDA MOTOR CO., INC.

There is a malfunction in the communication line between the B-CAN and gauge control module. The F-CAN line is OK at this time. Go to B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

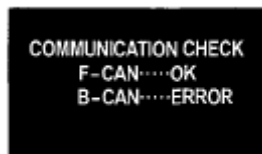


Fig. 7: Diagnosis Screen Display - Communication Check

Courtesy of AMERICAN HONDA MOTOR CO., INC.

There is a malfunction in the communication line between the gauge control module and F-CAN and B-CAN. Check for DTCs in the PCM and troubleshoot any DTCs found. If no DTCs are found, go to B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

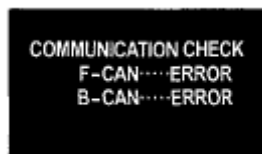


Fig. 8: Diagnosis Screen Display - COMMUNICATION CHECK

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENDING THE SELF-DIAGNOSTIC FUNCTION

Turn the ignition switch to LOCK (0).

NOTE: If the vehicle speed exceeds 1.2 mph (2 km/h), the self-diagnostic function ends.

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

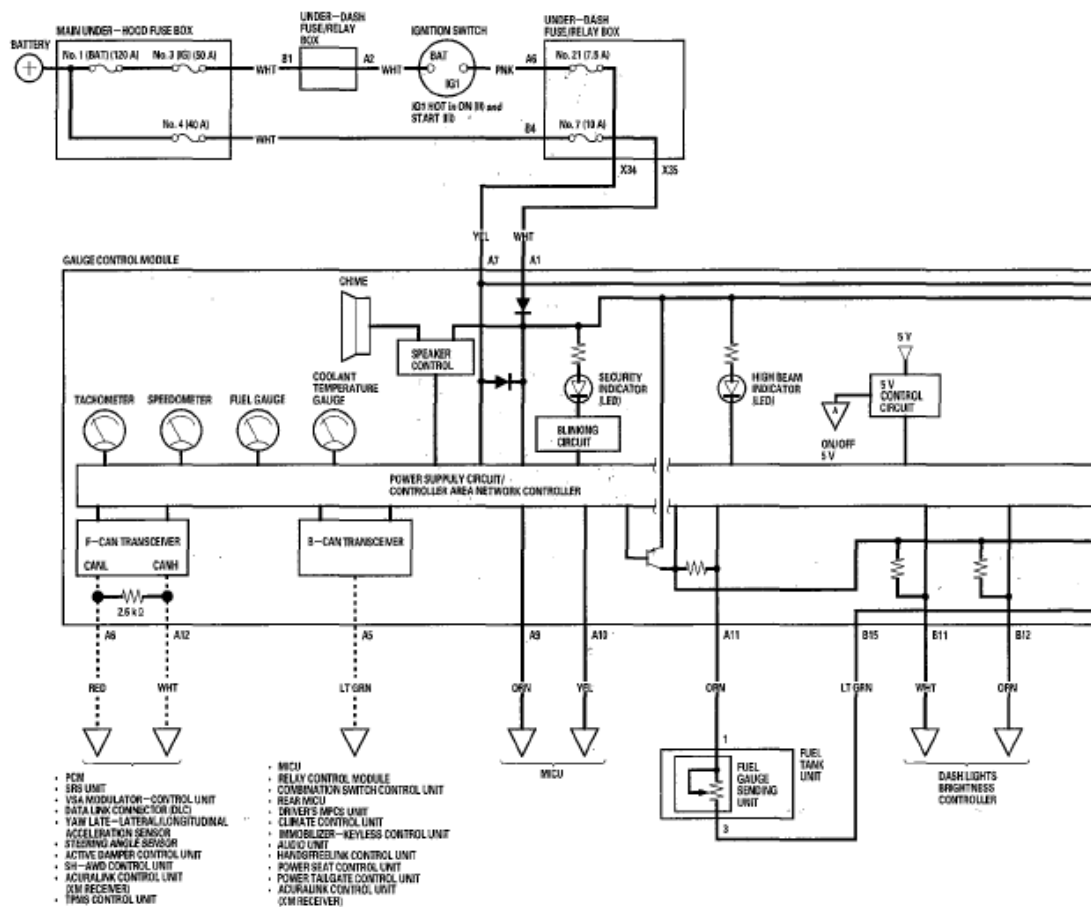


Fig. 9: Gauges - Circuit Diagram (1 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

*1 : '07 models
*2 : '08 models
----- : CAN Bus

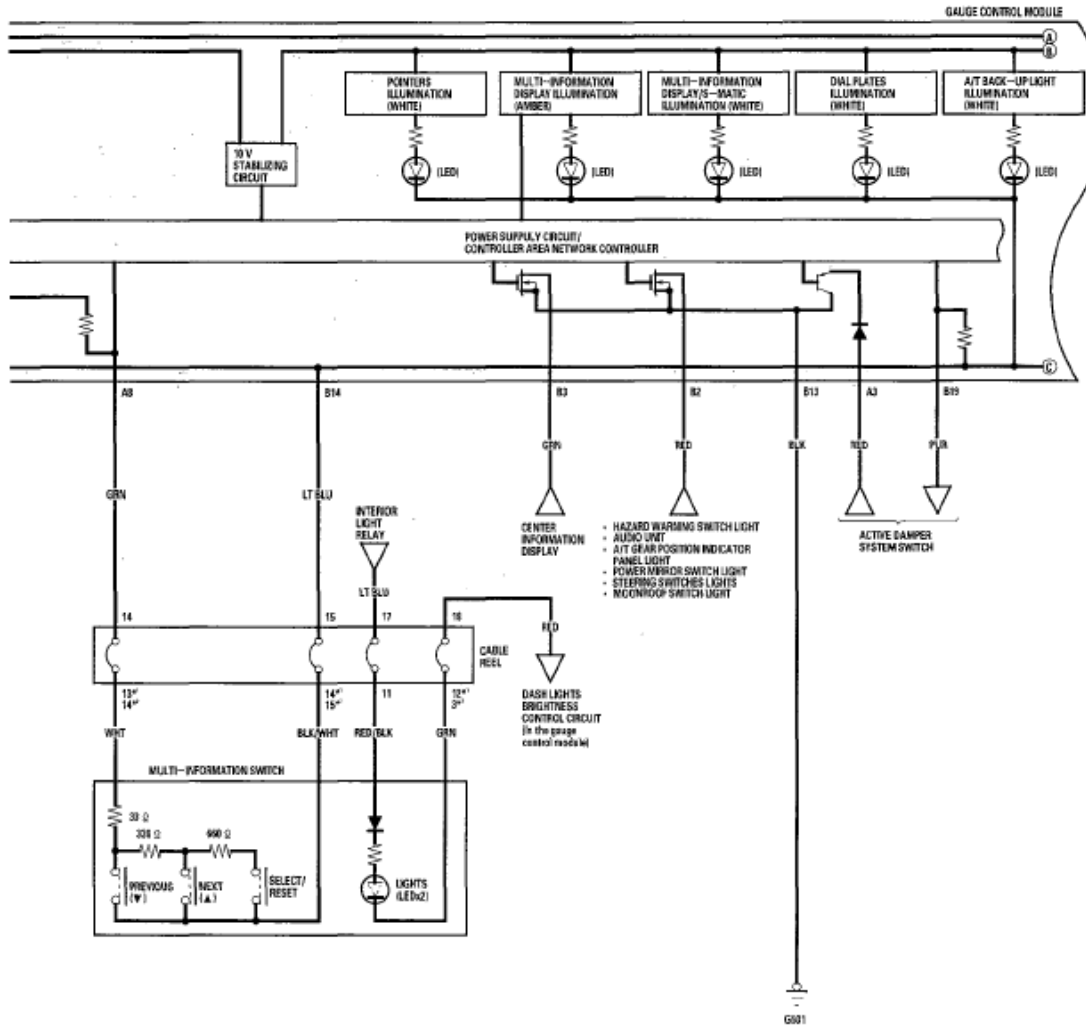


Fig. 10: Gauges - Circuit Diagram (2 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

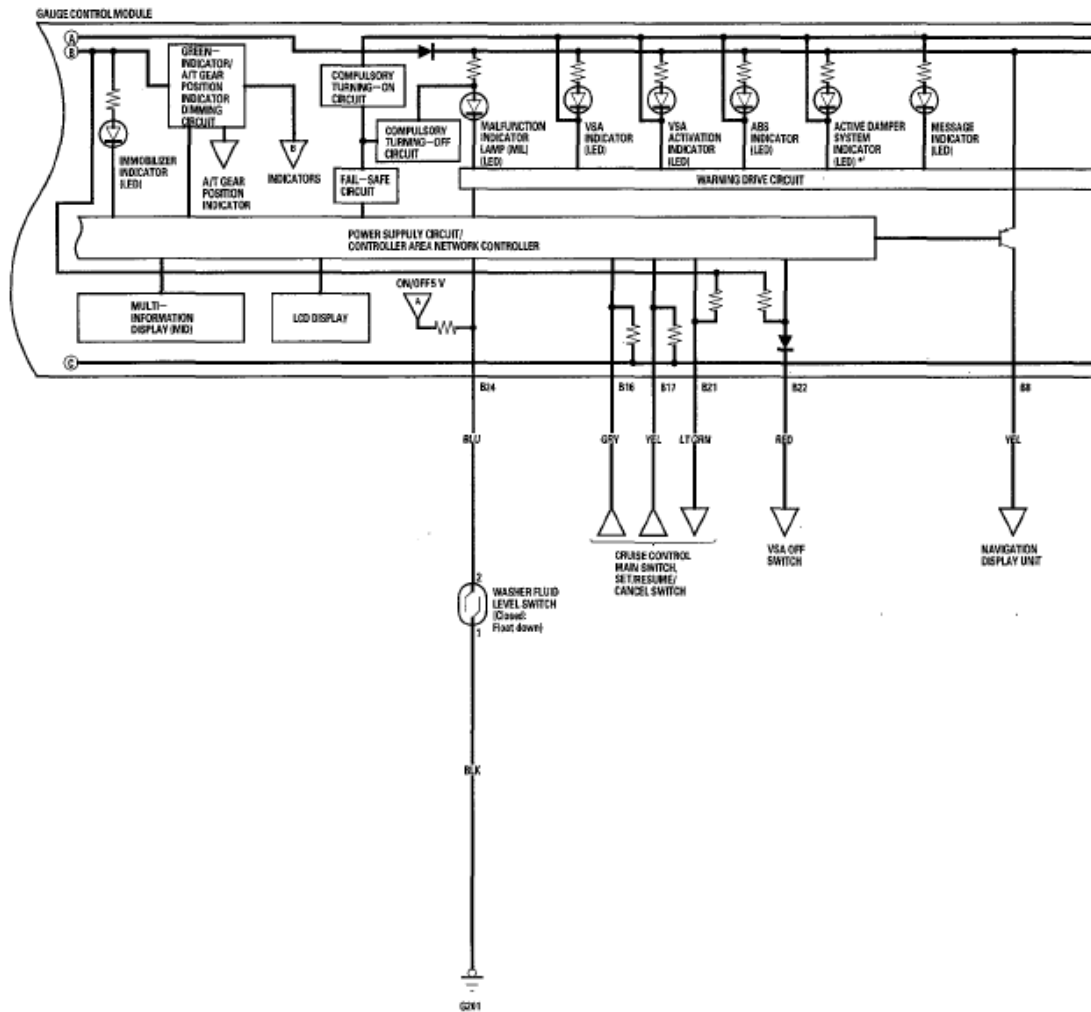


Fig. 11: Gauges - Circuit Diagram (3 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*1: With active damper system
*2: With TRMS

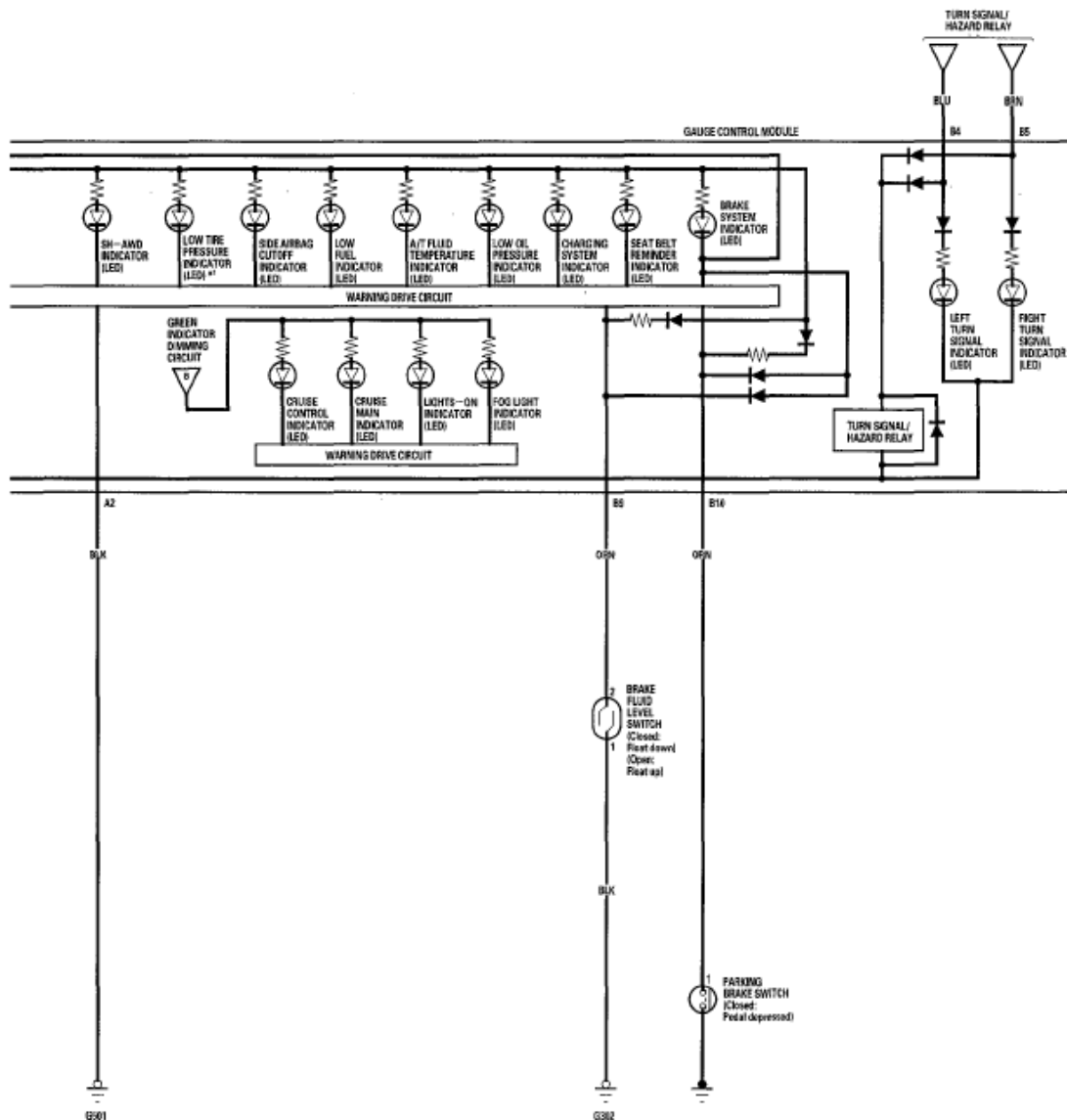


Fig. 12: Gauges - Circuit Diagram (4 Of 4)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1152: GAUGE CONTROL MODULE INTERNAL (EEPROM) ERROR

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.

4. Check for DTCs with the HDS.

Is DTC B1152 indicated?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time.

DTC B1155: GAUGE CONTROL MODULE LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (HLSW MESSAGE); DTC B1156: GAUGE CONTROL MODULE LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (WIPSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1155 and/or B1156 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the combination switch control unit.

5. Check for DTCs with the HDS.

Are DTCs B1007, B1062, B1063, B1957, B1958, and/or B2969 also indicated?

YES - Do the combination switch control unit input test (see **WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST**).

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

DTC B1157: GAUGE CONTROL MODULE LOST COMMUNICATION WITH MICU (MICU MESSAGE); DTC B1159: GAUGE CONTROL MODULE LOST COMMUNICATION WITH MICU (DOORSW MESSAGE); DTC B1180: GAUGE CONTROL MODULE LOST COMMUNICATION WITH MICU (AUTOLT MESSAGE); DTC B1188: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE MICU (RM MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN**).

SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1157, B1159, B1180, and/or B1188 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1056, B1057, B1255, B1955, B2155, B2156, and/or B2161 also indicated?

YES - Do the MICU input test (see **MICU INPUT TEST**).

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

DTC B1158: GAUGE CONTROL MODULE LOST COMMUNICATION WITH RELAY CONTROL MODULE (RM MESSAGE)

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1158 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the relay control module.

5. Check for DTCs with the HDS.

Are DTCs B1005, B1959, B2162, and/or B2970 also indicated?

YES - Do the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**).

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

DTC B1162: GAUGE CONTROL MODULE LOST COMMUNICATION WITH POWER TAILGATE (PTG MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1162 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1155, B1156, B1157, B1158, B1180, and/or B1182 also indicated?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the power tailgate control unit input test (see **CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1168: GAUGE CONTROL MODULE LOST COMMUNICATION WITH PCM (ENG MESSAGE); DTC B1169: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE PCM (A/T MESSAGE); DTC B1178: F-CAN COMMUNICATION LINE ERROR

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1168, B1169, and/or B1178 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connection between the gauge control module and the PCM.

5. Check for Fuel and Emissions Systems DTCs with the HDS.

Are there any DTCs indicated?

YES - Go to the indicated DTCs, then recheck.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect gauge control module connector A (12P).
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Connect the gauge control module connector A (12P) connector No. 6 and No. 12 terminals and body ground with jumper wires.

GAUGE CONTROL MODULE CONNECTOR A (12P)

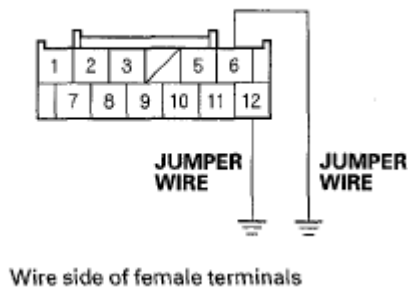
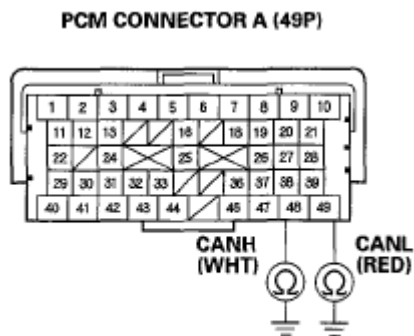


Fig. 13: Identifying Gauge Control Module Connector Terminals 6 And 12 And Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between body ground and PCM connector A (49P) No. 48 and No. 49 terminals individually.



Terminal side of male terminals

Fig. 14: Identifying Continuity Between Body Ground And PCM Connector Terminals 48 And 49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), and recheck. If the indication goes away, replace the original PCM (see **PCM REPLACEMENT**). If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Repair open in the wire.

DTC B1170: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE VSA MODULATOR-CONTROL UNIT (VSA MESSAGE)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1170 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connection between the gauge control module and the VSA modulator-control unit.

5. Check for VSA System DTCs with the HDS (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).

Are there any DTCs indicated?

YES - Go to the indicated DTCs, then recheck.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect gauge control module connector A (12P).
8. Disconnect the VSA modulator-control unit 46P connector.
9. Connect gauge control module connector A (12P) connector No. 6 and No. 12 terminals and body ground with jumper wires.

GAUGE CONTROL MODULE CONNECTOR A (12P)

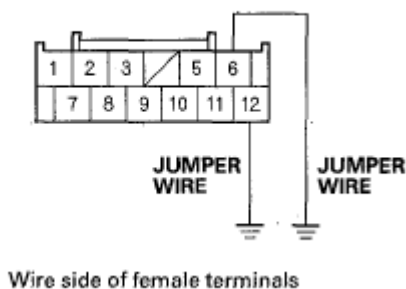


Fig. 15: Identifying Gauge Control Module Connector Terminals 6 And 12 And Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and VSA modulator-control unit 46P connector No. 38 and No. 39 terminals individually.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR

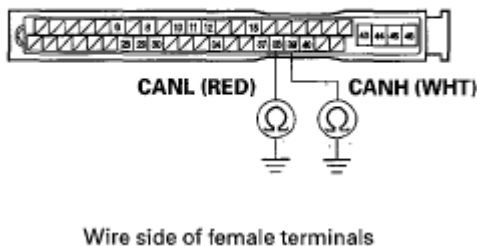


Fig. 16: Identifying Continuity Between Body Ground And VSA Modulator-Control Unit Connector Terminals 38 And 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), and recheck. If the indication goes away, replace the original VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**). If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Repair open in the wire.

DTC B1173: GAUGE CONTROL MODULE LOST COMMUNICATION WITH THE TPMS CONTROL UNIT (TPMS MESSAGE)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1173 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the TPMS control unit.

5. Check for TPMS DTCs with the HDS (see GENERAL TROUBLESHOOTING INFORMATION).

Are there any DTCs indicated?

YES - Go to the indicated DTCs, then recheck.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect gauge control module connector A (12P).
8. Disconnect the TPMS control unit 20P connector.
9. Connect gauge control module connector A (12P) connector No. 6 and No. 12 terminals and body ground with jumper wires.

GAUGE CONTROL MODULE CONNECTOR A (12P)

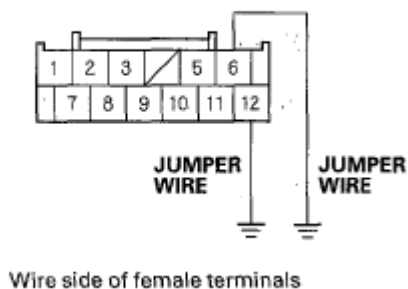


Fig. 17: Identifying Gauge Control Module Connector Terminals 6 And 12 Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and the TPMS control unit 20P connector No. 1 and No. 11 terminals individually.

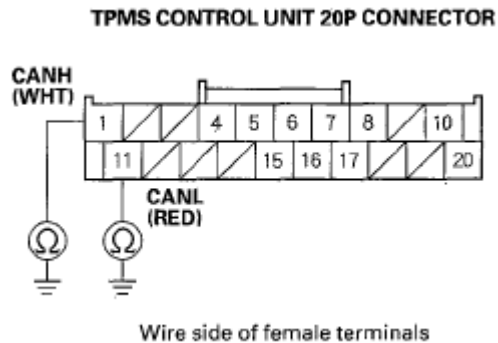


Fig. 18: Identifying Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminals 1 And 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good TPMS control unit (see TPMS CONTROL UNIT REPLACEMENT), and recheck. If the indication goes away, replace the original TPMS control unit (see TPMS CONTROL UNIT REPLACEMENT). If the DTC is still present, replace the gauge control module (see GAUGE CONTROL MODULE INPUT TEST).

NO - Repair open in the wire.

DTC B1175: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT OPEN

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 30 seconds or more.
4. Check for DTCs with the HDS.

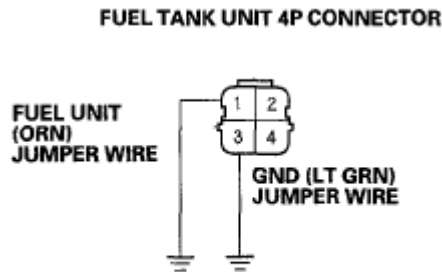
Is DTCs B1175 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the fuel tank unit.

5. Turn the ignition switch to LOCK (0).

6. Disconnect the fuel tank unit 4P connector.
7. Disconnect gauge control module connectors A (12P) and B(24P).
8. Connect the fuel tank unit 4P connector No. 1 and No. 3 terminals and body ground with jumper wires.



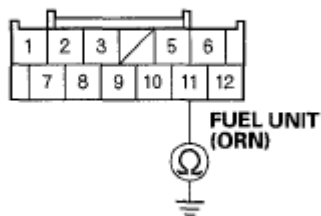
Wire side of female terminals

Fig. 19: Identifying Fuel Tank Unit Connector Terminals 1 And 3 And Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between the gauge control module connector A (12P) No. 11 terminal and body ground, and connector B (24P) No. 15 terminal and body ground respectively.

GAUGE CONTROL MODULE CONNECTOR A (12P)

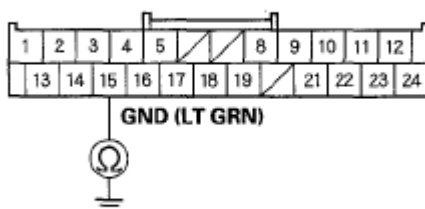


Wire side of female terminals

Fig. 20: Identifying Continuity Between Gauge Control Module Connector Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GAUGE CONTROL MODULE CONNECTOR B (24P)



Wire side of female terminals

Fig. 21: Identifying Continuity Between Gauge Control Module Connector Terminal 15 And Body Ground**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the gauge control module and the fuel tank unit.

10. Do the fuel gauge sending unit test (see **FUEL GAUGE SENDING UNIT TEST**).

Is the fuel tank unit OK?

YES - Replace the gauge control module.

NO - Replace the fuel gauge sending unit.

DTC B1176: FUEL LEVEL SENSOR (FUEL GAUGE SENDING UNIT) CIRCUIT SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 30 seconds or more.
4. Check for DTCs with the HDS.

Is DTCs B1176 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the fuel tank unit.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the fuel tank unit 4P connector.
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to LOCK (0), and then back ON (II).
9. Wait for 30 seconds or more.
10. Check for DTCs with the HDS.

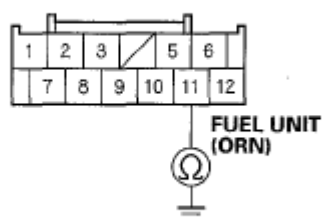
Is DTCs B1176 indicated?

YES - Go to step 11.

NO - Replace the fuel gauge sending unit.

11. Disconnect gauge control module connector A (12P).
12. Check for continuity between the gauge control module connector A (12P) No. 11 terminal and body ground.

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 22: Identifying Continuity Between Gauge Control Module Connector Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the gauge control module and the fuel tank unit.

NO - Replace the gauge control module.

DTC B1177: BATTERY VOLTAGE ABNORMAL

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Check for DTCs with the HDS.

Is DTCs B1177 indicated?

YES - Go to step 8.

NO - Go to step 4.

4. Clear the DTCs with the HDS.
5. Turn the ignition switch to LOCK (0), and then back ON (II).
6. Crank the engine.
7. Check for DTCs with the HDS.

Is DTCs B1177 indicated?

YES - Go to step 8.

NO - Intermittent failure, the gauge control module and power supply voltage (IG1) that is supplied to the gauge control module are OK at this time. The battery may have been discharged, and recovered.

8. Check the battery (see **BATTERY TEST**) and the charging system.

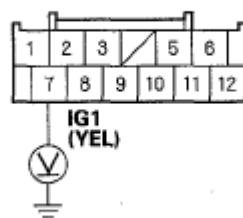
Are the battery condition normal and the charging system OK?

YES - Go to step 9.

NO - The battery needs a recharge or replacement, or the charging system needs to repair.

9. Turn the ignition switch ON (II).
10. With gauge control module connector A (12P) still connected, measure the voltage between the gauge control module connector A (12P) No. 7 terminal and body ground.

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 23: Identifying Voltage Between Gauge Control Module Connector Terminal 7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage above 7.5 V?

YES - Replace the gauge control module.

NO - Repair open or high resistance in the IG1 line between the ignition switch and the gauge control module.

DTC B1182: GAUGE CONTROL MODULE LOST COMMUNICATION WITH DRIVER'S MPCS UNIT (DRLOCKSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1182 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the driver's MPCS unit.

5. Check for DTCs with the HDS.

Are DTCs B1013, B1015, B1065, and B1905 indicated with DTC B1182?

YES - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

DTC B1187: GAUGE CONTROL MODULE LOST COMMUNICATION WITH SRS UNIT (SRS MESSAGE)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1187 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the SRS unit.

5. Check for SRS DTCs with the HDS.

Are there any DTCs indicated?

YES - Go to the indicated DTCs, then recheck.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect gauge control module connector A (12P).

8. Disconnect SRS unit connector A (see [SRS UNIT REPLACEMENT](#)).
9. Check for continuity between the gauge control module connector A (12P) No. 6 and the SRS unit connector A (28P) No. 12 terminal, and between the gauge control module connector A (12P) No. 12 terminal and the SRS unit connector A (28P) No. 11 terminal.

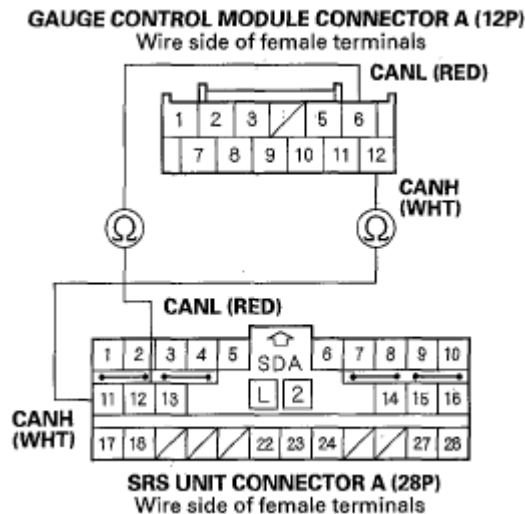


Fig. 24: Identifying Continuity Between Gauge Control Module And SRS Unit Connector Terminals 6 And 12 & Terminals 12 And 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good SRS unit (see [SRS UNIT REPLACEMENT](#)), and recheck. If the indication goes away, replace the original SRS unit (see [SRS UNIT REPLACEMENT](#)). If the DTC is still present, replace the gauge control module (see [GAUGE CONTROL MODULE INPUT TEST](#)).

NO - Repair open in the wire.

DTC B1189: GAUGE CONTROL MODULE LOST COMMUNICATION WITH ACTIVE DAMPER SYSTEM CONTROL UNIT (ADS MESSAGE)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1188 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the

gauge control module and the active damper control unit.

5. Check for active damper system DTCs with the HDS.

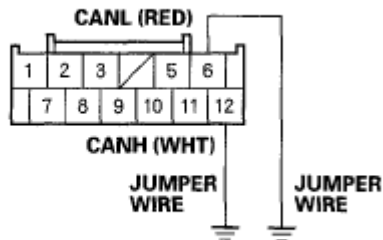
Are there any DTCs indicated?

YES - Go to the indicated DTCs, then recheck.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect gauge control module connector A (12P) (see **GAUGE CONTROL MODULE REPLACEMENT**).
8. Disconnect active damper control unit connector B (14P) (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).
9. Connect gauge control module connector A (12P) connector No. 6 and No. 12 terminals to body ground with jumper wires.

GAUGE CONTROL MODULE CONNECTOR A (12P)



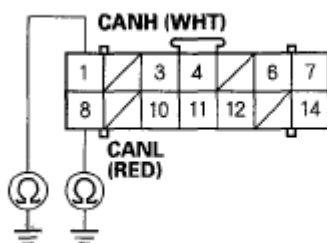
Wire side of female terminals

Fig. 25: Identifying Gauge Control Module Connector Terminals 6 And 12 Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between body ground and active damper control unit connector B (14P) No. 1 and No. 8 terminals respectively.

ACTIVE DAMPER CONTROL UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 26: Identifying Continuity Between Body Ground And Active Damper Control Unit Connector Terminals 1 And 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**), and recheck. If the indication goes away, replace the original active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**). If the DTC is still present, replace the gauge control module (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Repair an open in the wire.

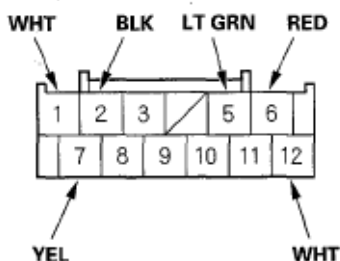
GAUGE CONTROL MODULE INPUT TEST

NOTE: Before testing the gauge control module, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Turn the ignition switch to LOCK (0), and remove the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).
2. Disconnect gauge control module connectors A (12P) and B (24P).

NOTE: All connector views are wire side of female terminals.

GAUGE CONTROL MODULE CONNECTOR A (12P)



GAUGE CONTROL MODULE CONNECTOR B (24P)

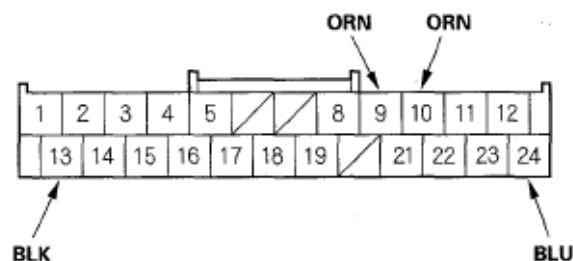


Fig. 27: Identifying Gauge Control Module Connectors Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 4.
4. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 5.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

GAUGE CONTROL MODULE INPUT

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A5	BLK	Under-dash fuse/relay box connector N (45P) disconnected	Check for continuity between the A5 and the under-dash fuse/relay box connector N (45P) No. 22 terminal: There should be continuity.	An open in the wire
A6	RED	PCM connector A (49P) disconnect	Check for continuity between the A6 and the PCM connector A (49P) No. 1 terminal: There should be continuity.	An open in the wire
A12	WHT	PCM connector A (49P) disconnected	Check for continuity between the A12 and the PCM connector A (49P) No. 36 terminal: There should be continuity.	An open in the wire

5. Reconnect the connectors, turn the ignition switch ON (II), and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, replace the gauge control module.

GAUGE CONTROL MODULE INPUT

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A2	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground(G501) • An open in the wire
B13				
A1	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
A7	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the main under-dash fuse/relay box • Faulty under-dash fuse/relay box

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

				• An open in the wire
B9	ORN	Ignition switch ON (II), brake fluid is full level in the reservoir	Measure the voltage to ground: There should be 5 V or more.	• Faulty brake fluid level switch • A short to ground in the wire
		Ignition switch ON (II), brake fluid is lower level in the reservoir	Measure the voltage to ground: There should be less than 1 V.	• Poor ground(G302) • An open in the wire • Faulty brake fluid level switch
B10	ORN	Ignition switch ON (II), parking brake pedal pressed	Measure the voltage to ground: There should be less than 1 V.	• Faulty brake fluid level switch • An open in the wire
		Ignition switch ON (II), parking brake pedal released	Measure the voltage to ground: There should be 5 V or more.	• Faulty brake fluid level switch • A short to ground in the wire
B24	BLU	Ignition switch ON (II), washer fluid is half or more in the washer reservoir	Measure the voltage to ground: There should be less than 1 V.	• Poor ground(G201) • Faulty washer fluid level switch • An open in the wire
		Ignition switch ON (II), washer fluid is half or more in the washer reservoir	Measure the voltage to ground: There should be 5 V or more.	• Faulty washer fluid level switch • A short to ground in the wire

REWRITING THE ODO DATA AND TRANSFERRING THE MAINTENANCE MINDER DATA TO A NEW GAUGE CONTROL MODULE**NOTE:**

- Obtain a new gauge control module before starting the rewriting process.
- Rewriting is not possible on a gauge control module that will not communicate with the HDS.
- Make sure that the HDS shows the correct VIN for the car you are working on.
- Once you have started this procedure, you must complete it before removing the HDS from the DLC.
- Connect a battery jumper box (not a battery charger) to insure that correct battery voltage will be maintained.

1. Before replacing the gauge control module, connect the HDS.
2. Select GAUGES from the BODY ELECTRICAL system select menu with the HDS.
3. Select "Gauge Control Module Replacement (ODO Rewrite)" from the ADJUSTMENT menu, and follow the instructions on the display to retrieve the ODO value and the Maintenance Minder Data Information.
4. Replace the gauge control module.
5. Follow the instructions on the display to write the new ODO value and Maintenance Minder Data to the new gauge control module. If the data transfer fails, refer to the instructions below to release the locked ODO value.

RELEASE LOCKED ODOMETER MILEAGE TO THE ORIGINAL GAUGE CONTROL MODULE.

If after you attempt to transfer mileage, the new odometer has dashes (--), garbled, or an incorrect value displayed, do the following:

Start over. The original gauge control module is going to be unlocked and restored to its original state.

1. Confirm that you have the latest HDS version of software.
2. Make sure that the HDS shows the correct VIN for the car you are working on.
3. With the ignition switch in LOCK (0) position, reconnect the original gauge control module.
4. Completely re-boot the HDS.
5. Clear any stored DTCs.
6. Navigate to Body Electric/Gauges/Adjustment/ Instrument Panel Replacement.
7. Select "3. Releasing Locked ODO Value."
8. Follow the prompts and the Odometer mileage will be restored.
9. Start over and make sure the screen prompts are followed.

GAUGE CONTROL MODULE REPLACEMENT

NOTE: Before replacing the gauge control module, do the **"REWRITING THE ODO DATA AND TRANSFERRING THE MAINTENANCE MINDER DATA TO A NEW GAUGE CONTROL MODULE"** (see).

1. Remove the parts shown:
 - Driver's switch panel (see **DRIVER'S OUTER DASHBOARD TRIM REMOVAL/INSTALLATION**).
 - Instrument fascia (see **INSTRUMENT FASCIA REMOVAL/ INSTALLATION**).
2. Remove the screws from the gauge control module (A).

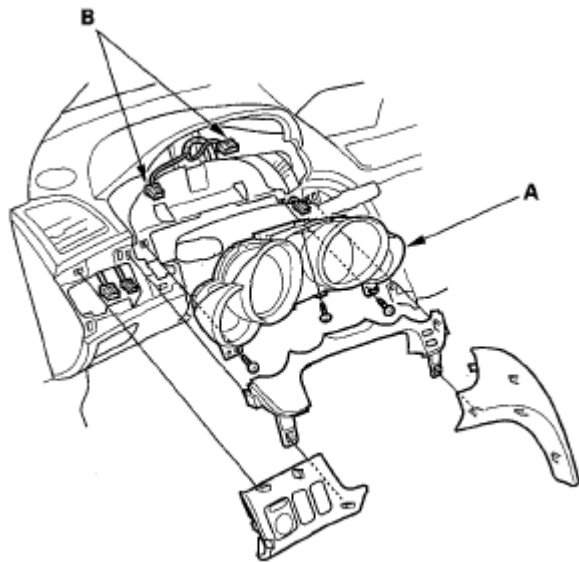


Fig. 28: Identifying Gauge Control Module And Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the connectors (B), and remove the gauge control module.
4. Install the gauge control module in the reverse order of removal.

MULTI-INFORMATION SWITCH TEST/ REPLACEMENT

1. Remove the driver's airbag assembly (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Disconnect the 20P connector (A) from the cable reel.

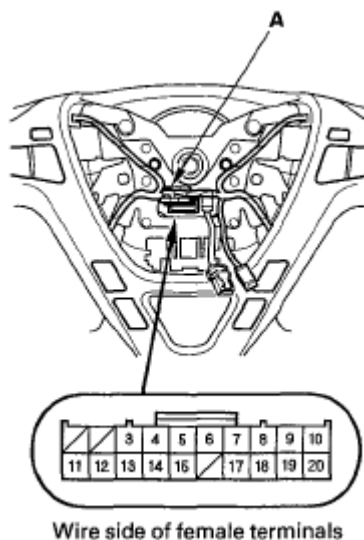


Fig. 29: Identifying 20P Connector From Cable Reel
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

3. Measure the resistance between the cable reel 20P connector No. 14 and No. 15 terminals in each multi-information switch position according to the table.

RESISTANCE SPECIFICATION

Position	Resistance
Previous (? triangle)	About 33 ohms
SEL/RESET	About 1,023 ohms
Next (? triangle)	About 363 ohms

4. If the resistance is not as specified, replace the steering switch assembly.

NOTE: If the switch is OK, but there is a problem with the switch function, check the cable reel.

OUTSIDE AIR TEMPERATURE INDICATOR CALIBRATION

NOTE: To test the outside air temperature sensor (see OUTSIDE AIR TEMPERATURE SENSOR TEST).

DESCRIPTION

The outside temperature sensor is located behind the center of the front bumper. The gauge control module uses measurements from this sensor to display the outside air temperature.

Because of the location of the sensor, it may be affected by heat reflection from the road, engine and radiator heat, or hot exhaust from surrounding traffic.

These conditions can heat soak the outside air temperature sensor and cause inaccurate readings. Logic has been written into the gauge control module to help prevent abnormal or fluctuating outside air temperature indicator readings.

OUTSIDE AIR TEMPERATURE INDICATOR LOGIC

Initial outside air temperature indication after the ignition switch is turned ON (II).

If the engine coolant temperature is 140°F (60°C) or higher when the ignition switch is turned ON (II), the outside air temperature indicated the last time the key was turned to LOCK (0) will be displayed regardless of the current temperature measured by the outside air temperature sensor.

If the engine coolant temperature is 139°F (59°C) or lower when the ignition switch is turned ON (II), the current temperature measured by the outside air temperature sensor will be indicated.

UPDATE TO THE OUTSIDE AIR TEMPERATURE INDICATOR WHILE DRIVING

If the temperature measured by the outside air temperature sensor is greater than the temperature on the outside

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Gauges - MDX

air temperature indicator, the outside temperature indicator will increase by 1°F (1°C) per minute after the vehicle speed is greater than 19 mph (30 km/h) for more than 30 seconds. It will continue to increase until the current outside air temperature is indicated. So, the first change to the outside air temperature indicator is 1 minute and 30 seconds after the vehicle speed is greater than 19 mph (30 km/h). If the vehicle speed drops below 19 mph (30 km/h), the indicator will not update again until the vehicle speed is increased to 19 mph (30 km/h) or more for more than 1 minute and 30 seconds again.

If the outside air temperature is less than 140°F (60°C), the temperature increases 1°F (1°C) every 2 seconds until the current outside air temperature.

If the outside air temperature is less than the indicated temperature, the temperature will decrease 1°F (1°C) every 2 seconds until the current outside air temperature is indicated regardless of vehicle speed.

TROUBLESHOOTING

If the indicator displays "---" for more than 2 seconds after selecting the outside air temperature display mode, check the climate control system or multiplex integrated control system for DTCs (see **B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

CALIBRATION

The outside air temperature indicator's displayed temperature can be recalibrated $\pm 5^{\circ}\text{F}$ or $\pm 3^{\circ}\text{C}$ to meet the client's expectations.

Calibrate the outside air temperature with the HDS or by custom memory setting.

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose pins at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

SERVICE INFORMATION

Some DTCs or symptoms can be caused by a combination of PCM software and specific driving habits. Periodically, new PCM software or new service procedures may become available. Always check on-line for the latest software or service information related to the DTCs or symptoms you are troubleshooting.

OPENS AND SHORTS

"Open" and "short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see HOW TO SET READINESS CODES).

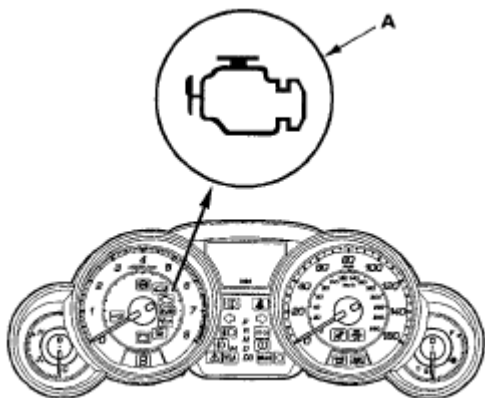


Fig. 2: Identifying Malfunction Indicator Lamp
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

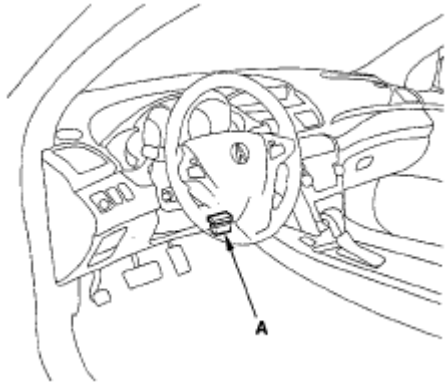


Fig. 3: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTCs troubleshooting, and begin the appropriate troubleshooting procedure.

NOTE:

- Freeze data indicates the engine conditions when the first system malfunction, misfire, or fuel trim malfunction that activated the MIL was detected.
- The HDS can read the DTCs, freeze data, on-board snapshot, current data, and other powertrain control module (PCM) data.
- For specific operations, refer to the user's manual that came with the HDS.

6. If no DTCs are found, go to MIL circuit troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the code, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced PCM.

HDS CLEAR COMMAND

The PCM stores various specific data to correct the system even if there is no electrical power such as when the battery negative terminal is disconnected. Stored data based on failed parts should be cleared by using the "CLEAR COMMAND" of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, PCM reset, and crank (CKP) pattern clear. DTC clear command erases all stored DTC codes, freeze data, on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting.

The PCM reset command erases all stored DTC codes, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except crank (CKP) pattern. If the crank (CKP) pattern data in the PCM was cleared, you must do the crank (CKP) pattern learn procedure. The crank (CKP) pattern clear command erases only crank (CKP) pattern data. This command is for repair of a misfire or the CKP sensor.

SCAN TOOL CLEAR COMMAND

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the PCM, and it clears all commands at the same time (crank (CKP) pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**); crank (CKP) pattern learn procedure; Test-drive to set readiness codes to complete (see **HOW TO SET READINESS CODES**).

DTC CLEAR

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

PCM RESET

1. Reset the PCM with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.
5. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

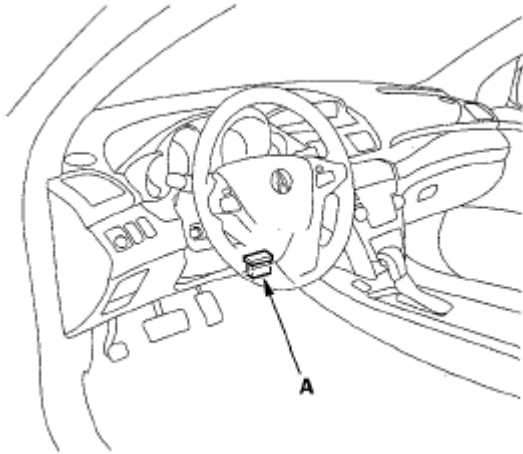


Fig. 4: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm down to 1,000 rpm with the transmission in D position.
3. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 5,000 rpm down to 3,000 rpm with the transmission in D position.
4. Repeat step 2 and 3 several times.
5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II), and wait 30 seconds.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the PCM with the HDS.
2. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch OFF.
4. Disconnect the HDS from the DLC.

NOTE: **The PCM is part of the immobilizer system. If you replace the PCM, it will have a different immobilizer code. In order for the engine to start, you**

must rewrite the immobilizer code with the HDS (IMMOBILIZER SYSTEM--MDX article).

HOW TO TROUBLESHOOT CIRCUITS AT THE PCM CONNECTORS

NOTE:

- The PCM overwrites data and monitors the EVAP system for up to about 40 minutes after the ignition switch is turned OFF. Jumping the SCS line after turning the ignition switch OFF cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.
- PCM connectors A, B, and C have symbols (A= $\square$ B= Δ , C= $\circ$) embossed on them for identification.

1. Jump the SCS line with the HDS.
2. Remove the bracket (D), then free the A/C discharge line (E) from the clip (F) and remove the A/C suction line mounting bracket bolt (G).

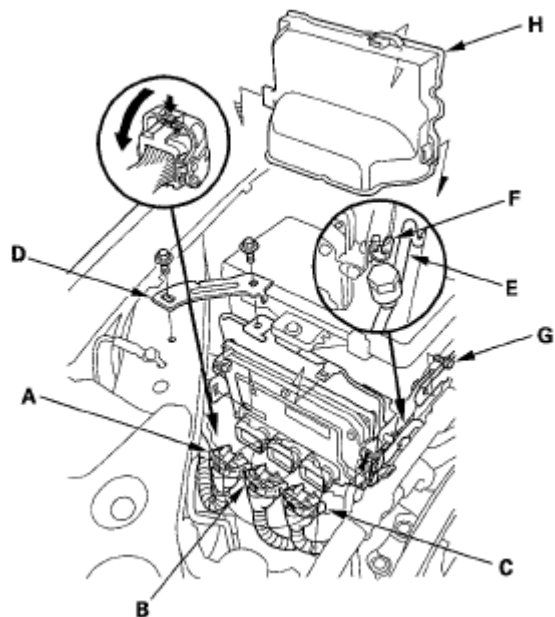


Fig. 5: Identifying A/C Discharge Line, Bracket And A/C Suction Line Mounting Bracket Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the cover (H), then disconnect the PCM connector A, B, and C.
4. When diagnosis/troubleshooting is made at the PCM connector, use the measurement hole (A) above the terminal you need to check.

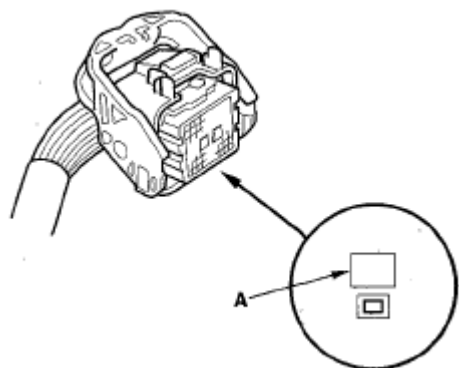


Fig. 6: Identifying Measurement Hole

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect one side of the patch cord (A) terminals to a commercially available digital multimeter (B), and connect the other side of the patch cord terminals to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (C).

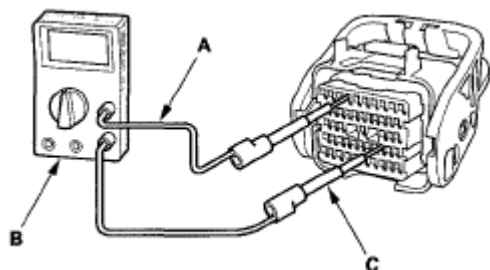


Fig. 7: Connecting Side Of Patch Cord Terminals To Digital Multimeter

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Gently contact the pin probe (male) at the terminal test port from the terminal side. Do not force the tips into the terminals.

NOTE:

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

SUBSTITUTING THE PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester

- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE: **Use this procedure when you need to substitute a known-good PCM during troubleshooting procedures.**

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

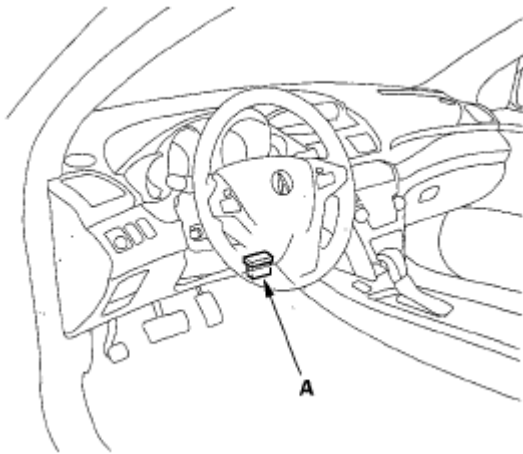


Fig. 8: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from DLC circuit troubleshooting, skip step 4 to 5, then clean the throttle body after substituting the PCM (see **THROTTLE BODY CLEANING**).
4. USA, Canada models: Select the INSPECTION MENU with the HDS.
5. USA, Canada models: Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

NOTE: **USA, Canada models: If the TP POSITION CHECK indicates FAILED, continue this procedure.**

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Remove the bracket (D), then free the A/C discharge line (E) from the clip (F) and remove the A/C suction line mounting bracket bolt (G).

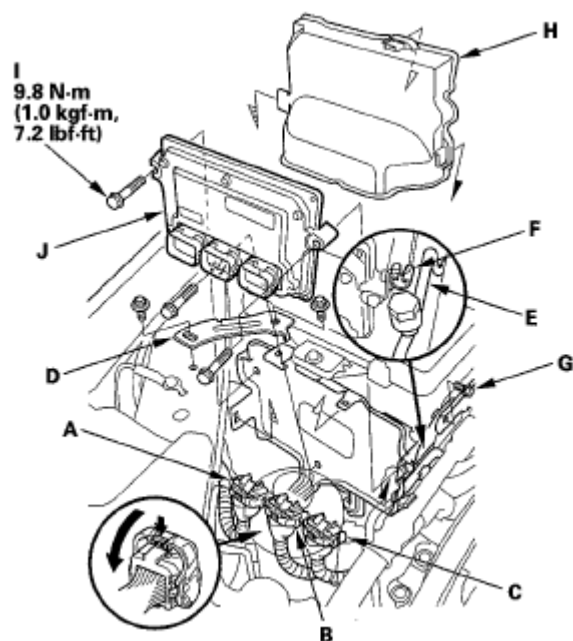


Fig. 9: Identifying A/C Discharge Line, Clip, Bracket And A/C Suction Line Mounting Bracket Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the cover (H), then disconnect the PCM connectors A, B, and C.

NOTE: PCM connectors A, B, and C have symbols (A=□, B=Δ, C=○) embossed on them for identification.

10. Remove the bolts (I), then remove the PCM (J).
11. Install the parts in the reverse order of removal.
12. Open the SCS with the HDS.
13. Turn the ignition switch ON (II).

NOTE: USA, Canada models: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.

14. USA, Canada models: Manually input the VIN to the PCM with the HDS.
15. Update the PCM if it does not have the latest software.
16. Select the IMMOBI SYSTEM with the HDS.
17. Enter the immobilizer code with the PCM replacement procedure in the HDS; it allows you to start the engine.
18. Reset the PCM with the HDS.
19. USA, Canada models: If the TP POSITION CHECK failed in step 6, clean the throttle body (see

THROTTLE BODY CLEANING).

20. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
21. Do the CKP pattern learn procedure.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- **PASSED:** The on board diagnosis is successfully finished.
- **FAILED:** The on board diagnosis has finished but failed.
- **EXECUTING:** The vehicle is in enable criteria conditions for the DTC and the on board diagnosis is running.
- **NOT COMPLETED:** The on board diagnosis was running but is out of the enable conditions for the DTC.
- **OUT OF CONDITION:** The vehicle has stayed out of the enable conditions for the DTC.

2007-09 ACCESSORIES AND EQUIPMENT

HandsFreeLink System - MDX

COMPONENT LOCATION INDEX

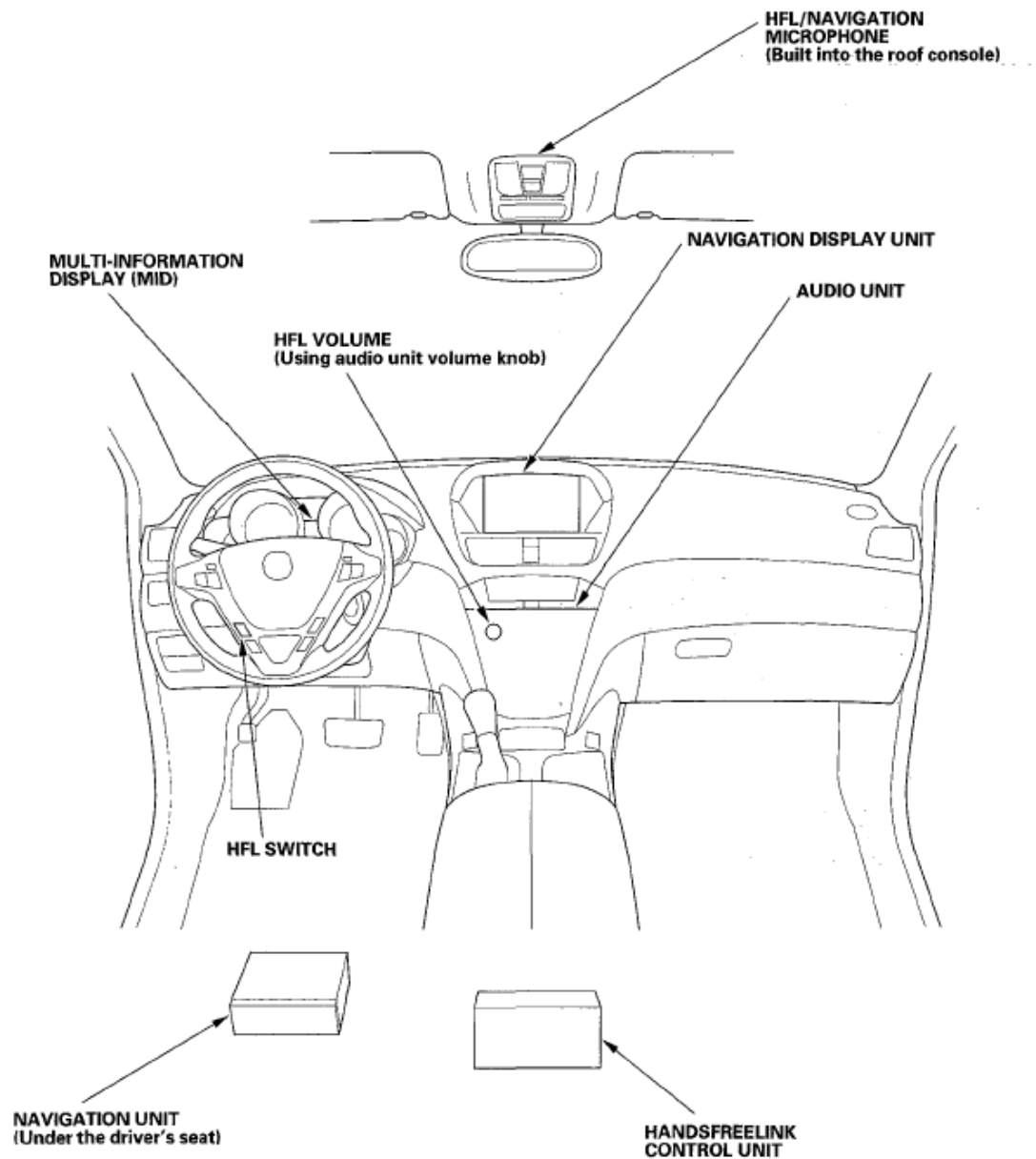


Fig. 1: HandsFreeLink System Component Location Index
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

1. Make sure the ignition switch is in LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

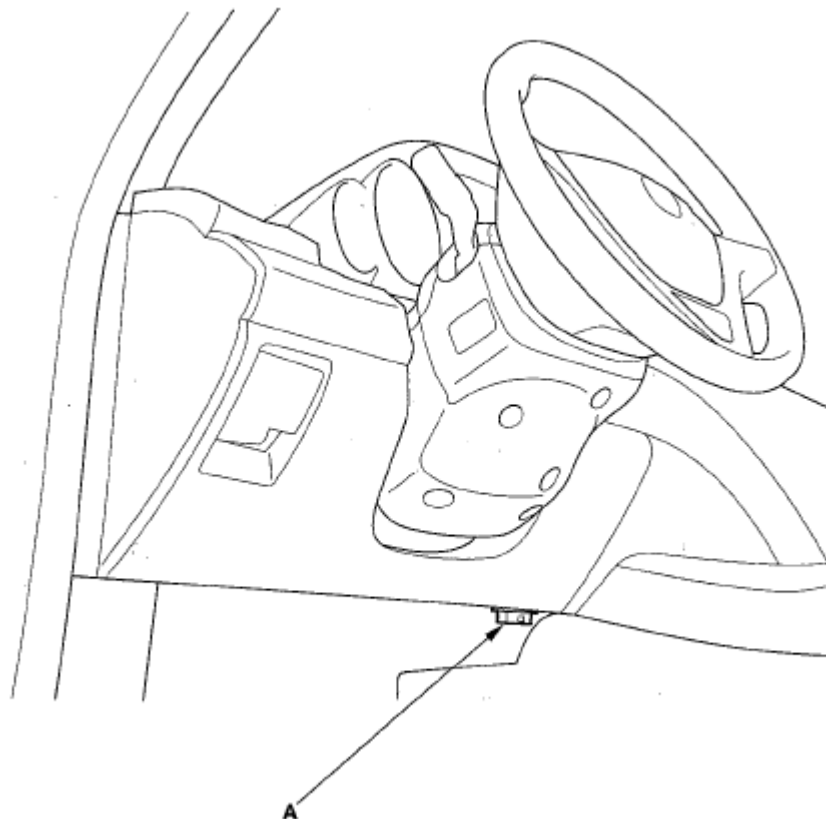


Fig. 2: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the HandsFreeLink control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Select HandsFreeLink in the BODY ELECTRICAL menu.
6. Select DTCs in the HandsFreeLink menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated **DTC troubleshooting**. If no DTCs are indicated, refer to **SYMPTOM TROUBLESHOOTING**.

NOTE:

- After troubleshooting, clear the DTCs with the HDS.
- For specific operations, refer to the user's manual that came with the HDS.

The HFL system works only with approved Bluetooth®-enabled cell phones with a hands-free profile. If you are not sure if your cell phone is compatible with the HFL system, Acura has a dedicated call center at (888) 528-7876 and web site www.acura.com/handsfreelink, to answer your questions.

The HFL system allows you to make and receive hands-free calls. It cannot control the phone's performance (call quality and signal strength). For more information about performance and performance problems, refer to Dropped Calls.

CHECKING CELL PHONE COMPATIBILITY

The most important step in troubleshooting HFL issues is to identify the client's phone model, the software version, and the carrier that experiences the HFL problem. Not all phones with the Bluetooth feature and a hands-free profile are compatible with the HFL system.

Here is the best method to confirm if the phone is compatible

1. Log onto www.acura.com/handsfreelink.
2. Select Find a Phone.

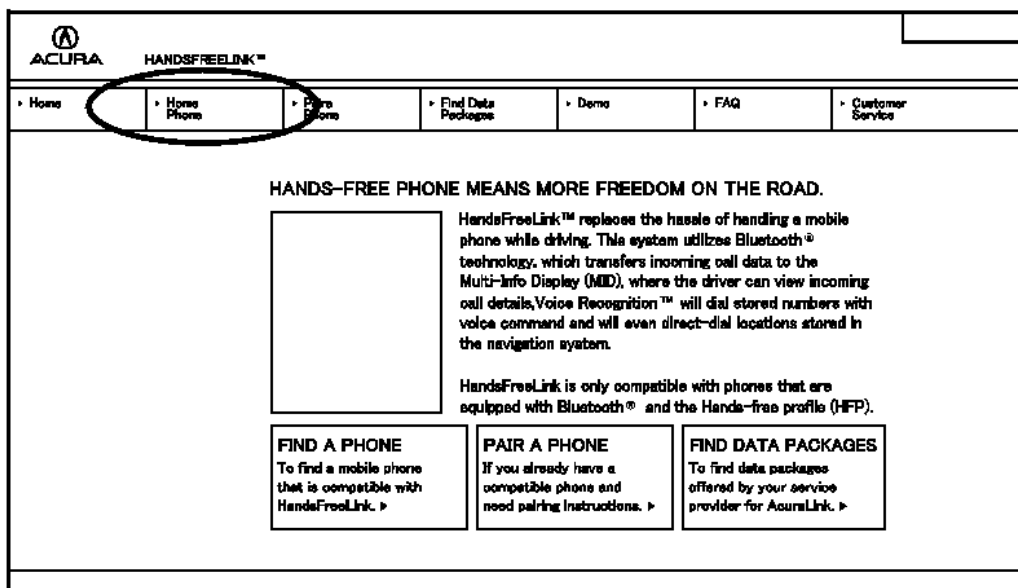


Fig. 3: Identifying Cell Phone Compatibility

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Choose the vehicle model you are working on, then select CONTINUE.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX

The screenshot shows the Acura HandsFreeLink website. At the top is the Acura logo and the text "HANDSFREELINK™". Below this is a navigation bar with links: Home, Home Phone, Pair Phone, Find Data Package, Demo, FAQ, and Customer Service. The main content area is titled "FIND A PHONE" and includes the instruction: "To find a phone that is compatible with HandsFreeLink™, please follow the steps below:". The first step is highlighted with a red oval and labeled "STEP 1". It says "CHOOSE YOUR VEHICLE MODEL" and has a dropdown menu showing "MDX" and a "CONTINUE >" button. To the right of this step is a "MESSAGE BOARD" section with a note: "NOTES: PLEASE LOOK HERE FOR IMPORTANT MESSAGES". Below the note is a paragraph: "Phonebook Import and Receive Contact feature for 2007 MDX and 2007 TL. Certain phones approved for this feature may have multiple software versions. Please make note of the approved software version listed on this site, as some versions may no longer be available from the phone carrier or manufacturer."

Fig. 4: Identifying Cell Phone Compatibility

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Choose the vehicle model year, then select CONTINUE

The screenshot shows the Acura HandsFreeLink website, continuing from the previous step. The navigation bar and "FIND A PHONE" header are the same. The instruction "To find a phone that is compatible with HandsFreeLink™, please follow the steps below:" is still present. The second step is highlighted with a red oval and labeled "STEP 2". It says "CHOOSE YOUR VEHICLE MODEL YEAR" and has a dropdown menu showing "2008" and a "CONTINUE >" button. Below this step, the text "Vehicle Model MDX" is visible, and there is a "Start Over" link.

Fig. 5: Identifying Cell Phone Compatibility

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Choose the vehicle trim level, then select CONTINUE.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX

The screenshot shows the Acura HandsFreeLink website. At the top is the Acura logo and the text "HANDSFREELINK™". Below this is a navigation bar with links: Home, Home Phone, Pair Phone, Find Data Packages, Demo, FAQ, and Customer Service. The main content area is titled "FIND A PHONE" and includes the instruction: "To find a phone that is compatible with HandsFreeLink™, please follow the steps below:". A box labeled "STEP 3" contains the text "CHOOSE YOUR VEHICLE TRIM LEVEL". Below this is a dropdown menu currently set to "w/Navigation". Underneath the dropdown, it says "Vehicle Model: MDX" and "Vehicle Year: 2008". To the right of this information is a "CONTINUE >" button. At the bottom of the box is a "Start Over" link.

Fig. 6: Identifying Cell Phone Compatibility

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Choose to search by wireless carrier or cell phone manufacturer, then select CONTINUE.

The screenshot shows the Acura HandsFreeLink website, similar to Fig. 6. The main content area is titled "FIND A PHONE" with the same instruction. A box labeled "STEP 4" contains the text "CHOOSE YOUR SEARCH TYPE". Below this are two options, each with a "CONTINUE >" button: "Search by Wireless Carrier" and "Search by Device Manufacturer". An "OR" is placed between these two options. Below the search options, it says "Vehicle Model: MDX", "Vehicle Year: 2008", and "Vehicle Trim Level: w/Navigation". At the bottom is a "Start Over" link. Two arrows point from text labels to the search options: "SEARCH BY CARRIER" points to "Search by Wireless Carrier" and "SEARCH BY MANUFACTURER" points to "Search by Device Manufacturer".

Fig. 7: Identifying Cell Phone Compatibility

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX


Acura

HANDSFREELINK

[Home](#)

[Home Phone](#)

[Phone Phone](#)

[Find Data Packages](#)

[Demo](#)

[FAQ](#)

[Customer Service](#)

COMPARISON OF HANDSFREELINK SUPPORTED FEATURES

Please note: The features listed below are specific to the 2008 RDX(w/Navigation). To choose another vehicle, click here .															Print Back			
Phones	Carrier	Status	Software Version	BASIC FEATURES					ADVANCED FEATURES**				INDICATORS					Comments
				Phone Pairing/Cloning	Handsfree Calling	Incoming Call	Call Transfer	Call Hang Up	Call Waiting	Manual Ring Tones	Phone Data Connection	Receive Contact	Phonebook Import	Battery Levels	Caller ID	Signal Strength	Roaming	
HTC																		
8800	Sprint	Passed		✓	✓	✓	✓	✓	✓	✓	X	Feature not available for this model/trim	Feature not available for this model/trim	X	✓	X	X	
8801	Sprint	Passed		✓	✓	✓	✓	✓	✓	✓	X	Feature not available for this model/trim	Feature not available for this model/trim	X	✓	X	X	
Verizon KV6600	Verizon	Failed		X	✓	✓	✓	✓	✓	✓	Feature not available for this model/trim	Feature not available for this model/trim	Feature not available for this model/trim	X	✓	X	X	

 Function is compatible with HandsFreeLink operation.

 Function is NOT compatible with HandsFreeLink operation.

• See your Owner's Manual for details on Phone Data Connection.

** Optional features are only available on specific trims and models.

This compatible phone list is updated regularly. The last update occurred on 01/30/2008.

Fig. 9: Identifying HandsFreeLink Supported Features
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- These approved, archived, and currently testing phone model lists are constantly changing, so make sure you view them frequently.
- Phones are added as they are approved.
- Phones can be removed from the approved list if a software bug is discovered that makes the phone incompatible. These phones can be added back to the approved list if the phone manufacturer corrects the bug.
- If the software bug is corrected, a new software version is created and may be listed in the Supported Features section of the phone.
- The Acura web site now includes the software versions that are tested and approved. When software versions are listed, you need to know which version is loaded on the phone to help you troubleshoot the client's complaint. If you cannot access the Acura web site, call the HFL call center at (888) 528-7876 for further assistance. The call center is open Monday thru Friday from 6:00 a.m. to 6:00 p.m. CST; Saturday from 7:00 a.m. to 6:00 p.m. CST; and Sunday from 8:00 a.m. to 6:00 p.m. CST.

VOICE CONTROL TIPS

To give any voice commands to the HFL system, press and release the HFL Talk button. Always wait for the beep, then give your command in a clear, natural voice. The HFL microphone is on the ceiling, by the map lights.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX

If the HFL system doesn't recognize your voice command, you'll hear "Pardon." If your command isn't recognized a second time, you'll hear "Please repeat." If your command isn't recognized a third time, the HFL system sends you to its Help menu.

To hear a list of available options at any time, press the HFL TALK button and say "Hands free help."

The HFL system may have problems with some voices. To improve voice recognition:

- Close the windows and moonroof.
- Set the fan speed to low (1 or 2).
- Adjust the air flow from the air conditioning vents so that they do not blow against the microphone on the ceiling.
- Speak in a clear and natural voice. If the system cannot recognize your command, try speaking louder, in a deeper tone.
- If the background noise is too loud, you may need to speak louder.
- If you speak with something in your mouth, or your voice is too high, the system may not interpret your command correctly.
- Find out if the problem is with one person or with everyone who uses the system. If the system has a problem with only one person's voice, this is a system limitation.

Many issues result from the client not using the system properly. Make sure the client is using the HFL buttons and not the navigation buttons. When the HFL TALK button is pressed, the client hears one audible tone. When the HFL BACK button is pressed, the client hears two audible tones. Make sure to press the HFL BACK button to exit out of the HFL main menu after completing a call and before giving any navigation commands.

The HFL system may experience a number recognition issue, such as when a client rattles off a set of numbers in a group unrecognized by the system. The HFL system understands phone numbers in specific blocks of 1, 3, 4, 7, and 10 numbers. For example, the system understands:

- 1234567890
- 123-456-7890
- 1-2-3-4-5-6-7-8-9-0

The system may become confused if numbers are stated in other blocks like these:

- 1234-567-890
- 12-34-56-78-90
- 12345-67890
- 123-4567-890

NAVIGATION THROUGH MENUS

To skip a voice prompt, press and release the HFL TALK button while the HFL system is speaking. The system begins listening for your next voice command.

To go back a step in a voice command sequence, press and release the HFL BLACK button, or press the HFL TALK button and say "Go back." If you don't say anything while the HFL system is listening for your voice command, it times out and stops voice recognition. The next time you press and release the HFL TALK button, the HFL system begins listening from the point it timed out.

If you've finished or want to stop a voice command sequence at any time, press and release the HFL BACK button, or press and release the HFL TALK button, wait for the beep, and say "Cancel." The next time you press and release the HFL TALK button, the HFL system begins from its main menu, and MAIN appears on the multi-information display (MID) in the instrument panel. To avoid keeping the audio system muted, press and release the HFL BACK button when you are finished.

PAIRING A CELL PHONE

You must pair an approved Bluetooth-compatible phone to the HFL system before you can make and receive calls. For a current list of approved phones and specific phone pairing instructions for each phone, see Checking Cell Phone Compatibility, go to www.acura.com/handsfreelink, or call (888) 528-7876.

The following procedure works for most phones. If you cannot pair your phone to the HFL system with this procedure, refer to your phone's operating manual, visit www.acura.com/handsfreelink, or call (888) 528-7876.

NOTE:

- **You cannot pair a phone if the vehicle is moving.**
- **Your phone must be in its Discovery mode.**
- **A maximum of six Bluetooth-compatible phones can be paired to the system.**

1. With your phone on and the ignition switch in ACCESSORY (I) or ON (II), press and release the HFL TALK button. After the beep, say "Phone setup." The HFL responds, "Phone setup options are status, pair, edit, delete, and list."
2. Press and release the HFL TALK button. After the beep, say "Pair." The HFL responds, "The pairing process requires operation of your mobile phone. For safety, only perform this function while the vehicle is stopped. State a four-digit code for pairing. Note this code. It will be requested by the phone."
3. Press and release the HFL TALK button. After the beep, say the four-digit code you want to use. For example, say "1, 2, 3, 4." The HFL responds, "1, 2, 3, 4. Is this correct?"
4. Press and release the TALK button. After the beep, say "Yes." The HFL responds, "HFL is now searching for a Bluetooth phone. Make sure the phone you are trying to pair is in Discovery mode." If these steps do not work on the phone you are pairing, refer to the phone's operating manual.
5. Follow the prompts on your phone to get it into its Discovery mode. The phone will search for the HFL. When it comes up, select HandsFreeLink from the list of options displayed on your phone.
6. When asked by the phone, enter the four-digit code from step 3 into your phone. The HFL responds, "A new phone has been found. What would you like to name this phone?"
7. Press and release the HFL TALK button. After the beep, say the name you want to use. For example, say "Tom's phone." The HFL responds, "Tom's phone has been successfully paired. Returning to the main menu."

PAIRING TROUBLESHOOTING

Many pairing issues are resolved by altering the client's phone settings

Bluetooth feature settings must be turned on. Phone manufacturers set the default to disable Bluetooth features to conserve battery life. Cell phones may provide procedures to "Temporary Power On Bluetooth", or "Power On Bluetooth." Turn the Bluetooth feature on, pair the phone to the vehicle, and confirm the phone is linked. Do this by turning the phone off and back on. Make or receive a call to confirm the cell phone is successfully paired.

When the phone's Bluetooth feature is on, other handsfree accessories such as earpieces or headsets may automatically reconnect to the phone when you turn on the accessory or move it within range of the cell phone.

This results in the phone not connecting to the HFL system when the client enters the vehicle. You must unlink the hands-free accessory from the phone before the HFL system can reconnect.

Some phones have an Auto Answer setting that functions with a headset. This setting must be turned off or the HFL system cannot accept any incoming calls. When this setting is on, it blocks the HFL system from answering the call, and the call goes to voice mail. This can cause the client to think that the cell phone is not paired properly.

If the HFL system has six phones paired, it will not tell you that it has reached its maximum, and will not allow you to pair a new phone. To check how many phones are paired, press and release the HFL TALK button. After the beep, say "Phone setup list." The HFL system lists every assigned phone name paired with it, then finishes by saying "The entire list has been read. Returning to the main menu." Count number of phones listed. If there are six, you must delete one phone before adding a new one.

Pairing Checks

1. Is the cell phone compatible with the HFL?
2. Is the Bluetooth feature turned on?
3. Is the client using the HFL buttons, not the navigation buttons, when pairing?
4. Is the cell phone battery fully charged, and is there good signal strength when pairing?
5. Do a soft reset on the cell phone.
6. If the client is trying to pair a Blackberry® or Palm Treo™ device, make sure the client uses the shift key when entering the pass code. If the shift key is not pressed, the client may be entering letters. The HFL does not recognize letters.

For more information about pairing, refer to the cell phone owner's manual, or go to www.acura.com/handsfreelink.

DROPPED CALLS

Clients may perceive dropped calls as being an HFL system fault, but most dropped calls are resultant from cell phone and cell phone carrier issues. The HFL system does not directly handle the cell phone signal. It allows the cell phones to transmit the cell phone audio over the vehicle's audio system.

Before troubleshooting for dropped calls, confirm the cell phone settings

- Disable Audio Answer. If Auto Answer is enabled, incoming calls are routed to voice mail.
- Disable Always Ask/Trust, Authorize Device, or similar setting. If these settings are enabled, each time the HFL system attempts to link to the phone, the phone will ask if you want to connect. If you do not allow the connection, the HFL will not operate. The phone must be set to Never Ask, Authorize Device, etc. (based on the phone manufacturer and carrier) for permission. Refer to the cell phone owner's manual for more information.
- Disable Flip Open to a Answer. If this setting is enabled, the phone must remain open in the vehicle. If it is closed, the incoming calls are routed to voice mail.

Always confirm with the client if the number of dropped calls is higher while using the HFL system as opposed to using the cell phone only. Clients often confuse problems with their phone or carrier as a problem with the HFL system. The HFL system cannot control or determine:

- Cellular connection quality
- Signal strength
- Cellular coverage
- Ambient weather conditions that affect cellular signals

When a client complains about dropped calls, ask questions about when or where the calls are dropped, such as:

- Do you drive the same route on a regular basis?
- Does the call drop in the same location?
- Where do you keep your cell phone?
- Have you compared the number of dropped calls using the HFL versus making calls from the handset?
- Does your phone have an antenna that needs to be extended?

Many reasons for a dropped call are not related to the HFL system. Here are some causes for dropped calls:

- If the quantity of dropped calls is about the same when the client uses the HFL system versus the handset, the issue is likely due to the cellular phone or carrier.
- If the phone is equipped with a retractable antenna, it needs to be extended to maximize signal strength.
- If a client also notices that the calls tend to drop in the same areas, the HFL system may be operating normally, but something about the area diminishes cellular coverage to a point where the call drops.
- Hills or mountains can block or interfere with cellular signals.
- High-rise buildings, bridges, or other large structures may block or interfere with cellular signals.
- Placing the cell phone in a purse, in a metal briefcase, under the seat, in the glove box, or in the trunk can all affect signal reception.
- There are coverage gaps in the cellular service. When driving, a call is typically passed from one tower to another. If the client drives through an area where there is a coverage gap between towers,

the call drops.

- Electrical storms, heavy rain, or overcast conditions interfere with signal strength.
- The cell phone battery's state of charge can affect signal reception. A low battery may reduce the phone's ability to boost the antenna's power and function properly, especially in low signal strength areas. Some phone manufacturers trade off signal transmission and reception strength for battery life. As the battery weakens, the signal strength may also weaken. Some cell phones may operate more effectively than others in low signal strength areas, especially with a partially charged battery, and depending on whether or not the retractable antenna is fully extended (if applicable). On these models, make sure the antenna is always extended to maximize signal strength and extend battery life.

PHONE WILL NOT AUTOMATICALLY CONNECT THE HFL

If a client complains that their cell phone is not automatically connecting to the HFL system when they enter the vehicle, do this:

1. Make sure the Bluetooth feature is turned on in the cell phone
- 2.
3. Make sure the cell phone is properly paired to the HFL system.
4. Do a soft reset to the cell phone.
5. Check the battery and signal strength on the cell phone. Pairing a phone requires optimal signal strength and a nearly full battery.

INCOMING CALLS

If a client complains that they cannot receive incoming calls through the HFL system, see if the call is routing to the cell phone instead of the HFL system. An easy way to know if the call is routed to the cell phone is when the client says, "I can't hear the caller, but they can hear me."

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked
3. Make sure the answer settings in the cell phone are set to multi-key or any-key answer. If the phone is set to flip-open to answer, recommend changing the setting to Any Key or leaving the phone flipped open when using the HFL system.
4. Make sure the Audio Answer feature is turned off in the cell phone.
5. Do a soft reset to the phone.
6. Make sure the battery is fully charged and there is adequate signal strength.
7. Ask the client if they have set specific ring tones or ringer IDs to specific contacts. If they have, recommend returning them to a standard ring tone for all calls.
8. Make sure the client is pressing the HFL TALK button and not the HFL BACK button or the navigation buttons.

OUTGOING CALLS

If a client says that they cannot place a call using the HFL system, ask if the call was initiated through the HFL system or the cell phone itself.

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked.
3. Make sure the client is pressing the HFL TALK button before each command and going through the calling process correctly.
4. Make sure the client is pressing the HFT TALK button and not the HFL BACK button or the navigation buttons.
5. Check if the cell phone has an Authorized Connections or Trusted option.
6. Do a soft reset to the cell phone.

If the call is placed by the cell phone: The call will remain on the handset until you transfer it over to the HFL system. To continue the call on the HFL system, you must use the Transfer command by pressing and releasing the HFL TALK button during an active call and saying "Transfer." The client can now continue the call using the HFL system.

GLOSSARY OF TERMS

Auto Answer

This cell phone setting forces incoming calls to automatically be answered by the handset. Disable this feature on the phone when using the HFL system, as it may interfere with the HFL system answering incoming calls. Set the phone setting to Send Only, Any Key, or Multi-Key answer option.

Answer Options

These cell phone settings allow you to select how you would like to answer an incoming call on the handset. The answer option in the phone can affect inbound calls on the HFL system.

Authorized Connection

This cell phone setting allows the phone to connect automatically with the HFL system without prompting the client for permission to connect. In some instances, it can affect the ability of the phone to properly route sound to the HFL system.

Bluetooth Power

This cell phone function enables or disables the Bluetooth application. When using a hands free device such as HFL, the Bluetooth application needs to be enabled.

Discovery Mode

You need to have the cell phone in Discovery Mode to allow other devices with Bluetooth capabilities (such as the HFL system) to find the phone during the pairing process.

Downloaded Ringtones

A client gets these ringtones from an outside source, such as the internet or a mobile phone store.

HFL BACK button

Use this button on the steering wheel to end a call or return to a previous prompt in the HFL menu. Pressing the button twice or holding it down returns you to the HFL main menu.

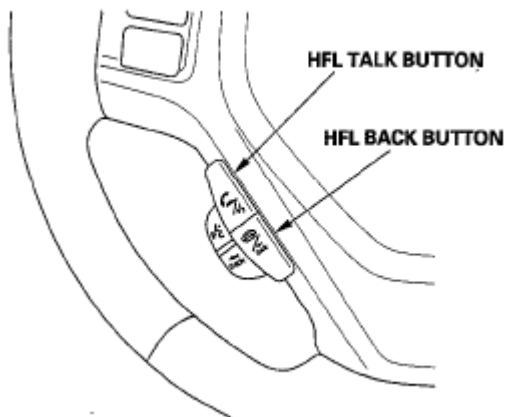


Fig. 10: Identifying HFL Talk Buttons And HFL Back Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HFL TALK button

Use this button on the steering wheel to give commands. Press the button before a voice command is given.

Hard Reset

Hard resets clear the saved settings in the cell phone and restores it to the factory defaults. A hard reset should be done only as a last resort.

Linking

This is when your paired phone is actively ready to use the HFL system. You can pair up to six phones to the HFL system, but only one phone can be linked at a time. If two paired phones are in the vehicle, only the phone that is linked can use the HFL system and functions. The second phone must be used as a normal handset.

Pairing

A description for linking two Bluetooth devices together. In this case, you are linking a cell phone with the HFL system. After the pairing process is complete, the devices are able to recognize each other and communicate wirelessly via Bluetooth.

Soft Reset

This helps to restore the basic functions of the phone. To do a soft reset, turn the phone power off, remove and reinsert the cell phone battery, then turn the phone back on.

Software Version

This refers to the software version loaded in the cell phone. The software version that was tested and determined to be compatible with the HFL system may be listed on the HFL web site. Not all software versions are compatible with the HFL system.

Standard Ringtone

These ringtones come factory-installed on the cell phone.

CLEARING THE SYSTEM**NOTE:**

- **This operation clears the HFL system of all passcode(s), any paired phones, and all names in the HFL phonebook.**
- **Clearing the HFL system is recommend before selling the vehicle.**

1. Press and release the TALK button. After the beep, say "Clear" and the HFL will respond, "This process will clear all paired phones, clear all entries in the phonebook, and clear the passcode. Is this what you would like to do?".
2. Press and release the TALK button. After the beep, say "Yes" and the HFL will respond, "Preparing to clear all paired phones, all phonebook entries, and the passcode. This may take up to 2 minutes to complete".

SELF-DIAGNOSTIC FUNCTION**NOTE:**

This procedure should be used only if HDS is unavailable.

To run the self-diagnostic function, do the following:

1. Turn the ignition switch to ON (II).
2. Press and hold the HFL Back button for more than 5 seconds.
3. When the HandsFreeLink system enters the self-diagnostic function, the following will occur.
 - If the system has not completed testing for DTCs, the HandsFreeLink system says The hands free system test is in progress.
 - If there is no DTC, the HandsFreeLink system says The hands free system is OK.
 - If there is any DTC, the HandsFreeLink system says The hands free system needs to be serviced.

NOTE:

- **The self-diagnostic function can only be initiated while the HFL is in its idle state.**
- **The self-diagnostic function is considered to start once the 5 seconds**

press and hold is detected, and ends when the units returns to idle state.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
The MID displays an HFL message that does not go away after pressing the HFL BACK button	Symptom Troubleshooting (see <u>THE MID DISPLAYS AN HFL MESSAGE THAT DOES NOT GO AWAY AFTER PRESSING THE HFL BACK BUTTON</u>)	Check and repair ail CAN related DTCs
The phone icon in the navigation route to screen is grayed-out	There is no HFL-compatible phone paired to the vehicle. Pair an approved HFL-compatible phone to the vehicle	- The phone must be on the list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com, or call 888-528-7876 for further assistance. - Check the Diagnostic Menu and use the Navi System Link
The approved Bluetooth phone is having problems pairing to the vehicle	HFL Diagnostic mode A	The phone must be on the list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com , or call 888-528-7876 for further assistance.
The Bluetooth phone cannot use all its functions	HFL Diagnostic mode A	The phone must be on the list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com , or call 888-528-7876 for further assistance.
The Bluetooth phone does not place or receive calls using the HFL system	HFL Diagnostic mode A	The phone must be on the list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to www.acura.com , or call 888-528-7876 for further assistance.
The client wants the HFL system reset (all phones and address information cleared from the HFL system)	Clearing the system (see <u>CLEARING THE HFL SYSTEM</u>)	See the Owner's Manual for additional information.
The HFL system is locked and the pass code has been lost or forgotten	Symptom Troubleshooting (see <u>THE HFL SYSTEM IS LOCKED AND THE PASS CODE HAS BEEN LOST OR FORGOTTEN</u>)	
	Symptom Troubleshooting (see	

The HFL system does not recognize all voice prompts	<u>THE HFL SYSTEM DOES NOT RECOGNIZE ALL VOICE PROMPTS</u>	Also see Voice control tips (see <u>VOICE CONTROL TIPS</u>).
The HFL system speaks in French	See the HFL section in the Owner's Manual for Changing Language	

CIRCUIT DIAGRAM

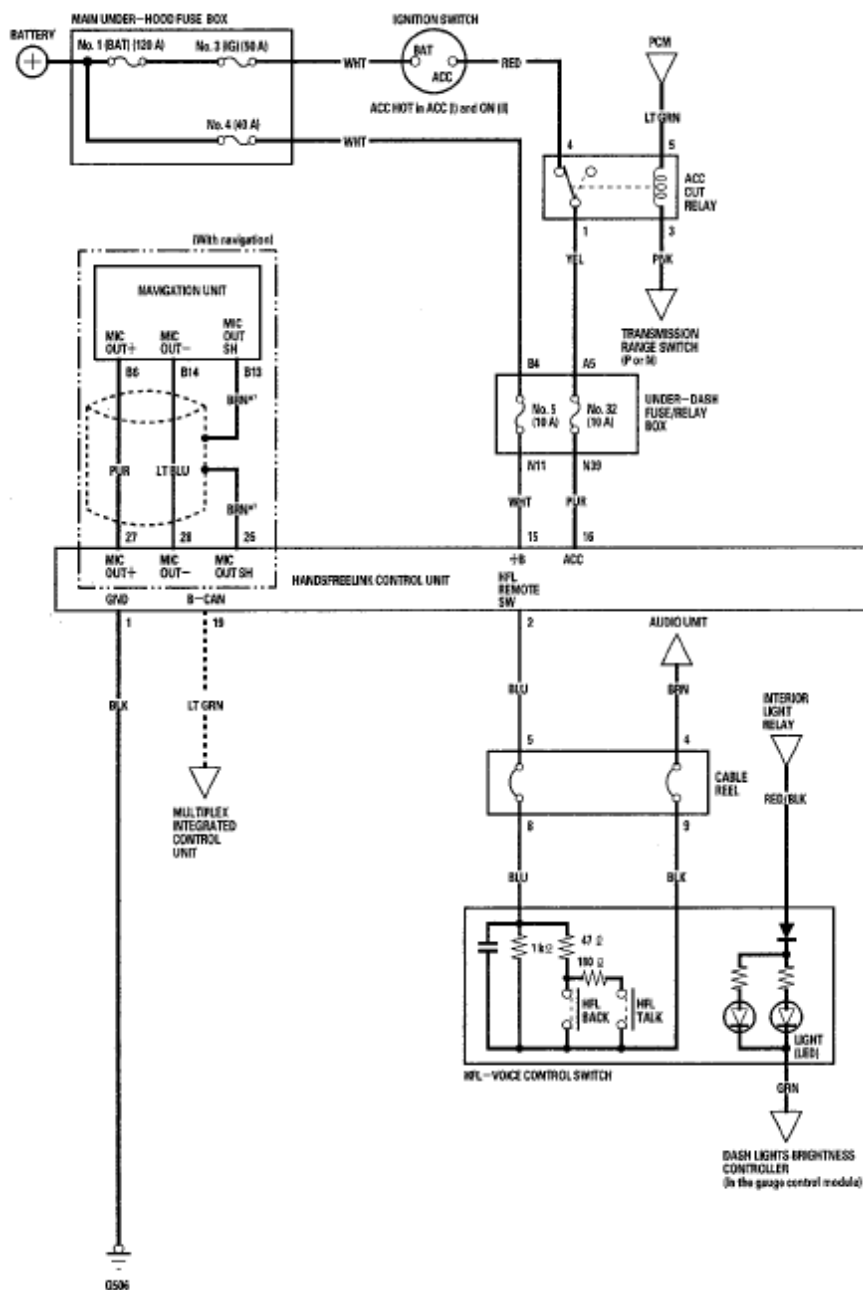


Fig. 11: HandsFreeLink System Circuit Diagram (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

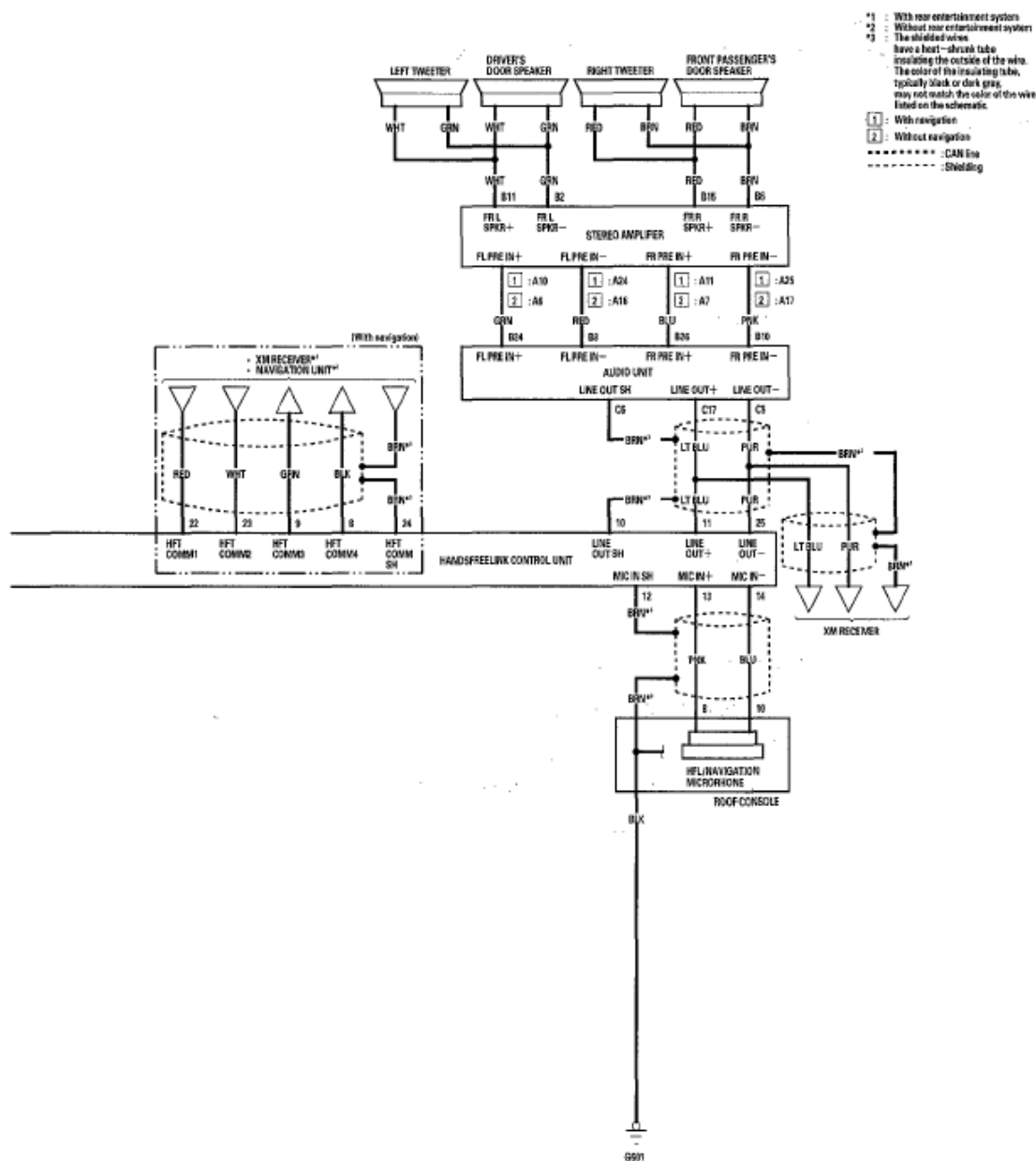


Fig. 12: HandsFreeLink System Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HFL SYSTEM TROUBLESHOOTING

NOTE:

- You must be able to duplicate the client's concern to successfully diagnose the problem.
- Always use the client's phone.
- Make sure the phone is approved and configured correctly. Online, go to www.acura.com, or call the HFL support desk at 888-528-7876 for further

assistance.

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II).
3. Check for DTCs.

Are any DTCs indicated?

YES - Repair the indicated DTCs and recheck.

NO - Go to Step 4.

4. Try to duplicate the problem.

Can you duplicate the problem?

YES - Go to Step 5.

NO - The system is OK at this time.

5. Pair the phone to a known-good vehicle (same model, year, and trim), and try duplicate the problem.

Does the phone have the same problem on the known-good vehicle ?

YES - Call the HFL support desk at 888-528-7876 to make sure the phone is configured correctly and has the correct software. If the phone is configured correctly, it is either a characteristic of the HFL system, or a characteristic of the particular approved phone being used. Explain to your client that this is a system characteristic. Another phone from the approved phone list may give more favorable results.

NO - Substitute a known-good HandsFreeLink control unit and recheck. If the problem goes away, replace the original HandsFreeLink control unit.

DTC TROUBLESHOOTING

DTC B1775: MICROPHONE INPUT/OUTPUT SHORT TO POWER/OPEN

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN system diagnosis test mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

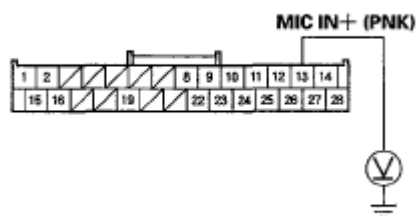
Is DTC B1775 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0).
5. Remove the roof console (see **HEADLINER REMOVAL/INSTALLATION**) and the console rear trim (see **CENTER CONSOLE REAR TRIM REMOVAL/ INSTALLATION**).
6. Disconnect the 20P connector from the roof console and the 28P connector from the HandsFreeLink control unit.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between HandsFreeLink control unit the 28P connector No. 13 terminal and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Fig. 13: Identifying Voltage Between HandsFreeLink Control Unit 28P Connector No. 13 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

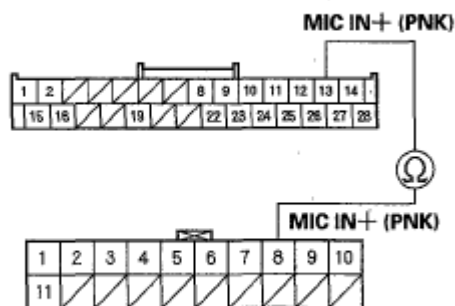
YES - Replace the faulty harness between the HandsFreeLink control unit and the roof console.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Check for continuity between HandsFreeLink control unit 28P connector No. 13 terminal and roof console 20P connector No. 8 terminal.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



ROOF CONSOLE 20P CONNECTOR

Wire side of female terminals

Fig. 14: Identifying For Continuity Between HandsFreeLink Control Unit 28P Connector No. 13 Terminal And Roof Console 20P Connector No. 8 Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good HandsFreeLink control unit, then recheck. If the symptom goes away, replace the original HandsFreeLink control unit.

NO - Replace the faulty harness between the HandsFreeLink control unit and the roof console.

DTC B1776: MICROPHONE INPUT/OUTPUT SHORT TO GROUND/OPEN

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN system diagnosis test mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

Is DTC B1776 indicated?

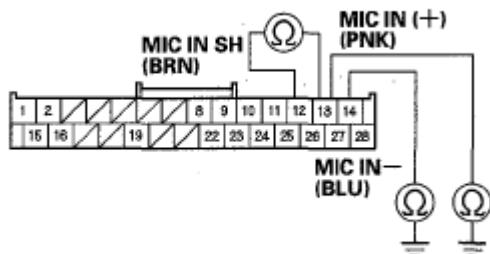
YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0).
5. Remove the roof console (see **HEADLINER REMOVAL/INSTALLATION**) and the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
6. Disconnect the 20P connector from the roof console and the 28P connector from the HandsFreeLink control unit.

7. Check for continuity between body ground and the No. 13 and No. 14 terminals of the HandsFreeLink control unit 28P connector individually, then between No. 12 and No. 13 terminals.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Fig. 15: Identifying For Continuity Between Body Ground And No. 13 And No. 14 Terminals Of HandsFreeLink Control Unit 28P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

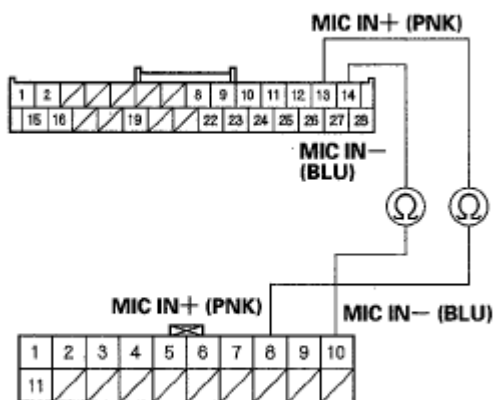
YES - Replace the faulty harness between the HandsFreeLinks control unit and the roof console.

NO - Go to step 8.

8. Check for continuity between the terminals shown of the HandsFreeLink control unit 28P connector and the roof console 20P connector.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



ROOF CONSOLE 20P CONNECTOR

Wire side of female terminals

Fig. 16: Identifying For Continuity Between Terminals Of HandsFreeLink Control Unit 28P Connector And Roof Console 20P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Replace the faulty harness between the HandsFreeLink control unit and the roof console.

9. Check if the vehicle is equipped with a navigation system.

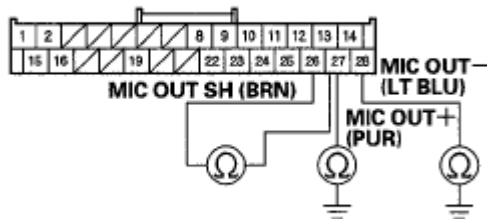
Is the vehicle navigation equipped?

YES - Go to step 10.

NO - Substitute a known-good HFL control unit and recheck.

10. Disconnect the 14P connector from the navigation unit.
11. Check for continuity between body ground and the No. 27 and No. 28 terminals of the HandsFreeLink control unit 28P connector individually, then between No. 26 and No. 27 terminals.

HANDSFREELINK CONTROL UNIT CONNECTOR (28P)



Wire side of female terminals

Fig. 17: Identifying For Continuity Between Body Ground And No. 27 And No. 28 Terminals Of HandsFreeLink Control Unit 28P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

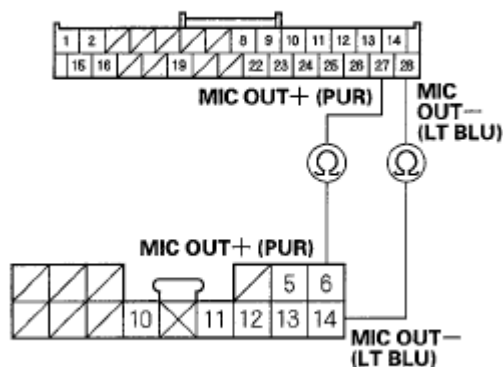
Is there continuity?

YES - Replace the faulty harness between the HandsFreeLink control unit and the navigation unit.

NO - Go to step 12.

12. Check for continuity between the terminals shown of the HandsFreeLink control unit 28P connector and the navigation unit connector B (14P).

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



NAVIGATION UNIT CONNECTOR B (14P)
Wire side of female terminals

Fig. 18: Identifying For Continuity Between Terminals Of HandsFreeLink Control Unit 28P Connector And Navigation Unit Connector B (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good HandsFreeLink control unit, then recheck. If the symptom goes away, replace the original HandsFreeLink control unit. If the symptom does not go away, replace the faulty navigation unit.

NO - Replace the faulty harness between the HandsFreeLink control unit and the navigation unit.

DTC B1779: HFL SWITCH (HFL TALK/HFL BACK BUTTONS) CIRCUIT OPEN/SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), then start the vehicle and turn the steering wheel back and forth several times.
3. Check for DTCs with the HDS.

Is DTC B1779 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0).
5. Do the HFL switch test (see HFL SWITCH TEST).

Is the switch OK?

YES - Go to step 6.

NO - Replace the cable reel subharness (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

6. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
7. Disconnect the 28P connector from the HandsFreeLink control unit.
8. Disconnect the 20P connector from the cable reel subharness.
9. Turn the ignition switch to ON (II).
10. Check for voltage on the cable reel subharness 20P connector terminal No. 8.

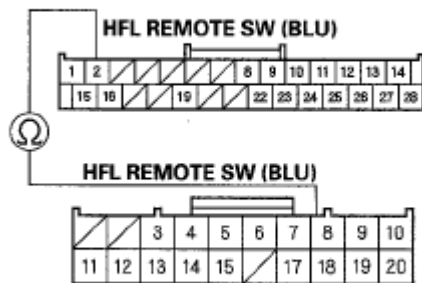
Is there voltage?

YES - Repair a short to power on BLU wire.

NO - Go to step 11.

11. Check for continuity between the HandsFreeLink control unit 28P connector No. 2 terminal and cable reel subharness 20P connector No. 8 terminal.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



CABLE REEL SUBHARNESS 20P CONNECTOR
Wire side of female terminals

Fig. 19: Identifying For Continuity Between HandsFreeLink Control Unit 28P Connector No. 2 Terminal And Cable Reel Subharness 20P Connector No. 8 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the BLU wire between the switch, cable reel, and HandsFreeLink control unit.

12. Check for continuity between the cable reel subharness 20P connector No. 9 terminal and the audio unit connector B (32P) No. 3 terminal.

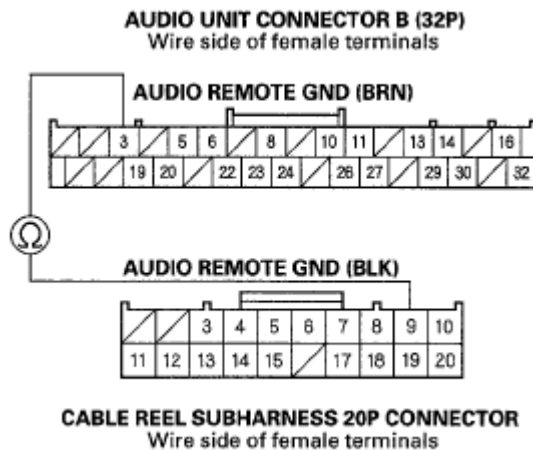


Fig. 20: Identifying For Continuity Between Cable Reel Subharness 20P Connector No. 9 Terminal And Audio Unit Connector B (32P) No. 3 Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose or poor connections at the audio unit, HandsFreeLink control unit, and HFL switch. If the connections are OK, substitute a known-good HandsFreeLink control unit. If the problem is gone, replace the original control unit.

NO - Repair open in the wire between the switch, cable reel, and the audio unit.

DTC B1780: HFL SWITCH (HFL TALK/HFL BACK BUTTONS) CIRCUIT SHORT

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN system diagnosis test mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), then start the vehicle and turn the steering wheel back and forth several times.
3. Check for DTCs with the HDS.

Is DTC B1780 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0).
5. Do the HFL switch test (see **HFL SWITCH TEST**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX

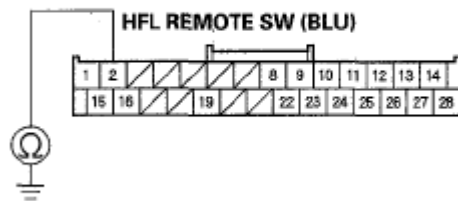
Is the switch OK?

YES - Go to step 6.

NO - Replace the cable reel subharness (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

6. Turn the ignition switch to LOCK (0).
7. Remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
8. Disconnect the 28P connector from the HandsFreeLink control unit.
9. Disconnect the 20P connector from the cable reel subharness.
10. Check for continuity between the HandsFreeLink control unit 28P connector No. 2 terminal and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Fig. 21: Identifying For Continuity Between HandsFreeLink Control Unit 28P Connector No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Replace the HandsFreeLink control unit.

DTC B1785: INCORRECT CONFIGURATION (VEHINFO FRAME)

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) and wait 6 seconds or more.
4. Check for DTC with the HDS.

Is DTC B1785 indicated?

YES - Gauge control module is faulty, replace the gauge control module.

NO - Intermittent failure. VEHINFO frame is OK at this time. Check for poor connections or loose terminals at the HandsFreeLink control unit.

DTC B1786: HANDSFREELINK CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VEHINFO FRAME)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Connect the HDS to the DLC.
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) and wait 6 seconds or more.
4. Check for DTC with the HDS.

Is DTC B1786 indicated?

YES - Go to step 5.

NO - Intermittent failure. VEHINFO frame is OK at this time. Check for poor connections or loose terminals at the HandsFreeLink control unit.

5. Check for DTC with the HDS.

Is DTC B1011, B1032, B1060, B1061, B1205, B1206, B1207, B1906, B1956, B2157, B2160 indicated?

YES - Go to step 6.

NO - HandsFreeLink control unit is faulty, replace the HandsFreeLink control unit.

6. Select the UNIT INFORMATION MENU from the HDS, and do the CONNECTED UNIT.
7. Check the AVAILABLE/NOT AVAILABLE information of the gauge control module in the CONNECTED UNIT.

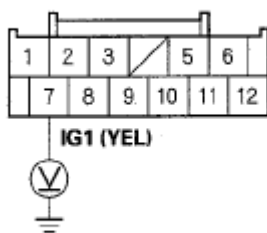
Is the information indicator NOT AVAILABLE?

YES - Go to step 8.

NO - Gauge control module is faulty, replace the gauge control module.

8. Turn the ignition switch to LOCK (0).
9. Disconnect the gauge control module connector A (12P).
10. Turn the ignition switch to ON (II).
11. Measure the voltage between body ground and gauge control module connector A (12P) No. 7 terminal.

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 22: Identifying Voltage Between Body Ground And Gauge Control Module Connector A (12P) No. 7 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

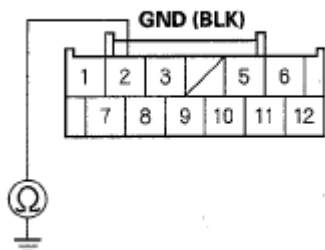
Is there battery voltage?

YES - Go to step 12.

NO - Check the No. 21 (7.5 A) fuse in the under-dash fuse/relay box. If the fuse are good, repair open in the wire between the No. 21 fuse in the under-dash fuse/relay box and the gauge control module.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the gauge control module connector B (24P).
14. Check for continuity between body ground and gauge control module connector A (12P) No. 2 terminal and gauge control module connector B (24P) No. 13 terminal individually.

GAUGE CONTROL MODULE CONNECTOR A (12P)

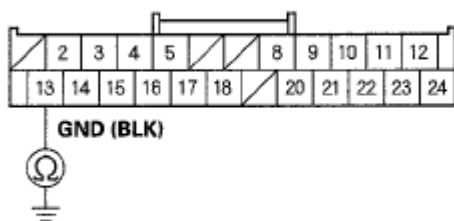


Wire side of female terminals

Fig. 23: Identifying For Continuity Between Body Ground And Gauge Control Module Connector A (12P) No. 2 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GAUGE CONTROL MODULE CONNECTOR B (24P)



Wire side of female terminals

Fig. 24: Identifying For Continuity Between Body Ground And Gauge Control Module Connector B (24P) No. 13 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

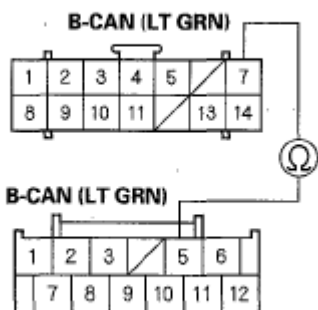
YES - Go to step 15.

NO - Repair open in the wire(s) between body ground and the gauge control module.

15. Disconnect the power tailgate control unit connector C (14P).
16. Check for continuity between the power tailgate control unit connector C (14P) No. 7 terminal and gauge control module connector A (12P) No. 5 terminal.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)

Wire side of female terminals



GAUGE CONTROL MODULE CONNECTOR A (12P)

Wire side of female terminals

Fig. 25: Identifying For Continuity Between Power Tailgate Control Unit Connector C (14P) No. 7 Terminal And Gauge Control Module Connector A (12P) No. 5 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Gauge control module is faulty, replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Repair open in the wire between power tailgate control unit and the gauge control module.

DTC B1792: HANDSFREELINK CONTROL UNIT INTERNAL ERROR

1. Connect the HDS to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

Is DTC B1792 indicated?

YES - Replace the HandsFreeLink control unit (see **CONTROL UNIT INPUT TEST/REPLACEMENT**).

NO - Intermittent failure, the system is OK at this time.

SYMPTOM TROUBLESHOOTING**THE MID DISPLAYS AN HFL MESSAGE THAT DOES NOT GO AWAY AFTER PRESSING THE HFL BACK BUTTON**

1. Connect the HDS to the DLC.
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then to ON (II).
4. Check for DTCs.

Are there any DTCs indicate?

YES - Repair the indicated DTCs.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Substitute a known-good HandsFreeLink control unit, then turn the ignition switch to ON (II) and recheck the MID.

Are the messages cleared?

YES - Replace the original HandsFreeLink control unit.

NO - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

THE HFL SYSTEM DOES NOT RECOGNIZE ALL VOICE PROMPTS

1. Connect the HDS to the DLC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT HandsFreeLink System - MDX

2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then to ON (II).
4. Check for DTCs.

Are there any DTCs indicated?

YES - Repair the indicated DTCs.

NO - Go to step 5.

5. Check if the problem is duplicated.

Can the client's problem be duplicated?

YES - Go to step 6.

NO - The system is OK at this time. Ask the client to demonstrate the problem.

6. Check if the navigation system can recognize for voice prompts.

Can the voice prompts be recognized?

YES - Go to step 7.

NO - Refer to the navigation system troubleshooting.

7. Pair the client's phone to a known-good vehicle and try to duplicate the problem.

Can you duplicate the problem?

YES - Call the HFL support desk at 888-528-7876, and inquire if there are any known issues for the problem. If there are no known issues, explain to the client this is a system characteristic and cannot be improved at this time.

NO - Substitute a known-good HFL/navigation microphone. If the problems still present, substitute a known-good HandsFreeLink control unit. If the problem goes away, replace the original HFL/ navigation microphone.

THE HFL SYSTEM IS LOCKED AND THE PASS CODE HAS BEEN LOST OR FORGOTTEN

1. Connect the HDS to the DLC.
2. Turn the ignition switch to ON (II).
3. From the Body Electrical menu, then select HandsFreeLink.
4. Select Miscellaneous Tests, then select Pass code reset.
5. Follow the HDS system prompts to reset the pass code.

HFL SWITCH TEST

1. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Disconnect the 20P connector (A).

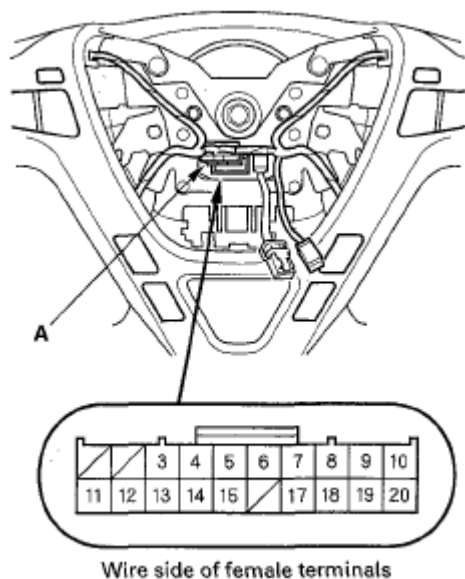


Fig. 26: Identifying 20P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between the No. 8 and No. 9 terminals in each switch position according to the table.

HFL Switch

HFL SWITCH POSITION

Position	Resistance
No buttons pressed	About 1 k ohms
HFL TALK button pressed	About 185 ohms
HFL BACK button pressed	About 45 ohms

4. If the resistance is not as specified, replace the switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

CONTROL UNIT INPUT TEST/REPLACEMENT

1. Remove the console rear trim (see **CENTER CONSOLE REAR TRIM REMOVAL/INSTALLATION**).
2. Disconnect the 28P connector (A) from the HandsFreeLink control unit (B).

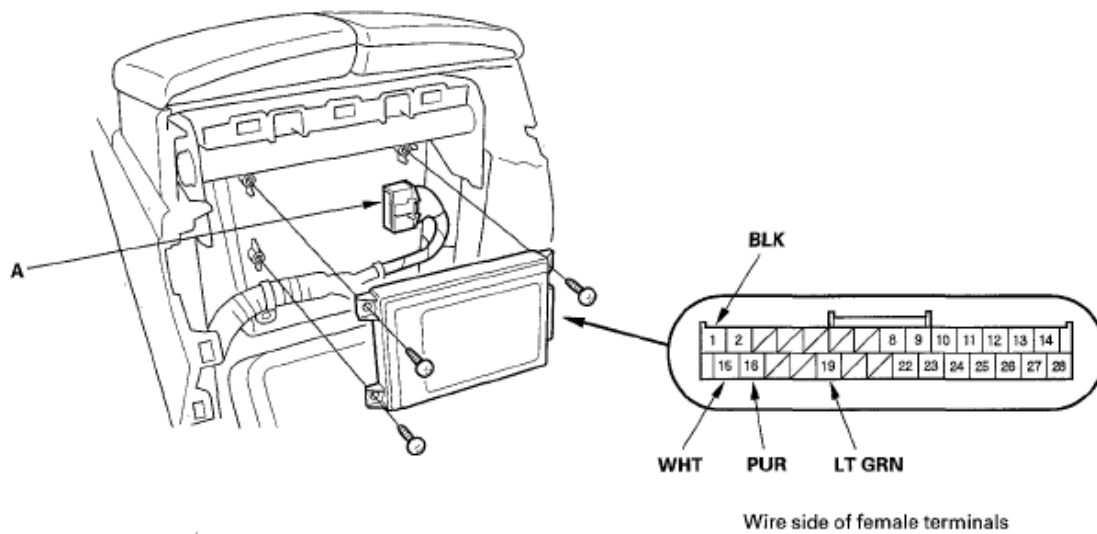


Fig. 27: Identifying 28P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals for a good pinfit to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 4.
4. Reconnect the connector, and make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 5.

TEST CONDITION

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G506) • An open in the wire
15	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 5 (10 A) fuse in the driver's under-dash fuse/relay box • An open in the wire
16	PUR	Ignition switch ACC (I) or ON (ID)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 32 (10 A) fuse in the driver's under-dash fuse/relay box • An open in the wire

5. Disconnect the 28P connector again, and make this input test at the connector.
 - If the test indicates a problem, find and correct the cause, then recheck the system.
 - If the input test proves OK, the HandsFreeLink control unit must be faulty, replace it.

TEST CONDITION

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
19	LT GRN	Under all conditions	Check for continuity between No. 19 terminal and the driver's under-dash fuse/relay box connector X (39P) No. 27 terminal: There should be continuity.	An open in the wire
		Driver's under-dash fuse/relay box connector X (39P) disconnected	Check for continuity to ground: There should be no continuity.	Short to ground

HFL/NAVIGATION MICROPHONE REMOVAL/INSTALLATION**NOTE:**

- Put on gloves to protect your hands.
- Take care not to scratch the dashboard and related parts.
- Lay a workshop towel under the parts when working on them to protect the face panel from scratches or other damage.

1. Remove the roof console (see **HEADLINER REMOVAL/INSTALLATION**).
2. Remove the screws and the printed circuit board (A).

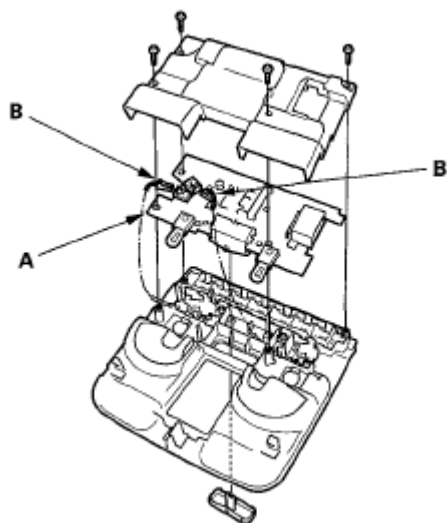


Fig. 28: Identifying Screws And Printed Circuit Board
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the connectors (B) from the printed circuit board.
4. Remove the screws and the microphone (A). ©

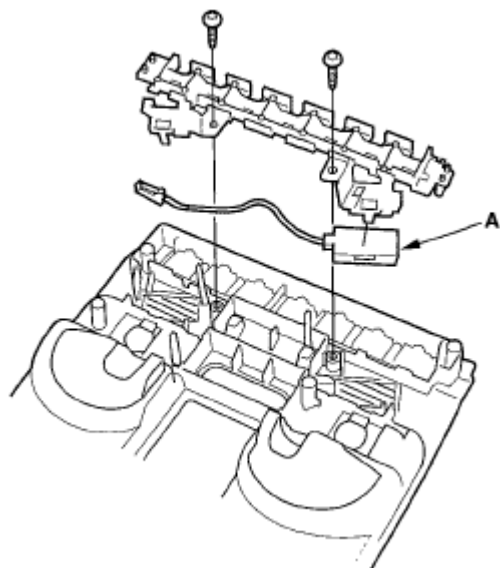


Fig. 29: Identifying Screws And Microphone

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the microphone in the reverse order of removal.

2007-09 ACCESSORIES AND EQUIPMENT

Headlight Leveling System - MDX

COMPONENT LOCATION INDEX

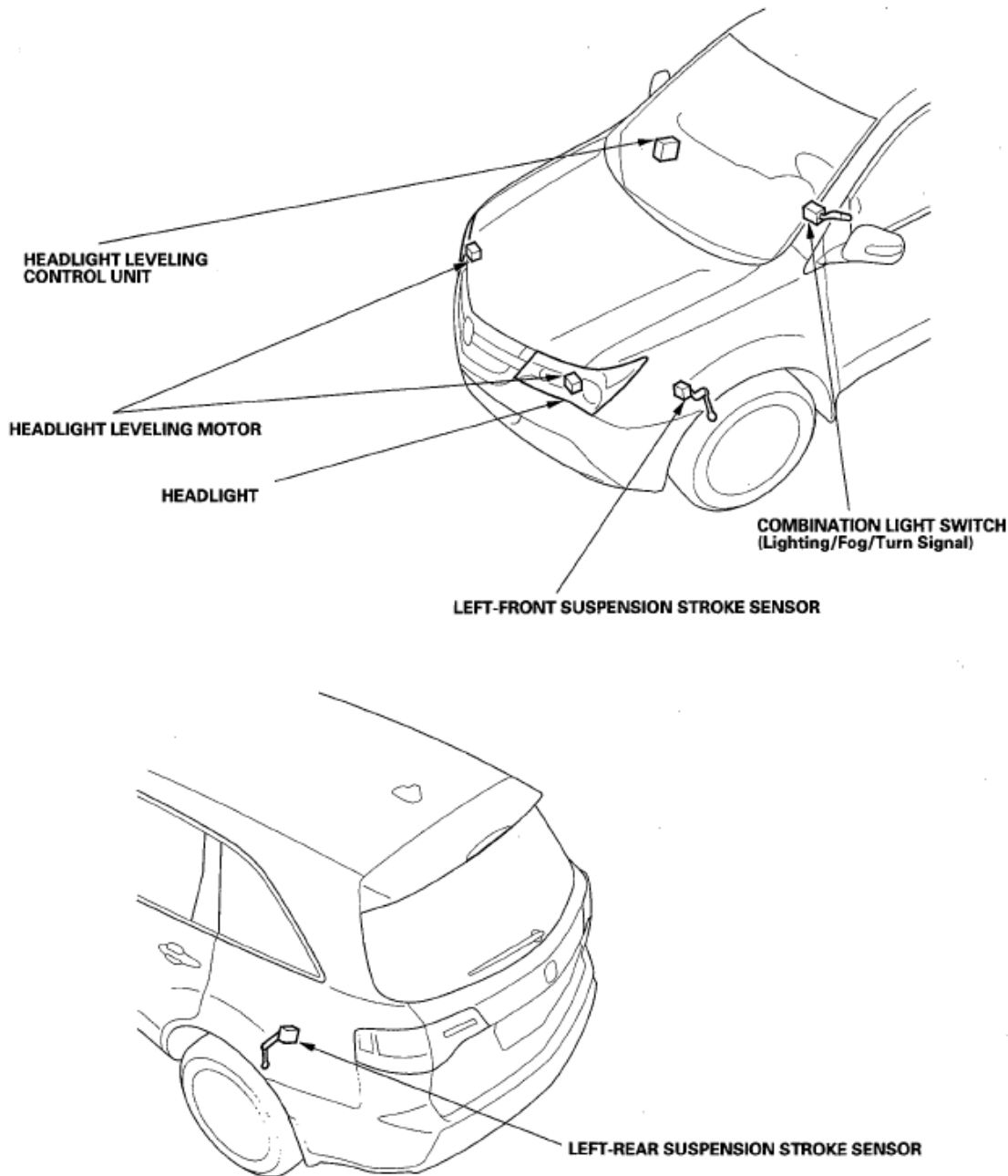


Fig. 1: Identifying Headlight Leveling System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

HEADLIGHT LEVELING SYSTEM

The headlight leveling system is composed of the headlight leveling control unit, the left-front and left-rear suspension stroke sensors, and the left and right headlight leveling motors.

The system uses the left-front and left-rear suspension stroke sensors to monitor the vehicle ride height. The ride height is monitored every 3 minutes while the vehicle is running with the headlight switch ON, and 8 seconds after the vehicles stops with the ignition and headlight switches ON.

If the control unit detects a ride height change, the control unit controls the headlight leveling motors to adjust the headlight vertical position.

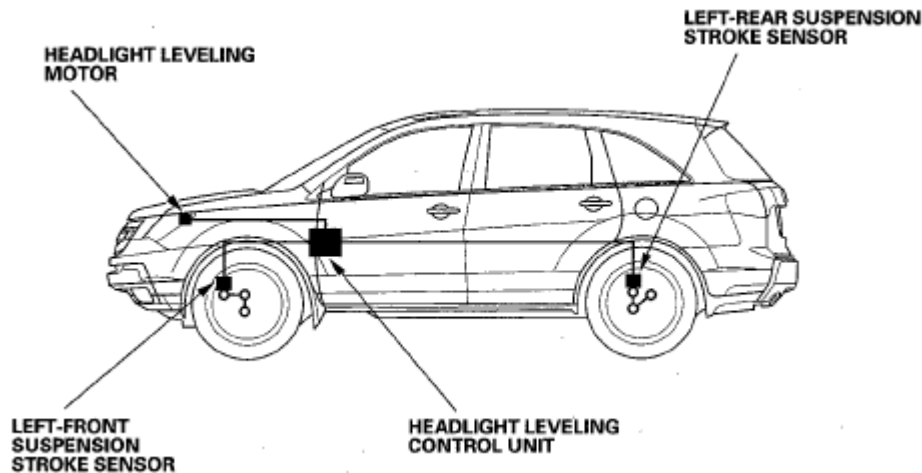


Fig. 2: Identifying Headlight Leveling System

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SUSPENSION STROKE SENSORS

The suspension stroke sensors are also one of the active damper system components. The headlight leveling system uses the left-front and left-rear suspension stroke sensor signals. The left-front suspension stroke sensor is located at the left front suspension area. A short link connects the arm of the sensor to the stabilizer bar. The left-rear suspension stroke sensor is located at the left rear suspension area. A short link connects the arm of the sensor to the damper assembly.

The sensors detect the vehicle ride height and sends a voltage signal (about 0.4-4.6 V) to the headlight leveling control unit.

HEADLIGHT LEVELING CONTROL UNIT

The headlight leveling control unit is located under the passenger's side of the dashboard. The headlight leveling control unit uses the voltage signals it receives from the left-front and left-rear suspension stroke sensors to determine the voltage signal (about 2-11 V) it sends to control the left and right leveling motors.

HEADLIGHT LEVELING MOTORS

The headlight leveling motors are located behind both headlights, and they adjust the headlights vertically based upon the voltage signals (about 2-11 V) they receive from the headlight leveling control unit.

CIRCUIT DIAGRAM

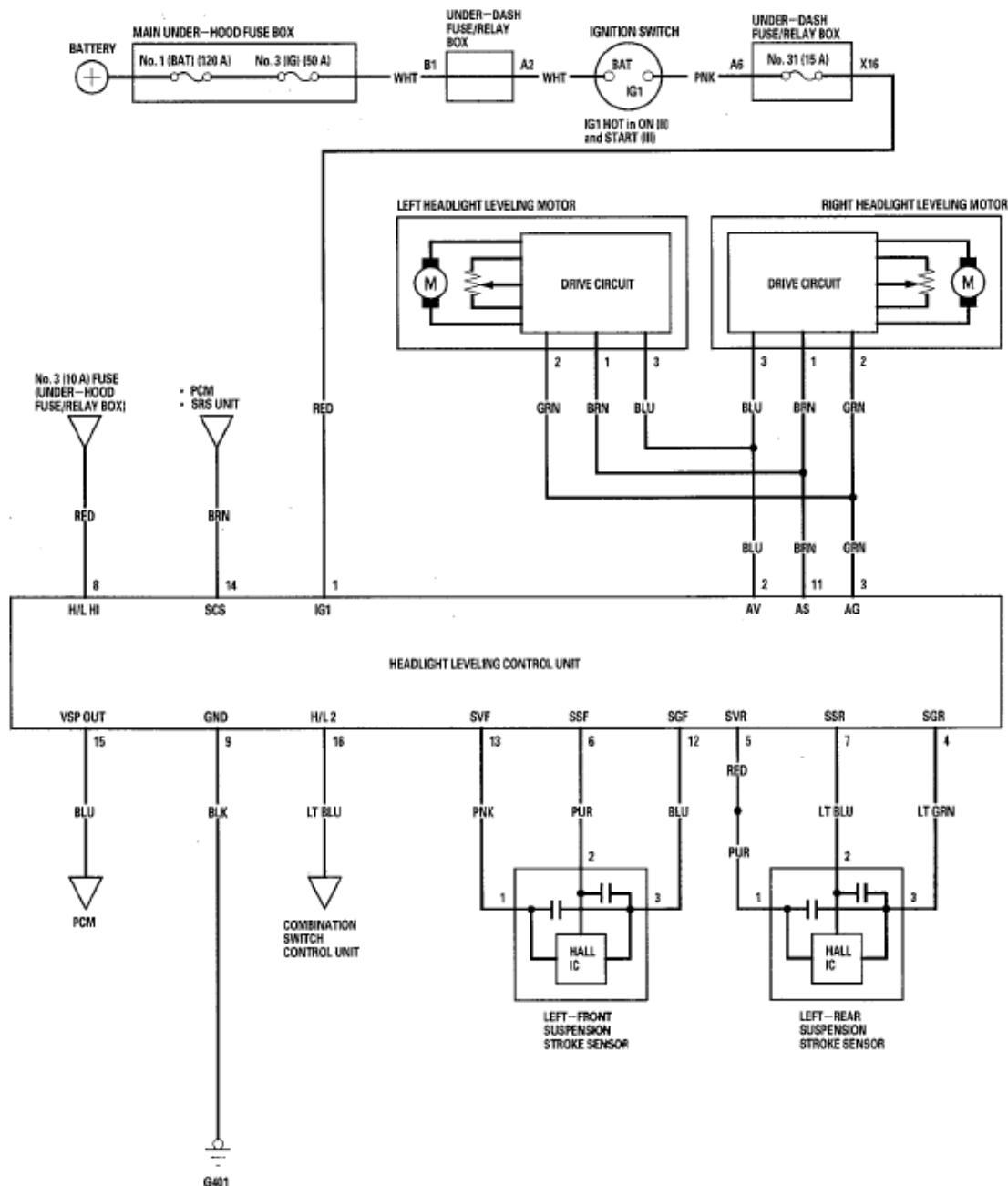


Fig. 3: Headlight Leveling Control Unit - Circuit Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SUSPENSION STROKE SENSOR CIRCUIT TROUBLESHOOTING

NOTE: Before troubleshooting, check the No. 31 (15 A) fuse in the under-dash fuse/relay box. Check the active damper system for DTCs and troubleshoot those codes first.

1. Raise the vehicle, make sure it is securely supported.
2. Disconnect the 3P connector (A) from the left-front stroke sensor (B).

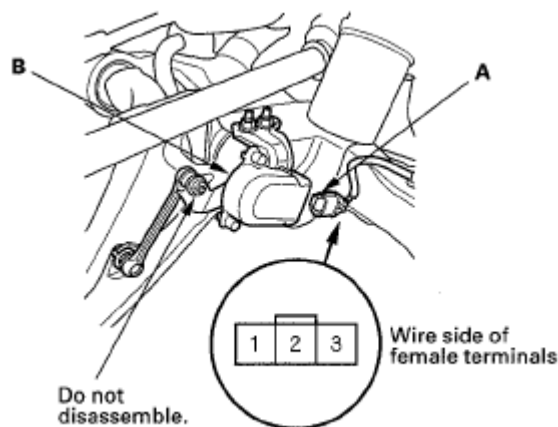


Fig. 4: Identifying Left-Front Stroke Sensor And 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 3P connector (A) from the left-rear stroke sensor (B).

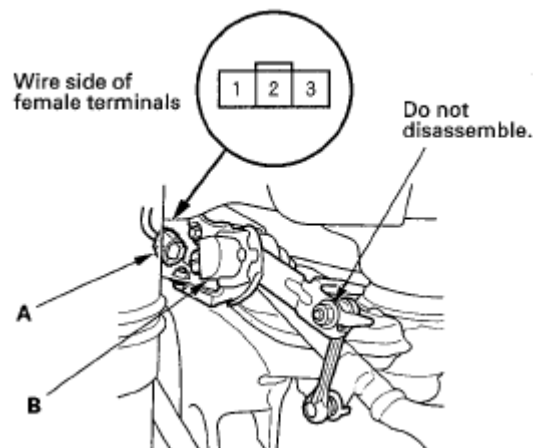
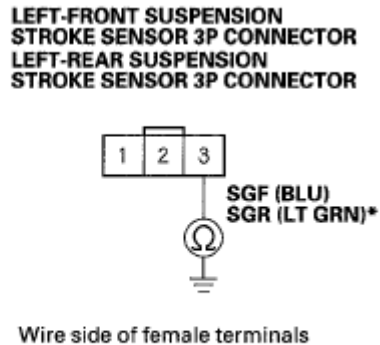


Fig. 5: Identifying Left-Rear Stroke Sensor And 3P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Turn the ignition switch to ON (II).
5. Turn the combination light (headlight) switch ON.

6. Check for continuity between the left-front and left-rear suspension stroke sensors 3P connector No. 3 terminal and body ground individually.



*: Left-rear suspension stroke sensor

Fig. 6: Identifying Continuity Between Suspension Stroke Sensors 3P Connector Terminal 3 And Body Ground

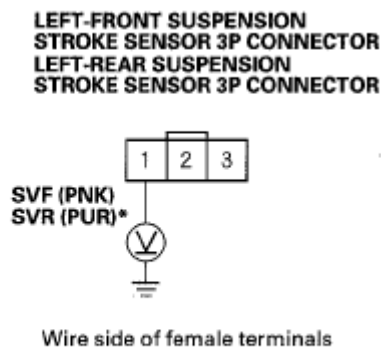
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair open in the wire or poor ground (G401), if the wire is OK, replace the headlight leveling control unit.

7. Measure the voltage between the left-front and left-rear suspension stroke sensor 3P connector No. 1 terminal and body ground individually.



*: Left-rear suspension stroke sensor

Fig. 7: Measuring Voltage Between Suspension Stroke Sensor 3P Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 8.

NO - Check for an open or a short in the wire between the headlight leveling control unit and the left-front (or left-rear) suspension stroke sensor. If the wire is OK, replace the left-front (or left-rear) suspension stroke sensor.

8. Remove the nut (A) and the left-front suspension stroke sensor from the suspension side.

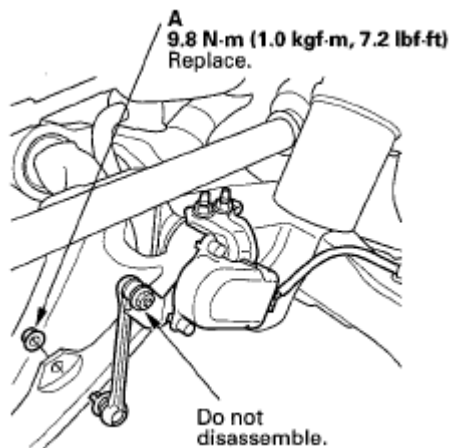


Fig. 8: Identifying Left-Front Suspension Stroke Sensor And Nut With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the nut (A) and the left-rear suspension stroke sensor from the suspension side.

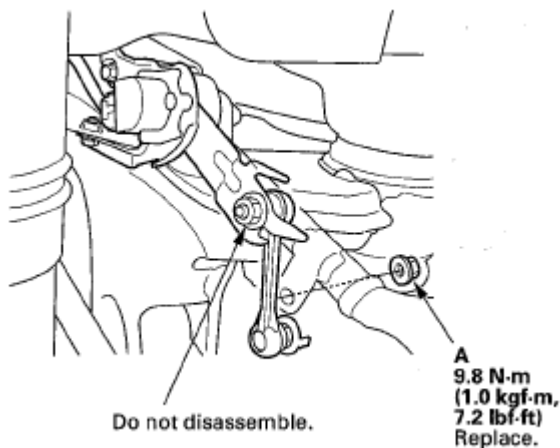


Fig. 9: Identifying Left-Rear Suspension Stroke Sensor And Nut With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Reconnect the 3P connector to each suspension stroke sensor.
11. Measure the voltage between the headlight leveling control unit 16P connector No. 4 and No. 7 terminals, and No. 6 and No. 12 terminals while the suspension stroke sensor arm (A) is moved.

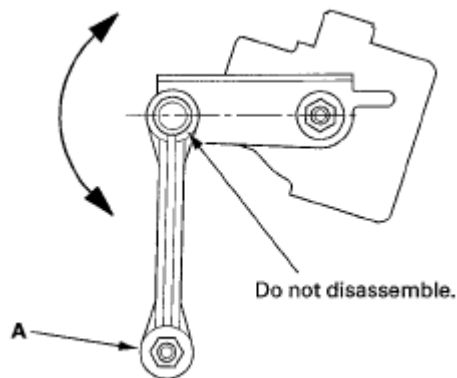


Fig. 10: Identifying Suspension Stroke Sensor Arm
Courtesy of AMERICAN HONDA MOTOR CO., INC.

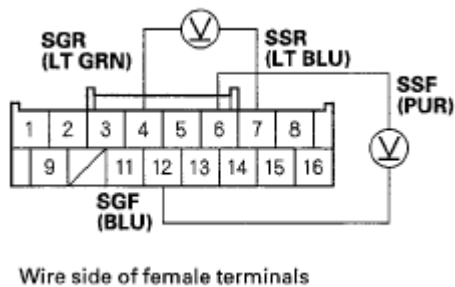


Fig. 11: Measuring Voltage Between Headlight Leveling Control Unit 16P Connector Terminals 6 And 12
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.5-4.5 V?

YES - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the headlight leveling control unit and the left-front (or left-rear) suspension stroke sensor, if the connections are OK, replace the left-front (or left-rear) suspension stroke sensor.

NO - Check for an open or a short in the wire between the headlight leveling control unit and the left-front (or left-rear) suspension stroke sensor, if the wire is OK, replace the left-front (or left-rear) suspension stroke sensor.

HEADLIGHT LEVELING CONTROL UNIT INPUT TEST

1. Turn the ignition switch to LOCK (0), and remove the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Disconnect the 16P connector (A) from the headlight leveling control unit (B).

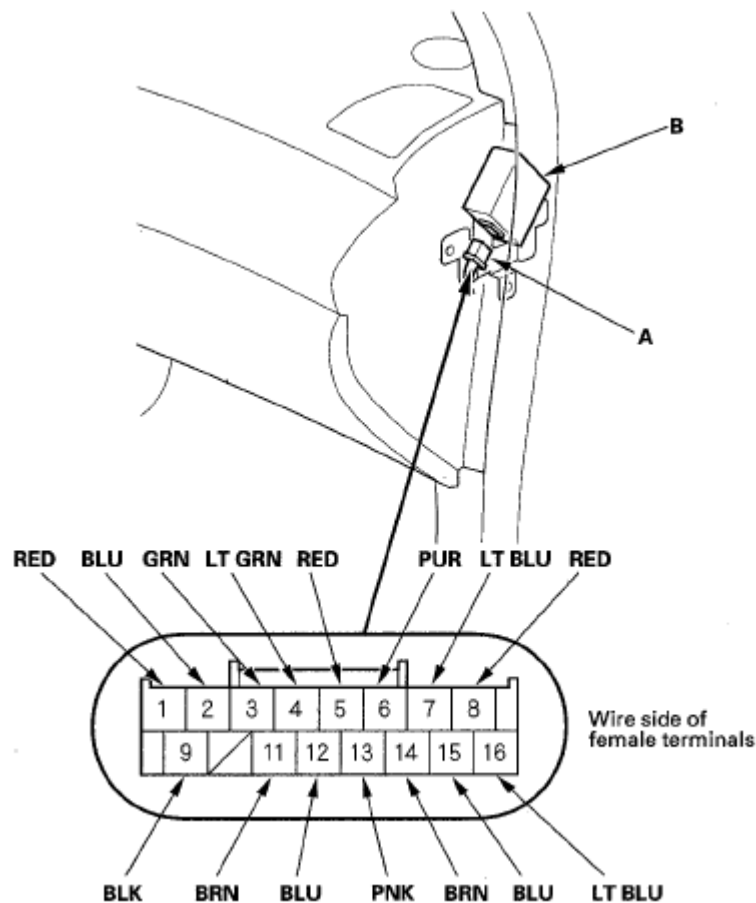


Fig. 12: Identifying Headlight Leveling Control Unit And 16P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals are OK, go to step 4.
4. With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 5.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
15	BLU	Ignition switch ON (II), raise the vehicle, make sure it is securely supported, and rotate one of the front wheels slowly with the	Measure the voltage between the No. 15(+) and No.9(-) terminals: There should be 0-5 V or more	• Faulty PCM • An open in the wire • A short to

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Headlight Leveling System - MDX

		other wheel blocked.	and 0-5 V or more repeatedly.	ground in the wire
16	LT BLU	Under all conditions	Check for continuity between the No. 16 terminal and the Non terminal of the combination switch control unit 8P connector: There should be continuity.	An open in the wire

5. Reconnect the connector, turn the ignition switch to ON (II), and make these input tests at the connector.
- If any test indicate a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, replace the headlight leveling control unit.

NOTE: **After replacing the control unit, do the headlight initial position learning procedure (see HEADLIGHT INITIAL POSITION LEARNING PROCEDURE).**

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
9	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
3	GRN	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
4	LT GRN			
12	BLU			
8	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 3 (10 A) fuse in the main under-hood fuse box • A short to ground in the wire
1	RED	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 31 (15 A) fuse in the under-dash fuse/relay box • An open in the wire
2	BLU	Ignition switch ON (II), headlight switch ON	Measure the voltage between the No. 2 and No. 3 terminals: There should be battery voltage.	• Faulty headlight leveling motor • An open in the wire
3	GRN			
11	BRN	Ignition switch ON (II), headlight switch ON	Measure the voltage between the No. 11 and No. 3 terminals: There should be about 2 to 12	• Faulty headlight leveling motor • An open in the wire
3	GRN			

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Headlight Leveling System - MDX**

			V.	
6	PUR	Under all conditions	• Measure the voltage between the No. 13 and No. 12 terminals: There should be about 5 V.	• Faulty left-front suspension stroke sensor • An open in the wire
12	BLU		• Measure the voltage between the No. 6 and No. 12 terminals: There should be about 0.5 to 4.5 V.	
13	PNK			
4	LT GRN	Under all conditions	• Measure the voltage between the No. 5 and No. 4 terminals: There should be about 5 V.	• Faulty left-rear suspension stroke sensor • An open in the wire
5	RED		• Measure the voltage between the No. 7 and No. 4 terminals: There should be about 0.5 to 4.5 V.	
7	LT BLU			

HEADLIGHT LEVELING MOTOR INPUT TEST

1. Turn the ignition switch to LOCK (0).
2. Disconnect the 3P connector (A) from the headlight leveling motor (B).

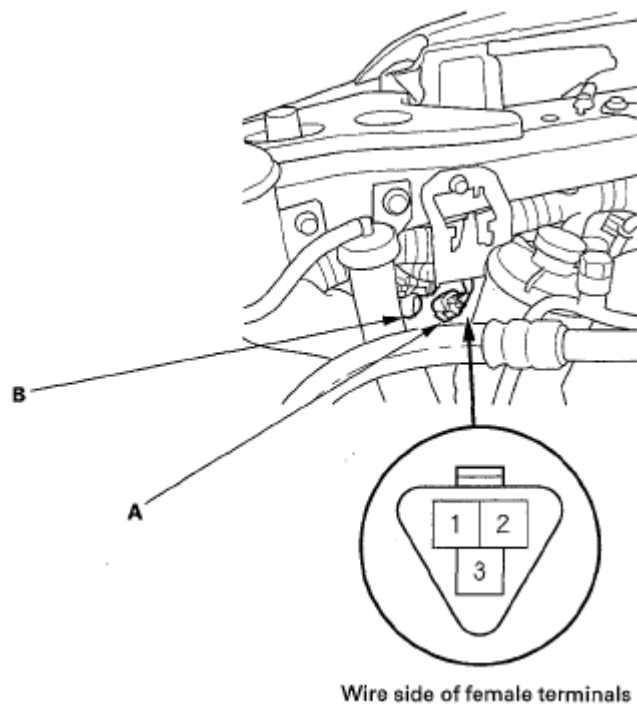


Fig. 13: Identifying Headlight Leveling Motor And 3P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals are OK, go to step 4.
4. Reconnect the connector to the headlight leveling motor, and make these input tests at the connector.
 - If any tests indicate a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, replace the headlight leveling motor (see **HEADLIGHT LEVELING MOTOR REPLACEMENT**).

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	BRN	Ignition switch ON (II)	Measure the voltage to ground: There should be about 2-12 V. NOTE: Depending on the headlight leveling position.	• Faulty headlight leveling control unit • An open in the wire
2	GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be less than 1 V.	• Faulty headlight leveling control unit • An open in the wire

3	BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Faulty headlight leveling control unit - An open in the wire
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SUSPENSION STROKE SENSOR REPLACEMENT

NOTE:

- Right side of suspension stroke sensor for active damper system is the same procedure as left side suspension stroke sensor.
- After install the rear suspension stroke sensor, do the memorizing rear suspension full rebound position (see MEMORIZING REAR SUSPENSION FULL REBOUND POSITION).

- Raise the vehicle, make sure it is securely supported.
- Disconnect the 3P connector (A) from the suspension stroke sensor (B).

LEFT-FRONT

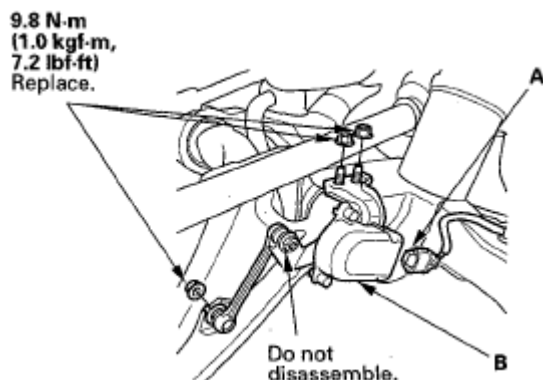


Fig. 14: Identifying Left And Front Suspension Stroke Sensor From 3P Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT-REAR

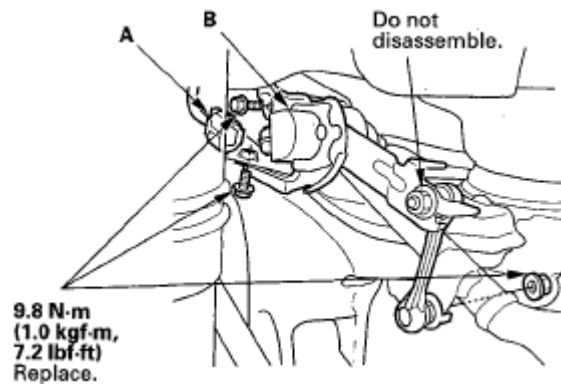


Fig. 15: Identifying Left And Rear Suspension Stroke Sensor From 3P Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolt and nut, then remove the suspension stroke sensor.
4. Install the sensor in the reverse order of removal.
5. After installing, do the headlight initial position learning procedure (see **HEADLIGHT INITIAL POSITION LEARNING PROCEDURE**).

HEADLIGHT LEVELING MOTOR REPLACEMENT

REMOVAL

1. Remove the headlight assembly (see **HEADLIGHT REPLACEMENT**).
2. Turn the headlight leveling motor (A) 45° counterclockwise.

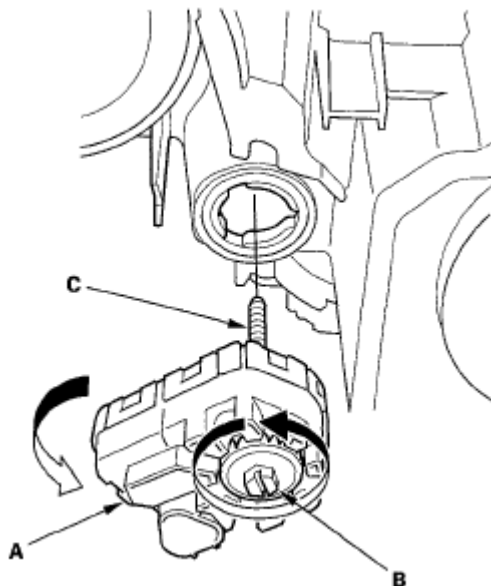


Fig. 16: Identifying Headlight Leveling Motor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the adjuster (B) of the headlight leveling motor until the headlight leveling motor shaft (C) is removed from the headlight.

INSTALLATION

1. Insert the headlight leveling motor shaft (A) into the headlight housing, then turn the adjuster (B) until the shaft connects to the headlight.

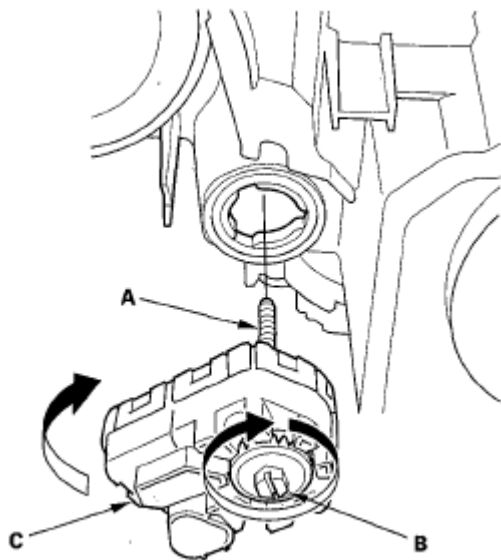


Fig. 17: Identifying Headlight Leveling Motor Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the headlight leveling motor (C) 45° clockwise to install to the headlight.
3. Tighten the adjuster until fully it is secure, but do not over tighten, then back it off 9 turns.
4. Insert the headlight in the reverse order of removal.
5. After installing, do the headlight leveling motor initial position learning procedure (see **HEADLIGHT INITIAL POSITION LEARNING PROCEDURE**)

HEADLIGHT INITIAL POSITION LEARNING PROCEDURE

Do the headlight initial position learning when any of the related parts of the headlight leveling system shown is replaced:

- Headlight
- HID unit
- Left-front suspension stroke sensor
- Left-rear suspension stroke sensor

- Headlight leveling motor
- Headlight leveling control unit

LEARNING PROCEDURE

Before learning the headlights:

- Park the vehicle on a level surface.
 - Make sure the tire pressures are correct.
1. Turn the ignition switch to LOCK (0).
 2. Remove all of the baggage from the vehicle.
 3. Slide the front seats backward fully.
 4. Have the driver (about 165 lb (75 kg)) or someone who weighs the same sit in the driver's seat.
 5. Connect the HDS to the data link connector.
 6. Jump the SCS line with the HDS.
 7. Turn the ignition switch ON (II).
 8. Within 5 seconds, turn the headlights (low beam) or passing switch ON and OFF three times repeatedly, and leave them on.
 - If the headlights aiming moves down (about 2 in. at 10 feet), then returns to the original position, the initial position learning is complete.
 - If the headlights aiming doesn't move, go to step 1 and repeat the procedure.
 9. Turn the ignition switch to LOCK (0), and disconnect the HDS from the data link connector.
 10. Adjust the headlight aim to conform with the applicable requirements.

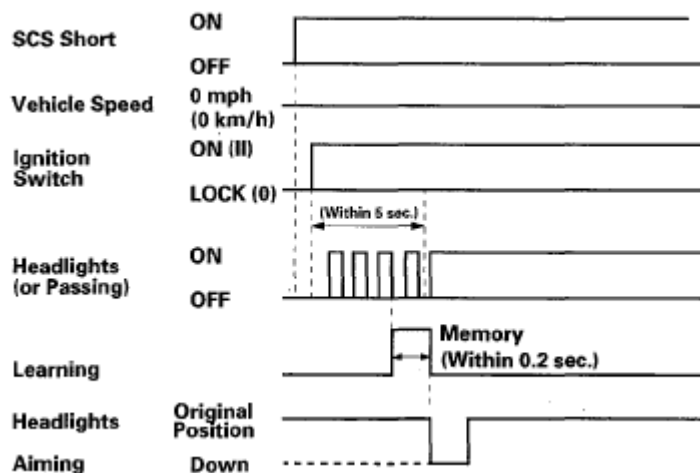
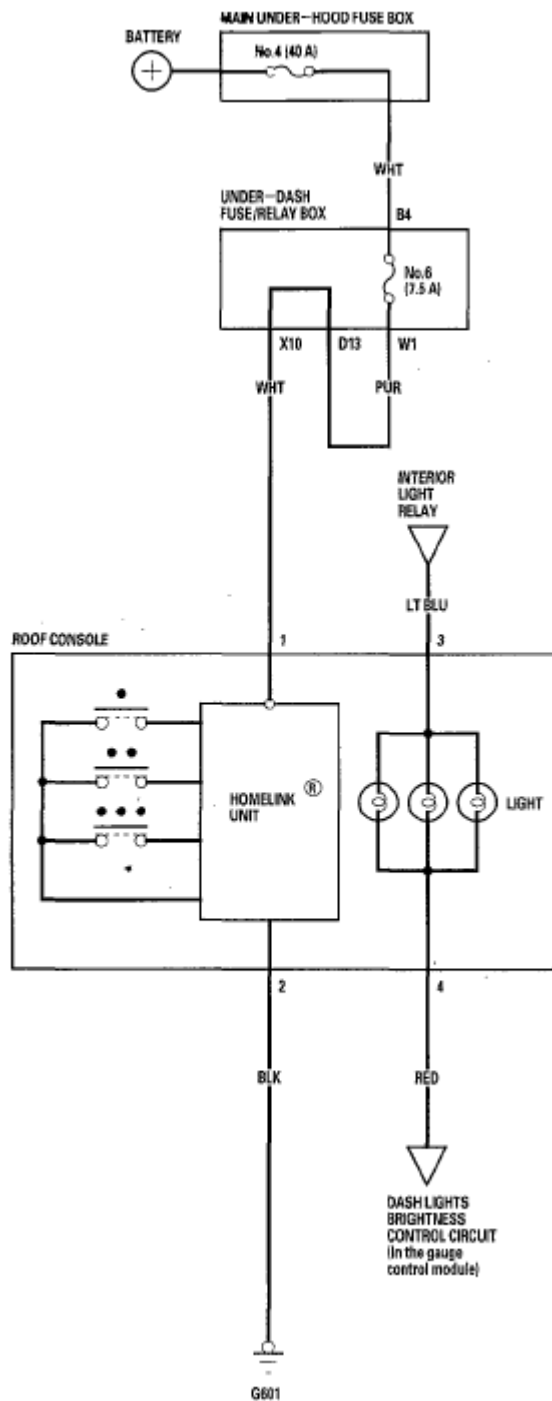


Fig. 18: Identifying Headlight Aiming Blinking Pattern
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Homelink Remote Control System-MDX

CIRCUIT DIAGRAM

**Fig. 1: Homelink Remote Control System - Circuit Diagram**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TEST

NOTE: If the HomeLink will not open the client's garage, do the following procedures.

1. Press any of the buttons on the HomeLink unit.
 - If the red indicator comes on, go to step 3.
 - If the red indicator does not come on, go to step 2.
2. Measure the voltage between the No. 1 (+) and No. 2 (-) terminals of the roof console 20P connector (A). There should be battery voltage.
 - If the voltage is not as specified, check for these problems:
 - A blown No. 6 (7.5 A) fuse in the under-dash fuse/relay box.
 - A faulty under-dash fuse/relay box.
 - An open in the wire.
 - Poor ground (G601).
 - If the voltage is specified, go to step 3.

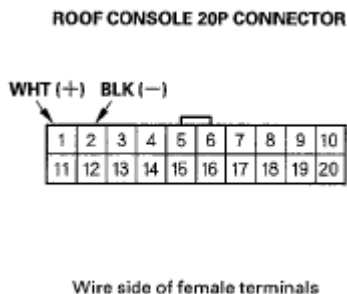


Fig. 2: Measuring Voltage Between Roof Console 20P Connector Terminals 1 And 2
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the Genie remote transmitter (test remote) has fresh batteries.
4. Clear any previously learned codes by pressing and holding the two outside buttons (A) on the HomeLink unit (B) for about 20 seconds. When the red indicator (C) on the unit starts blinking, release the buttons.

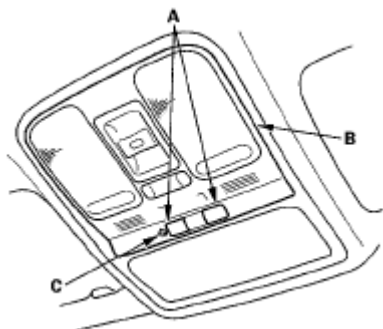
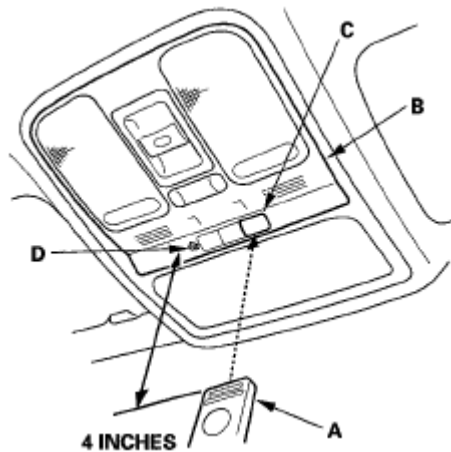


Fig. 3: Identifying Homelink Unit And Red Indicator, Buttons

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Point the test remote transmitter (A) straight up exactly 4.0 in. (101.6 mm) away from the HomeLink unit (B).

**Fig. 4: Identifying Remote Transmitter Button And Homelink Unit Buttons**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Press and hold the test transmitter button and one of the HomeLink unit buttons (C) at the same time.
7. Wait for about 20 seconds while watching the red indicator (D) on the HomeLink unit.
 - If the red indicator starts out blinking slowly and then blinks faster, the unit is OK. Release the buttons, then clear the learned code (see step 1). Explain to the client that garage door remote transmitters come in two types: fixed code and rolling code. Each type has its own programming method, and each method is covered in the owner's manual. If the customer has concerns about the HomeLink unit, have the client contact the HomeLink the assistance desk at 800-355-3515. On the internet, go to www.homelink.com.
 - If the red indicator does not blink, faulty HomeLink unit; replace the roof console (see **INTERIOR LIGHT SWITCH TEST/REPLACEMENT**).

2007-09 ACCESSORIES AND EQUIPMENT

Hood - MDX

HOOD ADJUSTMENT

1. Remove these items:
 - Front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**)
 - Hood support strut, both sides (see **HOOD SUPPORT STRUT REPLACEMENT**)
2. Slightly loosen each bolt (A).

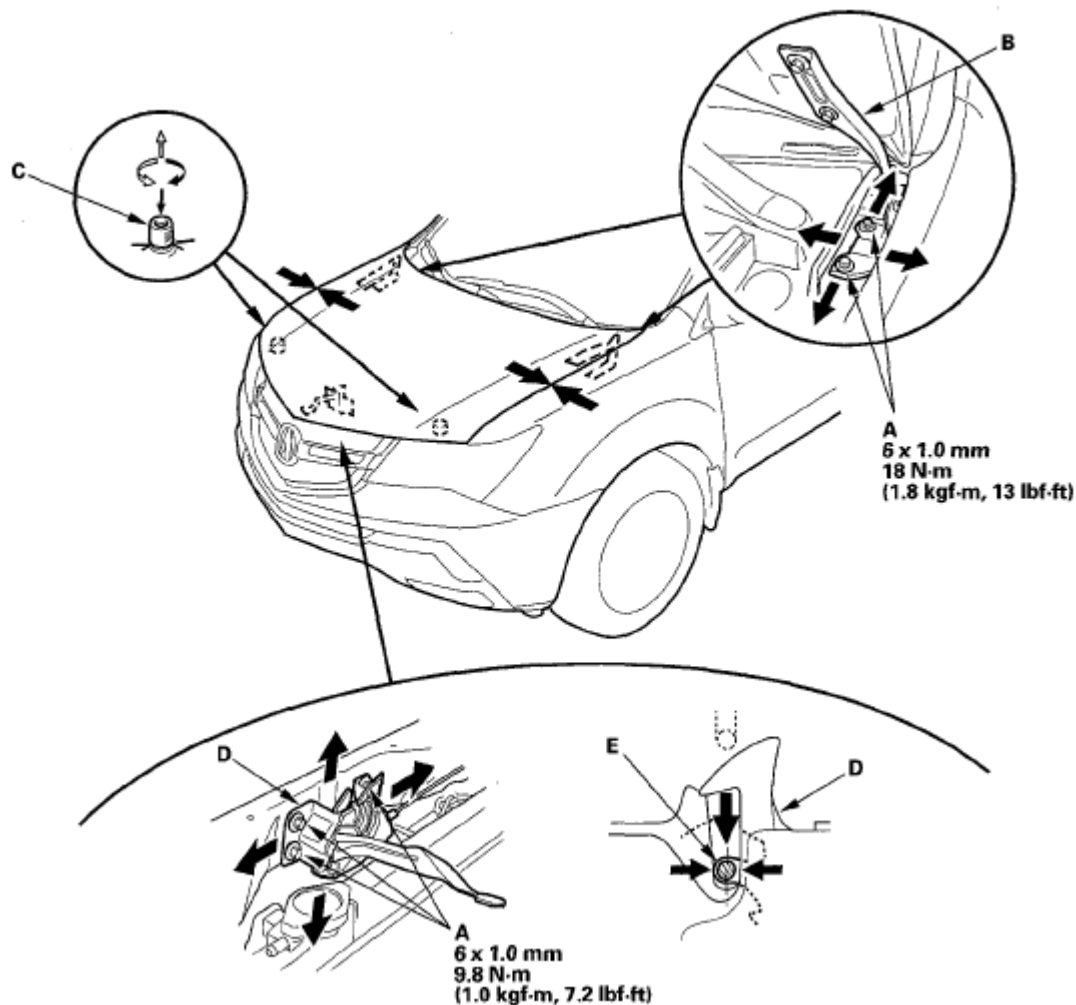


Fig. 1: Identifying Hood Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Adjust the hood alignment in this sequence:
 - Adjust the hood right and left, as well as forward and rearward, by using the elongated holes in the hood hinges (B).

- Turn the hood edge cushions (C), as necessary, to make the hood fit flush with the body at the front and side edges.
- 4. Adjust the hood latch (D) to obtain the proper height at the forward edge, and move the hood latch right or left until the striker (E) is centered in the hood latch.
- 5. Tighten the bolts to the specified torque.
- 6. Check that the hood opens properly and closes securely.
- 7. Apply touch-up paint to the hinge mounting bolts and around the hinges, and let the paint dry.
- 8. Apply multipurpose grease to the hood latch and hood hinges as indicated by the arrows.

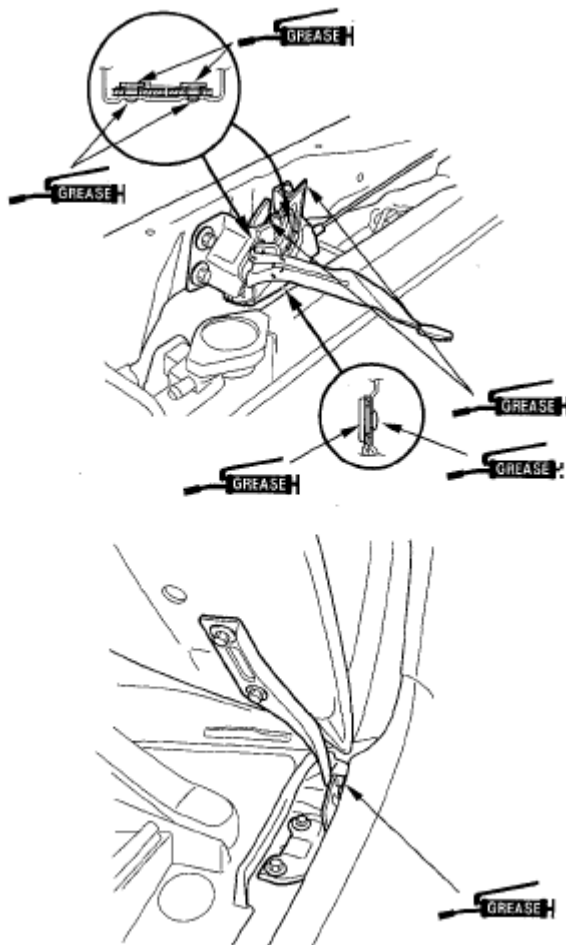


Fig. 2: Identifying Grease Area Of Hood Latch And Hood Hinges
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- 9. Reinstall all of the removed parts.

HOOD SUPPORT STRUT REPLACEMENT

NOTE: Use eye protection when prying support strut clip.

1. With the help of an assistant, use a flat-tip screwdriver (A) to pry the support strut clips (B) of the support strut (C) on the hood and body, then release the support strut from the pivot bolts (D). Do not remove the clips from the support strut.

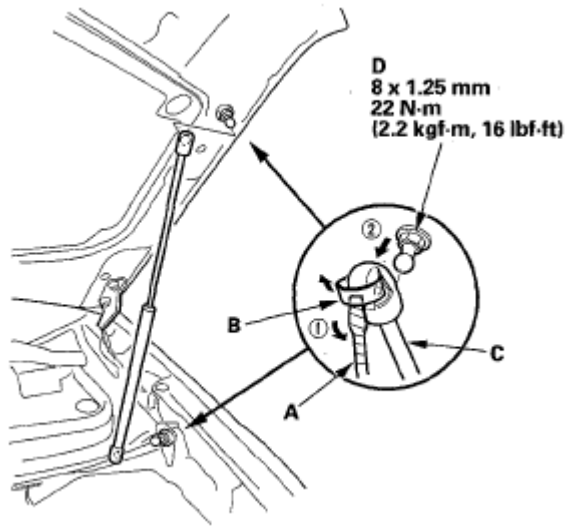


Fig. 3: Identifying Hood Support Strut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Apply multipurpose grease to each pivot.

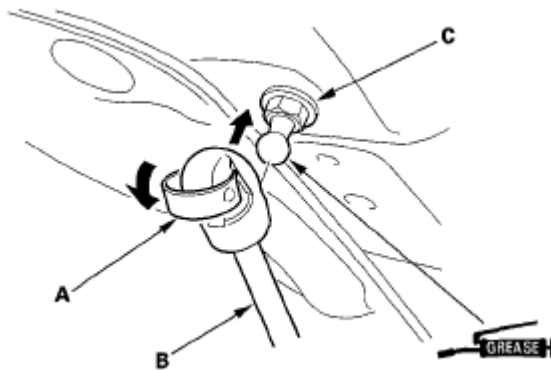


Fig. 4: Applying Multipurpose Grease To Each Pivot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Set the clips (A) on the original position, then reattach the support strut (B) on the pivot bolts (C) by pushing on the support strut.

HOOD SEAL REPLACEMENT

1. Using a clip remover, detach the clips, then remove the hood seal (A). Take care not to scratch the hood.

Fastener Locations

▷ : Clip, 8

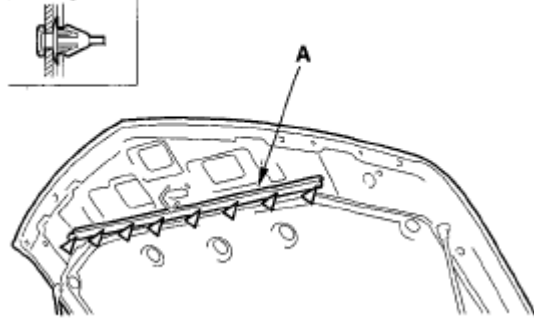


Fig. 5: Identifying Hood Seal Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the seals in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

HOOD INSULATOR REPLACEMENT

1. Using a clip remover, detach the clips. Release the hooks (A), then remove the hood insulator (B). Take care not to scratch the hood.

Fastener Locations

▷ : Clip, 7

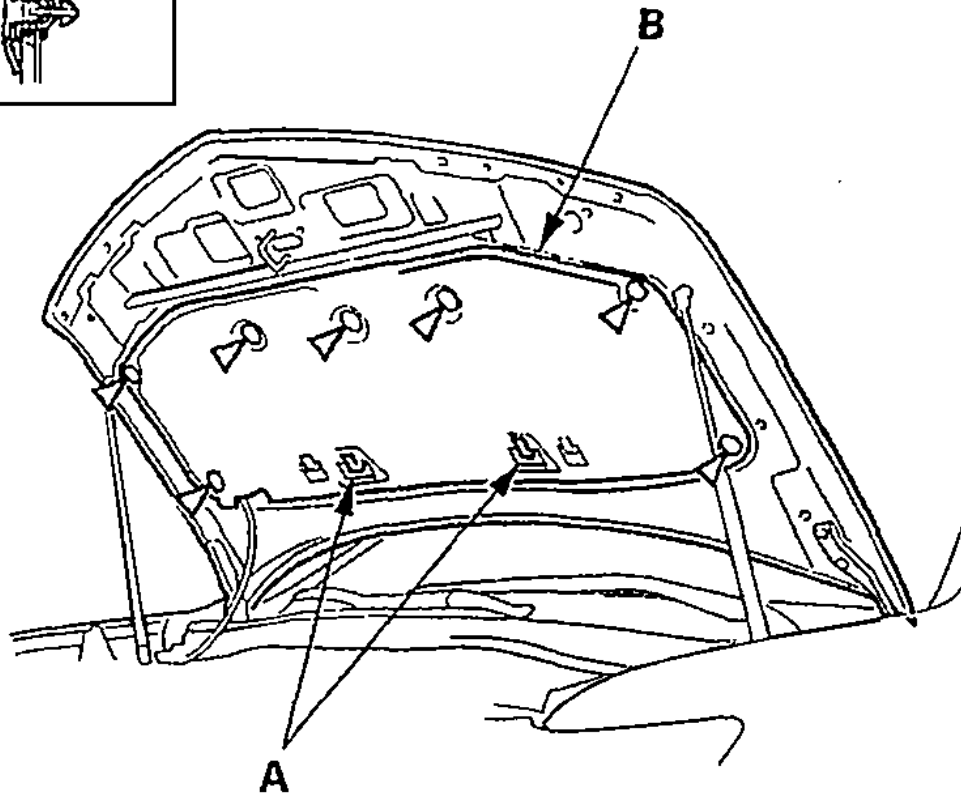
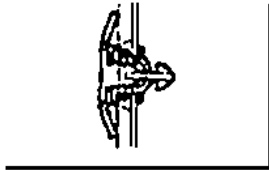


Fig. 6: Identifying Hood Insulator Hooks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the insulator in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips into place securely.

2007-09 ACCESSORIES AND EQUIPMENT

Horns - MDX

COMPONENT LOCATION INDEX

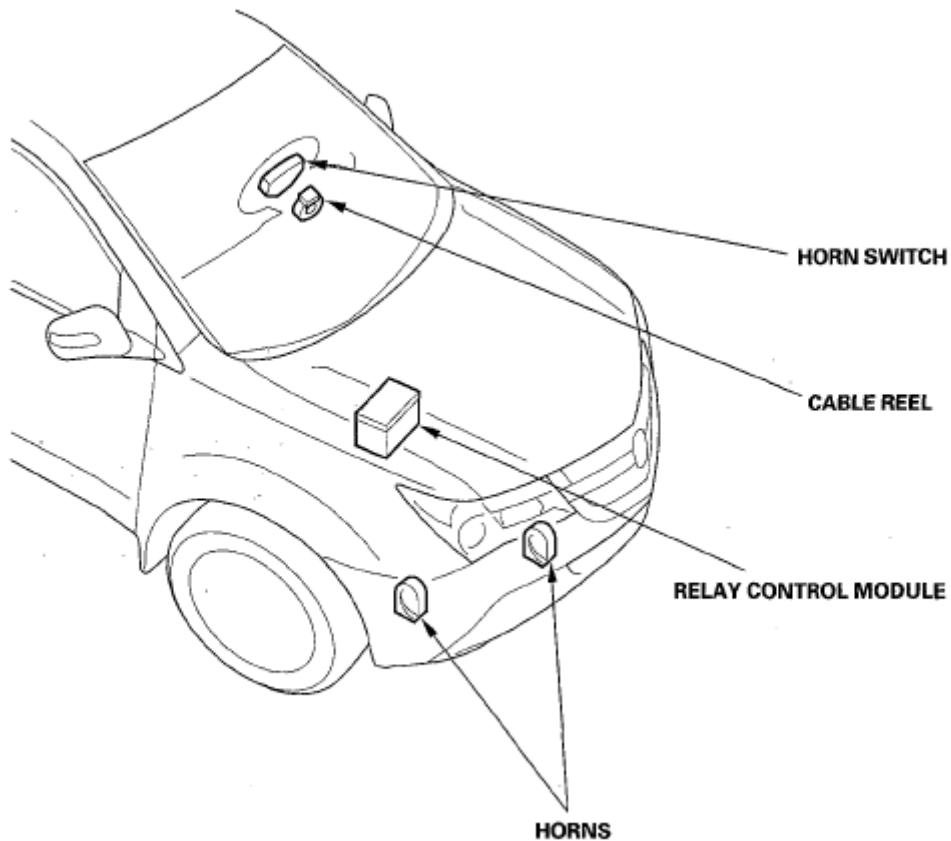


Fig. 1: Identifying Horns Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

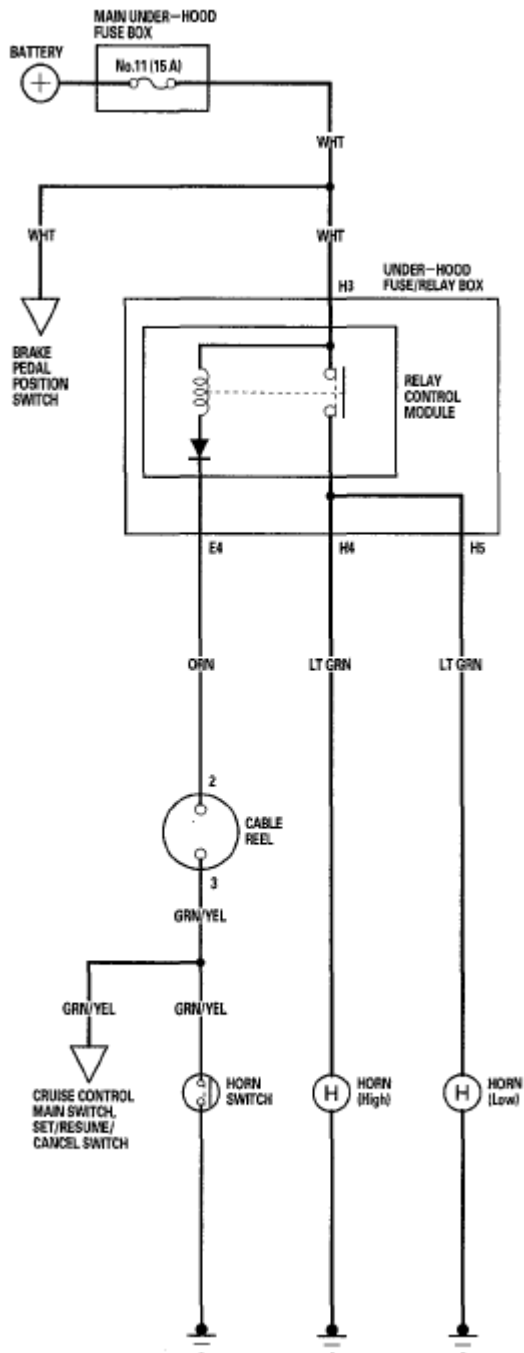


Fig. 2: Horn Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HORN TEST/REPLACEMENT

1. Remove the upper grille (see **FRONT GRILLE REPLACEMENT**).
2. Disconnect the 1P connector (A) from each horn (B).

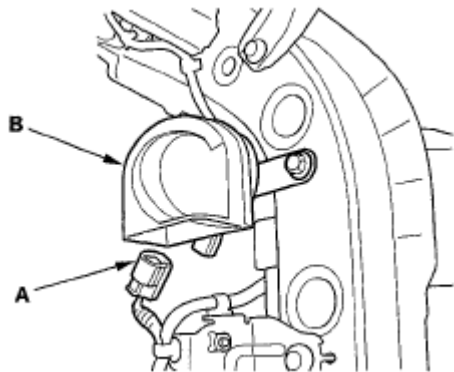


Fig. 3: Identifying 1P Connector And Horn

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the horn by connecting battery power to the terminal (A) and grounding the bracket (B). The horn should sound.

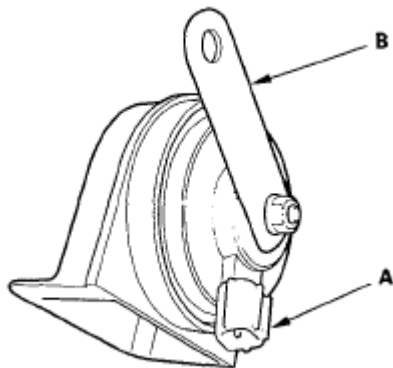


Fig. 4: Identifying Terminal And Bracket

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If it fails to sound, replace it.

HORN SWITCH TEST

1. Remove the steering column covers (see COLUMN COVER REMOVAL/INSTALLATION).
2. Disconnect the dashboard wire harness 20P connector (A) from the cable reel (B).

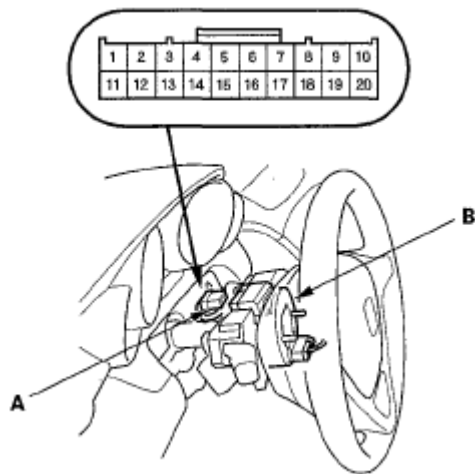


Fig. 5: Identifying Dashboard Wire Harness 20P Connector And Cable Reel
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a jumper wire, connect the dashboard wire harness 20P connector No. 2 terminal to body ground. The horns should sound.
 - If the horns sound, go to step 4.
 - If the horns do not sound, check these items:
 - No. 11 (15 A) fuse in the main under-hood fuse box.
 - Horn (see **HORN TEST/REPLACEMENT**)
 - MICU
 - An open in the wire.

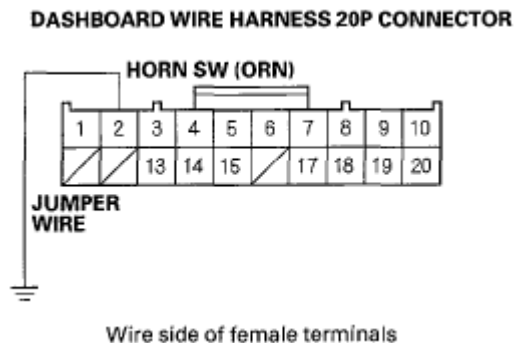


Fig. 6: Identifying Dashboard Wire Harness 20P Connector No. 2 Terminal To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Reconnect the dashboard wire harness 20P connector (A) to the cable reel (B).

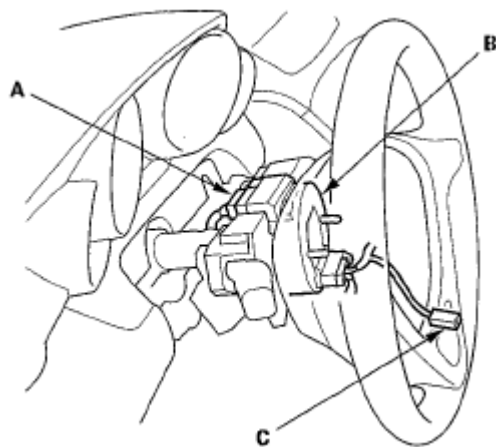


Fig. 7: Identifying Dashboard Wire Harness 20P Connector, Cable Reel And Horn Switch 1P Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the driver's airbag assembly (see **DRIVER'S AIRBAG REPLACEMENT**), and disconnect the horn switch 1P terminal (C) from the driver's airbag.
6. Check for continuity between the dashboard wire harness 20P connector No. 2 terminal and the horn switch 1P terminal.
 - If there is continuity, check the installation of the driver's airbag assembly and the steering wheel. If the installation is correct, faulty horn switch; replace the driver's airbag assembly.
 - If there is no continuity, repair an open in the wire between the cable reel and the horn switch 1P terminal, if the wire harness is OK, replace the cable reel (see **CABLE REEL REPLACEMENT**).

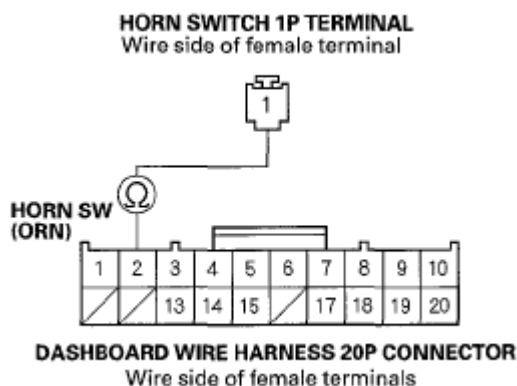


Fig. 8: Identifying Continuity Between Dashboard Wire Harness 20P Connector No. 2 Terminal And Horn Switch 1P Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ENGINE PERFORMANCE

Idle Control System - MDX

COMPONENT LOCATION INDEX

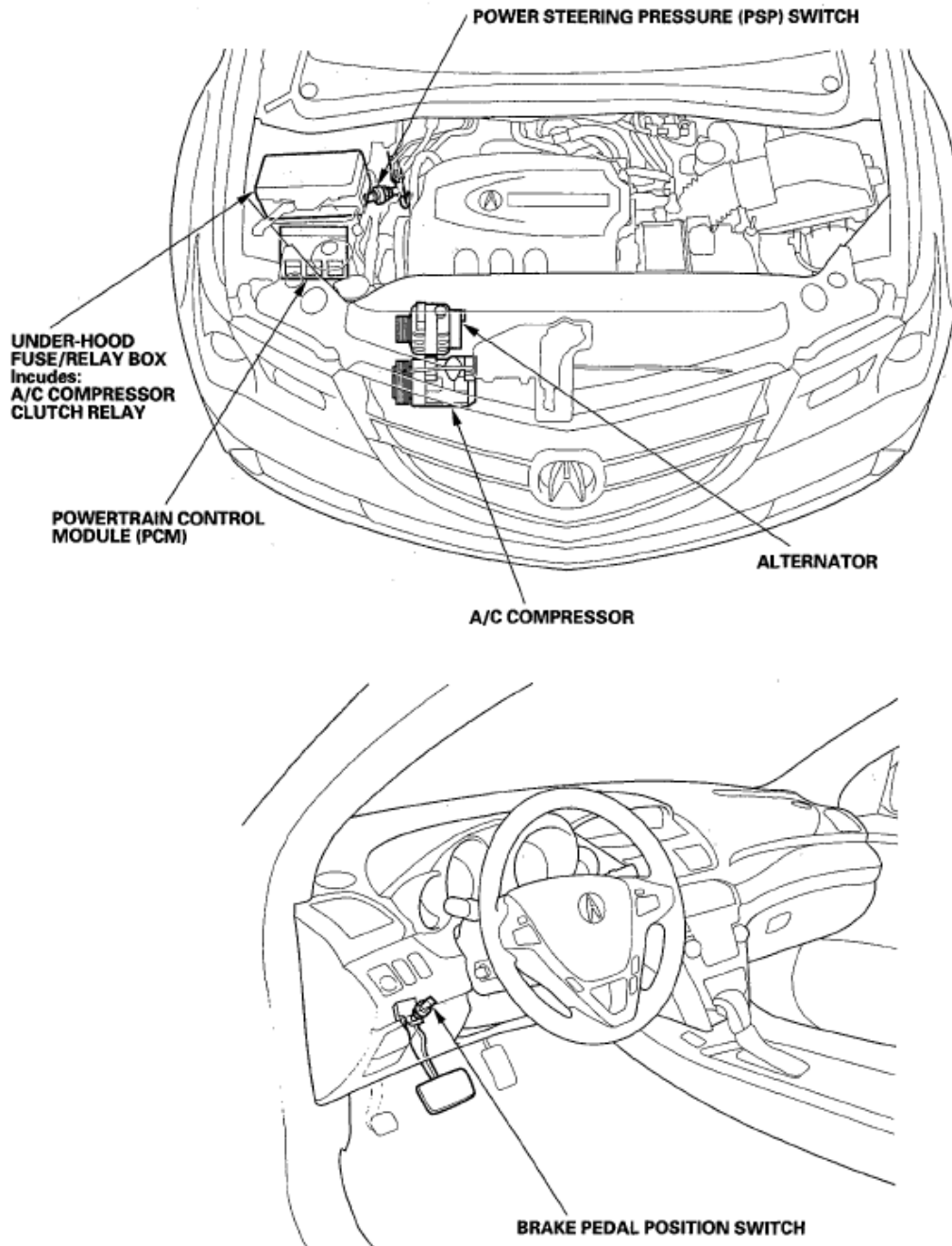


Fig. 1: Identifying Idle Control System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0506: IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 20 seconds.
4. Check under these DATA LIST parameter conditions with the HDS:
 - ECT SENSOR 1 above 158°F (70°C)
 - IAT SENSOR above 32°F (0°C)
 - Vehicle speed is 0 mph (0 km/h)
 - ST FUEL TRIM between 0.73-1.47
 - FSS is CLOSED
5. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, go to step 15. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 4 and recheck.

6. Remove the air intake duct from the throttle body (see THROTTLE BODY REMOVAL/INSTALLATION).
7. Check for dirt, carbon, or damage in the throttle bore.

Is there dirt, carbon, or damage in the throttle bore?

YES - If there is dirt or carbon, clean the throttle body (see THROTTLE BODY CLEANING). Also check for damage to the air cleaner element (see AIR CLEANER ELEMENT INSPECTION/REPLACEMENT), then go to step 9. If there is damage in the throttle bore, go to step 8.

NO - Check the A/C system or power steering system, then go to step 9.

8. Replace the throttle body (see THROTTLE BODY REMOVAL/INSTALLATION).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see PCM IDLE LEARN PROCEDURE).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Idle Control System - MDX

fan comes on, then let it idle 20 seconds.

12. Check under these DATA LIST parameter conditions with the HDS:

- ECT SENSOR 1 above 158°F (70°C)
- IAT SENSOR above 32°F (0°C)
- Vehicle speed is 0 mph (0 km/h)
- ST FUEL TRIM between 0.73-1.47
- FSS is CLOSED

13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0506 indicated?

YES - Go to step 19.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 13, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, go to step 19. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

15. Remove the air intake duct from the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).

16. Check for dirt, carbon, or damage in the throttle bore.

Is there dirt, carbon, or damage in the throttle bore?

YES - If there is dirt or carbon, clean the throttle body (see **THROTTLE BODY CLEANING**). Also check for damage to the air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 9. If there is damage in the throttle bore, go to step 8.

NO - Go to step 17.

17. Recheck with different load conditions (turn on the headlights, blower motor, rear window defogger and/or A/C, change the gear position, etc.).

18. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Intermittent failure, the system is OK at this time.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Idle Control System - MDX

NO - If the screen indicates FAILED, check the A/C system and/or power steering system, then go to step 1 and recheck. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 17 and recheck.

19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 20 seconds.
21. Check under these DATA LIST parameter conditions with the HDS:
 - ECT SENSOR 1 above 158°F (70°C)
 - IAT SENSOR above 32°F (0°C)
 - Vehicle speed is 0 mph (0 km/h)
 - ST FUEL TRIM between 0.73-1.47
 - FSS is CLOSED
22. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0506 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1.

NO - Go to step 23.

23. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 22, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 20.

DTC P0507: IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Idle Control System - MDX

2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 20 seconds.
4. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 5.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, recheck with different load conditions (electrical, A/C, gear position, etc.), then go to step 3.

5. Check for vacuum leaks at these parts:
 - PCV valve
 - PCV hose
 - EVAP canister purge valve
 - Throttle body
 - Intake manifold
 - Brake booster hose
 - Brake booster

Are there any leaks?

YES - Repair or replace the leaking part(s), then go to step 6.

NO - Go to step 6.

6. Turn the ignition switch ON (II).
7. Reset the PCM with the HDS.
8. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
9. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 20 seconds.
10. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0507 indicated?

YES - Go to step 12.

NO - Go to step 11.

11. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 10, go to the indicated **DTCs TROUBLESHOOTING**.

NO - If the screen indicates FAILED, go to step 12. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 9.

12. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
13. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 20 seconds.
14. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0507 indicated?

YES - Check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 13. If the PCM was substituted, go to step 1.

NO - Go to step 15.

15. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 14, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the throttle body and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 13. If the PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, go to step 13.

A/C SIGNAL CIRCUIT TROUBLESHOOTING

1. Start the engine.
2. Turn the blower switch on.
3. Turn the A/C switch on.
4. Check the A/C CLUTCH in the DATA LIST with the HDS.

Does it indicate ON?

YES - Go to step 5.

NO - Do the A/C pressure switch circuit troubleshooting (see **DTC B2979 OR DTC INDICATOR B AND WINDSHIELD DEFROST: AN OPEN IN THE A/C PRESSURE SENSOR CIRCUIT**).

5. Check the A/C system.

Does the A/C system operate ?

YES - The air conditioning system circuit is OK.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II).
8. Activate the A/C CLUTCH in the INSPECTION MENU with the HDS.

Is there a clicking noise from the A/C compressor clutch?

YES - Do the A/C system test (see **A/C SYSTEM TEST**).

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (49P).
12. Turn the ignition switch ON (II).
13. Momentarily connect PCM connector terminal A13 to body ground with a jumper wire several times.

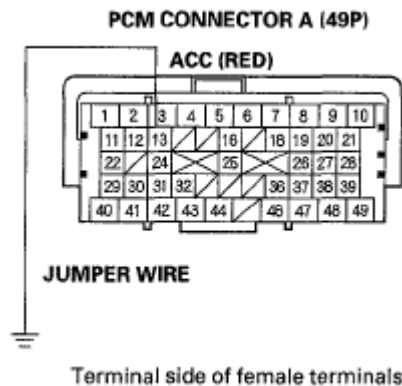


Fig. 2: Identifying PCM Connector Terminal A13 To Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there a clicking noise from the A/C compressor clutch?

YES - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes

away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Check for poor connections or loose terminals at the A/C compressor clutch relay and the PCM. If the connections are OK, check the A/C compressor clutch relay (see **POWER RELAY TEST**). Then repair open in the wire between the PCM (A13) and the A/C compressor clutch relay and the other A/C systems.

ALTERNATOR FR SIGNAL CIRCUIT TROUBLESHOOTING

1. Start the engine, and let it idle.
2. Monitor the ALTERNATOR in the DATA LIST with the HDS.
3. Check if the indicated percentage varies when the headlight switch is turned on.

Does the percentage vary?

YES - The alternator signal circuit is OK.

NO - Go to step 4.

4. Turn the headlight switch and ignition switch to LOCK (0).
5. Jump the SCS line with the HDS.
6. Disconnect the alternator 4P connector.
7. Disconnect PCM connector C (49P).
8. Check for continuity between body ground and PCM connector terminal C44.

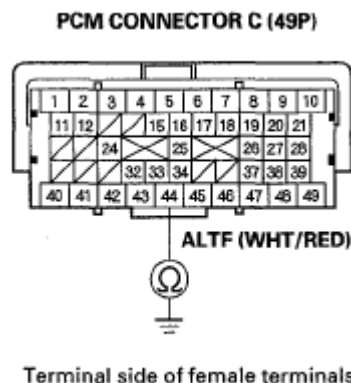


Fig. 3: Identifying Continuity Between Body Ground And PCM Connector Terminal C44
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C44) and the alternator.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a

known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

PSP SWITCH SIGNAL CIRCUIT TROUBLESHOOTING

1. Start the engine, and let it idle.
2. Align the steering wheel straight ahead.
3. Check the PSP SWITCH in the DATA LIST with the HDS.

Does it indicate ON?

YES - Go to step 4.

NO - Go to step 14.

4. Turn the steering wheel to the full lock position.
5. Check the PSP SWITCH in the DATA LIST with the HDS.

Does it change to OFF?

YES - The PSP switch signal circuit is OK.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the PSP switch 2P connector.
8. Start the engine.
9. Check the PSP SWITCH in the DATA LIST with the HDS.

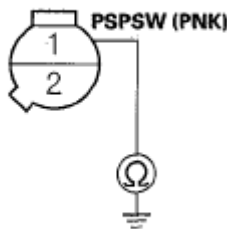
Does it change to OFF?

YES - Replace the PSP switch.

NO - Go to step 10.

10. Turn the ignition switch OFF.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P).
13. Check for continuity between PSP switch 2P connector terminal No. 1 and body ground.

PSP SWITCH 2P CONNECTOR



Wire side of female terminals

Fig. 4: Identifying Continuity Between PSP Switch 2P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

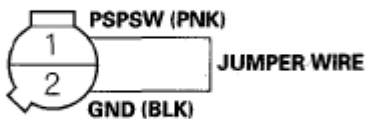
Is there continuity?

YES - Repair short in the wire between the PCM (A38) and the PSP switch.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

14. Turn the ignition switch to LOCK (0).
15. Disconnect the PSP switch 2P connector.
16. Connect PSP switch 2P connector terminals No. 1 and No. 2 with a jumper wire, then start the engine.

PSP SWITCH 2P CONNECTOR



Wire side of female terminals

Fig. 5: Identifying PSP Switch 2P Connector Terminals No. 1 And No. 2 With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Check the PSP SWITCH in the DATA LIST with the HDS.

Does it change to ON?

YES - Replace the PSP switch (see **POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT**).

NO - Go to step 18.

18. Turn the ignition switch to LOCK (0).
19. Remove the jumper wire from the PSP switch 2P connector.
20. Jump the SCS line with the HDS.
21. Disconnect PCM connector A (49P).
22. Check for continuity between PCM connector terminal A38 and PSP switch 2P connector terminal No. 1.

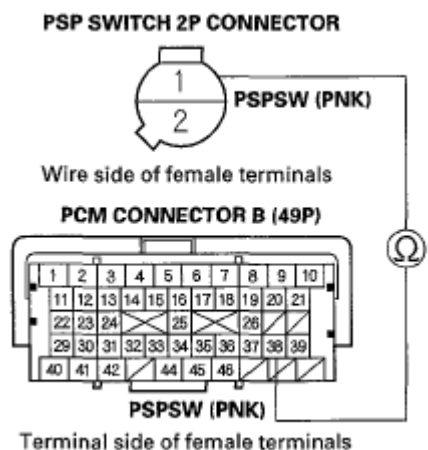


Fig. 6: Identifying Continuity Between PCM Connector Terminal A38 And PSP Switch 2P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the PSP switch and the PCM (A38).

23. Check for continuity between PSP switch 2P connector terminal No. 2 and body ground.

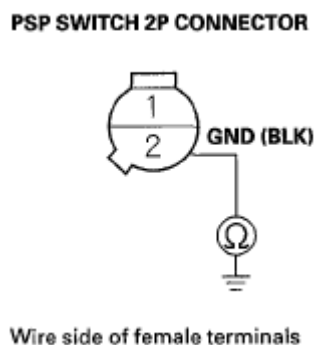


Fig. 7: Identifying Continuity Between PSP Switch 2P Connector Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the PSP switch and G202.

BRAKE PEDAL POSITION SWITCH SIGNAL CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II).
2. Check the BRAKE SWITCH in the DATA LIST with the HDS.

Does it indicate OFF?

YES - Go to step 3.

NO - Inspect the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

3. Press the brake pedal, and check the BRAKE SWITCH in the DATA LIST with the HDS.

Does it change to ON?

YES - The brake pedal position switch signal circuit (BKSW line) is OK.

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Jump the SCS line with the HDS.
6. Disconnect the brake pedal position switch 4P connector.
7. Disconnect PCM connector A (49P).
8. Check for continuity between PCM connector terminal A8 and body ground.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Idle Control System - MDX

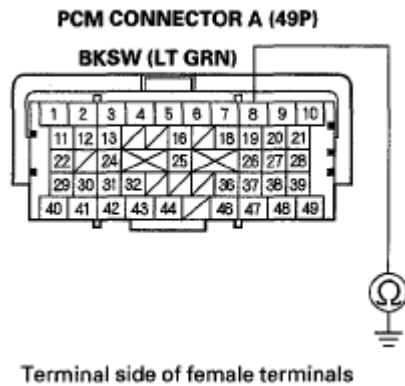


Fig. 8: Identifying Continuity Between PCM Connector Terminal A8 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A8) and the No. 11+B STOP & HORN (15 A) fuse.
Replace the No. 11 +B STOP & HORN (15 A) fuse.

NO - Go to step 9.

9. Connect brake pedal position switch 4P connector terminal No. 2 to body ground with a jumper wire.

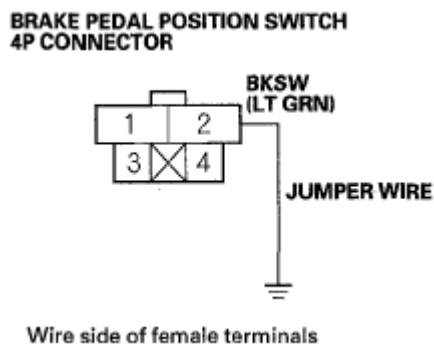


Fig. 9: Identifying Brake Pedal Position Switch 4P Connector Terminal No. 2 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check for continuity between PCM connector terminal A8 and body ground.

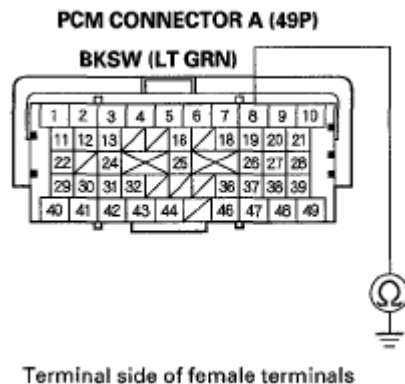


Fig. 10: Identifying Continuity Between PCM Connector Terminal A8 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the brake pedal position switch and the No. 11 +B STOP & HORN (15 A) fuse. Inspect the brake pedal position switch (see **BRAKE PEDAL AND BRAKE PEDAL POSITION SWITCH ADJUSTMENT**).

NO - Repair open in the wire between the PCM (A8) and the brake pedal position switch.

IDLE SPEED INSPECTION

NOTE:

- Before checking the idle speed, check these items:
 - The malfunction indicator lamp (MIL) has not been reported on, and there are no DTCs.
 - Ignition timing
 - Sparkplugs
 - Air cleaner
 - PCV system
- Apply the parking brake and make sure the headlights are off.

1. Disconnect the evaporative emission (EVAP) canister purge valve connector.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

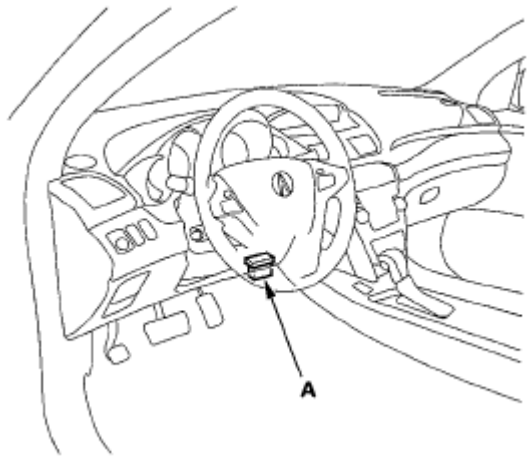


Fig. 11: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
6. Check the idle speed without load conditions: headlights, blower fan, radiator fan, and air conditioner off.

Idle speed should be: 710 ± 50 rpm (in Park or neutral)

7. Let the engine idle for 1 minute with high electric load (A/C switch ON, temperature set to max cool, blower fan on high, and headlights on high beam).

Idle speed should be: 710 ± 50 rpm (in Park or neutral)

NOTE: If the idle speed is not within specification, do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**). If the idle speed is still not within specification, go to symptom troubleshooting.

8. Reconnect the EVAP canister purge valve connector.

PCM IDLE LEARN PROCEDURE

The idle learn procedure must be done so the PCM can learn the engine idle characteristics.

Do the idle learn procedure whenever you do any of these actions:

- Replace the PCM.
- Reset the PCM.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Idle Control System - MDX

- Update the PCM.
- Replace or clean the throttle body.
- When the engine or transmission is disassembled.

NOTE: **Clearing the DTCs with the HDS does not require you to do the idle learn procedure.**

PROCEDURE

1. Make sure all electrical items (A/C, audio, lights, etc.) are off.
2. Reset the PCM with the HDS.
3. Turn the ignition switch ON (II), and wait 2 seconds.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, or until the engine coolant temperature reaches 194°F (90°C).
5. Let the engine idle for about 5 minutes with the throttle fully closed.

NOTE: **If the radiator fan comes on, do not include its running time in the 5 minutes.**

6. Verify on the HDS data list that the idle learn procedure is complete.

2007-09 ACCESSORIES AND EQUIPMENT

Ignition Switch-MDX

TEST

SRS components are located in the area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before performing repairs or servicing.

1. Do the battery terminal disconnection procedure (See **DISCONNECTION**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the 7P connector (A) from the ignition switch (B).

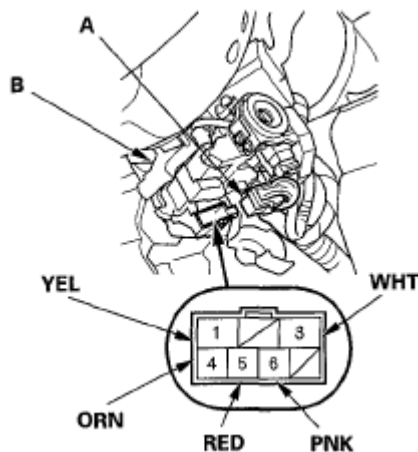


Fig. 1: Identifying 7P Connector And Ignition Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	RED (ACC)	WHT (BAT)	PNK (IG1)	ORN (IG2)	YEL (ST)
O (LOCK)					
I (ACC)	○	○			
II (ON)	○	○	○	○	
III (START)		○	○	○	○

Fig. 2: Switch Position Terminals Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity does not agree with the table, replace the ignition switch (see **REPLACEMENT**).
6. Do the battery terminal reconnection procedure (See **RECONNECTION**).

REPLACEMENT

SRS components are located in the area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before performing repairs or servicing.

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** .
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the 7P connector (A) from the ignition switch (B).

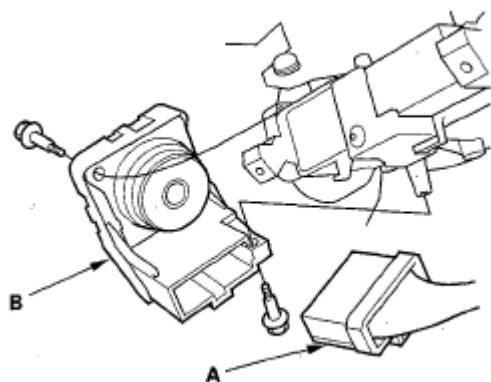


Fig. 3: Identifying 7P Connector And Ignition Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws and the ignition switch.
5. Install the parts in the reverse order of removal.
6. Do the battery terminal reconnection procedure (See **RECONNECTION**).

2008 Acura MDX

2007-09 ENGINE Ignition System - MDX

2007-09 ENGINE

Ignition System - MDX

COMPONENT LOCATION INDEX

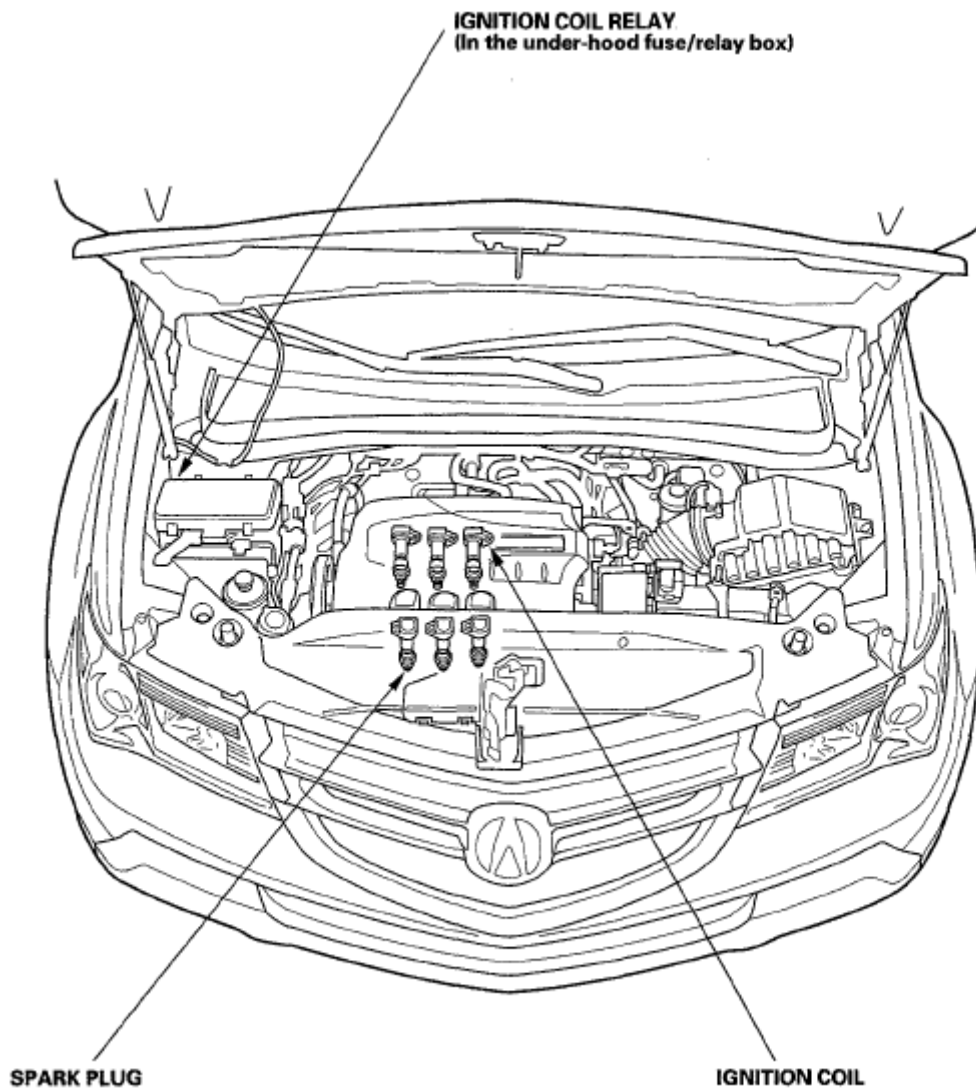


Fig. 1: Identifying Ignition System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ENGINE Ignition System - MDX

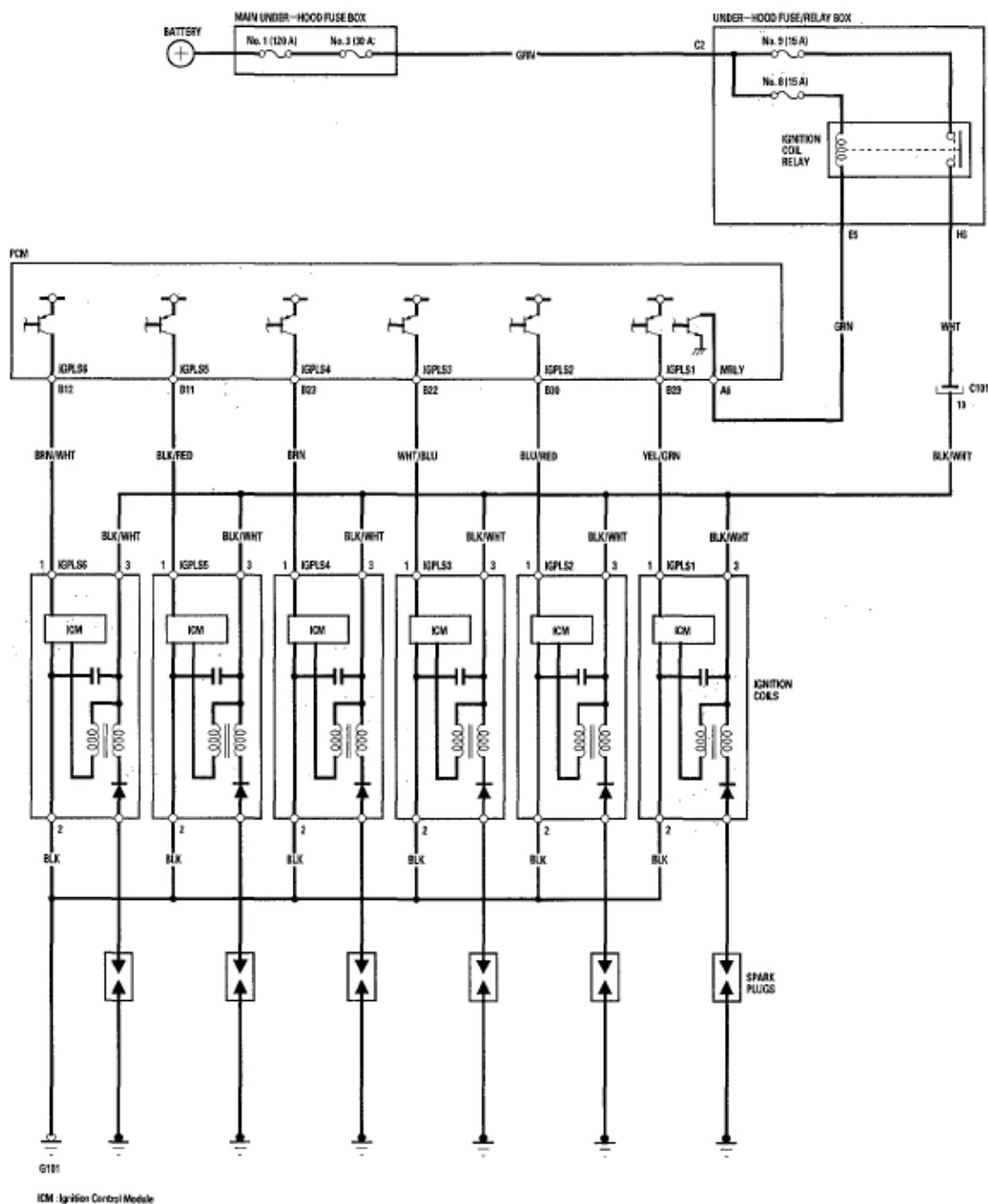


Fig. 2: Ignition System - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

IGNITION TIMING INSPECTION

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
2. Turn the ignition switch to ON (II).

3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Check for DTCs. If a DTC is present, diagnose and repair the cause before inspecting the ignition timing.
5. Start the engine. Hold the engine at 3,000 rpm with no load (in P or N position) until the radiator fan comes on, then let it idle.
6. Check the idle speed (see **IDLE SPEED INSPECTION**).
7. Jump the SCS line with the HDS.
8. Connect the timing light to the service loop.

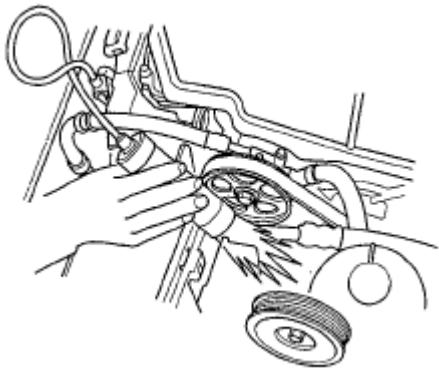


Fig. 3: Identifying Timing Light To Service Loop
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Aim the light toward the pointer (A) on the timing belt cover. Check the ignition timing under a no load condition (headlights, blower fan, rear window defogger, and air conditioner are turned off).

Ignition Timing:

10° ± 2° BTDC (RED mark (B)) at idle in P or N position

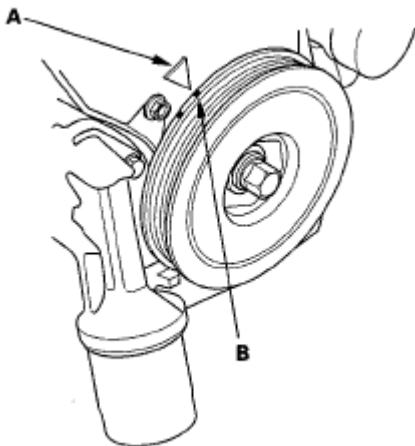


Fig. 4: Identifying Ignition Timing Mark
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If the ignition timing differs from the specification, check the cam timing. If the cam timing is OK, update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the ignition system works properly, replace the original PCM (see **PCM REPLACEMENT**).
11. Disconnect the HDS and the timing light.

IGNITION COIL REMOVAL/INSTALLATION

1. Remove the engine cover (A).

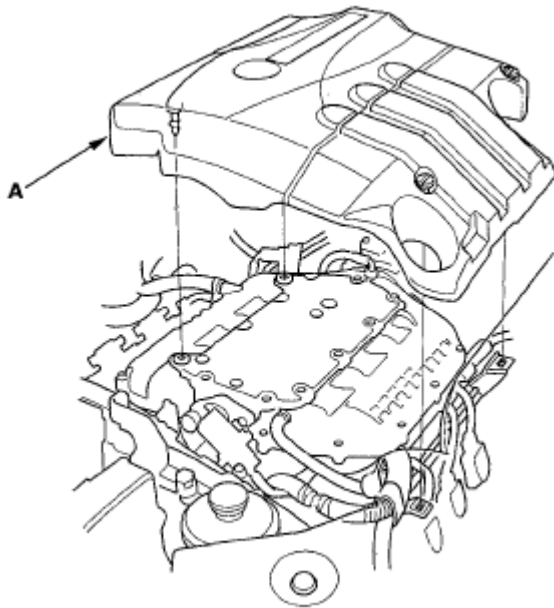


Fig. 5: Identifying Engine Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the ignition coil connector (A), then remove the ignition coils (B).

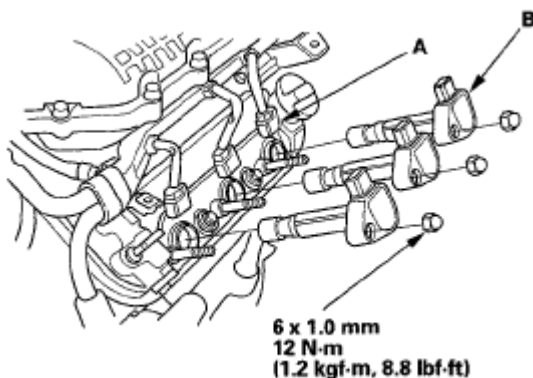


Fig. 6: Identifying Ignition Coil Connector And Ignition Coils With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the ignition coils in the reverse order of removal.

IGNITION COIL RELAY CIRCUIT TROUBLESHOOTING

1. Check the No. 8 (15 A) fuse and No. 9 (15 A) fuse in the under-hood fuse/relay box.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse. If the fuse continues to blow, locate and repair the short in the circuit between the under-hood fuse/relay box and the ignition coils.

2. Remove the relay control module from the under-hood fuse/relay box, and test it (see **RELAY CONTROL MODULE TEST**).

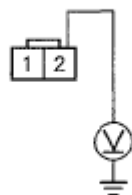
Is the relay OK?

YES - Go to step 3.

NO - Replace the relay control module in the under-hood fuse/relay box.

3. Measure the voltage between the relay control module connector C terminal No. 2 and body ground.

RELAY CONTROL MODULE 2P CONNECTOR C



Wire side of female terminals

Fig. 7: Identifying Voltage Between Relay Control Module Connector C Terminal No. 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 4.

NO - Repair open in the wire between relay control module connector C terminal No. 2 and the main under-hood fuse box.

4. Check for continuity between the relay control module connector H terminal No. 6 and No. 1 ignition coil

3P connector terminal No. 3.

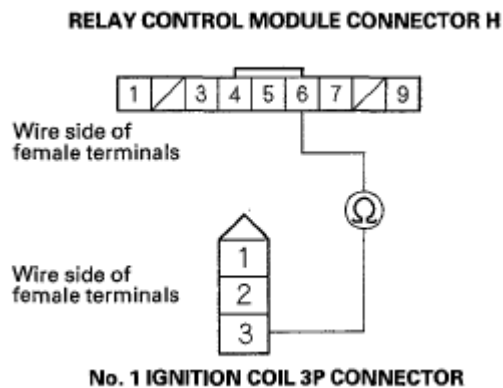


Fig. 8: Identifying Continuity Between Relay Control Module Connector H And Ignition Coil 3P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 5.

NO - Repair open in the wire between the relay control module connector H terminal No. 6 and ignition coil 3P connector terminal No. 3.

5. Check for continuity between the relay control module connector E terminal No. 5 and body ground.

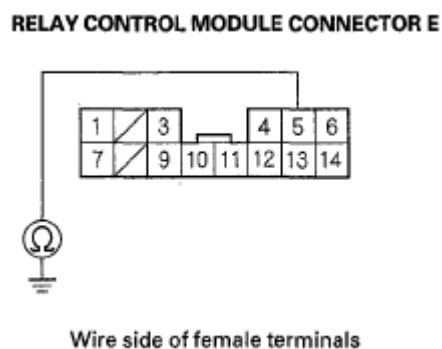


Fig. 9: Identifying Continuity Between Relay Control Module Connector E Terminal No. 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to body ground in the wire between the relay control module connector E terminal No. 5 and the powertrain control module (PCM) (A6).

NO - Go to step 6.

6. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
7. Turn the ignition switch to ON (II).
8. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
9. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

10. Disconnect PCM connector A (49P).
11. Check for continuity between relay control module connector E terminal No. 5 and PCM connector terminal A6.

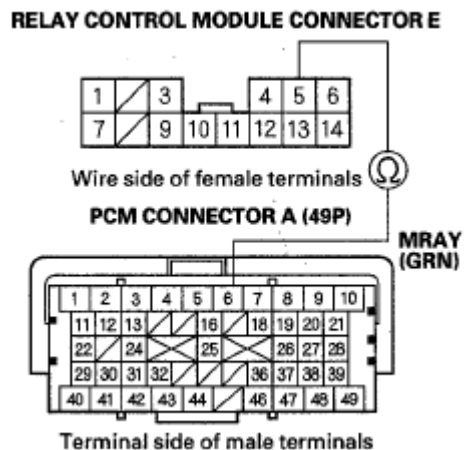


Fig. 10: Identifying Continuity Between Relay Control Module Connector E Terminal No. 5 And PCM Connector Terminal A6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - The system is OK at this time. Check for loose or poor connections at the relay control module connector E and the PCM (A6).

NO - Repair open in the wire between the relay control module connector E terminal No. 5 and the PCM (A6).

SPARK PLUG INSPECTION

1. Remove the spark plugs and inspect the electrodes and the ceramic insulator.
 - Burned or worn electrodes may be caused by:
 - Advanced ignition timing
 - Loose spark plug

- Plug heat range too hot
- Insufficient cooling
- Fouled plugs may be caused by:
 - Retarded ignition timing
 - Oil in combustion chamber
 - Incorrect spark plug gap
 - Plug heat range too cold
 - Excessive idling/low speed running
 - Clogged air cleaner element
 - Deteriorated ignition coils

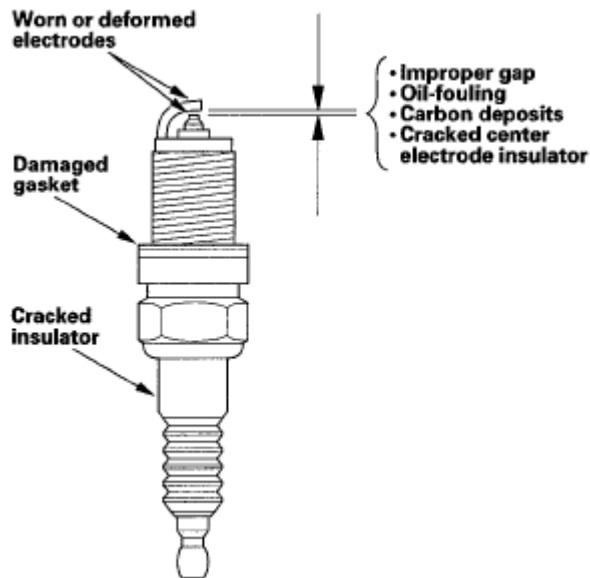


Fig. 11: Identifying Spark Plug Gap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the spark plug electrode is dirty or contaminated, clean the electrode with a plug cleaner.

NOTE:

- Do not use a wire brush or scrape the iridium electrode since this will damage the electrode.
- When using a sand blaster spark plug cleaner, do not clean for more than 20 seconds to avoid damaging the electrode.

3. Do not adjust the gap (A) of iridium tip plugs; replace the spark plug if the gap is out of specification.

Electrode Gap

Standard (New): 1.0-1.1 mm (0.039-0.043 in.)

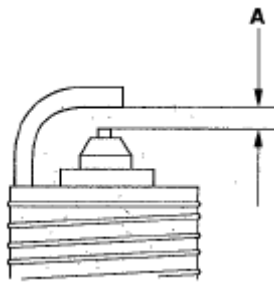


Fig. 12: Identifying Electrode Gap

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Replace the plug at the specified interval, or when the center electrode is rounded (A). Use only the listed spark plugs.

Spark Plugs

NGK: IZFR6K11

DENSO: SKJ20DR-M11

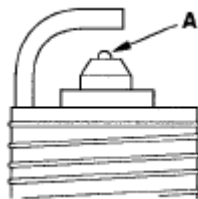


Fig. 13: Identifying Center Electrode

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Apply a small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger-tight. Torque them to 18 N.m (1.8 kgf.m, 13 lbf.ft).

2007-09 ACCESSORIES AND EQUIPMENT

Immobilizer System - MDX

COMPONENT LOCATION INDEX

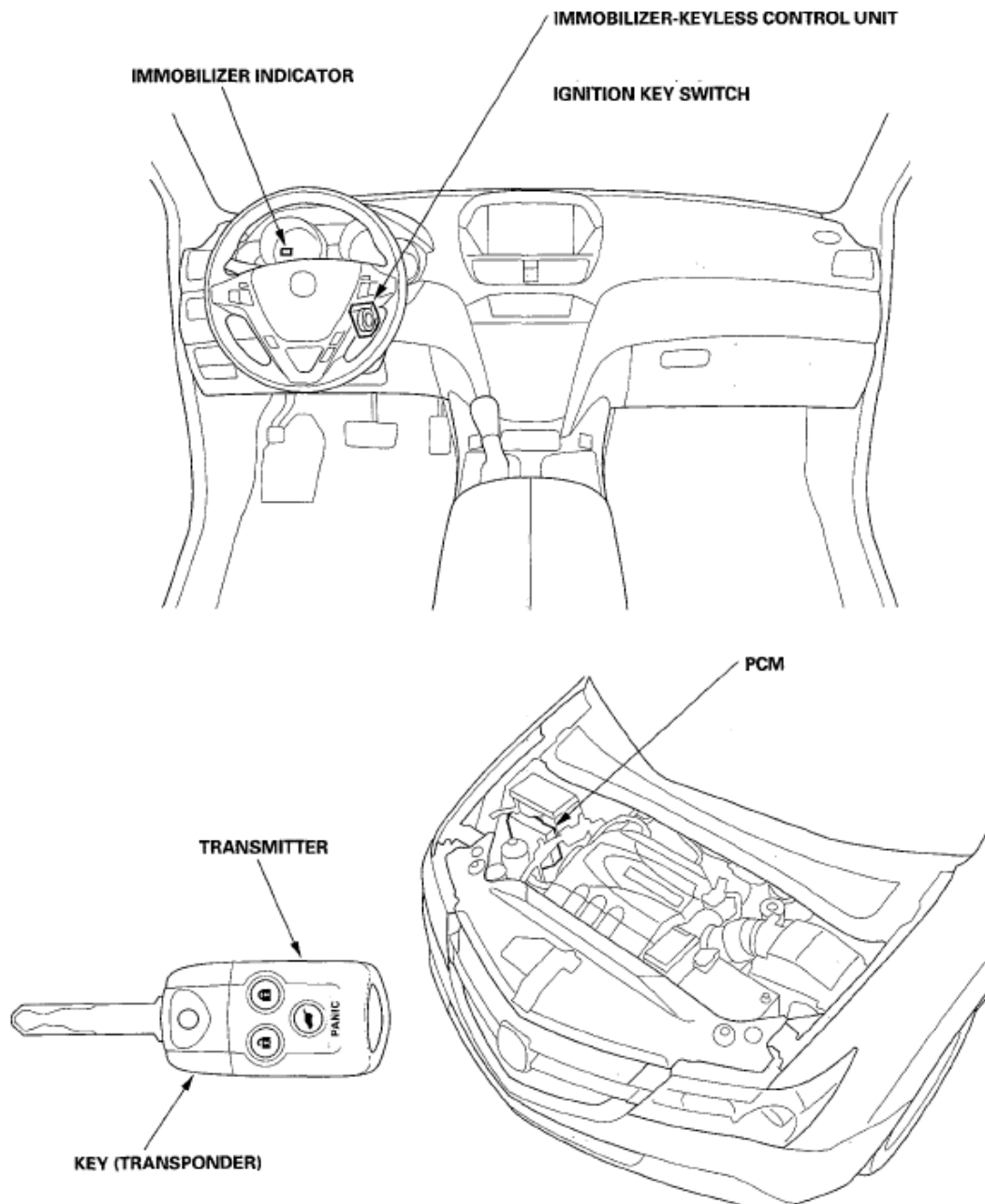


Fig. 1: Identifying Immobilizer System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

The vehicle is equipped with an immobilizer system that will disable the vehicle unless a programmed ignition key is used.

This system consists of a transponder, a keyless transmitter, immobilizer-keyless control unit, immobilizer indicator, imoes unit (built into the MICU), and the PCM.

When the immobilizer key (programmed by the HDS) is inserted into the ignition switch and turned to the ON (II) position, the immobilizer-keyless control unit sends power to the transponder in the ignition key. The transponder then sends a coded signal back to the immobilizer-keyless control unit which then sends a coded signal to the imoes unit, which confirms the code and signals the PCM to continue to supply power to the fuel pump circuit.

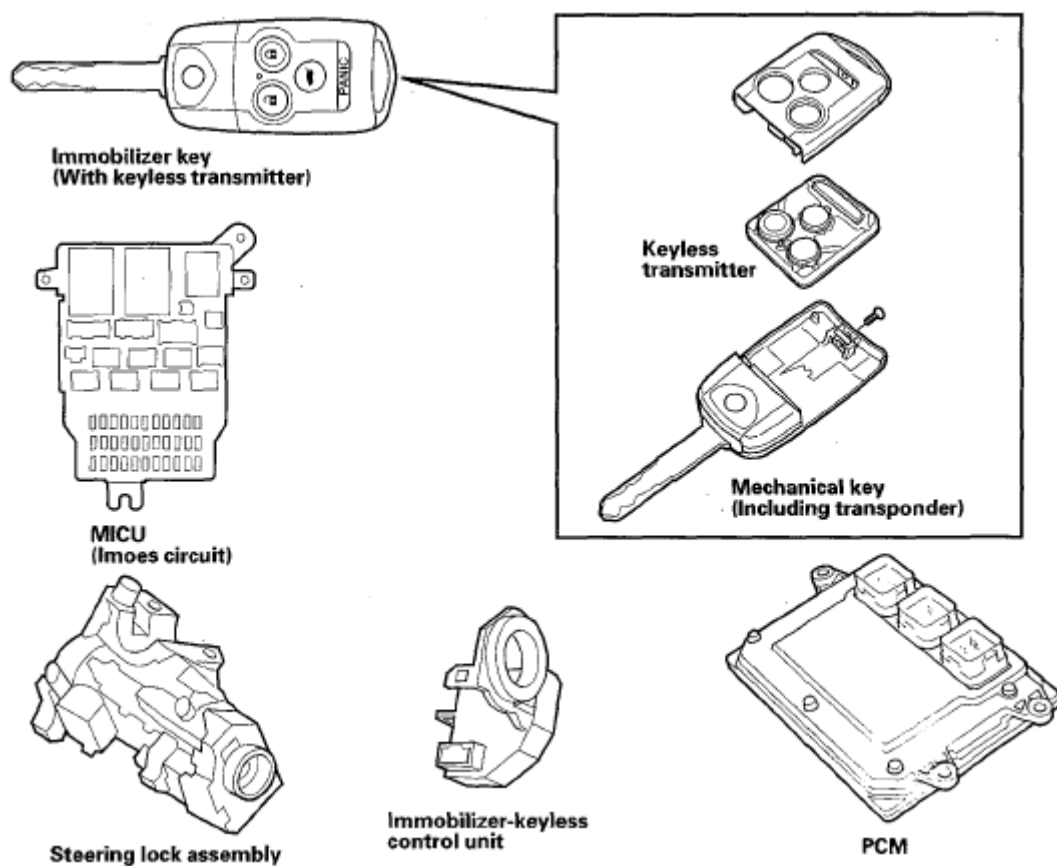


Fig. 2: Identifying Immobilizer System Description
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the wrong key has been used or the code was not received or recognized by the unit, the vehicle will not start, then shut off, and the indicator will quickly flash once, then it will blink until the ignition switch is turned to LOCK (0). When the ignition switch is turned to LOCK (0), the indicator will blink ten times to signal that the unit has reset correctly, then the indicator will go off.

CIRCUIT DIAGRAM

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX



DTC B1905: IMMOBILIZER-KEYLESS CONTROL UNIT LOST COMMUNICATION WITH

DRIVER'S MPCS UNIT (DRLOCKSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1905 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the driver's MPCS unit.

5. Check for DTCs with the HDS.

Are DTCs B1013, B1065, B1182, and/or B1356 also indicated?

YES - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

NO - Do the immobilizer-keyless control unit input test (see **IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST**).

DTC B1906: IMMOBILIZER-KEYLESS CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (A/T MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1906 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1061, B1359, B1808, and B1956 also indicated?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the immobilizer-keyless control unit input test (see **IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST**).

SYMPTOM TROUBLESHOOTING INFORMATION

GENERAL CHECK BEFORE TROUBLESHOOTING

Before troubleshooting the immobilizer system, check the following general items to minimize troubleshooting time:

- If the battery is low; fully charge the battery, then troubleshoot the immobilizer system.
- The ignition key is not a genuine Acura part; use the Acura-approved key blank, register the key, then troubleshoot the immobilizer system.
- Check to see if a key ring, or a key case is used; remove the immobilizer key from it, and troubleshoot the immobilizer system with the immobilizer key only.
- Check to see if an aftermarket electrical part is attached; remove it, then troubleshoot the immobilizer system.

SYMPTOM TROUBLESHOOTING USING THE IMMOBILIZER INDICATOR LIGHTING PATTERN

The blinking pattern of the immobilizer indicator light can help troubleshoot the condition of the immobilizer system. Following are descriptions of the four possible patterns.

Normal operation

If the immobilizer code is identified, the immobilizer indicator comes on for a maximum of 2 seconds, then goes off after turning the ignition switch ON (II).

The immobilizer indicator does not come on when the ignition switch is turned to LOCK (0).

Immobilizer code is not identified

If the immobilizer code is not identified, the immobilizer indicator comes on for a maximum of 2 seconds, then blinks after turning the ignition switch ON (II). The immobilizer indicator blinks ten times, then goes off when the ignition switch is turned to LOCK (0).

The state of the immobilizer key registration and the IM OCD (S-NET) line can be checked by doing a **SYSTEM CHECK** with the HDS (see **SYSTEM CHECK**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

Immobilizer indicator does not come on

If the immobilizer indicator does not come on after turning the ignition switch ON (II), an open or short in the F-CAN lines between the PCM and the gauge control module. Watch the malfunction indicator lamp (MIL). If the MIL stays on, go to the PGM-FI system troubleshooting (see **GENERAL TROUBLESHOOTING INFORMATION**).

Immobilizer indicator does not go off

If the immobilizer indicator does not go off after turning the ignition switch ON (II), do the gauge control module self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). If the indicator drive circuit is OK, do the SYSTEM CHECK with the HDS.

SYMPTOM TROUBLESHOOTING USING MALFUNCTIONING CIRCUIT FUNCTIONS

If a malfunction occurs in the immobilizer circuit, use the table to cross-reference the malfunctioning function to the line(s) that should be checked table:

Function		Immobilizer Indicator	Engine Start	Key Registration	Tester Communication	Keyless Operation
Line Error	Cause of Malfunction					
Terminal No.						
1	VBU line open or short	Comes on, then goes off.	Possible	Impossible	Possible	Impossible
2	IG1 line open or short	Blinking	Impossible	Impossible	Impossible	Possible
3	IM OCD (S-NET) line open or short	Blinking	Impossible	Impossible	Impossible	Possible
4	B-CAN line open or short	Comes on, then goes off.	Possible	Impossible	Immobilizer: Possible Keyless: Impossible	Impossible
5	K-LINE line open or short	Comes on, then goes off.	Possible	Impossible	Impossible	Possible
6	KEYSW line open	Comes on, then goes off.	Possible	Possible	Possible	Possible (in spite of the key is in the ignition switch)
	KEYSW line short to ground					Impossible (panic only works with ignition switch OFF)
7	GND (LG) line open	Blinking	Impossible	Impossible	Impossible	Impossible

Fig. 4: Symptom Troubleshooting Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM CHECK AND STATUS LOG

NOTE: The HDS can be used to:

- Check the state of the immobilizer key registration and the IM OCD (S-NET) line by doing a SYSTEM CHECK.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

- **Check the number of times the immobilizer control unit-receiver doesn't permit the engine to run by checking the STATUS LOG. Troubleshoot the line with the highest count first.**

1. Connect the HDS to the data link connector, then turn the ignition switch ON (II) and follow the prompts to the MAIN MENU.

NOTE: If the HDS does not communicate with the vehicle, go to the DLC circuit troubleshooting (see DLC CIRCUIT TROUBLESHOOTING).

2. At the MAIN MENU, enter IMMOBILIZER, then select the IMMOBILIZER SETUP.
3. Do the SYSTEM CHECK. If there is a system check number, do the troubleshooting for the item indicated.
4. Check the status log using the HDS. Troubleshoot the line with the highest counts. If all the lines are "0" zero, the problem may not be caused by the immobilizer system, check for ignition or fuel problems.

NOTE: Once repaired, clear the status log by removing the No. 7 (10 A) fuse in the under-dash fuse box or disconnecting the immobilizer control unit-receiver.

SYMPTOM TROUBLESHOOTING INDEX

1. Troubleshoot the immobilizer system by the order of the priority shown:

SYMPTOM TROUBLESHOOTING INDEX

Order of Priority	Symptom	Possible cause
1	Immobilizer indicator blinks after the ignition switch is turned to LOCK (0).	Symptom troubleshooting (see Symptom Troubleshooting <u>IMMOBILIZER INDICATOR BLINKS</u>).
2	Engine does not start with the programmed immobilizer key.	Symptom troubleshooting (see <u>ENGINE DOES NOT START WITH THE IMMOBILIZER KEY</u>).
3	Immobilizer indicator does not come on.	Check the MIL indication. • If the MIL comes on, go to the PGM-FI System MIL circuit troubleshooting (see <u>MIL CIRCUIT TROUBLESHOOTING</u>). • If the MIL does not come on, replace the gauge control module.
4	Immobilizer indicator does not go off.	Symptom troubleshooting (see <u>IMMOBILIZER INDICATOR DOES NOT GO OFF</u>).

SYSTEM CHECK

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX**

1. Connect the HDS to the data link connector.
2. Turn the ignition switch ON (II).
3. Monitor the System Check in the Immobilizer Info with the HDS.
4. If the HDS displays the "Immobilizer system is normal", the immobilizer system is OK. If the HDS displays any other messages, check as follows:

SYSTEM CHECK CHART

Status Log No.	System Check	Possible Failures
A-1	Immobilizer system is not normal	• This key is not registered in the immobilizer-keyless control unit. Try to register keys by using "KEYS". • The communication was not good between the antenna and the immobilizer key by influence of metal such as key chains. • The communication was not good between the antenna and the immobilizer key by battery voltage low.
A-2	Immobilizer system is not normal	• Intermittent interruption between transponder and immobilizer-keyless control unit. • The immobilizer key type is different. It is not for this vehicle but for another one or for other company's one. • Key failure (transponder failure) • The communication was not good between the antenna and the immobilizer key by influence of metal such as key chains. • The communication was not good between the antenna and the immobilizer key by battery voltage low.
A-3	Immobilizer system is not normal	• The ignition switch was turned ON (II) with a non-immobilizer key. • The immobilizer key type is different. It is not for this vehicle but for another one or for other company's one. • Key failure (transponder failure) • The communication was not good between the antenna and the immobilizer key by influence of metal such as key chains. • The communication was not good between the antenna and the immobilizer key by battery voltage low. • Immobilizer-keyless control unit failure
B-1	Immobilizer system is not normal	• The PCM was not registered. Try to register the PCM by using "REPLACE PCM". • The communication was not good between the PCM and the immobilizer-keyless control unit by battery voltage low. • The communication was not good between the immobilizer-keyless control unit and the PCM by influence of some noise.

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX**

B-2	Immobilizer system is not normal	• The PCM was not registered. Try to register the PCM by using "REPLACE PCM". • The communication was not good between the PCM and the immobilizer-keyless control unit by battery voltage low. • The communication was not good between the immobilizer-keyless control unit and the PCM by influence of some noise.
D-1	Immobilizer system is not normal	• Harness short from the PCM to the immobilizer-keyless control unit. (IMOCD/S-NET line short) • The communication was not good between the PCM and the immobilizer-keyless control unit by battery voltage low. • The communication was not good between the immobilizer-keyless control unit and the PCM by influence of some noise. • Immobilizer-keyless control unit failure • PCM failure
D-2	Immobilizer system is not normal	• Blown fuse • Harness open from the immobilizer control unit-receiver and the imoes unit. • The communication was not good between the immobilizer control unit-receiver and the imoes unit by influence of some noise.
D-3	Immobilizer system is not normal	• Blown fuse • Harness open from the PCM to the immobilizer-keyless control unit. • The communication was not good between the PCM and the immobilizer-keyless control unit by battery voltage low. • The communication was not good between the immobilizer-keyless control unit and the PCM by influence of some noise. • Immobilizer-keyless control unit failure • PCM failure

STATUS LOG

If you suspect there is a immobilizer system problem, check the status log.

1. Connect the HDS to the data link connector.
2. Turn the ignition switch ON (II).
3. On the HDS screen, select Honda systems, select immobilizer set-up, select immobilizer information, then select status log.
4. Check the Status log count. Troubleshoot the status with the highest count first. If no counts are listed, the immobilizer system is OK. Continue with normal symptom troubleshooting.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

STATUS LOG CHART

Status Log No.	Detected Item	Probable Cause
A-1	KEY CODE MISMATCH (Code format normal, but code data is mismatch)	1. The key was not registered 2. Interference from metal such as key chains 3. Low battery voltage
A-2	KEY CODE MISMATCH (Code format failure)	1. Ignition switch was turned ON (II) with another type of immobilizer key or aftermarket key 2. Interference from metal such as key chains 3. Low battery voltage
A-3	KEY CODE MISMATCH (No key code or non-immobilizer key)	1. Ignition switch was turned ON (II) with another type of immobilizer key or aftermarket key 2. Interference from metal such as key chains 3. Low battery voltage 4. Key failure 5. Immobilizer-keyless control unit failure
B-1	PCM CODE MISMATCH (Code format normal, but code data is mismatch)	1. PCM was not registered correctly 2. Low battery voltage 3. Poor or loose terminal connections at the immobilizer-keyless control unit 4. Communication line electrical noise
B-2	PCM MISMATCH (Code format failure)	1. PCM was not registered correctly 2. Low battery voltage 3. Poor or loose terminal connections at the immobilizer-keyless control unit 4. Communication line electrical noise
D-1	IM OCD/S-NET LINE PROBLEM (Short to ground)	1. Low battery voltage 2. Poor or loose terminal connections at the immobilizer-keyless control unit and the PCM 3. Communication line electrical noise
	IM OCD/S-NET LINE PROBLEM (Open	1. Open or short in the harness from the PCM to the immobilizer-keyless control unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

D-3	line or PCM/immobilizer control unit-receiver failure)	2. Low battery voltage 3. Poor or loose terminal connections at the immobilizer-keyless control unit and the PCM 4. Communication line electrical noise
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SYMPTOM TROUBLESHOOTING

IMMOBILIZER INDICATOR BLINKS

NOTE: Before troubleshooting, check the items listed in "General Check before Troubleshooting".

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS, then turn the ignition switch ON (II).
3. Enter the IMMOBILIZER, then select the IMMOBILIZER SETUP.
4. Check the SYSTEM CHECK and STATUS LOG information.

Is the SYSTEM CHECK indicated?

YES - Troubleshoot the immobilizer system according to the result of the SYSTEM CHECK/ STATUS LOG (see SYSTEM CHECK).

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Enter the vehicle, and remove the ignition key from the ignition switch, then close the all doors.
7. Operate the keyless transmitter LOCK and UNLOCK several times in the vehicle.

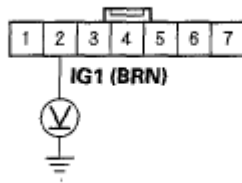
Do the door lock actuators work normally?

YES - Go to step 8.

NO - Check for a poor ground (G101) and/or an open in the wire between the immobilizer-keyless control unit 7P connector No. 7 terminal and PCM connector A (49P) No. 41 terminal.

8. Turn the ignition switch ON (II).
9. Measure the voltage between the immobilizer-keyless control unit 7P connector No. 2 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Fig. 5: Identifying Voltage Between Immobilizer-Keyless Control Unit 7P Connector No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

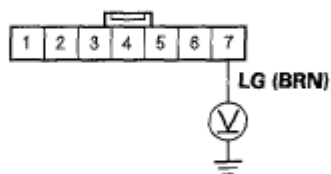
Is there battery voltage?

YES - Go to step 10.

NO - Check No. 19 (20 A) fuse in the under-dash fuse/relay box or for an open in the BRN wire between the under-dash fuse-relay box and the immobilizer-keyless control unit.

10. Measure the voltage between the immobilizer-keyless control unit 7P connector No. 7 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Fig. 6: Identifying Voltage Between Immobilizer-Keyless Control Unit 7P Connector No. 7 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES - Replace the immobilizer-keyless control unit.

NO - Check for a poor ground (G101) and/or repair poor connection or open between the immobilizer-keyless control unit 7P connector No. 7 terminal and PCM connector A (49P) No. 41 terminal.

NOTE: Before troubleshooting, check the items listed in "General Check before Troubleshooting" and "How to Troubleshoot" (see GENERAL CHECK BEFORE TROUBLESHOOTING).

1. Try to start the engine.

Does the engine start?

YES - Intermittent failure, the vehicle is OK at this time. Check status log (see STATUS LOG).

NO - Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Turn the ignition switch ON (II), and check the immobilizer indicator indication.

Does the indicator quickly flash twice and turn off?

YES - Go to step 4.

NO - Do the immobilizer-keyless control unit input test (see IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST).

4. Turn the ignition switch to START (III).

Does the starter crank the engine?

YES - Go to step 5.

NO - Go to Starting System troubleshooting and check the starter motor circuit.

5. Try to start the engine with a different known-good immobilizer key (previously programmed and known to start the vehicle).

Does the engine start?

YES - Replace the immobilizer key.

NO - Go to the PGM-FI System Symptom Troubleshooting.

IMMOBILIZER INDICATOR DOES NOT GO OFF

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Enter the IMMOBILIZER, then select the IMMOBILIZER INFORMATION.

5. Do the SYSTEM CHECK with the HDS.

Is N-1 OK indicated?

YES - Do the gauge control module self-test. If the gauge control module is faulty, replace it.

NO - Substitute a known-good immobilizer-keyless control unit, then register it and recheck. If the symptom goes away, replace the original immobilizer-keyless control unit.

IMMOBILIZER KEY REGISTRATION

NOTE:

- The HDS is required for registration of the immobilizer keys.
- Check for aftermarket electrical equipment that can cause problems with transponder operation.
- The immobilizer-keyless control unit can store up to six immobilizer Keys.

ADD ONE NEW KEY

1. Have a registered key, a new immobilizer key, and the first password from the iN system.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete Keys", then "Add 1 key".
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started by the newly registered key. Check the keyless remote operation to make sure that it functions properly.

DELETE OR ADD MULTIPLE KEYS

NOTE:

- If any of the registered keys were lost, do the following procedure to delete the lost registered key.
- When deleting keys, it is necessary to delete all stored remote transmitters. Refer to the keyless transmitter programming to delete and reprogram the remote (see TRANSMITTER TEST/REPLACEMENT).

1. Have all registered keys, all new keys, and the first password.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete Keys", or "Delete or Add Multiple Keys".
6. Do the registration according to the instruction of HDS screen.

7. Check if the engine can be started by all the registered keys.

ALL KEYS ARE LOST

NOTE: When deleting keys, it is necessary to delete all stored remote transmitters. Refer to the keyless transmitter programming to delete and reprogram the remote (see TRANSMITTER TEST/REPLACEMENT).

1. Prepare all new keys and have the immobilizer PCM code.
2. Connect the HDS to the data link connector.
3. Turn the ignition switch ON (II).
4. Select "IMMOBILIZER" from the "SYSTEM SELECT" menu.
5. Select "Add and Delete Keys", then "ALL KEYS LOST".
6. Do the registration according to the instruction of HDS screen.
7. Check if the engine can be started by all the registered keys.

IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST

NOTE: Before testing the immobilizer-keyless control unit, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A) and check the No. 19 (20 A) and No. 7 (10 A) fuses in the under-dash fuse/relay box.

1. Remove the steering column covers (see COLUMN COVER REMOVAL/INSTALLATION).
2. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).

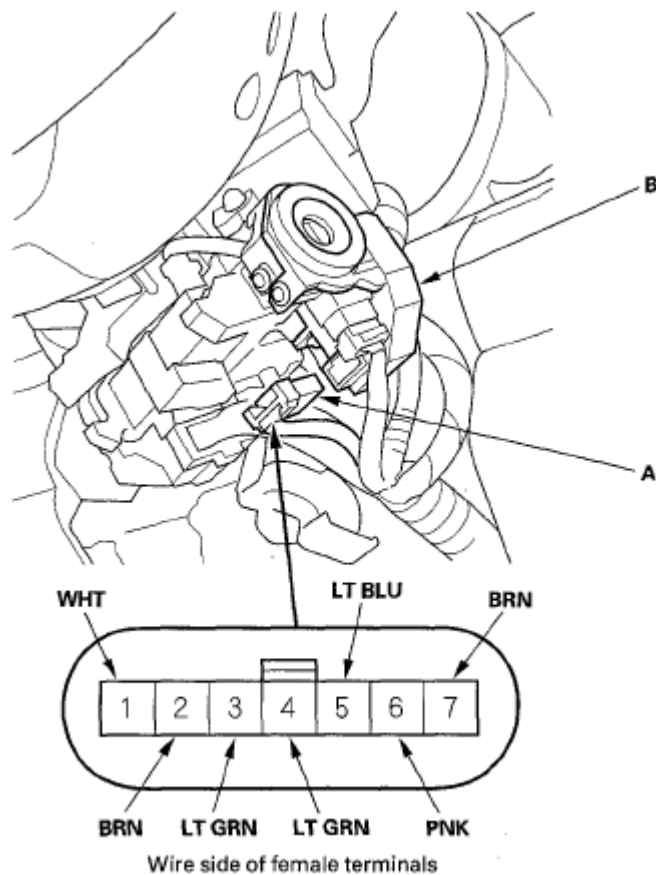


Fig. 7: Identifying 7P Connector And Immobilizer-Keyless Control Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 4.
4. With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 5.

IMMOBILIZER-KEYLESS CONTROL UNIT INPUT

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
			Check for continuity between the No. 3 terminal and the PCM connector A (49P) No. 46 terminal: There should be continuity.	An open in the

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

3	LT GRN (IMOCD (S-NET))	Immobilizer-keyless control unit 7P connector, the PCM connector A (49P), and the under-dash fuse/relay box connector Q (14P) disconnected.	Check for continuity between the No. 3 terminal and under-dash fuse/relay box connector Q (14P) No. 9 terminal: There should be continuity.	wire
			Check for continuity to body ground: There should be no continuity.	A short to ground in the wire
4	LT GRN (B-CAN)	Immobilizer-keyless control unit 7P connector, the under-dash fuse/relay box connector X(39P) disconnected.	Check for continuity between the No. 4 terminal and under-dash fuse/relay box connector X (39P) No. 27 terminal: There should be continuity.	An open in the wire
			Check for continuity to body ground: There should be no continuity.	A short to ground in the wire
5	LT BLU (K-LINE)	Immobilizer-keyless control unit 7P connector disconnected.	Check for continuity between the No. 5 terminal and the data link connector (16P) Non terminal: There should be continuity.	An open in the wire
			Check for continuity to body ground: There should be no continuity.	A short to ground in the wire

5. Reconnect the connector to the immobilizer-keyless control unit, and make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the immobilizer-keyless control unit must be faulty; replace it.

IMMOBILIZER-KEYLESS CONTROL UNIT INPUT

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	WHT (VBU)	Under all conditions	Measure the voltage to body ground: There should be battery voltage.	• Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • An open in the wire
			Measure the voltage to ground:	• Blown No. 19 (20 A) fuse in the under-dash fuse/relay

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

2	BRN (IG1)	Ignition switch ON (II)	There should be battery voltage.	box • An open in the wire
7	BRN (LG3)	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G101) • An open in the wire Faulty PCM
6	PNK (IG KEY SW)	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G601) • Faulty ignition key switch • An open in the wire

IMMOBILIZER-KEYLESS CONTROL UNIT REPLACEMENT

NOTE: All registered keys are necessary for replacement of the immobilizer-keyless control unit.

1. Remove the driver's dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).

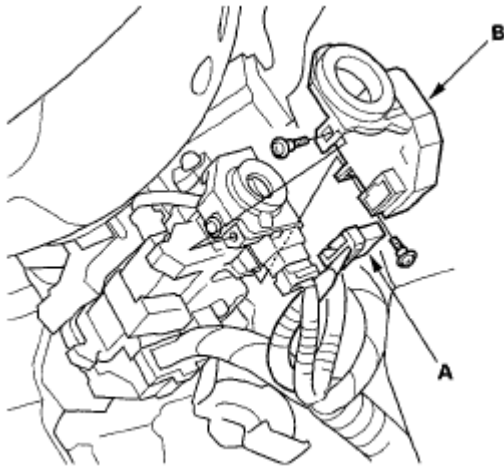


Fig. 8: Identifying 7P Connector And Immobilizer-Keyless Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws and the immobilizer-keyless control unit from the ignition key cylinder.
5. Install the immobilizer-keyless control unit in the reverse order of removal.
6. After replacement, turn the ignition switch ON (II).
7. Connect the HDS to the data link connector.
8. Select "IMMOBI" from the "System Select" menu.
9. Select "Immobilizer Setup" from the "Mode Menu".

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Immobilizer System - MDX

10. Select "Replace Imm Unit".
11. Operate according to instructions of a screen of HDS.
12. After HDS operation, check the immobilizer system.
13. Verify the operation of every key and remote transmitter.

2007-09 ENGINE PERFORMANCE

Intake Air System - MDX

COMPONENT LOCATION INDEX

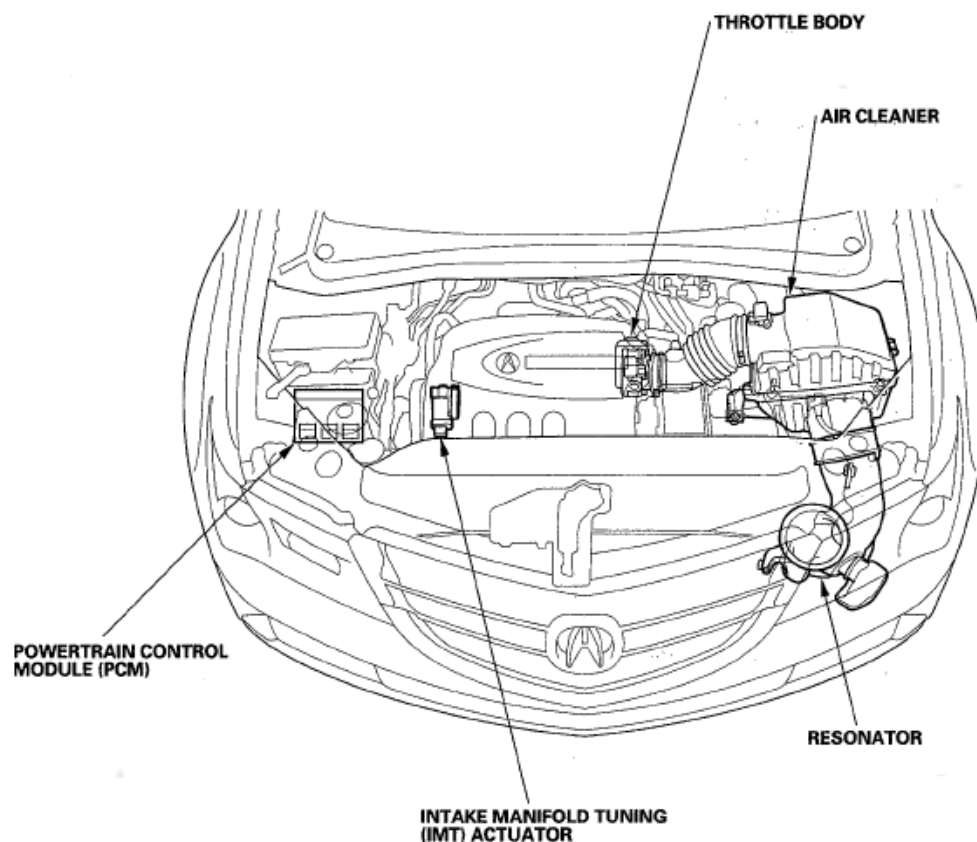


Fig. 1: Identifying Intake Air System Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P1077: IMT VALVE STUCK IN HIGH RPM POSITION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and then let it idle without load (in Park or neutral) until the radiator fan comes on.
4. Start the engine, and hold the engine speed above 3 800 rpm.

5. Check the IMT VALVE CMD in the DATA LIST with the HDS.

Is OPEN indicated?

YES - Go to step 6.

NO - Go to step 35.

6. Check the IMT VALVE SW in the DATA LIST with the HDS.

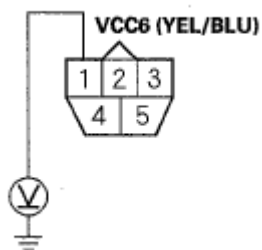
Is CLOSE indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IMT actuator and the PCM.

7. Let the engine idle, then turn the ignition switch OFF.
8. Disconnect the IMT actuator 5P connector.
9. Turn the ignition switch ON (II).
10. Measure voltage between IMT actuator 5P connector terminal No. 1 and body ground.

IMT ACTUATOR 5P CONNECTOR



Wire side of female terminals

Fig. 2: Identifying Voltage Between IMT Actuator 5P Connector Terminal No. 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

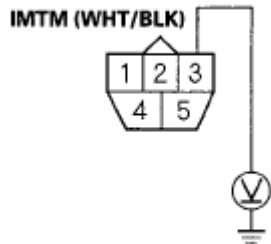
Is there about 5 V?

YES - Go to step 11.

NO - Repair open in the wire between the PCM (C11) and the IMT actuator, then go to step 26.

11. Measure voltage between IMT actuator 5P connector terminal No. 3 and body ground.

IMT ACTUATOR 5P CONNECTOR



Wire side of female terminals

Fig. 3: Identifying Voltage Between IMT Actuator 5P Connector Terminal No. 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

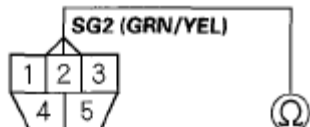
Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

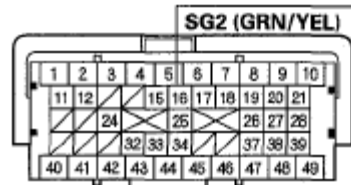
12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (49P).
15. Check for continuity between PCM connector terminal C16 and IMT actuator 5P connector terminal No. 2.

IMT ACTUATOR 5P CONNECTOR



Wire side of female terminals

PCM CONNECTOR C (49P)



Terminal side of female terminals

Fig. 4: Identifying Continuity Between PCM Connector Terminal C16 And IMT Actuator 5P Connector Terminal No. 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire between the PCM (C16) and the IMT actuator, then go to step 26.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector B (49P).
19. Check for continuity between PCM connector terminal B19 and IMT actuator 5P connector terminal No. 3.

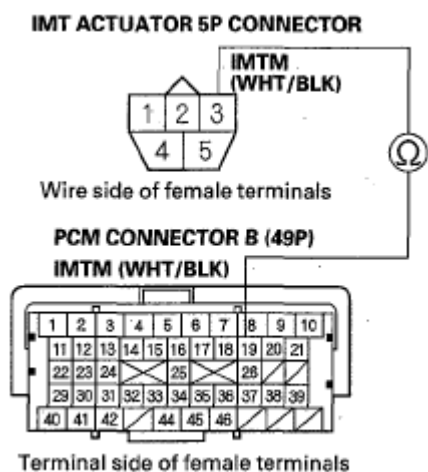


Fig. 5: Identifying Continuity Between PCM Connector Terminal B19 And IMT Actuator 5P Connector Terminal No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 34.

NO - Repair open in the wire between the PCM (B19) and the IMT actuator, then go to step 26.

20. Check for continuity between PCM connector terminal C48 and body ground.

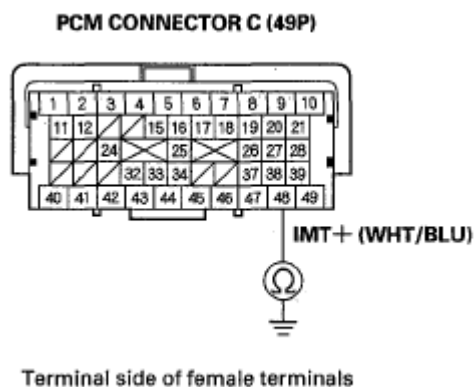


Fig. 6: Identifying Continuity Between PCM Connector Terminal C48 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C48) and the IMT actuator, then go to step 26.

NO - Go to step 21.

21. Check for continuity between PCM connector terminal C48 and IMT actuator 5P connector terminal No. 5.

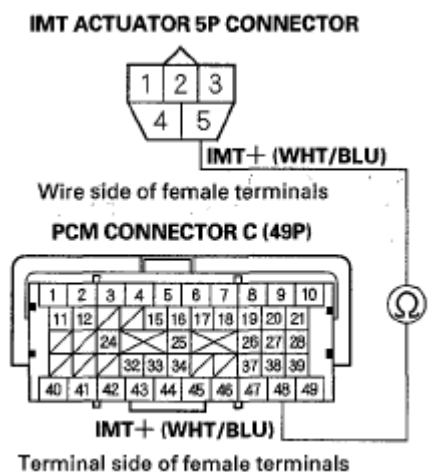


Fig. 7: Identifying Continuity Between PCM Connector Terminal C48 And IMT Actuator 5P Connector Terminal No. 5

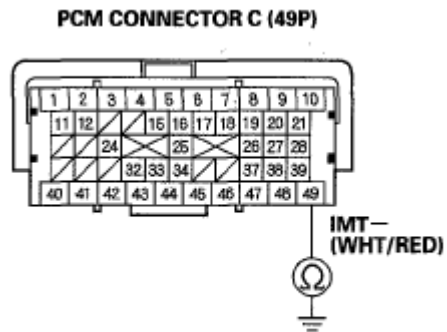
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the PCM (C48) and the IMT actuator, then go to step 26.

22. Check for continuity between PCM connector terminal C49 and body ground.



Terminal side of female terminals

Fig. 8: Identifying Continuity Between PCM Connector Terminal C49 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C49) and the IMT actuator, then go to step 26.

NO - Go to step 23.

23. Check for continuity between PCM connector terminal C49 and IMT actuator 5P connector terminal No. 4.

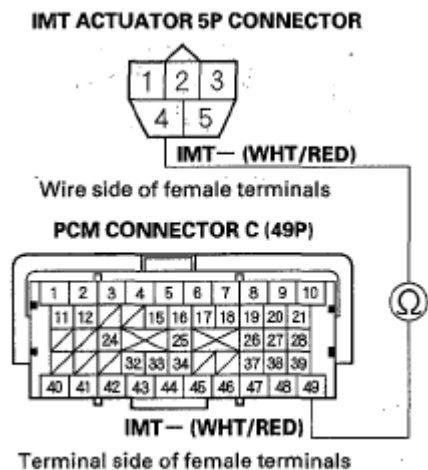


Fig. 9: Identifying Continuity Between PCM Connector Terminal C49 And IMT Actuator 5P Connector Terminal No. 4
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair open in the wire between the PCM (C49) and the IMT actuator, then go to step 26.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Intake Air System - MDX

24. Remove the IMT actuator (see **IMT ACTUATOR REPLACEMENT**).
25. Move the IMT valve by hand.

Does it move smoothly?

YES - Substitute a known-good IMT actuator (see **IMT ACTUATOR REPLACEMENT**), then go to step 26 and recheck. If DTC P1078 is not indicated, replace the IMT actuator (see **IMT ACTUATOR REPLACEMENT**), then go to step 26. If DTC P1078 is indicated, go to step 35.

NO - Remove the engine cover (see step 1 on **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), and repair the stuck valve. If necessary, replace the intake manifold (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), then go to step 26.

26. Reconnect all connectors.
27. Turn the ignition switch ON (II).
28. Reset the PCM with the HDS.
29. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
30. Start the engine, and then let it idle without load (in Park or neutral) until the radiator fan comes on.
31. Start the engine, and hold the engine speed at 3,800 rpm for 10 seconds, then let it idle.
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1077 indicated?

YES - Check for poor connections or loose terminals at the IMT actuator and the PCM, then go to step 1.

NO - Go to step 33.

33. Monitor the OBD STATUS for DTC P1077 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 32, go to .

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 31.

34. Reconnect all connectors.
35. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
36. Start the engine, and then let it idle without load (in Park or neutral) until the radiator fan comes on.
37. Start the engine, and hold the engine speed at 3,800 rpm for 10 seconds, then let it idle.
38. Check for Temporary DTCs or DTCs with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Intake Air System - MDX

Is DTC P1077 indicated?

YES - Check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1.

NO - Go to step 39.

39. Monitor the OBD STATUS for DTC P1077 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 38, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 37. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 37.

DTC P1078: IMT VALVE STUCK IN LOW RPM POSITION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle.
4. Check the IMT VALVE CMD in the DATA LIST with the HDS.

Is CLOSE indicated?

YES - Go to step 5.

NO - Go to step 29.

5. Check the IMT VALVE SW in the DATA LIST with the HDS.

Is OPEN indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IMT actuator and the PCM.

6. Turn the ignition switch OFF.
7. Disconnect the IMT actuator 5P connector.
8. Turn the ignition switch ON (II).
9. Check the IMT VALVE SW in the DATA LIST with the HDS.

Is CLOSE indicated?

YES - Go to step 14.

NO - Go to step 10.

10. Turn the ignition switch OFF.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (49P).
13. Check for continuity between PCM connector terminal B19 and body ground.

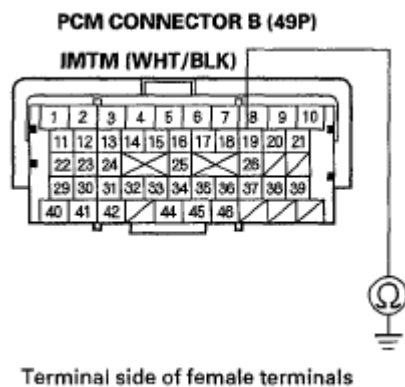


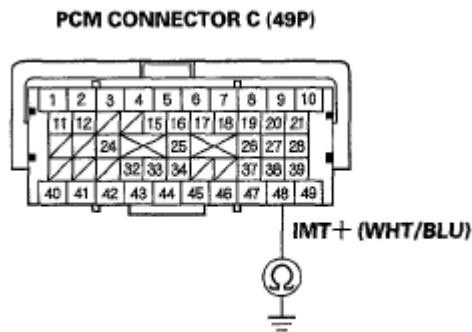
Fig. 10: Identifying Continuity Between PCM Connector Terminal B19 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B19) and the IMT actuator, then go to step 23.

NO - Go to step 30.

14. Turn the ignition switch OFF.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector C (49P).
17. Check for continuity between PCM connector terminal C48 and body ground.



Terminal side of female terminals

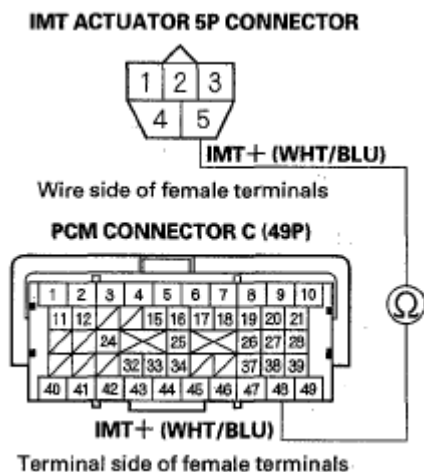
Fig. 11: Identifying Continuity Between PCM Connector Terminal C48 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C48) and the IMT actuator, then go to step 23.

NO - Go to step 18.

18. Check for continuity between PCM connector terminal C48 and IMT actuator 5P connector terminal No. 5.



Wire side of female terminals

PCM CONNECTOR C (49P)

Terminal side of female terminals

Fig. 12: Identifying Continuity Between PCM Connector Terminal C48 And IMT Actuator 5P Connector Terminal No. 5
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the PCM (C48) and the IMT actuator, then go to step 23.

19. Check for continuity between PCM connector terminal C49 and body ground.

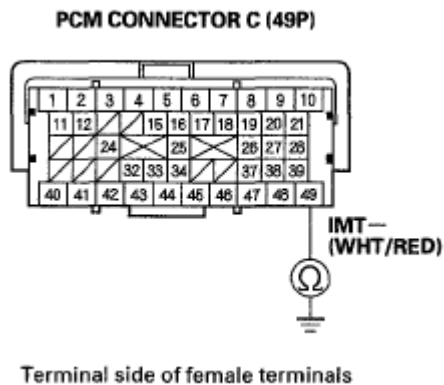


Fig. 13: Identifying Continuity Between PCM Connector Terminal C49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C49) and the IMT actuator, then go to step 23.

NO - Go to step 20.

20. Check for continuity between PCM connector terminal C49 and IMT actuator 5P connector terminal No. 4.

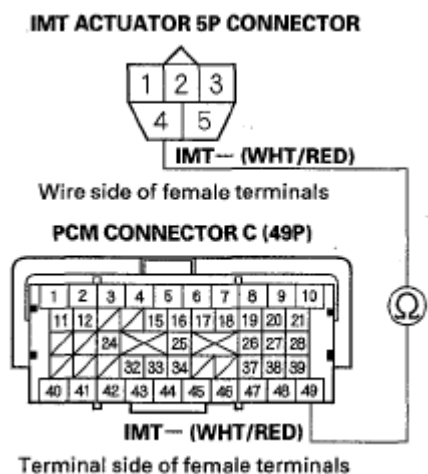


Fig. 14: Identifying Continuity Between PCM Connector Terminal C49 And IMT Actuator 5P Connector Terminal No. 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE Intake Air System - MDX

NO - Repair open in the wire between the PCM (C49) and the IMT actuator, then go to step 23.

21. Remove the IMT actuator (see **IMT ACTUATOR REPLACEMENT**).
22. Move the IMT valve by hand.

Does it move smoothly?

YES - Substitute a known-good IMT actuator (see **IMT ACTUATOR REPLACEMENT**), then go to step 23 and recheck. If DTC P1077 is not indicated, replace the IMT actuator (see **IMT ACTUATOR REPLACEMENT**), then go to step 23. If DTC P1077 is indicated, go to step 31.

NO - Remove the engine cover (see step 1 on **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), and repair the stuck valve. If necessary, replace the intake manifold (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**), then go to step 23.

23. Reconnect all connectors.
24. Turn the ignition switch ON (II).
25. Reset the PCM with the HDS.
26. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1077 indicated?

YES - Check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for DTC P1078 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 27, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

29. Turn the ignition switch OFF.
30. Reconnect all connectors.
31. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good

PCM (see **SUBSTITUTING THE PCM**).

32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1078 indicated?

YES - Check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 33.

33. Monitor the OBD STATUS for DTC P1078 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 32, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the IMT actuator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

THROTTLE BODY TEST

CARBON ACCUMULATION CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

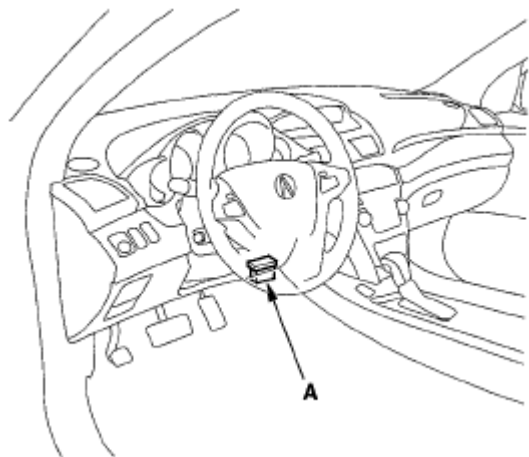


Fig. 15: Identifying Data Link Connector

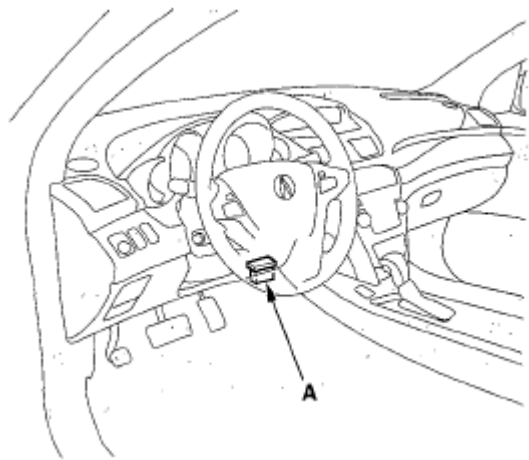
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Check the REL TP SENSOR in the DATA LIST with the HDS. The reading should be below 4.3 deg. If it is not, clean the throttle body (see **THROTTLE BODY CLEANING**).

THROTTLE POSITION LEARNING CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

**Fig. 16: Identifying Data Link Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select the INSPECTION MENU with the HDS.
5. Do the TP POSITION CHECK in the ETCS TEST. If needed, clean the throttle body (see **THROTTLE BODY CLEANING**).

THROTTLE BODY CLEANING

CAUTION: Do not insert your fingers into the installed throttle body when you turn

the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

1. Make sure the ignition switch is turned OFF.
2. Check for damage to the air cleaner. If the air cleaner is damaged, replace it (see **AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT**).
3. Remove the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
4. Clean off the carbon from the throttle valve and inside the throttle body with a paper towel soaked in throttle plate and induction cleaner.

NOTE:

- Remove the throttle body to clean it.
- Be careful not to pinch your fingers.
- To avoid removing the molybdenum coating, do not clean the bearing area of the throttle shaft (A).
- Do not spray throttle plate and induction cleaner directly on the throttle body.
- Use Acura genuine throttle plate and induction cleaner.

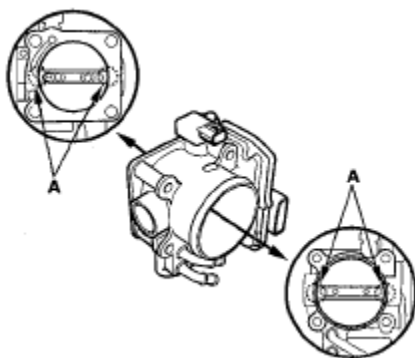


Fig. 17: Identifying Throttle Valve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
6. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

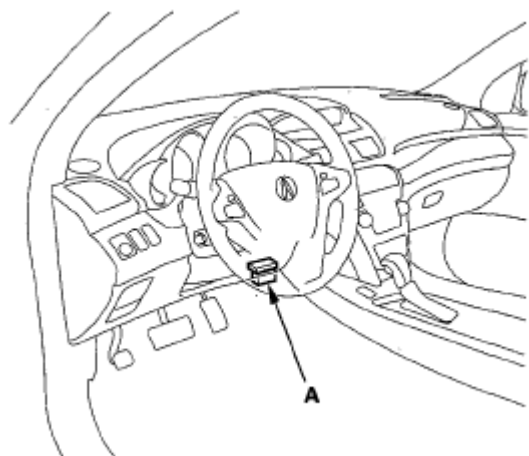


Fig. 18: Identifying Data Link Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Turn the ignition switch ON (II).
8. Make sure the HDS communicates with the PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
9. Reset the PCM with the HDS.
10. Select the ETCS TEST in the INSPECTION MENU with the HDS.
11. Select the TP POSITION CHECK and clear the throttle position (TP) learned value.
12. Turn the ignition switch OFF.
13. Turn the ignition switch ON (II), and wait 2 seconds without pressing the accelerator pedal.

AIR CLEANER REMOVAL/INSTALLATION

1. Disconnect the MAF sensor/IAT sensor connector (A).

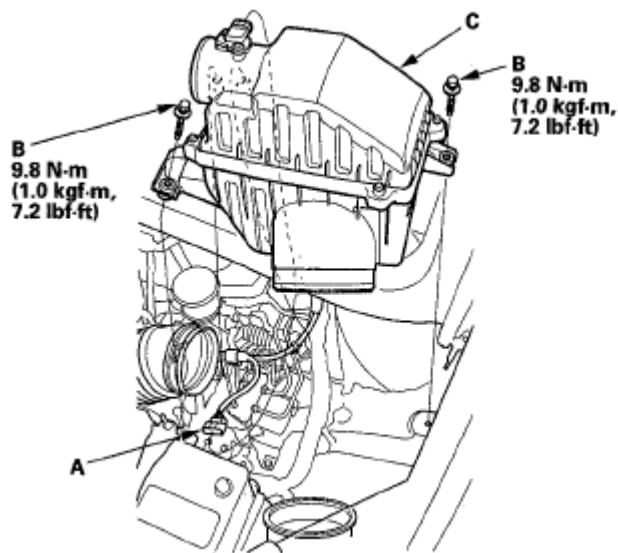


Fig. 19: Identifying Air Cleaner Remove / Install Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolts (B).
3. Remove the air cleaner (C).
4. Install the parts in the reverse order of removal.

AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT

1. Open the air cleaner housing cover (A).

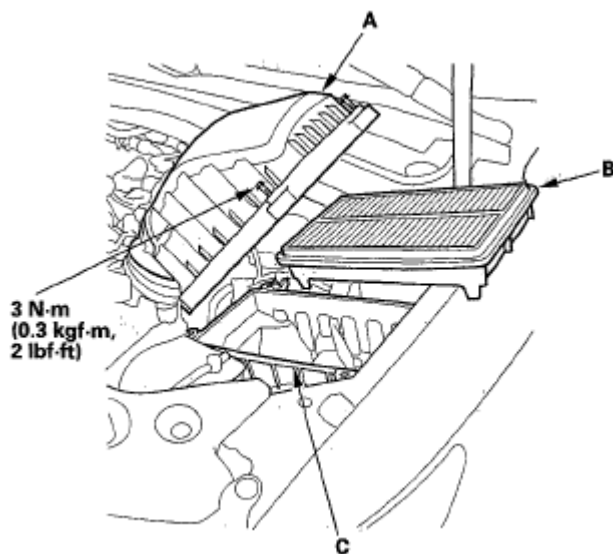


Fig. 20: Identifying Air Cleaner Housing Cover And Air Cleaner Element With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the air cleaner element (B) from the air cleaner housing (C).
3. Check the air cleaner element for damage or clogging. If there is damage or clogging, replace the air cleaner element.

NOTE: Do not use compressed air to clean the air cleaner element.

4. Clean and remove any debris from inside the air cleaner housing.
5. Install the parts in the reverse order of removal.
 - If you did not replace the air cleaner element, this procedure is complete.
 - If the maintenance minder required to the air cleaner element, reset the maintenance minder (See **RESETTING THE MAINTENANCE INFORMATION DISPLAY**).
 - If you replace the air cleaner element, reset the PCM with the HDS, and do the PCM idle learn procedure (See **PCM IDLE LEARN PROCEDURE**).

RESONATOR REMOVAL/INSTALLATION

1. Remove the air cleaner.
2. Do the battery terminal disconnection procedure. (See **DISCONNECTION**).
3. Remove the battery.
4. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**).
5. Remove the left side headlight (see **HEADLIGHT REPLACEMENT**).
6. Remove the clips (A) and cover (B).

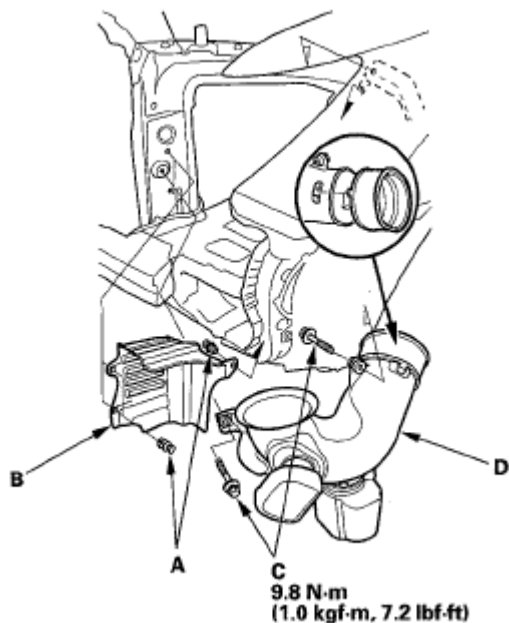


Fig. 21: Identifying Resonator Remove / Install Components With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the bolts (C), and resonator (D).
8. Install the parts in the reverse order of removal.
9. Do the battery terminal reconnection procedure(See **RECONNECTION**
10. Adjust the headlight to local requirements (see **HEADLIGHT ADJUSTMENT**).

IMT ACTUATOR REPLACEMENT

1. Remove the engine cover (see step 1 **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
2. Disconnect the IMT actuator connector (A).

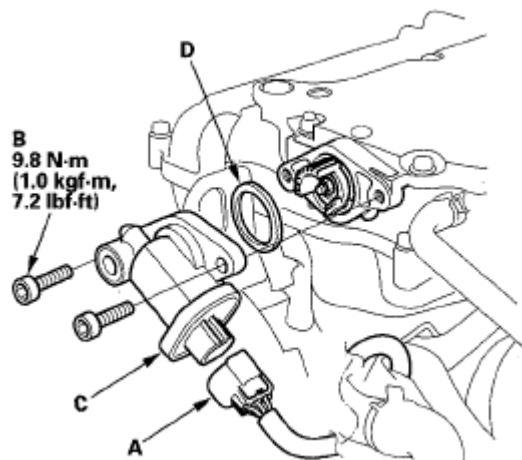


Fig. 22: Identifying IMT Actuator Connector And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts (B) and the IMT actuator (C).
4. Install the parts in the reverse order of removal with a new O-ring (D).

THROTTLE BODY REMOVAL/INSTALLATION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: If you are replacing the throttle body, begin at step 1. If you are removing the throttle body temporarily, begin at step 5.

1. Connect the HDS while the engine is stopped.
2. Select the INSPECTION MENU with the HDS.

3. Do the TP POSITION CHECK in the ETCS TEST.
4. Turn the ignition switch OFF.
5. Disconnect the MAP sensor connector (A).

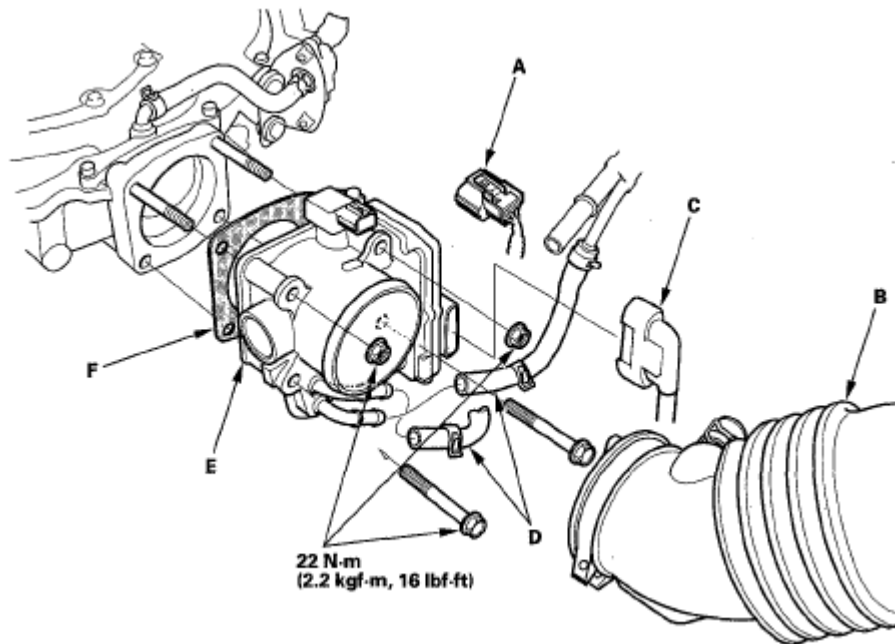


Fig. 23: Identifying Throttle Body Remove / Install Components With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the intake air duct (B).
7. Disconnect the throttle body connector (C).
8. Disconnect and plug the water bypass hoses (D).
9. Remove the throttle body (E).
10. Install the parts in the reverse order of removal with a new gasket (F).

NOTE:

- Do the PCM idle learn procedure after the throttle body has been replaced (see PCM IDLE LEARN PROCEDURE).
- Refill the radiator with engine coolant (see COOLANT CHECK).

2007-09 ENGINE

Intake Manifold and Exhaust System - MDX

INTAKE MANIFOLD REMOVAL AND INSTALLATION

EXPLODED VIEW

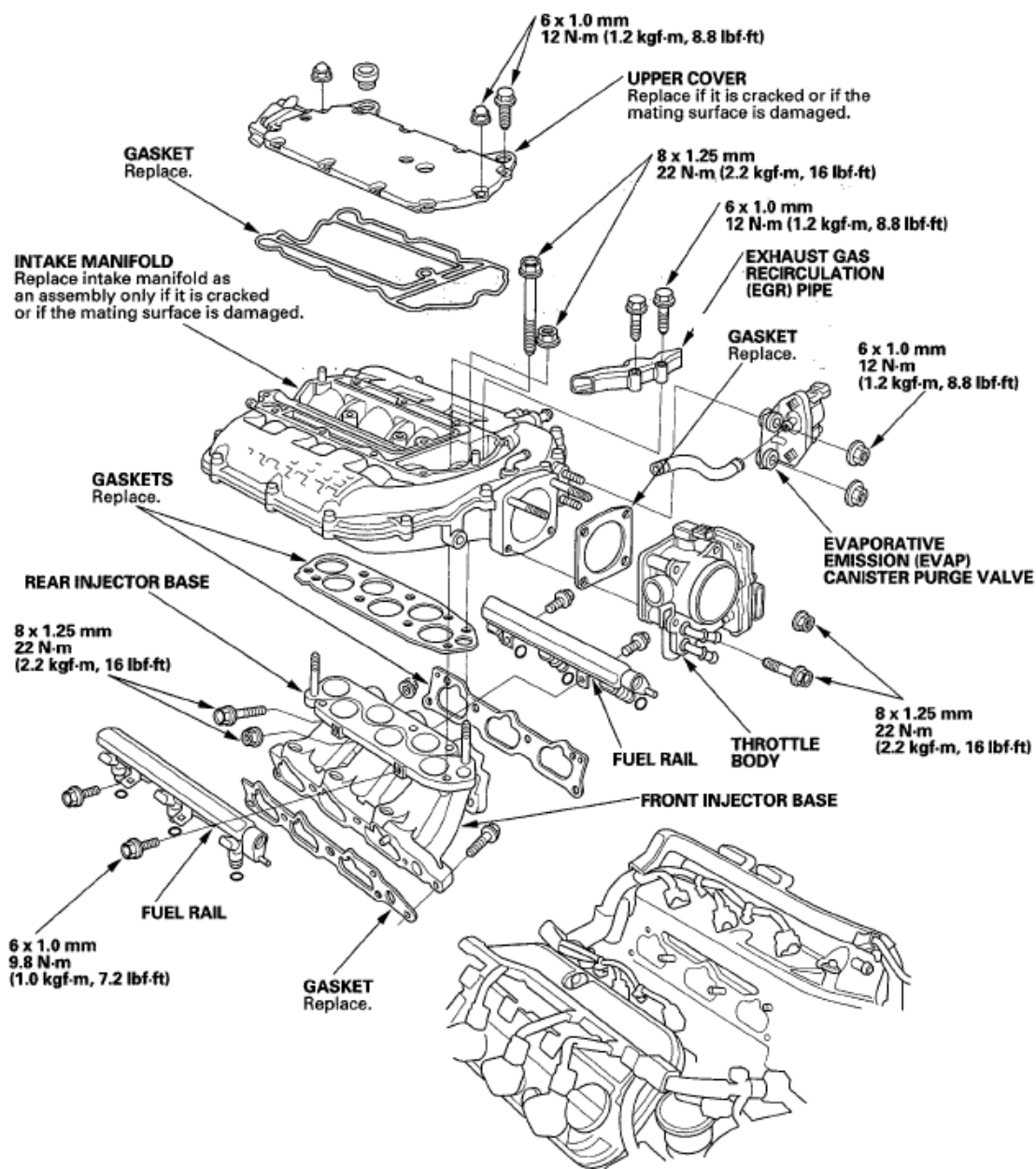


Fig. 1: Exploded View Of Intake Manifold Removal And Installation With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REMOVAL

1. Remove the engine cover.

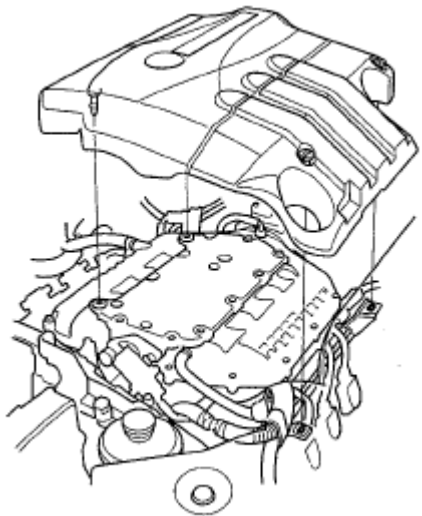


Fig. 2: Identifying Engine Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the breather pipe +(A), then remove the intake air duct (B).

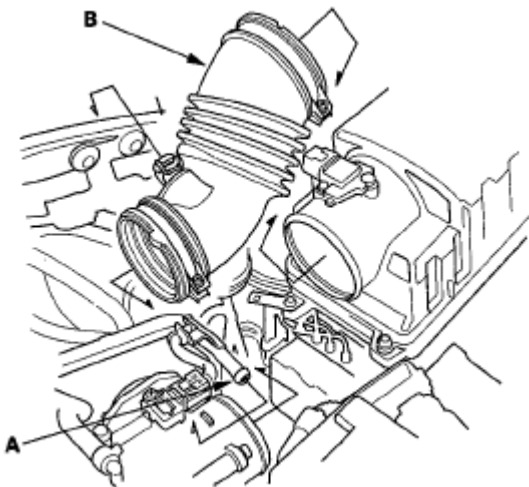


Fig. 3: Identifying Breather Pipe And Intake Air Duct

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the positive crankcase ventilation (PCV) hose (A), brake booster vacuum hose (B), vacuum hose (C), and intake manifold tuning (IMT) actuator connector (D).

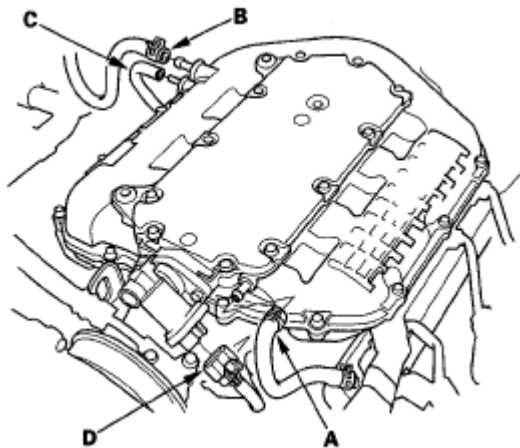


Fig. 4: Identifying PCV Hose, Brake Booster Vacuum Hose, Vacuum Hose, And Intake Manifold Tuning (IMT) Actuator Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the evaporative emission (EVAP) canister hose (A), EVAP canister purge valve connector (B), throttle actuator connector (C), and manifold absolute pressure (MAP) sensor connector (D).

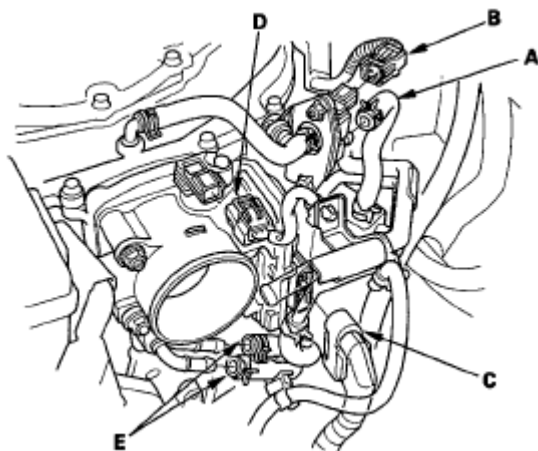


Fig. 5: Identifying EVAP Canister Hose, EVAP Canister Purge Valve Connector, Throttle Actuator Connector, And MAP Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect and plug the water bypass hoses (E).
6. Remove the upper cover mounting bolts and nuts sequentially in three steps, then remove the upper cover.

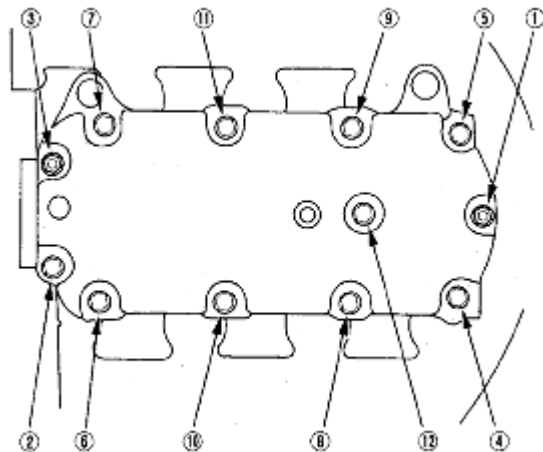


Fig. 6: Identifying Loosening Sequence Of Upper Cover Mounting Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the intake manifold mounting bolts and nuts sequentially in three steps, then remove the intake manifold.

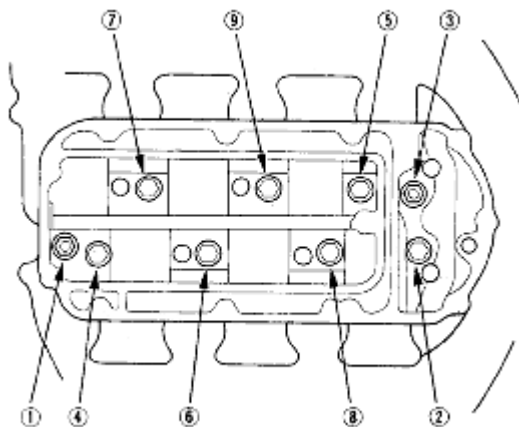


Fig. 7: Identifying Loosening Sequence Of Intake Manifold Mounting Bolts And Nuts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the new intake manifold gasket on the injector base.
2. Install the intake manifold. Tighten the bolts and nuts sequentially in three steps.

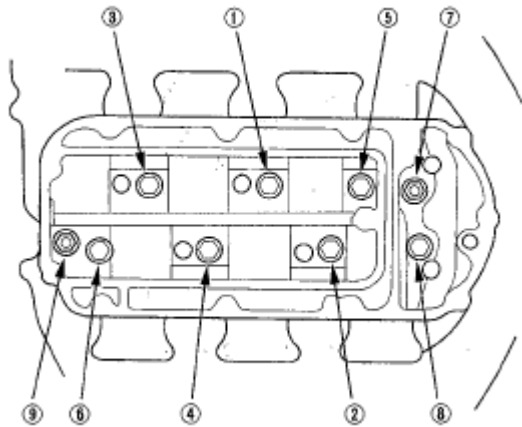


Fig. 8: Identifying Tightening Sequence Of Intake Manifold Mounting Bolts And Nuts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the upper cover. Tighten the bolts and nuts sequentially in three steps. Always use a new gasket.

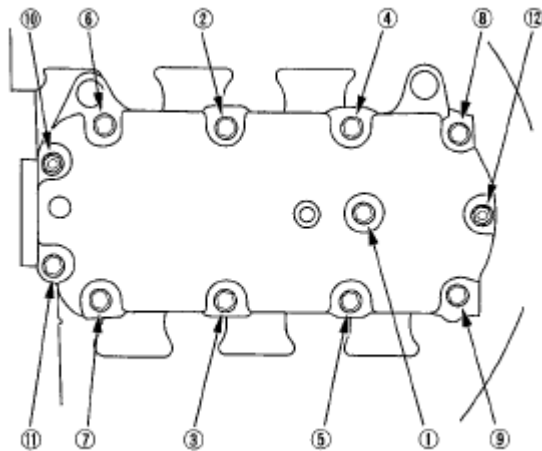


Fig. 9: Identifying Tightening Sequence Of Upper Cover Mounting Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the EVAP canister hose (A) and water bypass hoses (B).

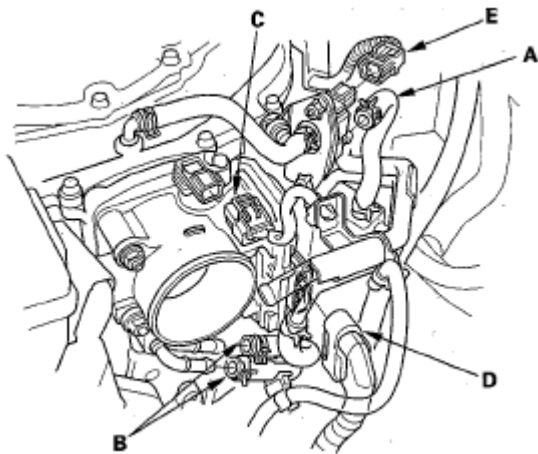


Fig. 10: Identifying EVAP Canister Hose, Water Bypass Hoses, MAP Sensor Connector And Throttle Actuator Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the MAP sensor connector (C), throttle actuator connector (D) and EVAP canister purge valve connector (E).
6. Install the PCV hose (A), brake booster vacuum hose (B), vacuum hose (C) and connect the IMT actuator connector (D).

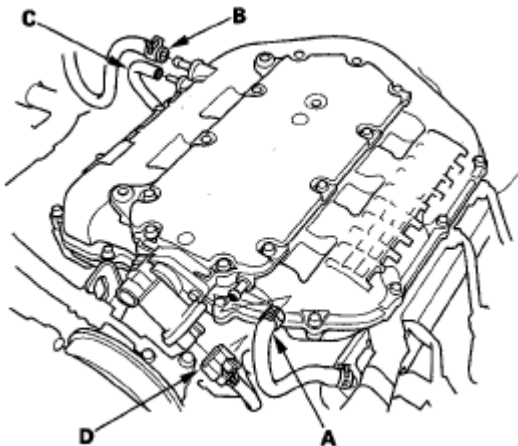


Fig. 11: Identifying PCV Hose, Brake Booster Vacuum Hose, Vacuum Hose And IMT Actuator Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the intake air duct (A), then install the breather pipe (B).

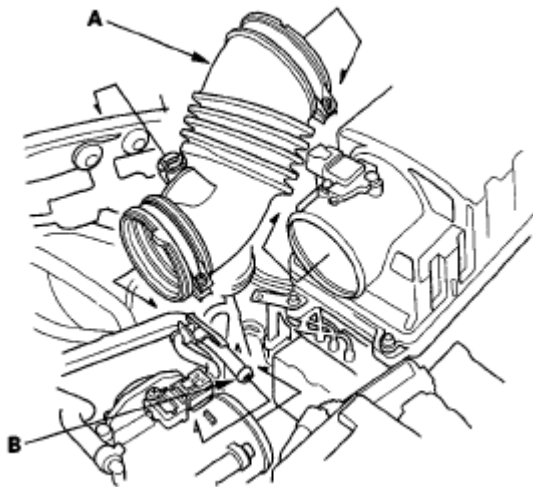


Fig. 12: Identifying Intake Air Duct And Breather Pipe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the engine cover.

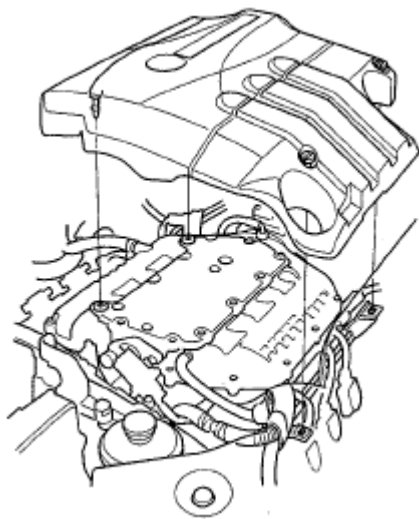


Fig. 13: Identifying Engine Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Clean up any spilled engine coolant.
10. After installation, check that all tubes, hoses, and connectors are installed correctly.
11. Refill the radiator with engine coolant, and bleed air from the cooling system with heater valve open (see step 10 on **COOLANT REPLACEMENT**).

INJECTOR BASE REMOVAL AND INSTALLATION

REMOVAL

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the drive belt (see **DRIVE BELT INSPECTION**).
3. Remove the power steering (P/S) pump and power steering line bracket (see step 6 on **CYLINDER HEAD REMOVAL**).
4. Remove the intake manifold (see **REMOVAL**).
5. Remove the injectors (see **INJECTOR REPLACEMENT**).
6. Remove the harness bracket mount bolt (A) and the knock sensor connector (B).

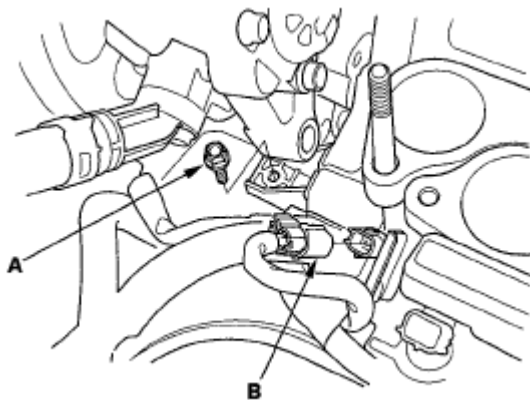


Fig. 14: Identifying Harness Bracket Mount Bolt And Knock Sensor Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the injector base mount bolts/nuts (A), then remove the front injector base (B) and rear injector base (C).

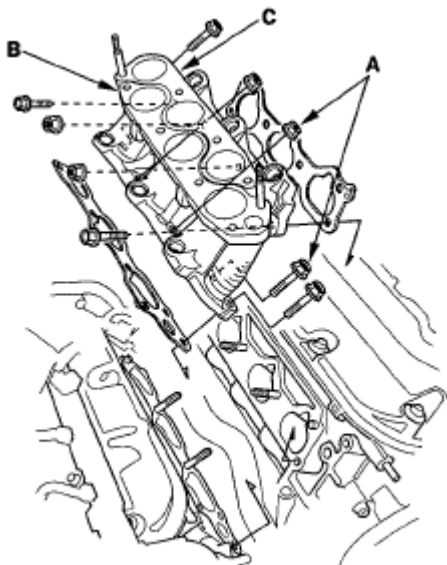


Fig. 15: Identifying Injector Base Mount Bolts/Nuts, Front Injector Base And Rear Injector Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Install the front injector base (A) and rear injector base (B) with new gaskets (C), and tighten the bolts/nuts (D) in a crisscross pattern in three steps, beginning with the inner nuts.

NOTE: Front injector base gasket is different from rear one. Do not mix injector base gasket types.

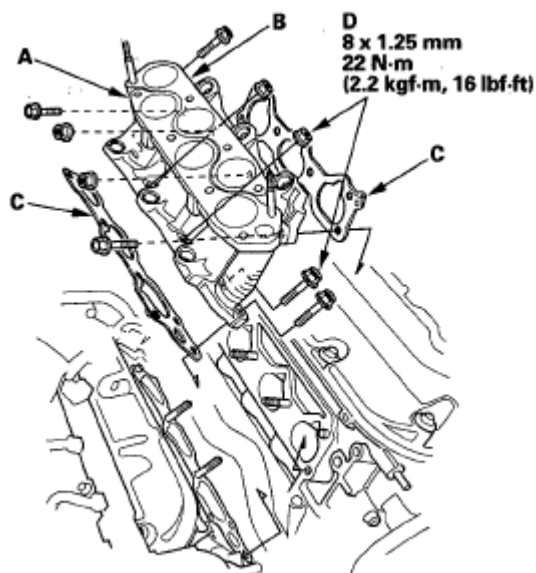


Fig. 16: Identifying Front Injector Base, Rear Injector Base, Gaskets, And Bolts/ Nuts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the knock sensor connector (A) and harness bracket mount bolt (B).

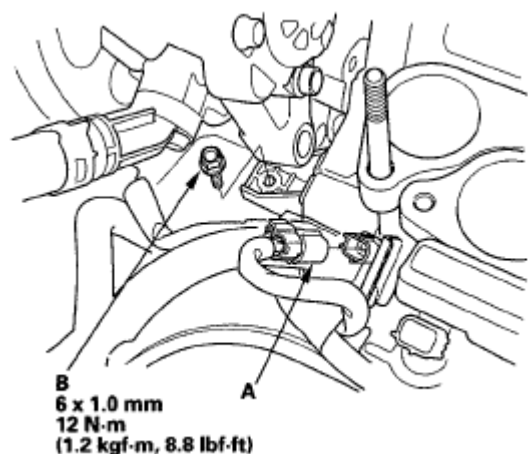


Fig. 17: Identifying Knock Sensor Connector And Harness Bracket Mount Bolt With Torque Specification

2008 Acura MDX
2007-09 ENGINE Intake Manifold and Exhaust System - MDX

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the injectors (see **INJECTOR REPLACEMENT**).
4. Install the intake manifold (see **INSTALLATION**).
5. Install P/S pump and P/S line bracket (see step 27 on **CYLINDER HEAD INSTALLATION**).
6. Install the drive belt (see **DRIVE BELT INSPECTION**).
7. Turn the ignition switch ON (II), but do not operate the starter. After the fuel pump runs about 2 seconds, the fuel pressure in the fuel line rises. Repeat this three times, then check for fuel leaks.

EXHAUST PIPE AND MUFFLER REPLACEMENT

NOTE: Use new gaskets and self-locking nuts when reassembling.

2008 Acura MDX

2007-09 ENGINE Intake Manifold and Exhaust System - MDX

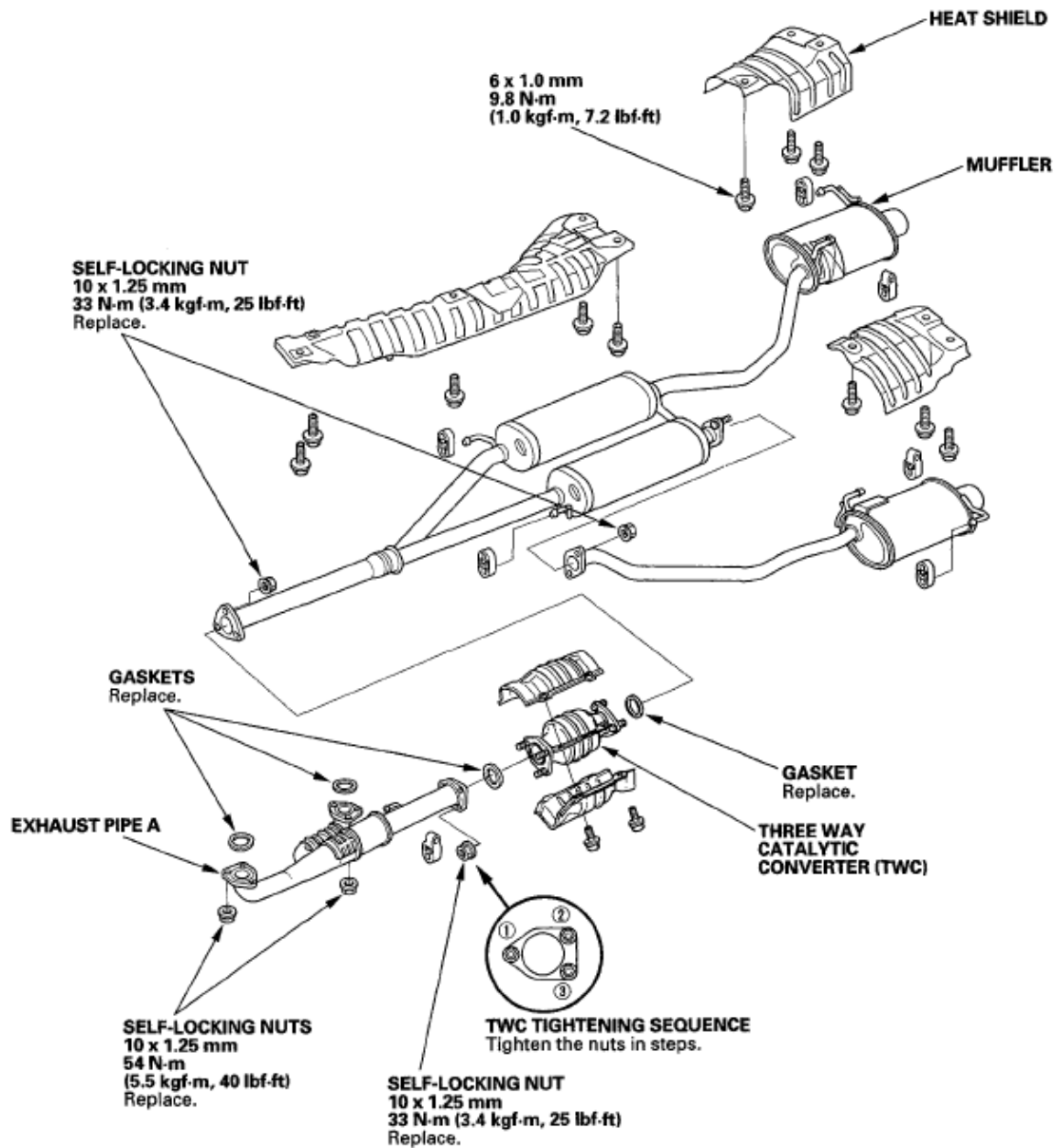


Fig. 18: Identifying Exhaust Pipe And Muffler Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Interior Lights - MDX

COMPONENT LOCATION INDEX

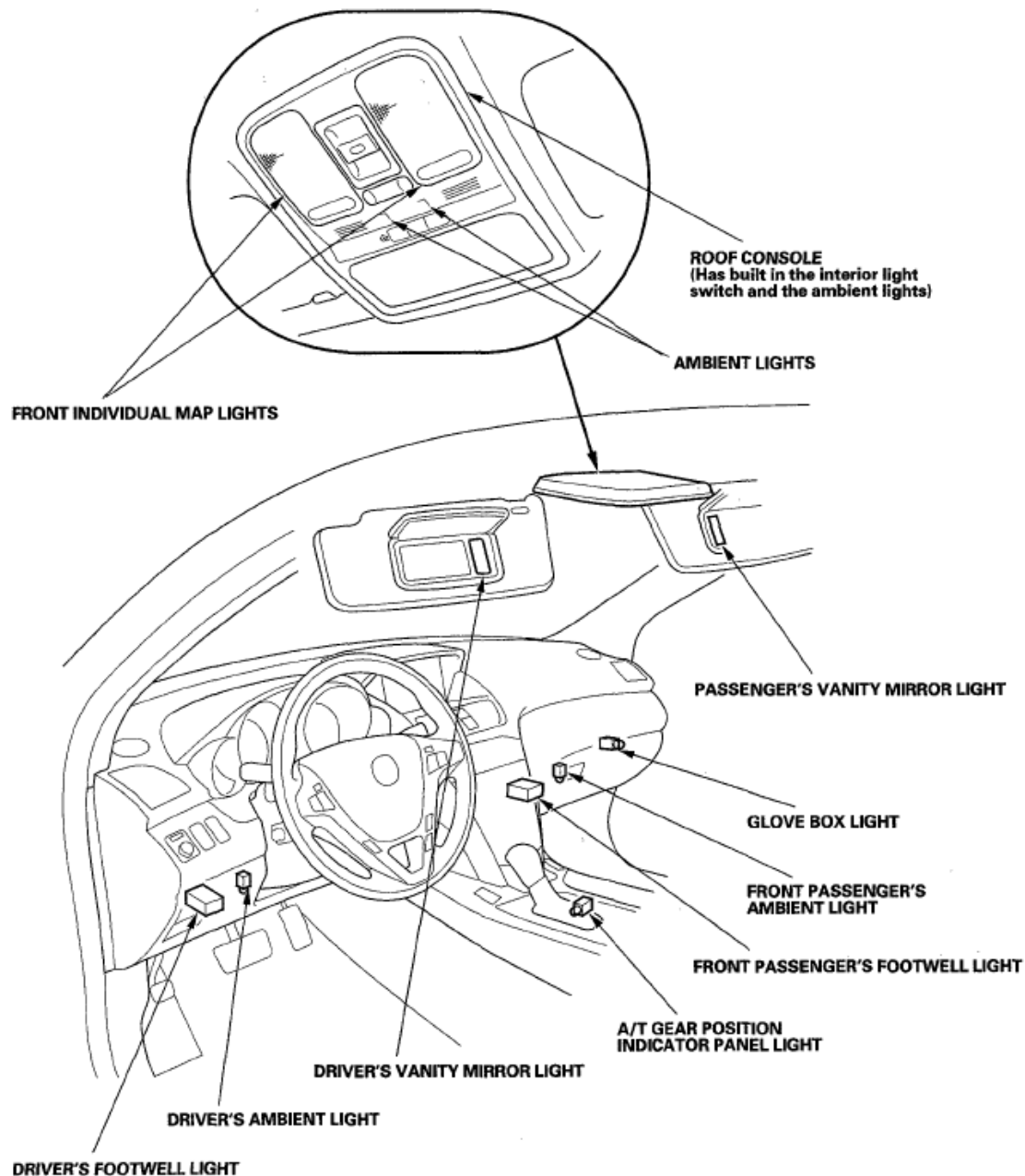


Fig. 1: Identifying Interior Lights Component Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Interior Lights - MDX

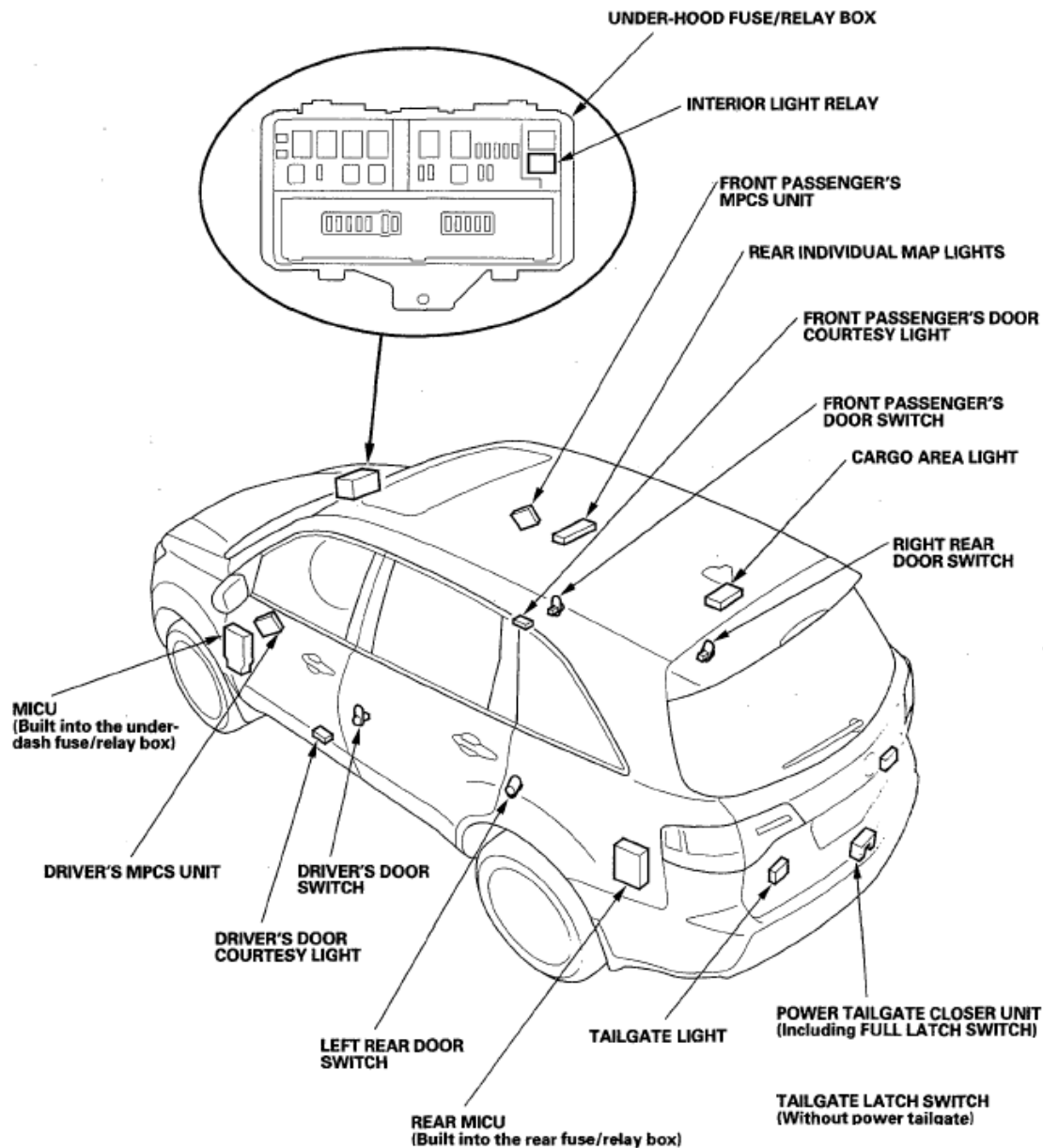


Fig. 2: Identifying Interior Lights Component Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Interior Lights - MDX

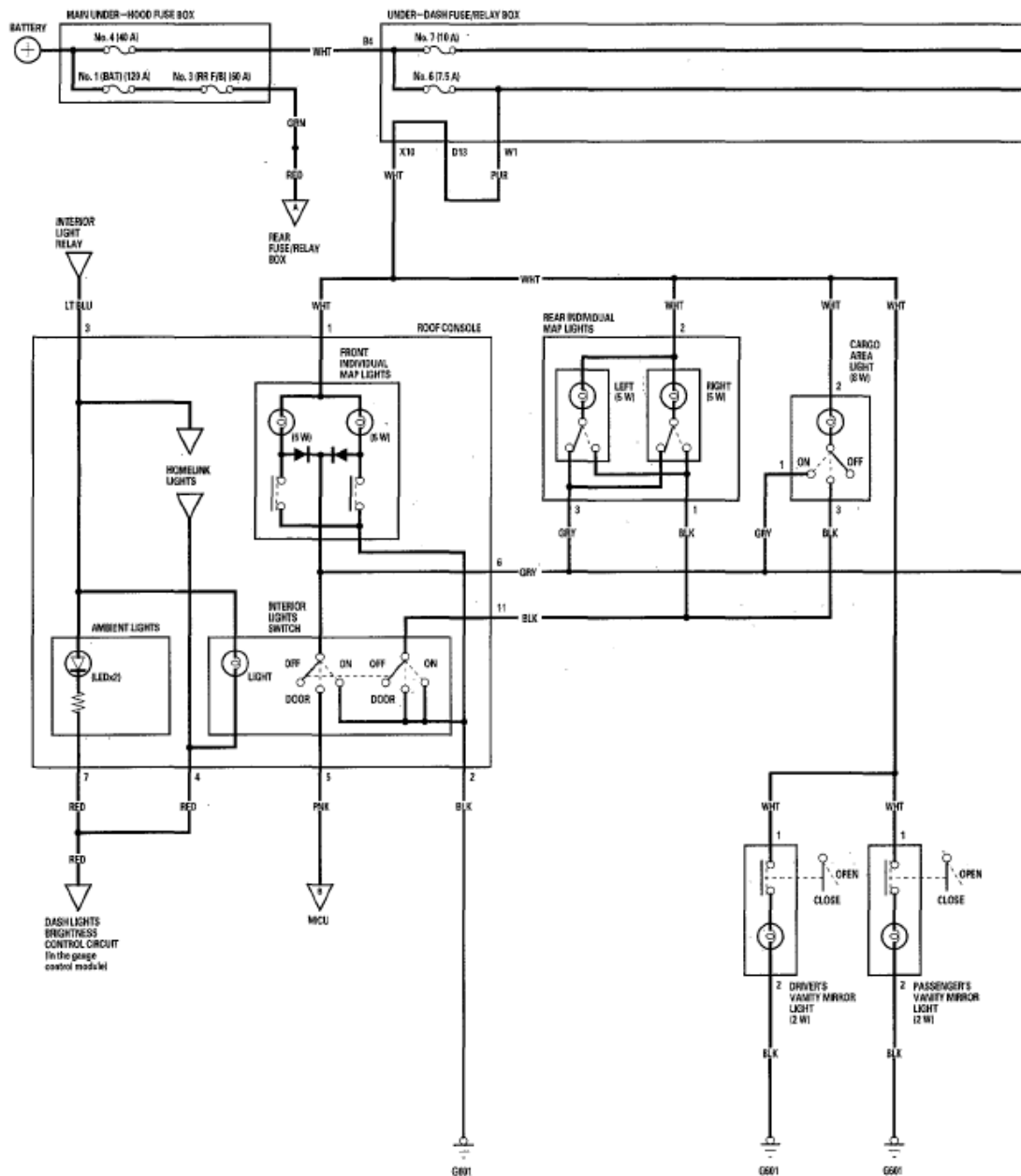


Fig. 3: Interior Lights - Circuit Diagram (1 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Interior Lights - MDX

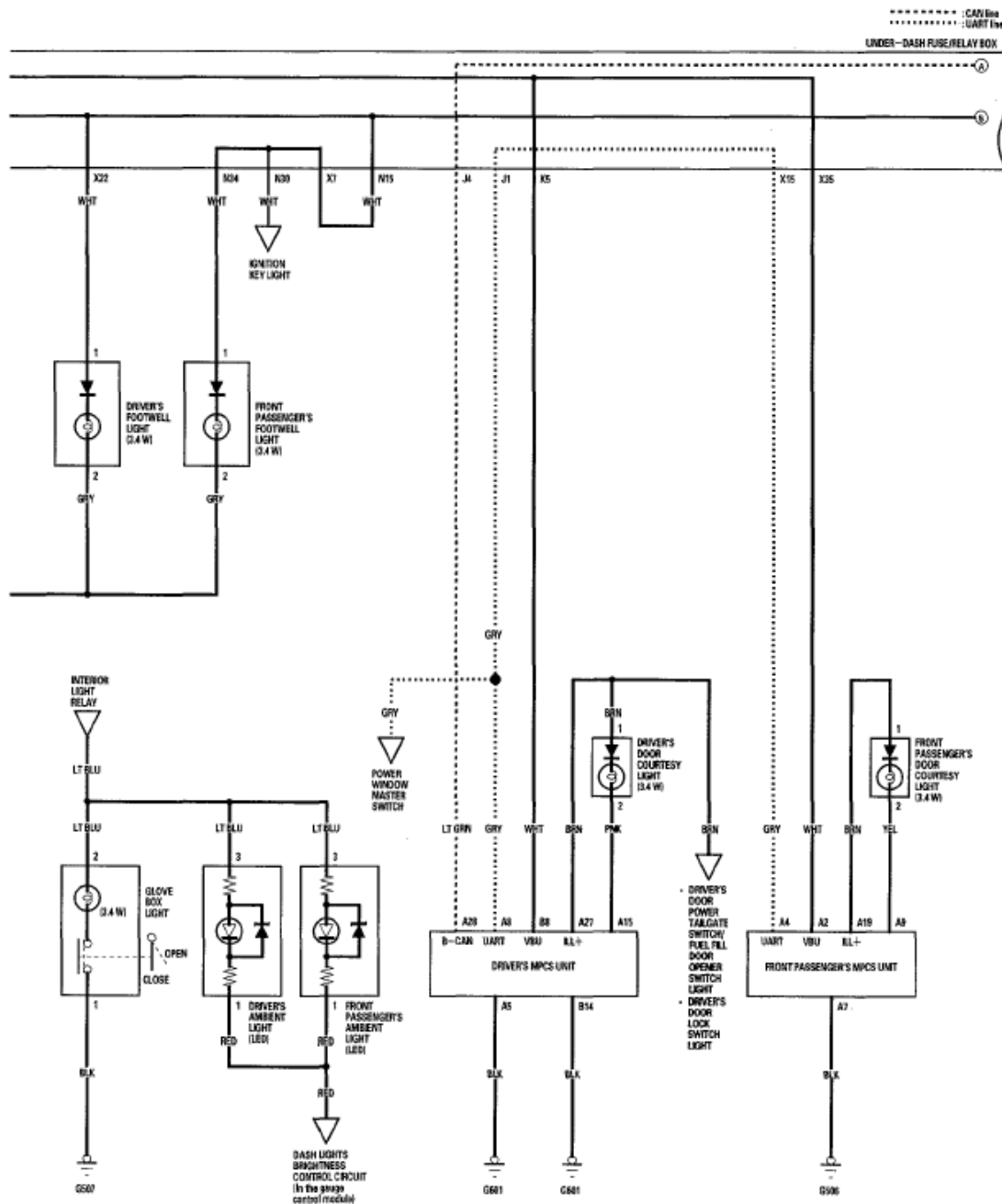


Fig. 4: Interior Lights - Circuit Diagram (2 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

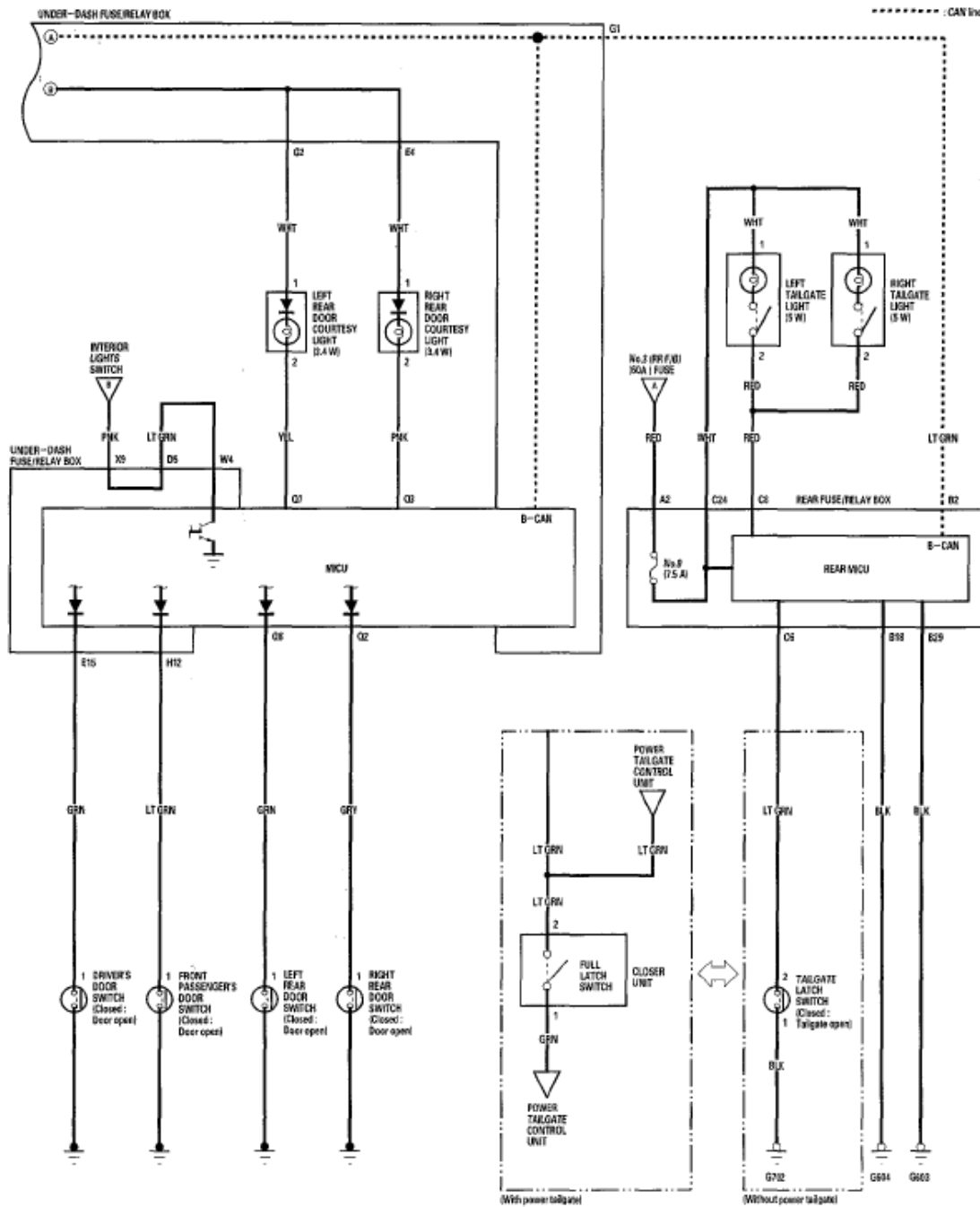
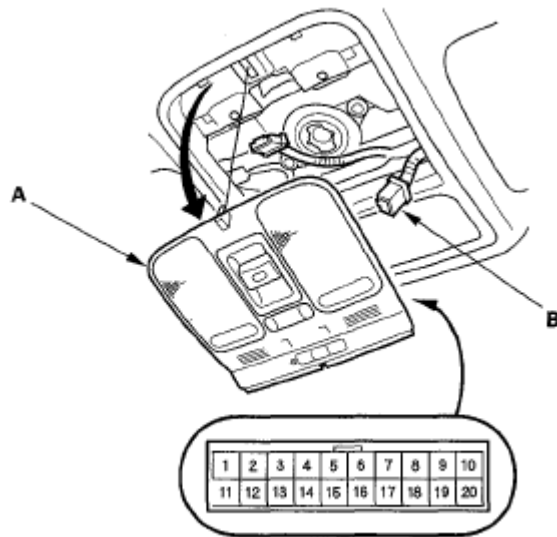


Fig. 5: Interior Lights - Circuit Diagram (3 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERIOR LIGHT SWITCH TEST/REPLACEMENT

1. Carefully pull down the roof console (A).

**Fig. 6: Identifying Roof Console**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 20P connector (B) from the roof console.
3. Check for continuity between the terminals in each interior light switch position according to **Fig. 7**.

NOTE:

- Before testing, check the front individual map light bulb(s).
- When check for continuity across the diode, use the diode setting on the digital volt/ohm meter to check the diode bias.

Terminal		1		2	5	6	11
Position							
OFF		○	⊖	▶		○	
OFF (Front map light switch ON)		○	⊖	●	○		
Middle (DOOR) position		○	⊖	▶	○	○	
ON		○	⊖	▶	○	○	○

Fig. 7: Checking For Continuity Between Terminals In Each Switch Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the roof console as an assembly.

FRONT INDIVIDUAL MAP LIGHT REPLACEMENT

1. Carefully pry off the lens (A) with a small screwdriver.

Front Map Light: 5 W x 2

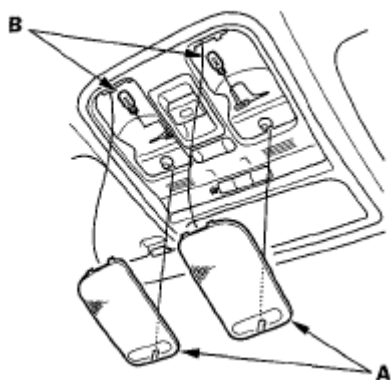


Fig. 8: Identifying Front Individual Map Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check the bulb(s) (B). If the bulb is OK, but there is a malfunction, check the interior light switch (see **INTERIOR LIGHT SWITCH TEST/REPLACEMENT**).

REAR INDIVIDUAL MAP LIGHT TEST/REPLACEMENT

1. Turn the ceiling light switch OFF.
2. Carefully pry off the lens (A) with a small screwdriver.

Rear Map Light: 5 W x 2

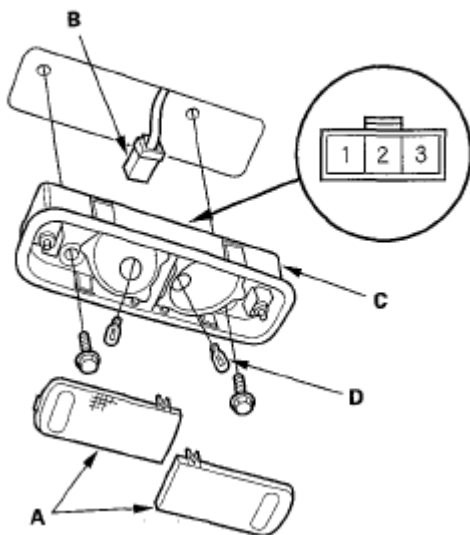


Fig. 9: Identifying Rear Individual Map Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two mounting screws.
4. Disconnect the 3P connector (B) from the housing (C).

5. Check for continuity between the terminals.
 - There should be continuity between the No. 1 and No. 3 terminals with the left switch ON.
 - There should be continuity between the No. 1 and No. 2 terminals with the right switch ON.
6. If the continuity is not as specified, check the bulb(s) (D). If the bulbs are OK, replace the light.
7. Install the parts in the reverse order of removal.

CARGO AREA LIGHT TEST/REPLACEMENT

1. Turn the light switch OFF.
2. Carefully pry off the lens (A) with a small screwdriver.

Cargo Area Light: 8 W

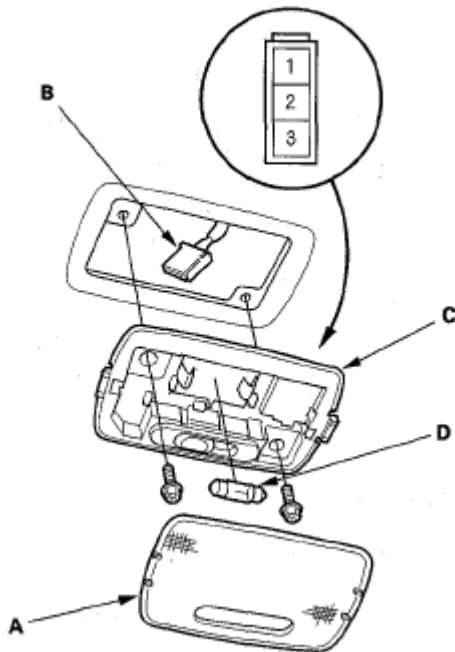


Fig. 10: Identifying Cargo Area Light
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the two mounting screws.
4. Disconnect the 3P connector (B) from the housing (C).
5. Check for continuity between the terminals in each switch position according to the table.
 - There should be continuity between the No. 2 and No. 3 terminals with the switch in the MIDDLE position.
 - There should be continuity between the No. 2 and No. 1 terminals with the switch in the ON position.
6. If the continuity is not as specified, check the bulb (D). If the bulb is OK, replace the light.

TAILGATE LIGHT TEST/REPLACEMENT

1. Open the tailgate.
2. Carefully pry out the tailgate light (A).

Tailgate Light: 5 W

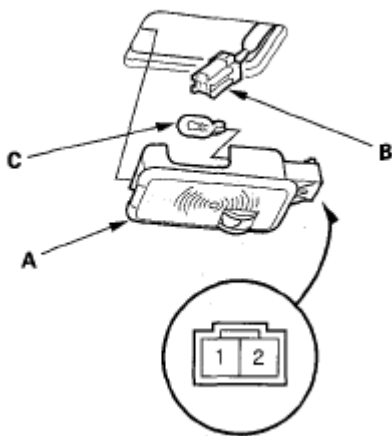


Fig. 11: Identifying Tailgate Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the light.
4. With the tailgate light switch ON, check for continuity between the No. 1 and No. 2 terminals. There should be continuity. If there is no continuity, check the bulb (C). If the bulb is OK, replace the tailgate light.

COURTESY LIGHT REPLACEMENT

1. Carefully pry off the lens (A) with a small screwdriver.

Courtesy Light: 3.4 W

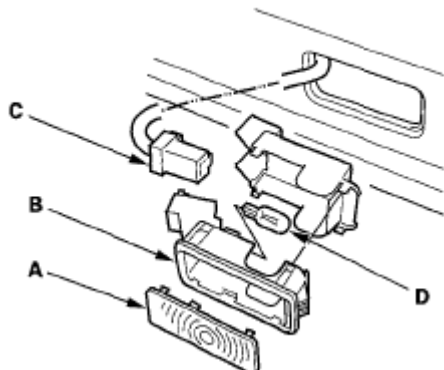


Fig. 12: Identifying Courtesy Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Pry out the housing (B) from the door, then disconnect the 2P connector (C).
3. Remove the bulb (D) from the socket.
4. Install the parts in the reverse order of removal.

GLOVE BOX LIGHT REPLACEMENT

1. Remove the glove box stops and damper (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Turn the bulb socket (A) 45° counterclockwise to remove it.

Glove Box Light: 3.4 W

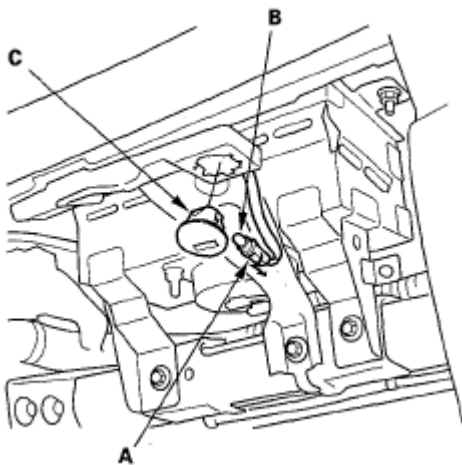


Fig. 13: Identifying Glove Box Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bulb (B) from the socket.
4. If necessary, remove the lens (C).
5. Install the parts in the reverse order of removal.

VANITY MIRROR LIGHT TEST/REPLACEMENT

1. Open the sunvisor.
2. Remove the sunvisor (see **SUNVISOR REMOVAL/INSTALLATION**).
3. Disconnect the 2P connector (A) from the vanity mirror light.

Vanity Mirror Light: 2 W

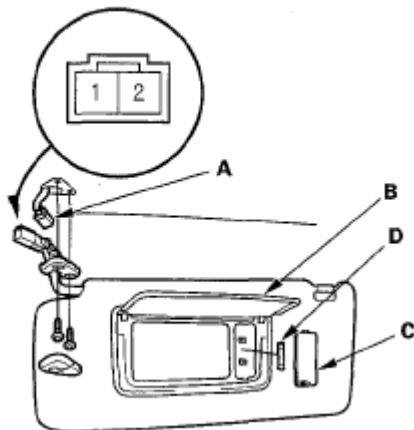


Fig. 14: Identifying Vanity Mirror Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the No. 1 and No. 2 terminals.
 - With the vanity mirror cover (B) opened, there should be continuity.
 - With the vanity mirror cover closed, there should be no continuity.
5. If the continuity is not as specified, remove the lens (C) and replace the bulb (D) or the sunvisor.

AMBIENT LIGHT TEST

1. Carefully pull down the roof console and disconnect the 20P connector (A).

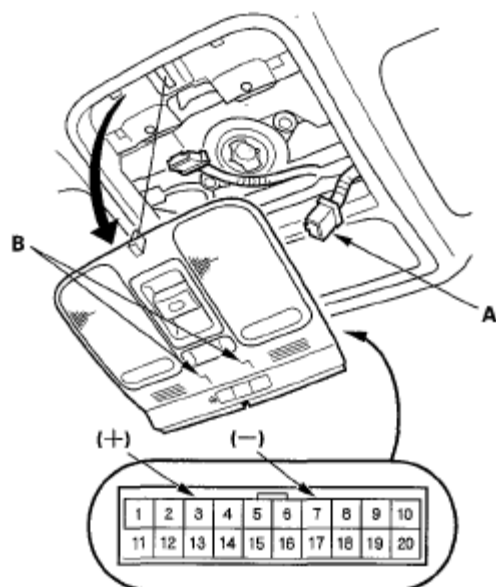


Fig. 15: Identifying Ambient Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the roof console 20P connector No. 3 terminal to battery power and No. 7 terminal to body ground. The ambient lights (B) should turn on. If they do not turn on, replace the roof console.

FOOTWELL LIGHT TEST/REPLACEMENT

1. Carefully pry out the footwell light lens (A) and housing (B).

Footwell Light: 3.4 W

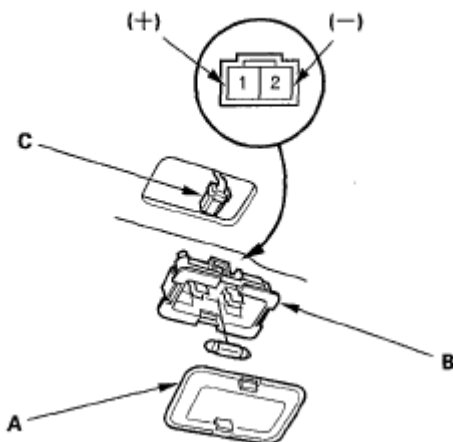


Fig. 16: Identifying Footwell Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 2P connector (C) from the light.
3. Check for continuity between the No. 1 (+) and No. 2 (-) terminals. There should be continuity. If there is no continuity, check the bulb (C). If the bulb is OK, replace the footwell light.
4. Install the parts in the reverse order of removal.

TAILGATE LATCH SWITCH TEST

1. Open the tailgate.
2. Remove the tailgate trim panel (see TRIM REMOVAL/INSTALLATION - TAILGATE AREA).
3. Disconnect the 2P connector (A) from the tailgate latch switch (B).

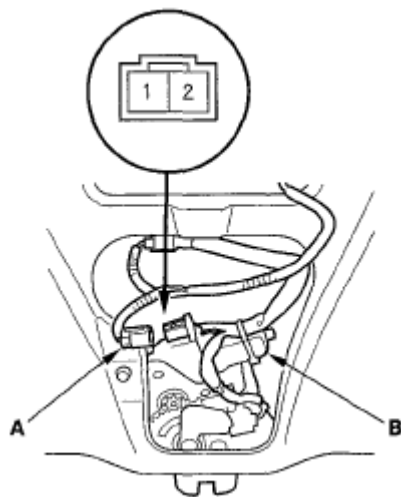


Fig. 17: Identifying Tailgate Latch Switch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check for continuity between the No. 1 and No. 2 terminals.
 - With the tailgate open, there should be continuity.
 - With the tailgate closed, there should be no continuity.
5. If the continuity is not as specified, replace the latch assembly.

DRIVER'S AMBIENT LIGHT REPLACEMENT

1. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**), then disconnect the 2P connector from the driver's ambient light (A).

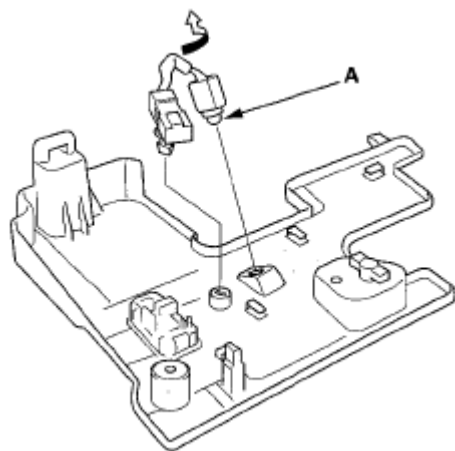


Fig. 18: Identifying Driver's Ambient Light

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the bulb socket 45° counterclockwise to remove the bulb.

3. Install the bulb in the reverse order of removal.

FRONT PASSENGER'S AMBIENT LIGHT REPLACEMENT

1. Remove the passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**), then disconnect the 2P connector from the driver's ambient light (A).

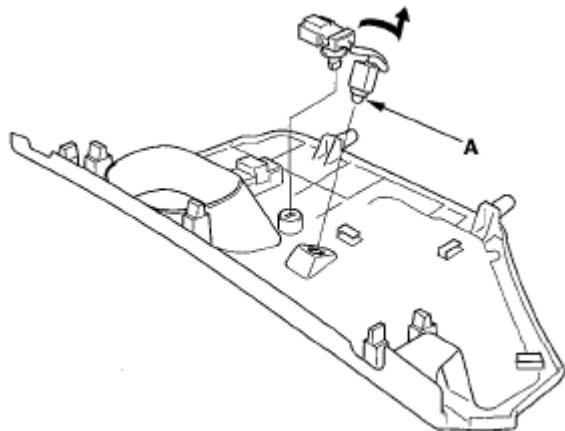


Fig. 19: Identifying Front Passenger's Ambient Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the bulb socket 45° counterclockwise to remove the bulb.
3. Install the bulb in the reverse order of removal.

2007-09 ACCESSORIES AND EQUIPMENT

Interior Trim - MDX

COMPONENT LOCATION INDEX

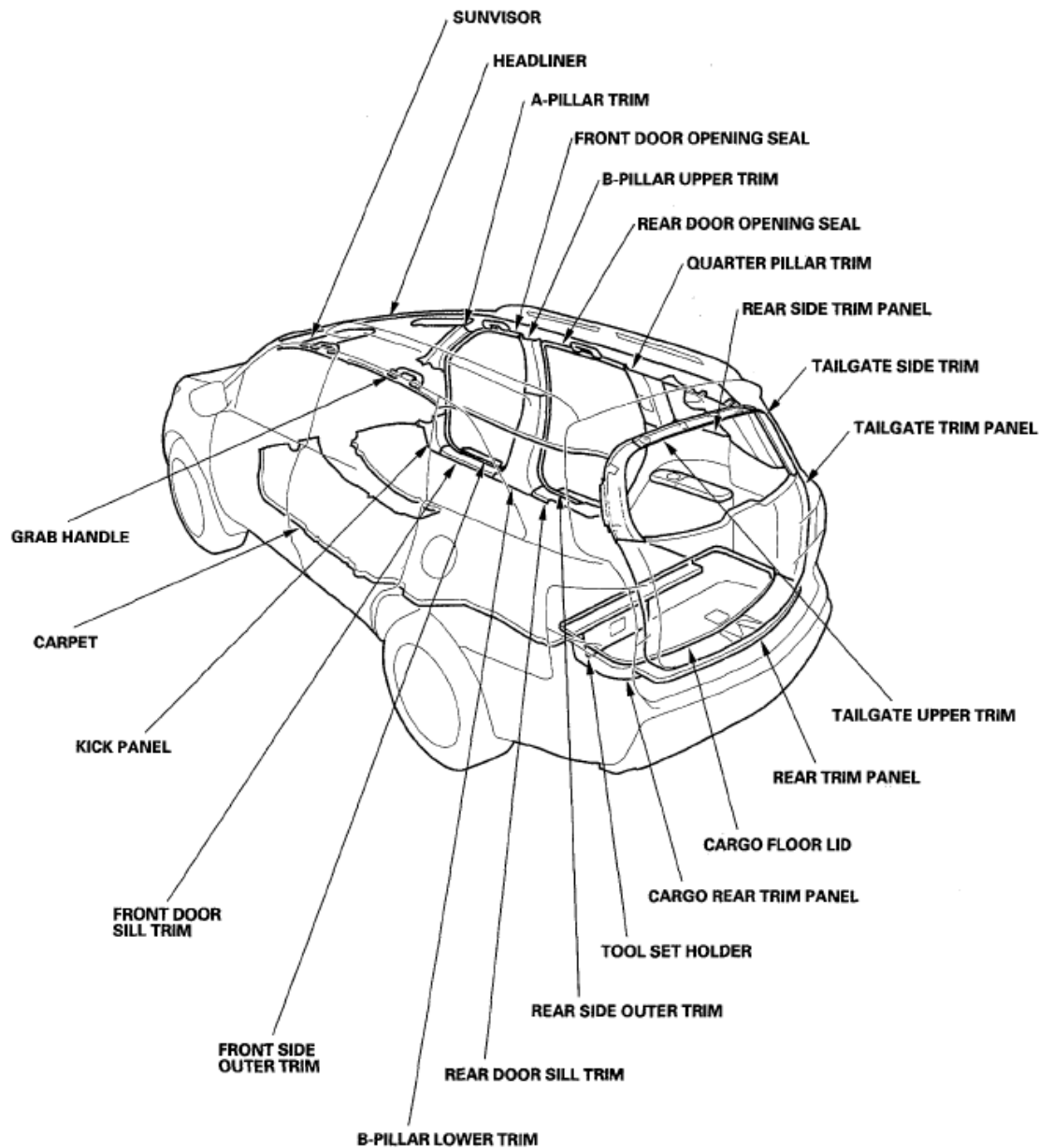


Fig. 1: Identifying Interior Trim Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TRIM REMOVAL/INSTALLATION - DOOR AREAS

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

FRONT DOOR SILL AREA

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Detach the hooks (A) and tabs (B) from the kick panel (C) and B-pillar lower trim (D), and pull the front door sill trim (E) up by hand to detach the clips (F), then remove it from the front door opening seal (G).

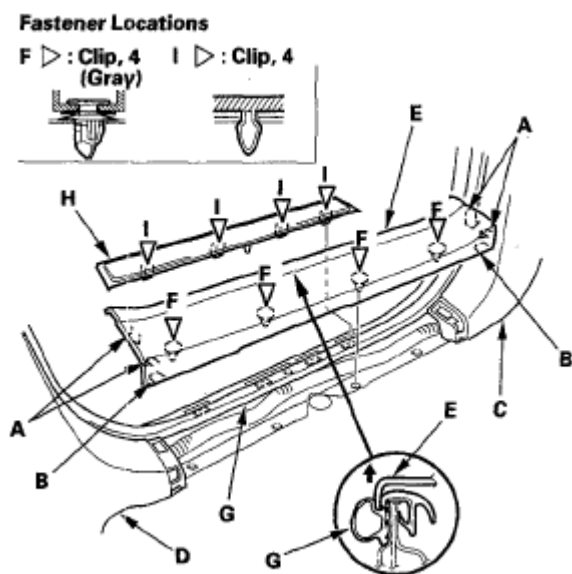


Fig. 2: Identifying Hooks, Tabs, Kick Panel, B-Pillar Lower Trim And Front Door Sill Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If necessary, pull the front side outer trim (H) up to detach the clips (I), then remove the trim.
3. Remove the left kick panel (A) or the right kick panel (8).
 1. Pull out the door opening seal (C) as needed from the kick panel hooks (D) and the door opening flange.
 2. Remove the clip (E).
 3. Pull the kick panel back by hand to detach the clip (F), then remove it.

Driver's

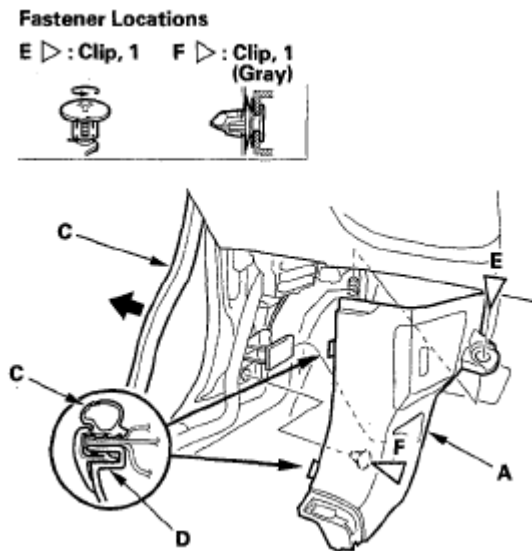


Fig. 3: Identifying Door Opening Seal, Kick Panel Hooks And Clip - Driver'S
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's

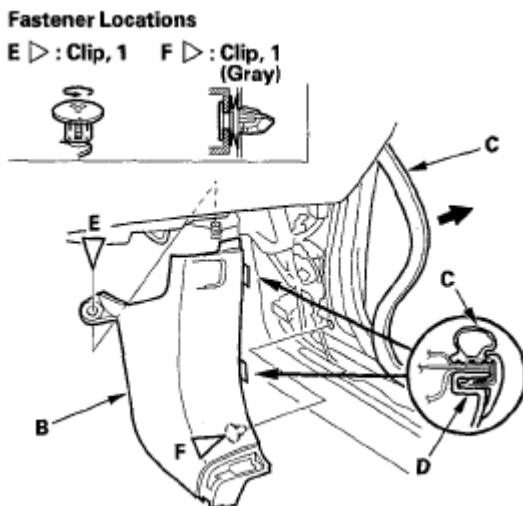


Fig. 4: Identifying Door Opening Seal, Kick Panel Hooks And Clip - Passenger'S
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Pull out the front door opening seal (A) from the trim hooks (B) and around the front door opening flange, then remove the seal.

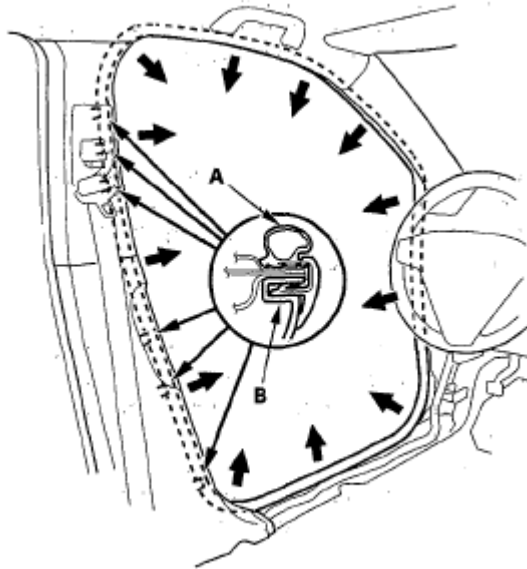


Fig. 5: Identifying Front Door Opening Seal And Trim Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

REAR DOOR SILL AREA

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Detach the hooks (A) and tabs (B) from the B-pillar lower trim (C) and rear side trim panel (D), and pull the rear door sill trim (E) up by hand to detach the clips (F, G), then remove it from the rear door opening seal (H).

Fastener Locations

F ▷ : Clip, 2 (Gray) G ▷ : Clip, 1 (Pink) J ▷ : Clip, 3

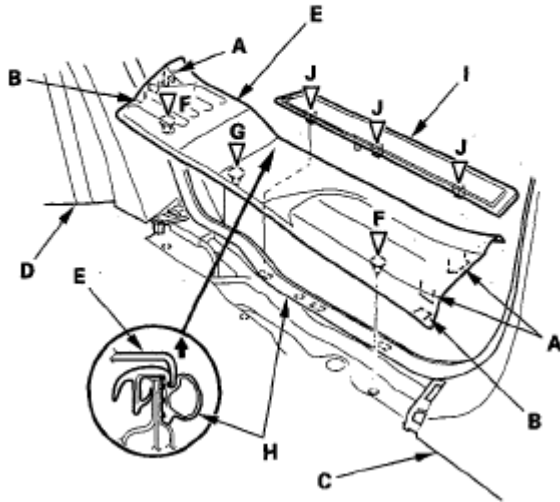


Fig. 6: Identifying Hooks, Tabs, B-Pillar Lower Trim, Rear Side Trim Panel And Rear Door Sill Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If necessary, pull the rear side outer trim (I) up to detach the clips (J), then remove the trim.
3. Pull out the rear door opening seal (A) from the trim hooks (B) and around the rear door opening flange, then remove the seal.

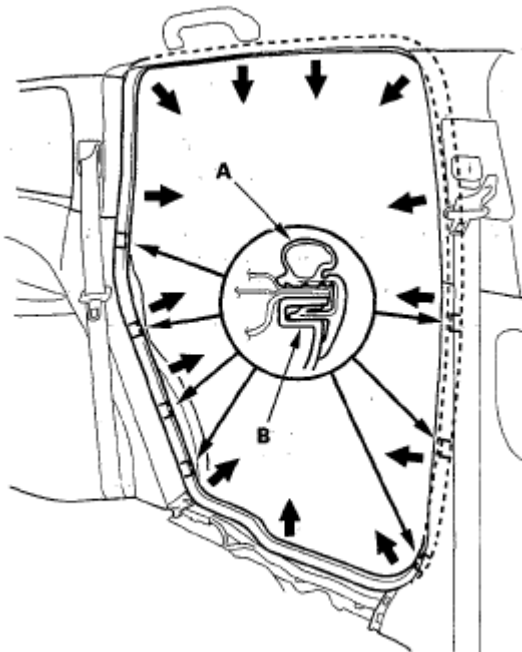


Fig. 7: Identifying Rear Door Opening Seal And Trim Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

TRIM REMOVAL/INSTALLATION - PILLAR AREAS

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

A-PILLAR TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Follow the A-pillar trim installation procedure carefully; improper installation could cause the side curtain airbags to deploy improperly and possibly cause injury.
- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the trim and panels.
- The upper clip in the A-pillar trim (A) consists of a resin grommet (B) and a metal pin (C). The groove (D) in the grommet secures it to the body panel (E). The shoulder (F) on the grommet is broken during removal, so the clip must be replaced with a new one when the trim is reinstalled.

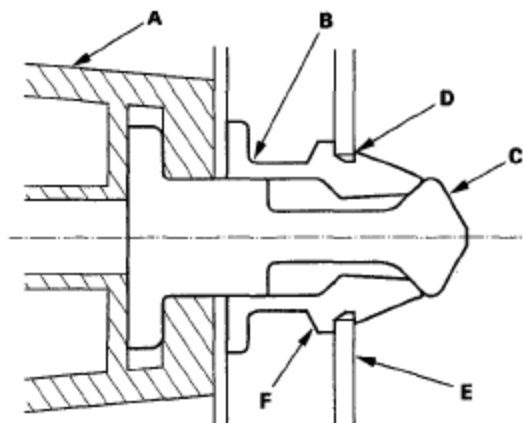


Fig. 8: Identifying A-Pillar Trim, Resin Grommet, Metal Pin And Groove
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Pull the front door opening seal away from the A-pillar as needed (see step 4 on).
2. Hit the surface of the A-pillar trim (A) with a rubber mallet. The clip is located under the top of the A-pillar trim near the "SIDE CURTAIN AIRBAG" mark (B). Hitting the trim surface breaks the shoulder (C) on the grommet (D) and pushes the pin (E) and grommet against the body (F).

NOTE: The clip must be replaced with a new one when the A-pillar trim is reinstalled.

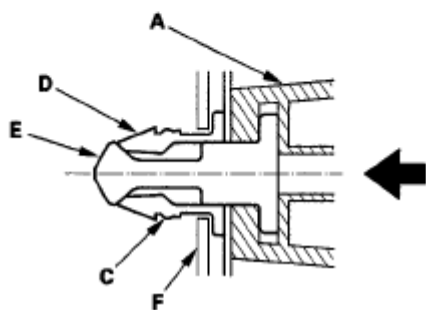
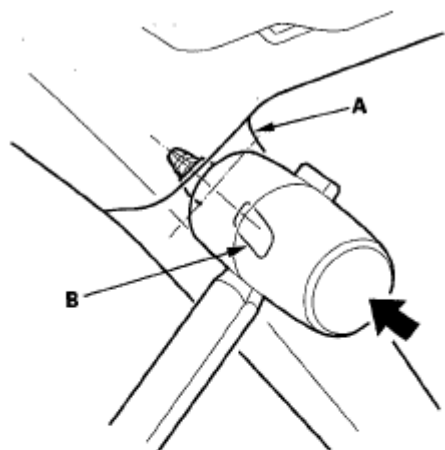


Fig. 9: Identifying A-Pillar Trim, Shoulder, Grommet And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull the top of the A-pillar trim (A) back by hand to remove the pin (B) from the grommet (C) remaining in the body (D).

NOTE: The edge of the headliner (E) lies between the A-pillar trim and the guide bracket (F) of the trim. The A-pillar trim shouldn't be pulled out too far at a time, or the guide bracket might catch the headliner and bend it.

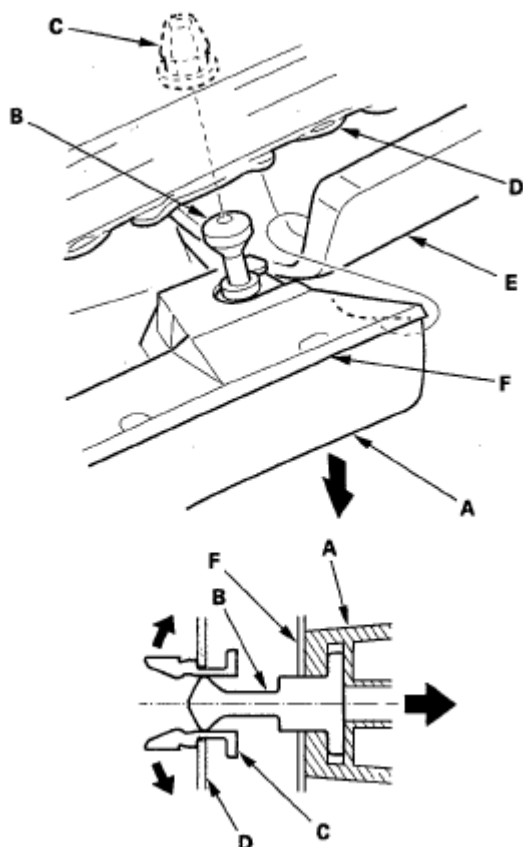


Fig. 10: Identifying A-Pillar Trim, Pin, Grommet And Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the A-pillar trim (A) by hand to detach the remaining clips, then pull the trim up from the dashboard (B).

Fastener Locations

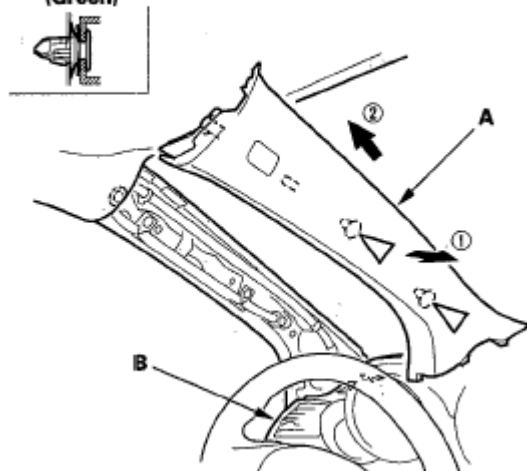
▷ : Clip, 2
(Green)

Fig. 11: Identifying A-Pillar Trim And Dashboard
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the grommet from the body.

NOTE: The upper grommet must be replaced with a new one because the grommet is damaged during removal.

6. If the side curtain airbag has been deployed, replace the A-pillar trim with a new one (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
7. If the side curtain airbag has not been deployed, check the A-pillar trim (A) and note the following:
 - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the A-pillar trim and replace it if it has any of these types of damage:
 - Any cracks, deformations, or stress-whitened areas in the A-pillar trim
 - Any cracks or stress-whitening in the clip and pin seating surfaces (B)
 - Damaged guide bracket (C)
 - Replace the upper grommet with a new one because it will be damaged during removal.
 - If the clips (D) are damaged or stress-whitened, replace them with new ones.

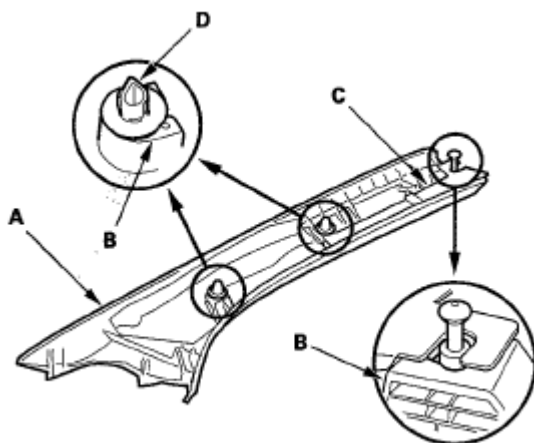


Fig. 12: Identifying Guide Bracket, Clips And Pin Seating Surfaces

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Before installing the A-pillar trim (A), carefully remove the grommet (B) from the pin (C) on the upper clip.

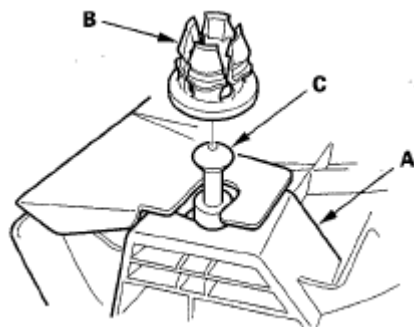


Fig. 13: Identifying A-Pillar Trim, Grommet And Pin

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check the overlap between the headliner and A-pillar trim, and if necessary, adjust it (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).
10. Carefully reinstall the grommet (A) on the pin (B) and seat them on the A-pillar trim (C) as shown.

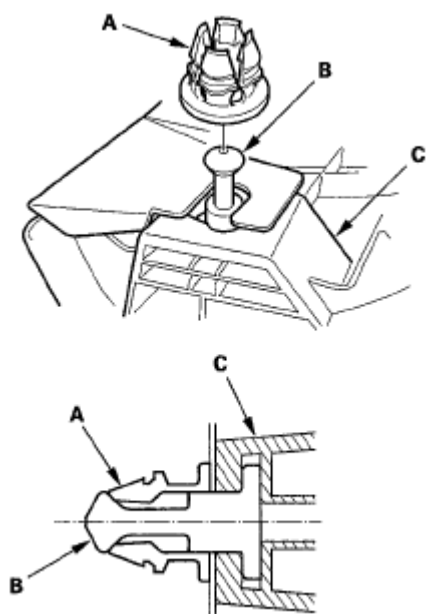


Fig. 14: Identifying Grommet, Pin And A-Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Reinstall the A-pillar trim (A).
 1. Insert the bottom of the trim into the dashboard (B).
 2. Place the trim over the A-pillar (C), and fit its upper clip (D), the other clips (E) and the pin (F) into holes (G) in the A-pillar, then lightly push the trim into place.

NOTE:

- Make sure that the side curtain airbag tether (H) is below the clip.
- Make sure the side curtain airbag isn't tucked down under the clips and ribs.
- Apply pressure to the areas of the trim on the upper clip until these clip fittings are felt. If you push too hard, the clip will be damaged, and it will not hold the trim properly.
- Make sure the upper clip portions of the trim don't come off the body by tugging on the trim.

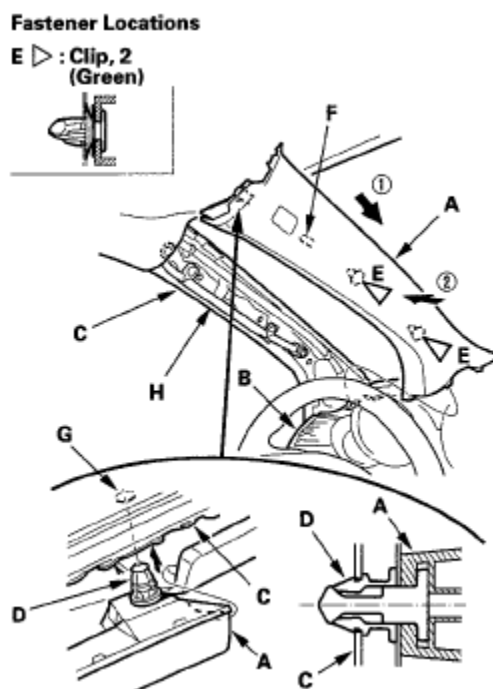


Fig. 15: Identifying A-Pillar, Upper Clip, Other Clips And Pin
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Reinstall the front door opening seal.

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

B-PILLAR UPPER/LOWER TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove these items:

- Front door sill trim (see **FRONT DOOR SILL AREA**)
- Rear door sill trim (see **REAR DOOR SILL AREA**)

- Front door opening seal, as needed (see step 4)
 - Rear door opening seal, as needed (see step 3)
2. Slide the front seat fully forward.
 3. Remove the B-pillar lower trim (A).
 1. Detach the lower clips by pulling the middle of the trim back by hand.
 2. While releasing the upper tabs (B), pull the upper portion of the trim back to release the upper hooks (C).

Fastener Locations

▷ : Clip, 2
(Gray)

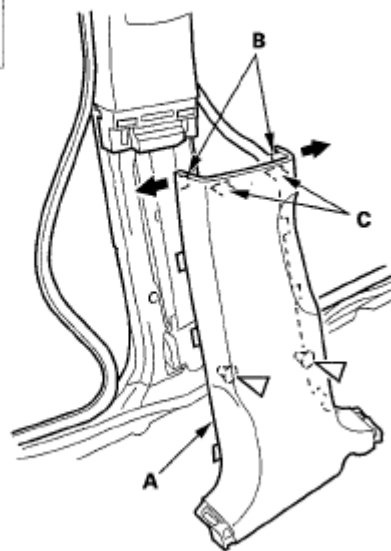


Fig. 16: Identifying Upper Tabs And Upper Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the front seat belt lower anchor (see **FRONT SEAT BELT REPLACEMENT**).
5. Pull the bottom of the B-pillar upper trim (A) back by hand to detach the lower hooks (B).

Fastener Location

▷ : Clip, 1
(Pink)

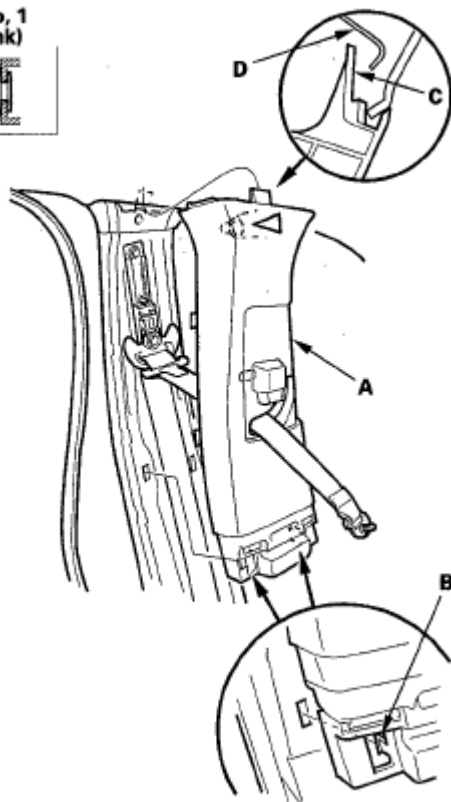


Fig. 17: Identifying B-Pillar Upper Trim And Lower Hooks

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Detach the upper clip by pulling the top of the B-pillar upper trim. Pull the trim down to release the upper hook (C) from the side curtain airbag B-pillar bracket (D).
7. Pass the front seat belt (A) lower anchor out through a hole in the slider (B), then remove the B-pillar upper trim (C).

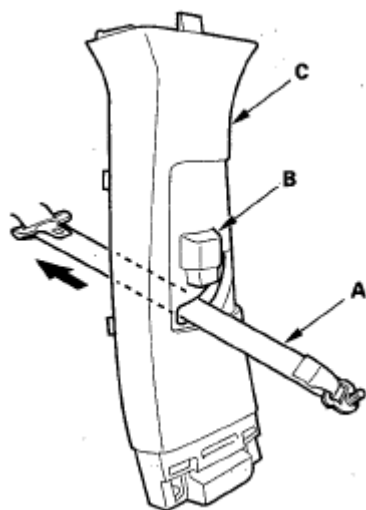


Fig. 18: Identifying Upper Hook, Side Curtain Airbag B-Pillar Bracket And B-Pillar Upper Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the trim in the reverse order of removal, and note these items:
 - If the clips (A) are damaged or stress-whitened, replace them with new ones.
 - If the side curtain airbag has deployed, replace the B-pillar upper and lower trim and all clips on the trim with new ones (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
 - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the trim and replace it if it has any of these types of damage:
 - Any cracks or deformations in the B-pillar upper trim (B) and the upper hook (C), and any stress-whitened areas in the upper part of the trim
 - Any cracks or deformations in the B-pillar lower trim (D), and any breakages in the part (E) fitted with the B-pillar upper trim
 - Any cracks or stress-whitened areas in the clips seating surfaces (F)
 - Replace any damaged parts with new ones.
 - Make sure the top of the trim overlaps with the headliner correctly (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).
 - Make sure the pin (G) on the front seat belt shoulder anchor adjuster (H) and the hole (I) on the back of the slider are engaged when installing the B-pillar upper trim.
 - Make sure the trim hook is installed into the side curtain airbag B-pillar bracket securely.
 - Push the clip and hooks into place securely.
 - Before installing the anchor bolt, make sure there are no twists or kinks in the seat belt.

Trim inspection

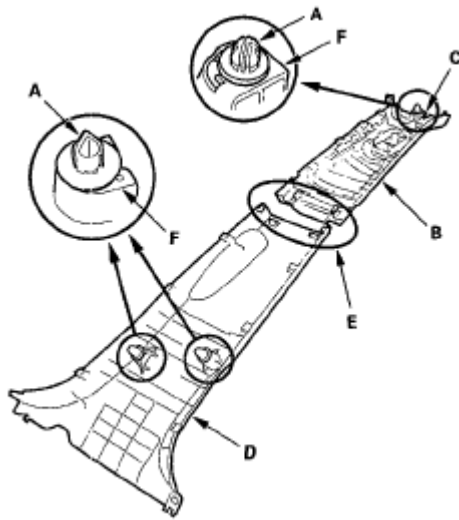


Fig. 19: Identifying Pin, Front Seat Belt Shoulder Anchor Adjuster And Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Slider engagement with shoulder anchor adjuster

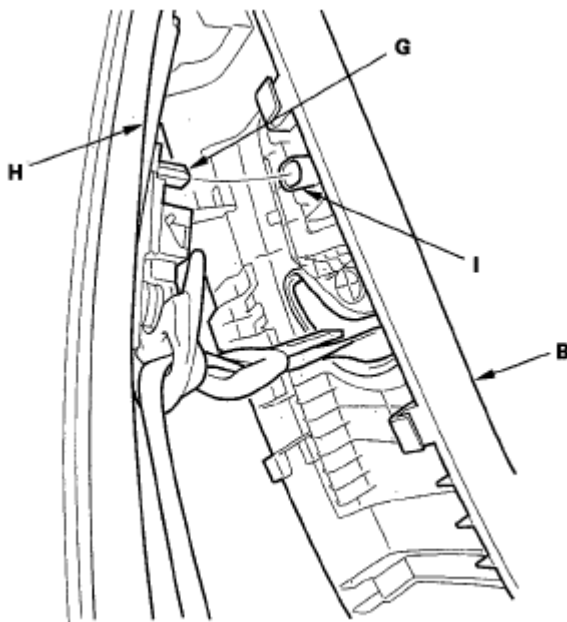


Fig. 20: Identifying Pin, Front Seat Belt Shoulder Anchor Adjuster And Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

QUARTER PILLAR TRIM

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Follow the quarter pillar trim installation procedure carefully; improper installation could cause the side curtain airbag to deploy improperly and possibly cause injury.
- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the trim and panels.
- The upper clip in the quarter pillar trim (A) consists of a grommet (B) and a pin (C). The grommet expanded with the pin secures it to the body panel (D). The projections (E) on the pin is broken during removal, so the clip must be replaced with a new one when the trim is reinstalled.

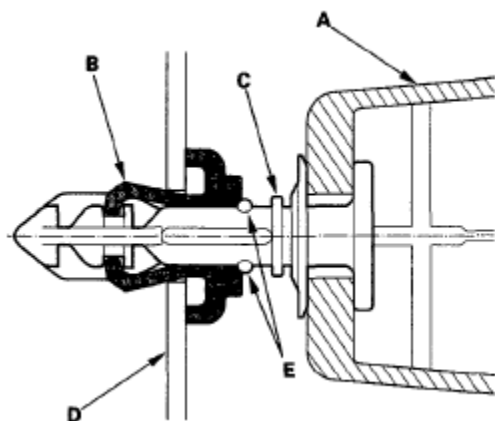


Fig. 21: Identifying Quarter Pillar Trim, Body Panel, Grommet And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove these items:

- Rear door opening seal, as needed (see step 3)
- Tailgate weatherstrip, as needed (see **TAILGATE WEATHERSTRIP REPLACEMENT**)
- Second row seat belt lower anchor (see step 3 **SECOND ROW SEAT BELT REPLACEMENT**)
- Seat belt exit C-pillar cap (see step 4 **SECOND ROW SEAT BELT REPLACEMENT**)
- Seat belt exit D-pillar cap (see step 3 **THIRD ROW SEAT BELT REPLACEMENT**)
- With power tailgate: Left tailgate side trim (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**)

2. Remove the upper portion of the rear side trim panel, as needed (see **REAR SIDE TRIM PANEL REMOVAL/INSTALLATION**).

3. With power tailgate: Remove the pivot bracket mounting bolts, then push the power tailgate rod (A) in the quarter pillar trim (B).

Fastener Locations

▶ : Bolt, 2

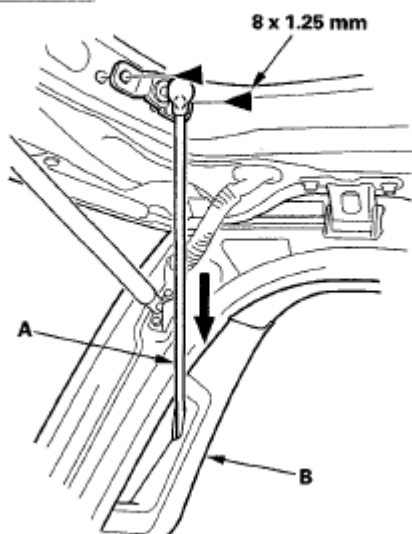


Fig. 22: Identifying Power Tailgate Rod And Quarter Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Hit the surface of the quarter pillar trim (A) with a rubber mallet. The clip is located in the top of the C-pillar near the "SIDE CURTAIN AIRBAG" mark (B). Hitting the trim surface breaks the projections (C) on the pin (D) and pushes it into the grommet (E) and against the body (F).

NOTE: The clip must be replaced with a new one when the quarter pillar trim is reinstalled.

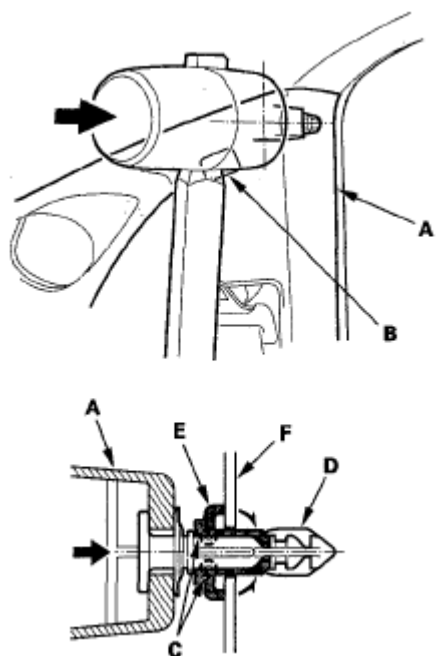


Fig. 23: Identifying Quarter Pillar Trim, Projections, Pin And Grommet

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Hit the surface of the quarter pillar trim (A) with a rubber mallet. The clip is located in the seat belt exit D-pillar cap opening. Hitting the trim surface breaks the projections (B) on the pin (C) and pushes it into the grommet (D) and against the body (E).

NOTE: **The clip must be replaced with a new one when the quarter pillar is reinstalled.**

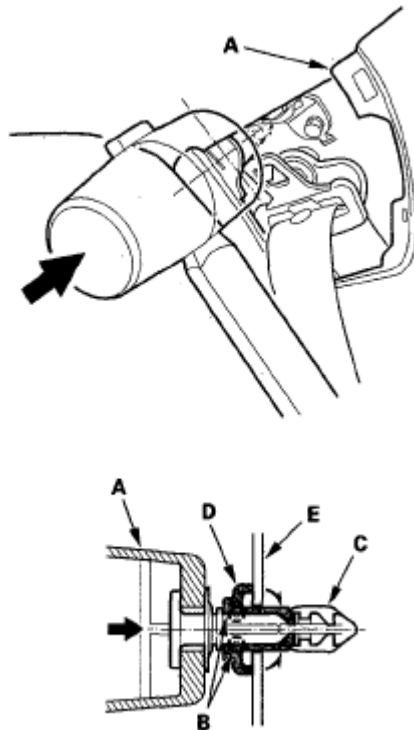


Fig. 24: Identifying Quarter Pillar Trim, Projections, Pin And Grommet
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While pulling the upper portion of the rear side trim panel (A) back, detach the clips (B, C), then release the lower portion of the quarter pillar trim (D) away from the body.

NOTE: The quarter pillar is still fastened with two upper clips located in the middle of it.

Fastener Locations

B ▷ : Clip, 4 (Gray)
 C ▷ : Clip, 1 (Pink)

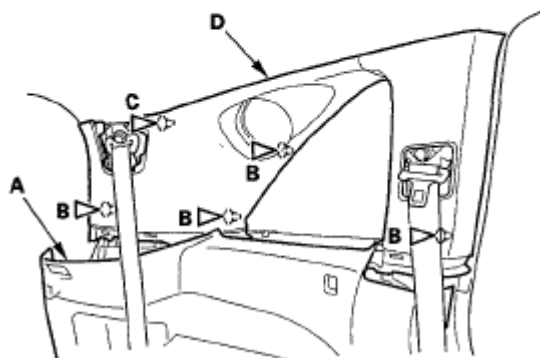


Fig. 25: Identifying Rear Side Trim Panel, Clips And Quarter Pillar Trim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. While pulling the lower portion of the quarter pillar trim (A) away from the body, hit the surface of the quarter pillar trim with a rubber mallet. The clip is located in the rear of the hollow (B) in the trim. Hitting the trim surface breaks the projections (C) on the pin (D) and pushes it into the grommet (E) and against the body (F).

NOTE: The clip must be replaced with a new one when the quarter pillar trim is reinstalled.

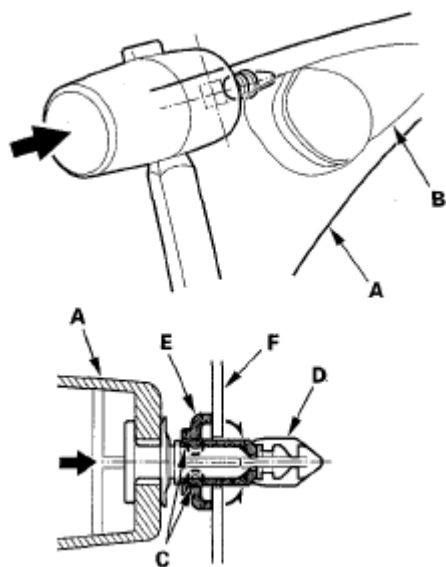


Fig. 26: Identifying Quarter Pillar Trim, Projections, Pin And Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Slide the upper clip portion (A) of the quarter pillar trim (B) up at a 45° angle to remove the trim from the clip. The clip can be removed once the trim is clear.

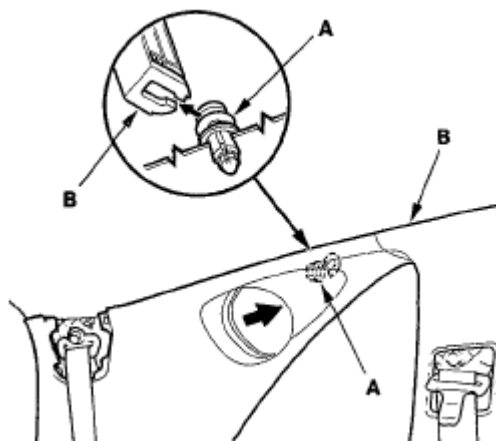
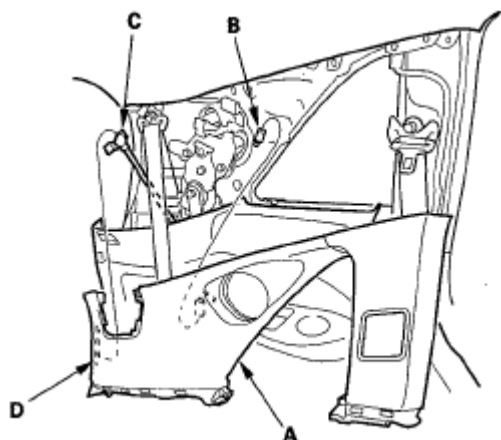


Fig. 27: Identifying Upper Clip Portion And Quarter Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the quarter pillar trim (A). If equipped with the premium sound system, disconnect the D-pillar speaker connector (B). If equipped with power tailgate, pull the power tailgate rod (C) out of the slit (D) in the quarter pillar trim.

**Fig. 28: Identifying Quarter Pillar Trim, D-Pillar Speaker Connector And Power Tailgate Rod**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Hit the remaining upper clip (A) with a rubber mallet. Hitting the clip breaks the projections (B) on the pin (C) and pushes it into the grommet (D) and against the body (E).

NOTE: The clip must be replaced with a new one when the quarter pillar trim is reinstalled.

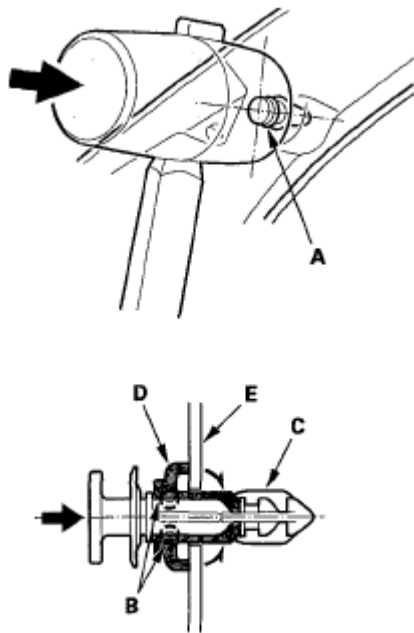


Fig. 29: Identifying Upper Clip, Projections, Pin, Grommet And Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. If the side curtain airbag has not deployed, remove the quarter pillar trim and all the clips on the trim with new ones (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
12. If the side curtain airbag has not deployed, remove the upper clips (A) from the removed quarter pillar trim (B) and discard them. Then check the trim and note the following:
 - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the quarter pillar trim and replace it if it has any of these types of damage:
 - Any cracks, deformations, or stress-whitened areas in the quarter pillar trim
 - Any cracks or stress-whitened areas in the clip seating surfaces (C, D)
 - If any of the lower clips (E) are damaged or stress-whitened, replace them.
 - Replace the upper clips with new ones.

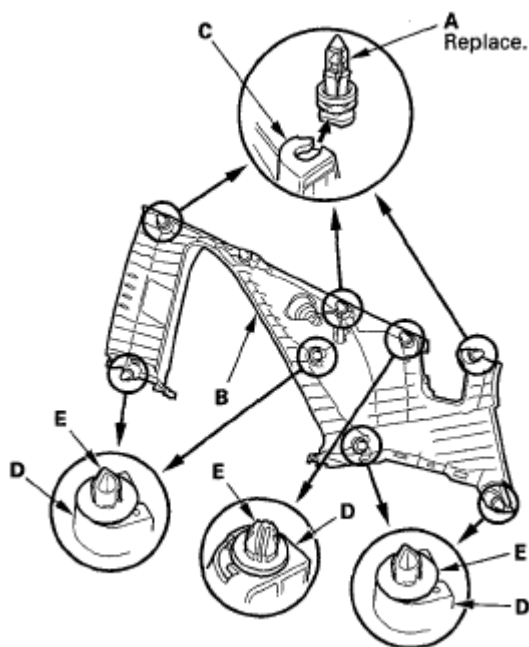


Fig. 30: Identifying Clip Seating Surfaces And Lower Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Before installing the quarter pillar trim (A), whether replaced or reinstalled, temporarily remove the new clips (B).

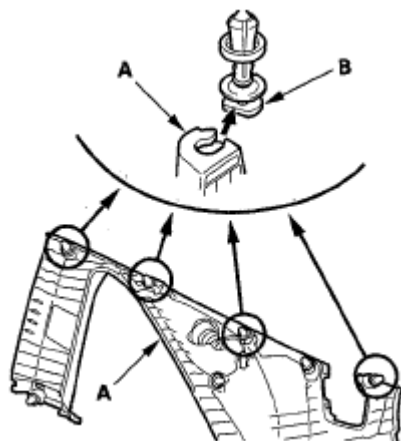


Fig. 31: Identifying Quarter Pillar Trim And Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Check the overlap between the headliner and quarter pillar trim, and if necessary, adjust it (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).
15. Carefully reinstall the clips (A) to the quarter pillar trim (B). Make sure that the grommet (C) is nearest to the top of the pin (D) as shown.

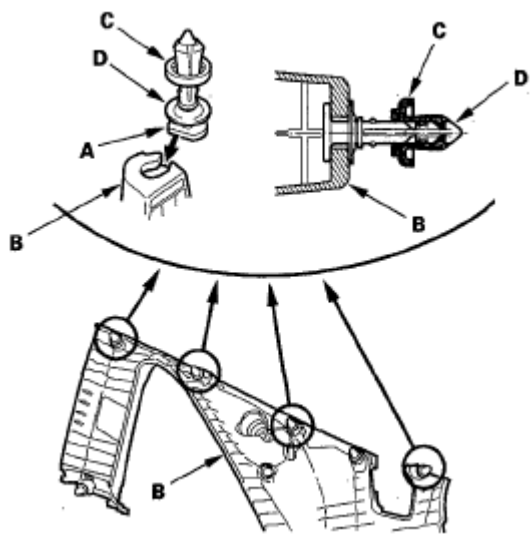


Fig. 32: Identifying Clips, Quarter Pillar Trim, Grommet And Pin
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Reinstall the quarter pillar trim (A).
 1. If equipped with the premium sound system, reconnect the D-pillar speaker connector (B).
 2. If equipped with power tailgate, pass the power tailgate rod (C) through the slit (D) in the quarter pillar trim.
 3. Place the trim over the C-pillar/D-pillar (E), and fit its upper clips (F), and all of the other clips (G, H) into holes (I) in the body, then lightly push the trim into place.

NOTE:

- Make sure the side curtain airbag isn't tucked down under the clips and ribs.
- Apply pressure to the areas of the trim on the upper clips until these clip fittings are felt. If you push too hard, the clip will be damaged, and it will not hold the trim properly.
- Make sure the upper clip portions of the trim don't come off the body by tugging on the trim.

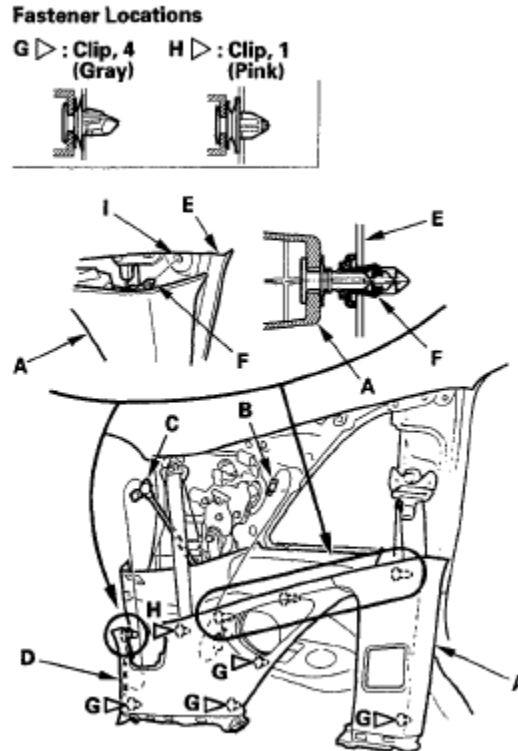


Fig. 33: Identifying C-Pillar/D-Pillar, Upper Clips, Clips And Holes

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. With power tailgate: Fasten the pivot bracket (A) on the tailgate.

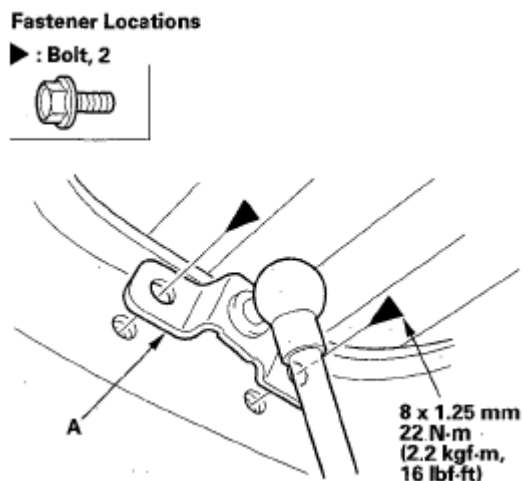


Fig. 34: Identifying Pivot Bracket With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Reinstall all of the removed parts.

TRIM REMOVAL/INSTALLATION - CARGO AREA

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the cargo floor lid (A). A

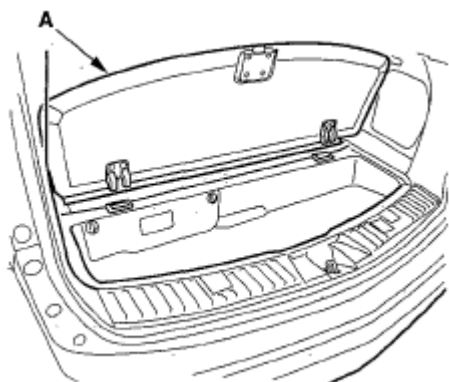


Fig. 35: Identifying Cargo Floor Lid

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Detach the hooks (A) from the rear side trim panel (B), and pull the rear trim panel (C) up by hand to detach the clips, then remove it.

Fastener Locations

▷ : Clip, 4
(Gray)

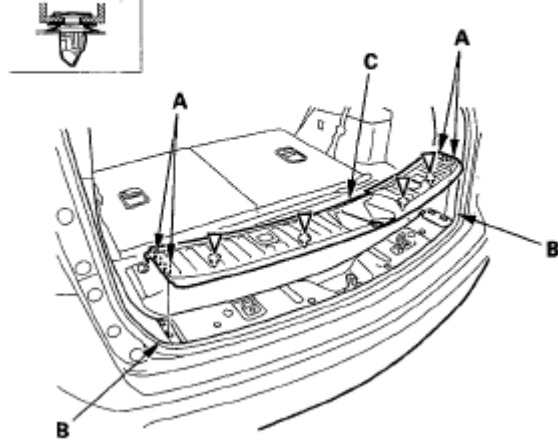


Fig. 36: Identifying Hooks, Rear Side Trim Panel And Rear Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the lock knobs (A) 90 °, then remove the tool set holder (B).

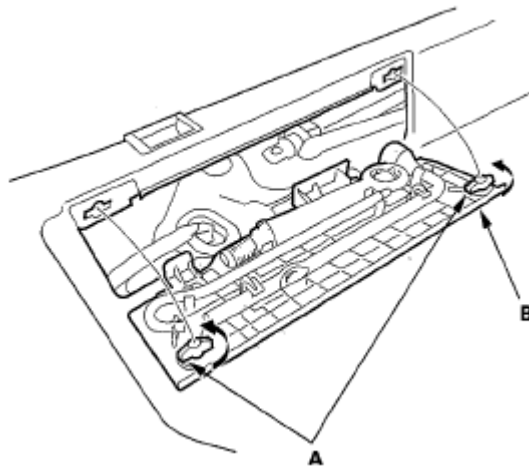


Fig. 37: Identifying Lock Knobs And Tool Set Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws, then remove the cargo lid hinges (A).

Fastener Locations

► : Screw, 2

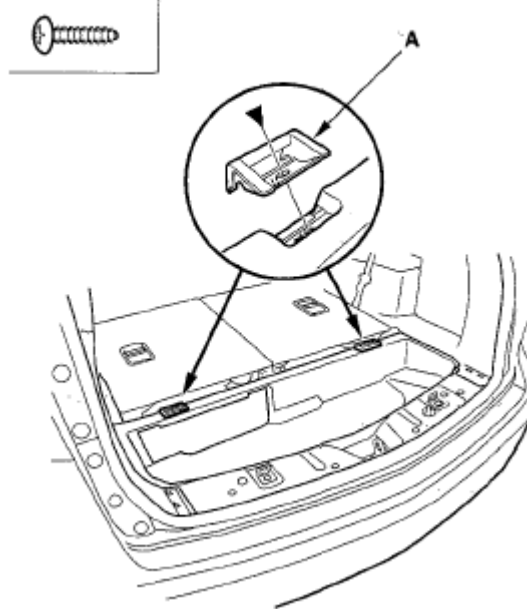


Fig. 38: Identifying Cargo Lid Hinges

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the cargo rear trim panel (A).

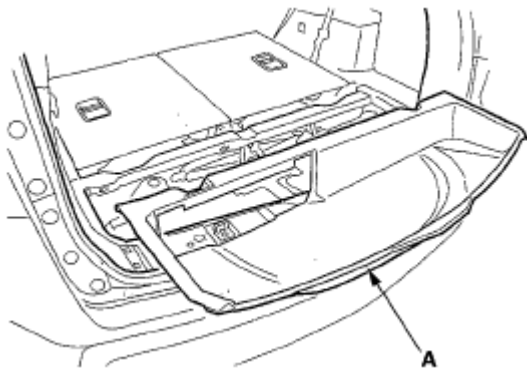


Fig. 39: Identifying Cargo Rear Trim Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the trim in the reverse order of removal, and note these items:
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips and hooks into place securely.

TRIM REMOVAL/INSTALLATION - REAR SIDE AREA

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

REAR SIDE TRIM PANEL REMOVAL/INSTALLATION

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove these items:

- Rear door sill trim (see **REAR DOOR SILL AREA**)
- Rear door opening seal, as needed (see step 3)
- Tailgate weatherstrip, as needed (see **TAILGATE WEATHERSTRIP REPLACEMENT**)
- Cargo floor lid (see step 1)
- Rear trim panel (see step 2)
- Cargo lid hinges (see step 4)
- Cargo rear trim panel (see step 5)

2. Raise the third row seat up, and remove the clips from under the third row seat.

Fastener Locations

▷ : Clip, 2

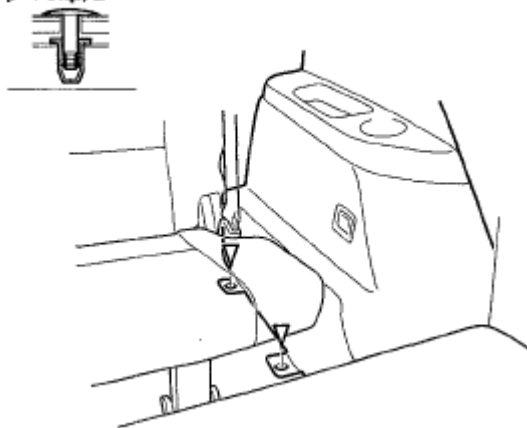


Fig. 40: Identifying Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Fold the third row seat-back forward.
4. Pry out the cover (A) and remove the bolt (B), then remove the tie down hook (C) (two places).

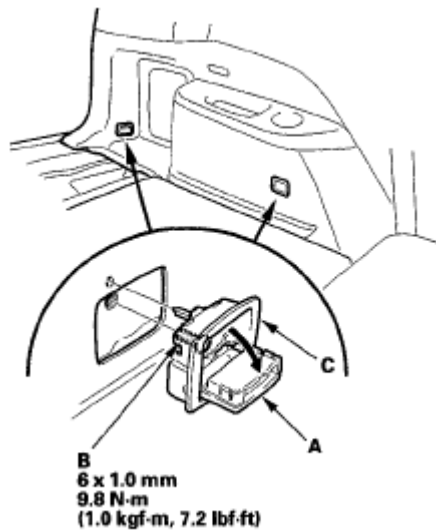


Fig. 41: Identifying Cover, Bolt And Tie Down Hook With torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Right side: Pry out the lid (A) and remove the screw in the pull pocket.

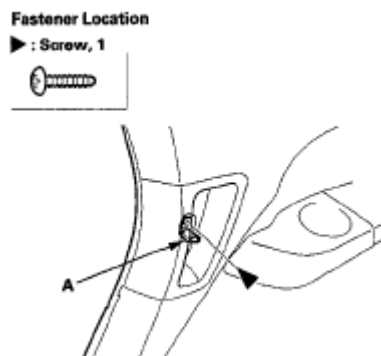


Fig. 42: Identifying Lid
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Open the cargo hook (A). Pry out the cover (B) and remove the screw.

Fastener Location

► : Screw, 1

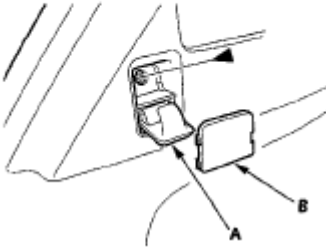
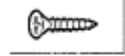


Fig. 43: Identifying Cargo Hook And Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pull out the front upper edge of the rear side trim panel (A) by hand to release the tabs (B) and hooks (C) from the quarter pillar trim (D).

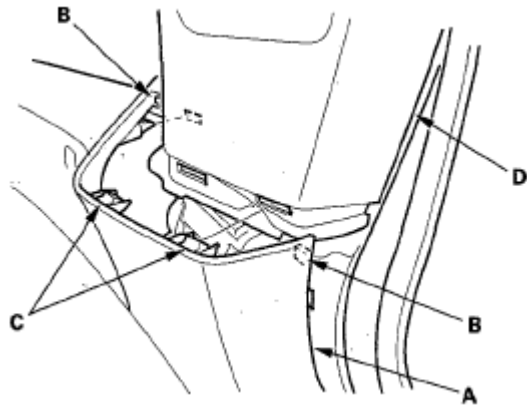


Fig. 44: Identifying Rear Side Trim Panel, Tabs, Hooks And Quarter Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pull out the rear upper edge of the rear side trim panel (A) by hand to release the tabs (B) and hooks (C) from the quarter pillar trim (D).

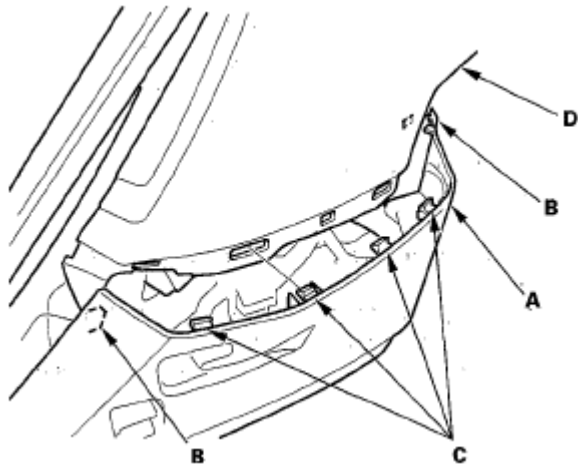


Fig. 45: Identifying Rear Side Trim Panel, Tabs, Hooks And Quarter Pillar Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pull the rear side trim panel (A) back by hand to detach the clips (B, C).

Left side on the vehicle without power tailgate

Fastener Locations

B ▷ : Clip, 7 (Gray)
 C ▷ : Clip, 2 (Green)

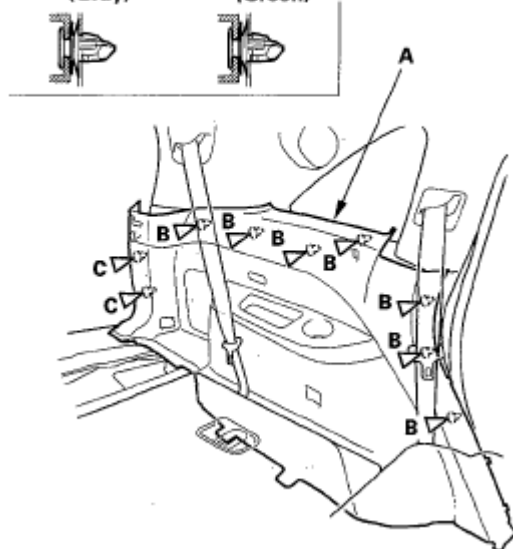


Fig. 46: Identifying Rear Side Trim Panel And Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Left side on the vehicle with power tailgate

Fastener Locations

B ▷ : Clip, 6
(Gray)

C ▷ : Clip, 2
(Green)

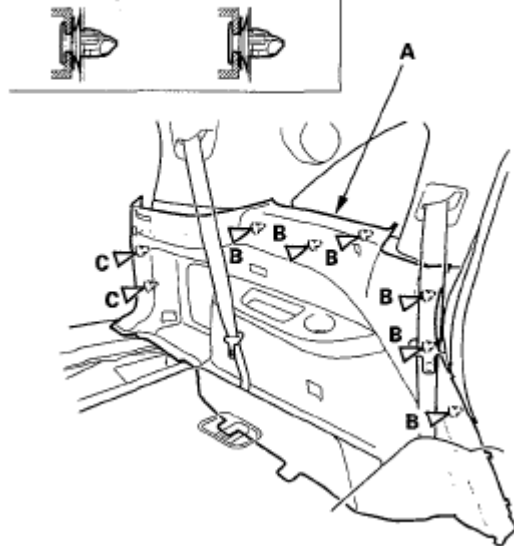


Fig. 47: Identifying Rear Side Trim Panel - Left Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right side**Fastener Locations**

B ▷ : Clip, 6
(Gray)

C ▷ : Clip, 2
(Green)

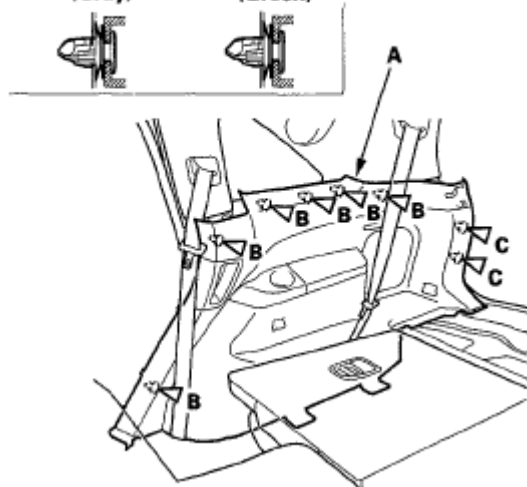


Fig. 48: Identifying Rear Side Trim Panel - Right Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull the rear side trim panel (A) up, then remove it. On the left side, disconnect the rear accessory socket connector (C).

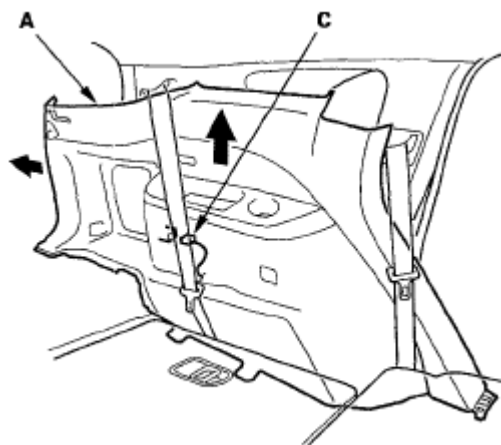


Fig. 49: Identifying Rear Side Trim Panel And Rear Accessory Socket Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

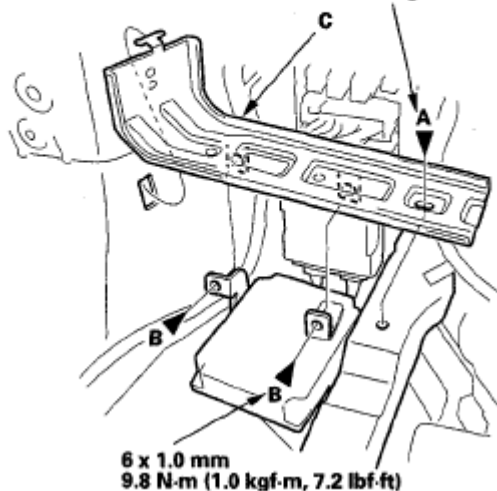
11. If necessary, remove the bolt (A), and on the left side, remove the active damper unit mounting bolts (B), then remove the rear side trim panel support bracket (C).

Fastener Locations

A ► : Bolt, 1 B ► : Bolt
Left side, 2



6 x 1.0 mm
9.8 N·m
(1.0 kgf·m, 7.2 lbf·ft)



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

Fig. 50: Identifying Bolt, Active Damper Unit Mounting Bolts And Rear Side Trim Panel Support Bracket With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the trim in the reverse order of removal, and note these items:
 - Make sure the accessory socket connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips, hooks and tabs into place securely.

ARMREST REPLACEMENT

1. Remove the rear side trim panel.
2. Remove the screws and release the hooks (A), then remove the armrest (B).

Left side

Fastener Locations

► : Screw, 9

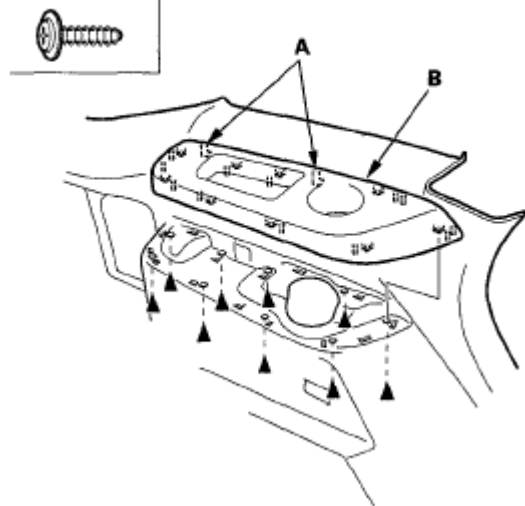


Fig. 51: Identifying Hooks And Armrest - Left Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right side

Fastener Locations

► : Screw, 9

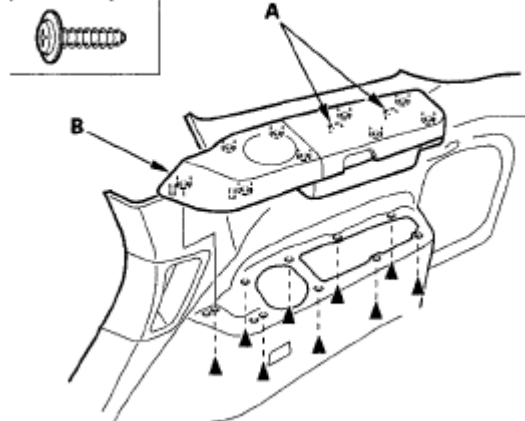


Fig. 52: Identifying Hooks And Armrest - Right Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the armrest in the reverse order of removal.

SPEAKER GRILLE REPLACEMENT

1. Remove the rear side trim panel.
2. Remove the screws and release the hooks (A), then remove the speaker grille (B).

Fastener Locations

► : Screw, 8

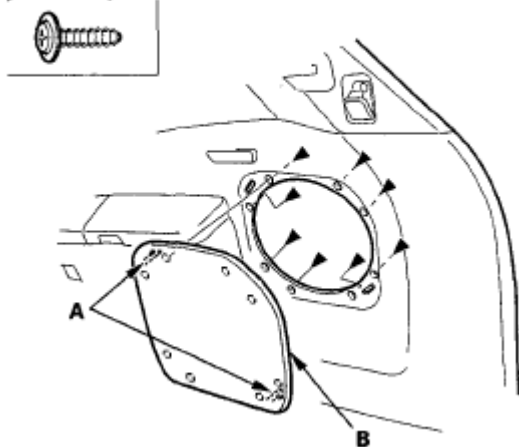


Fig. 53: Identifying Hooks And Speaker Grille
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the grille in the reverse order of removal.

TRIM REMOVAL/INSTALLATION - TAILGATE AREA

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the tailgate upper trim panel (A).
 1. Detach the hooks (B) and tabs (C) from the left tailgate side trim (D) and right tailgate side trim (E).
 2. Pull the tailgate upper trim panel back by hand to detach the clips, then remove it.

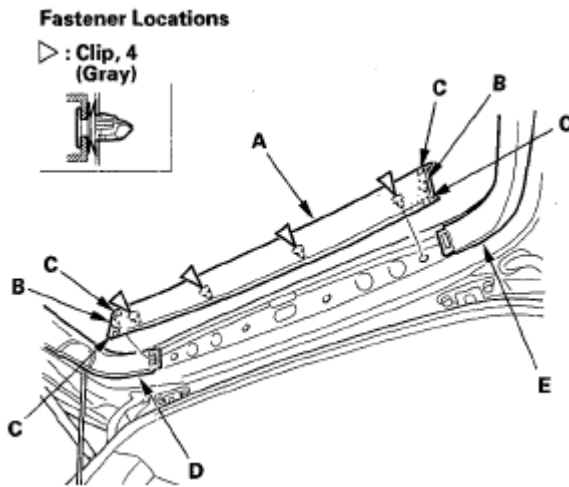


Fig. 54: Identifying Hooks, Tabs, Left Tailgate Side Trim And Right Tailgate Side Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the left tailgate side trim (A) and the right tailgate side trim (B).
 1. Pull out the top of the side trim to detach the clips.
 2. Detach the tabs (C) and hooks (D) from the tailgate lower trim panel (E).

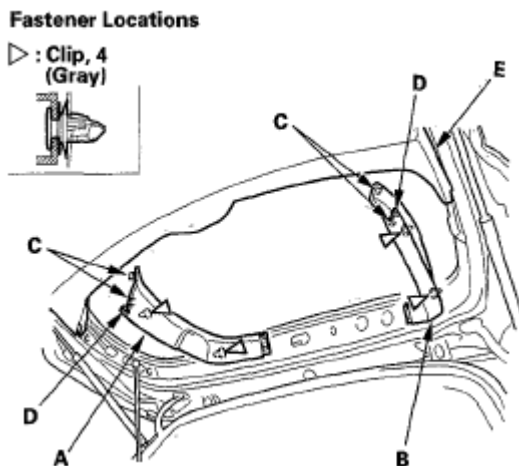


Fig. 55: Identifying Left Tailgate Side Trim, Right Tailgate Side Trim, Tabs And Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the tailgate pull pocket (A).
 1. Pry the hooks (B) with a trim tool.
 2. Carefully pull the edge of the tailgate lower trim panel (C) just beside the tailgate pull pocket by hand, and push out the inside hooks (D).
 3. Pull down the upper edge of the pocket and release the lower tabs (E).
 4. With power tailgate: Disconnect the power tailgate close switch connector (F).

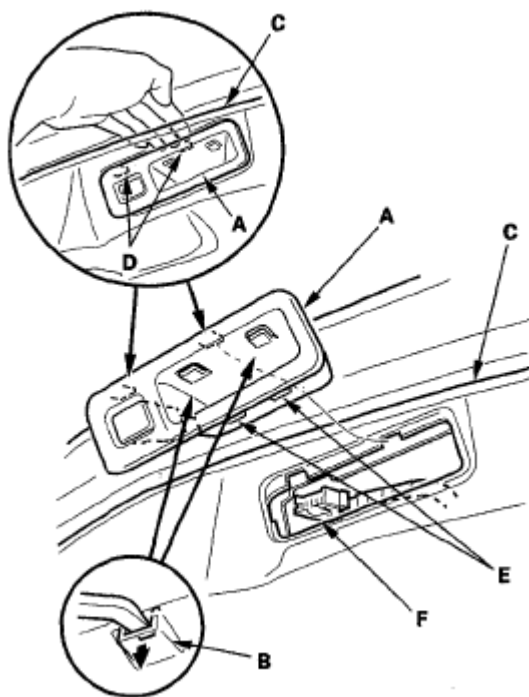


Fig. 56: Identifying Tailgate Pull Pocket, Hooks, Tailgate Lower Trim Panel And Lower Tabs
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the tailgate lights (see TAILGATE LIGHT TEST/REPLACEMENT).
5. Remove the tailgate lower trim panel (A).
 1. Detach the clips (B) beside the tailgate latch.
 2. Pull down the panel to detach all of the clips (C).

Fastener Locations

B, C ▷ : Clip, 16 (Gray)
 D ▷ : Clip, 1 (Green)

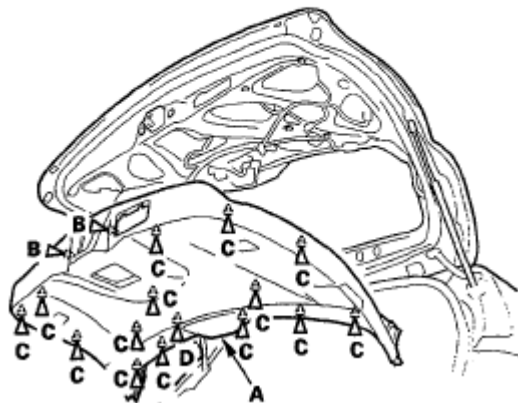


Fig. 57: Identifying Tailgate Lower Trim Panel And Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the trim and panel in the reverse order of removal, and note these items:
 - Make sure the power tailgate close switch connector is plugged in properly.
 - If the clips are damaged or stress-whitened, replace them with new ones.
 - Push the clips, hooks, and tubs into place securely.

SUNVISOR REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to scratch the headliner.
- Be careful not to damage the dashboard and other interior trim.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- When using a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Using a trim tool, release the tabs (A) of the sunvisor cap (B) from the bracket (C).

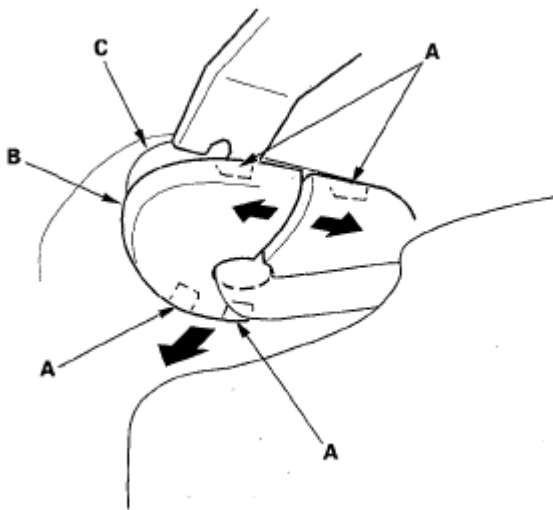


Fig. 58: Identifying Tabs, Sunvisor Cap And Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the sunvisor (A).
 1. Remove the screws.

2. Remove the sunvisor from the body and holder (B).
3. Disconnect the vanity mirror light connector (C).

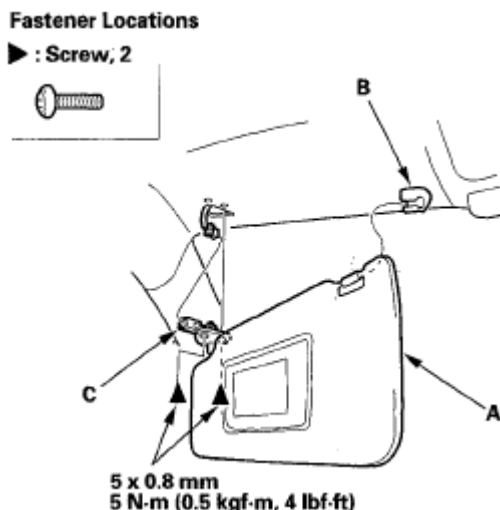


Fig. 59: Identifying Sunvisor, Holder And Vanity Mirror Light Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a flat-tip screwdriver, push the hook (A), and turn the holder (B) 90°, then pull it out.

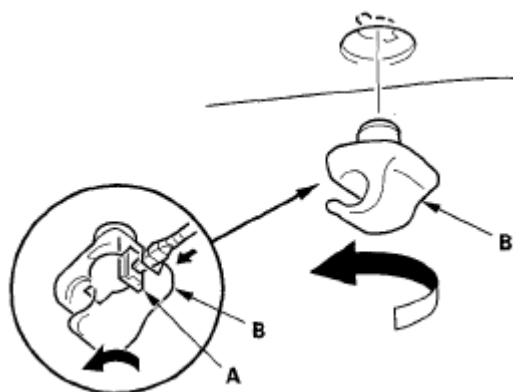


Fig. 60: Identifying Hook And Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the side curtain airbag has deployed (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**), replace the sunvisor with a new one.
5. If the side curtain airbag has not deployed, to prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect removed sunvisor and replace it if it has any cracks or damage:
 - Any cracks in the sunvisor stay base (A)
 - Any bends or cracks in the sunvisor stay shaft (B)

- Any cracks in the sunvisor base (C)
- Any cracks in the vanity mirror base (D)

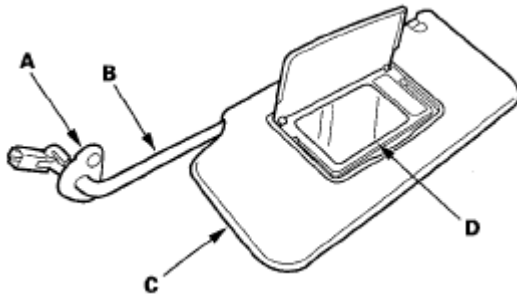


Fig. 61: Identifying Vanity Mirror Base, Sunvisor Base, Sunvisor Stay Base And Sunvisor Stay Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the sunvisor in the reverse order of removal, and make sure the vanity mirror light connector is plugged in properly.

GRAB HANDLE REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE: Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Lower the grab handle (A), then pull out the caps (B) by prying up at the notches (C) with a small flat-tip screwdriver.

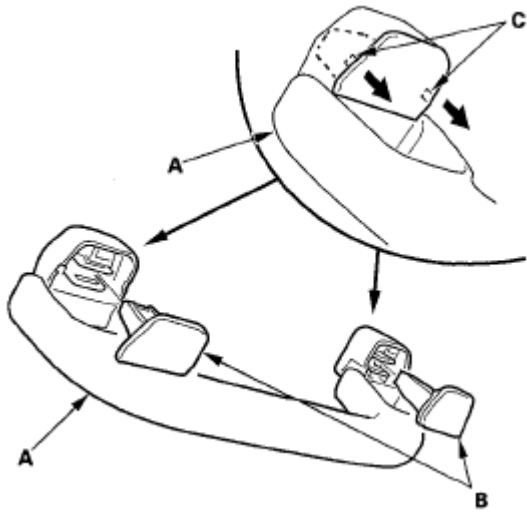


Fig. 62: Identifying Grab Handle, Caps And Notches
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. While pinching the clips (A), release the hooks (B), then remove the grab handle (C).

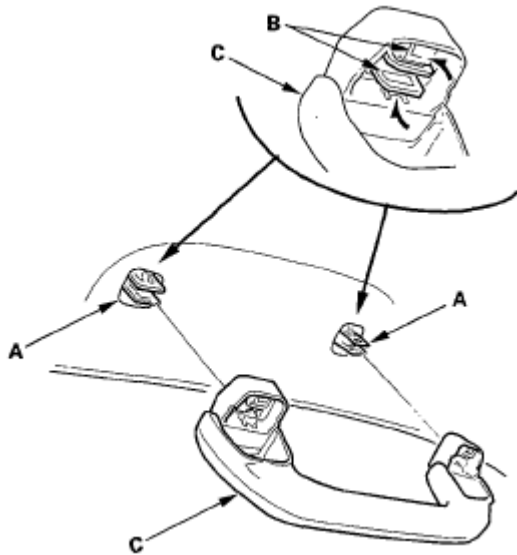


Fig. 63: Identifying Clips, Hooks And Grab Handle
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a pair of pliers, remove all of the clips (A) by pinching its hooks.

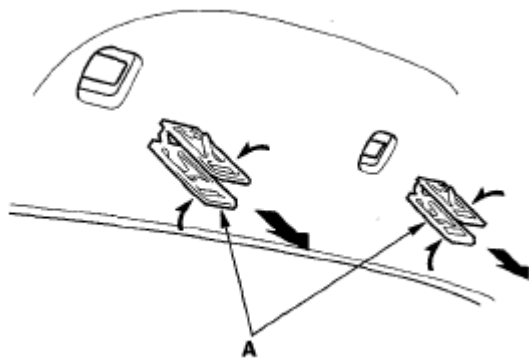


Fig. 64: Identifying Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the side curtain airbag has deployed, replace the grab handle with a new one (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
5. If the side curtain airbag has not deployed, to prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect removed pieces and replace them if they have any of these types of damage:
 - Any cracks or damage in the grab handle (A)
 - Any cracks or stress-whitening in the caps (B)

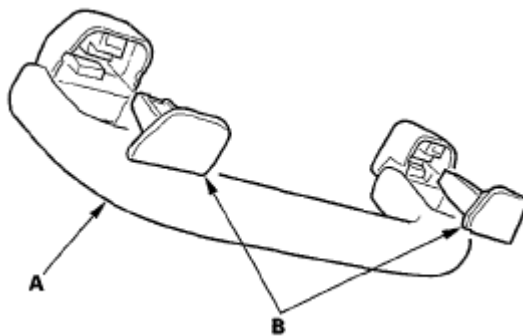


Fig. 65: Identifying Grab Handle And Caps

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the clips (A) to the grab handle (B), then install the caps (C) fully into the clips.

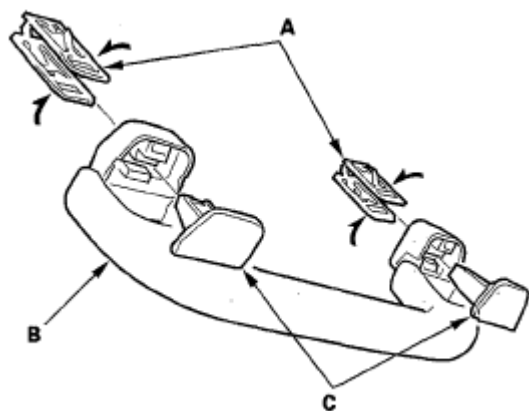


Fig. 66: Identifying Clips, Grab Handle And Caps
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Position the grab handle (A) on the bracket (B), and push on the grab handle until the clips (C) snap into place securely.

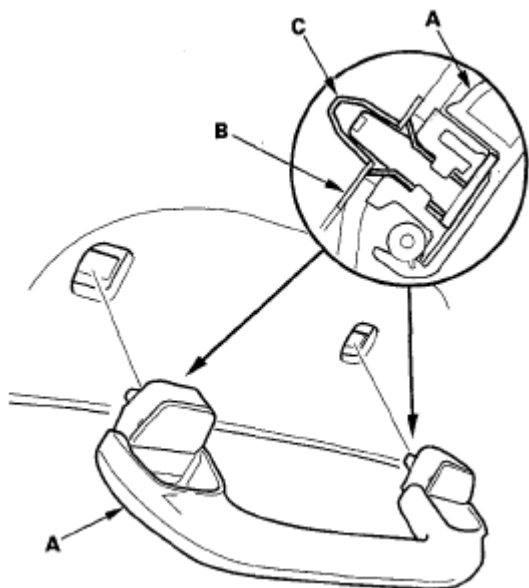


Fig. 67: Identifying Grab Handle, Bracket And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

HEADLINER REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to bend and scratch the headliner.
- Be careful not to damage the dashboard and other interior trim.

1. Remove these items:

- A-pillar trim, both sides (see **A-PILLAR TRIM**)
- Front seat belt upper anchor, both sides (see step 7 **FRONT SEAT BELT REPLACEMENT**)
- B-pillar lower trim, both sides (see **B-PILLAR UPPER/LOWER TRIM**)
- B-pillar upper trim, both sides (see **B-PILLAR UPPER/LOWER TRIM**)
- Quarter pillar trim, both sides (see **QUARTER PILLAR TRIM**)
- Sunvisors, both sides (see **SUNVISOR REMOVAL/INSTALLATION**)
- Grab handles, four places (see **GRAB HANDLE REMOVAL/INSTALLATION**)
- Rear individual map light (see **REAR INDIVIDUAL MAP LIGHT TEST/REPLACEMENT**)
- Cargo area light (see **TAILGATE LIGHT TEST/REPLACEMENT**)
- Center second row seat belt cover (see step 1 on **SECOND ROW SEAT BELT REPLACEMENT**)
- RES display cover (for some models) (see **REAR CONTROLLER AND SCREEN REMOVAL/INSTALLATION**)
- Roof console (see **INTERIOR LIGHT SWITCH TEST/REPLACEMENT**)

2. Remove the screws, then remove the roof console bezel (A).

Fastener Locations

► : Screw, 4



Fig. 68: Identifying Roof Console Bezel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, remove the remaining roof console clips (A) from the body and the moonroof frame (B).

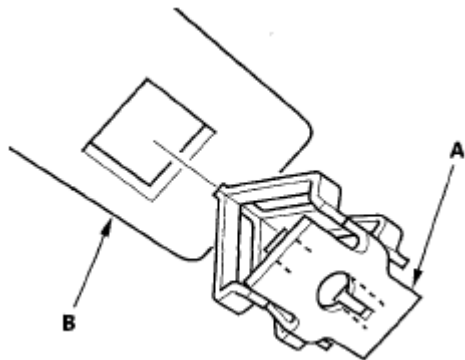


Fig. 69: Identifying Roof Console Clips And Moonroof Frame

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the roof wire harness connector (A).

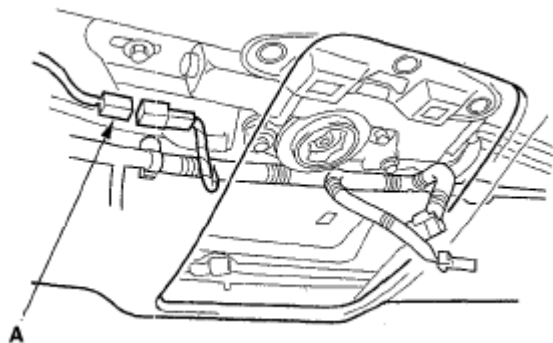


Fig. 70: Identifying Roof Wire Harness Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With rear entertainment system: Disconnect the RES wire harness connectors (A) and detach the harness clips (B) from the left A-pillar (C).

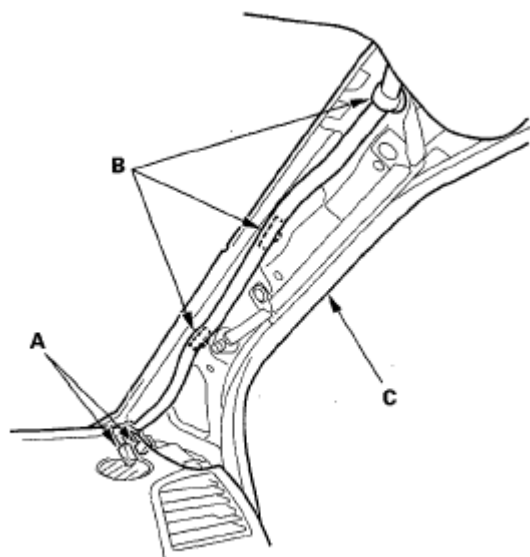


Fig. 71: Identifying RES Wire Harness Connectors, Clips And Left A-Pillar
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With rear entertainment system: Disconnect the RES wire harness connectors (A) from the rear controller and screen (B).

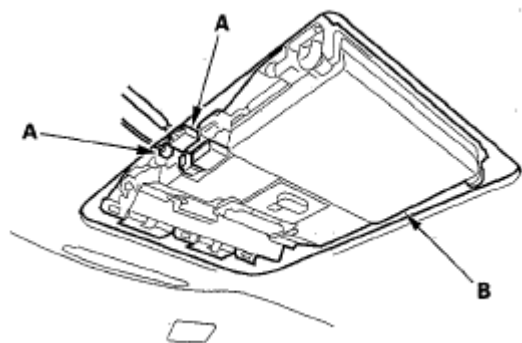


Fig. 72: Identifying RES Wire Harness Connectors, Rear Controller And Screen
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Lower the headliner (A). The vehicle with rear entertainment system is shown; and without rear entertainment system is similar.
 1. Remove the front door opening seals (B), rear door opening seals (C), and tailgate weatherstrip (D) from each roof portion.
 2. With the help of an assistant, detach the rear clips by pulling the rear portion of the headliner down.
 3. With the help of an assistant, release the fasteners (E) by lowering the headliner.

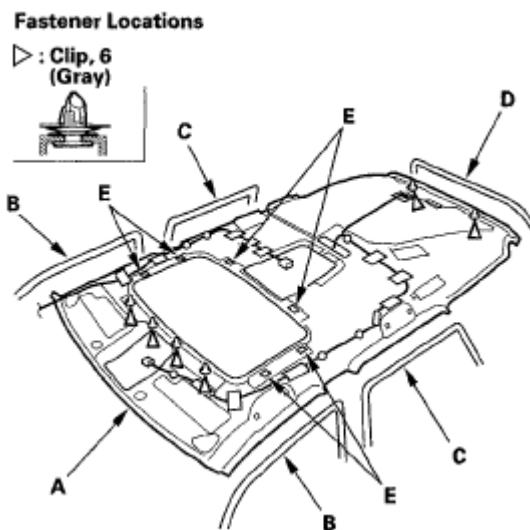


Fig. 73: Identifying Headliner, Front Door Opening Seals, Rear Door Opening Seals And Tailgate Weatherstrip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. With the help of an assistant, pull the headliner (A) along with the roof wire harness and rear entertainment system wire harness (for some models) out through the tailgate opening. Do not bend the liner. Bending the liner will crease and damage it.

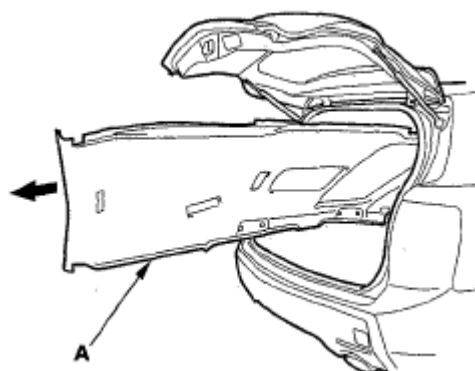


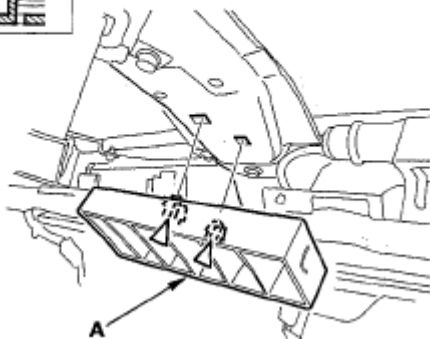
Fig. 74: Identifying Headliner

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If necessary, detach the hooks, then remove the roof side pad (A).

Fastener Locations

▷ : Hook, 2

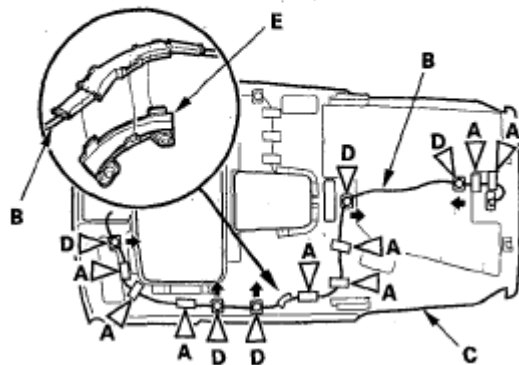
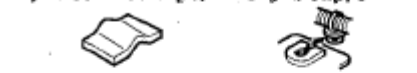
**Fig. 75: Identifying Roof Side Pad**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. If necessary, remove the cushion tapes (A) fastening the roof subharness (B) to the headliner (C), detach the harness clips (D) and release the harness from the harness protector base (E), then remove them from the headliner.

Fastener Locations

A ▷ : Cushion tape, 8 D ▷ : Clip, 5

**Fig. 76: Identifying Cushion Tapes, Roof Subharness, Headliner, Harness Clips And Protector Base**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. With rear entertainment system: If necessary, remove the cushion tape (A) fastening the RES wire harness (B) to the headliner (C), detach the harness clips (D) and release the harness from the harness protector base (E), then remove them from the headliner.

Fastener Locations

A ▷ : Cushion tape, 5 D ▷ : Clip, 2

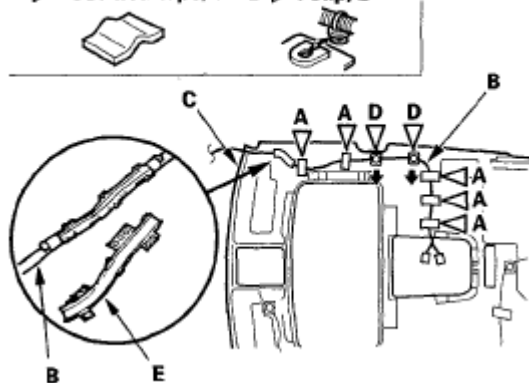


Fig. 77: Identifying Cushion Tape, RES Wire Harness, Headliner And Harness Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the headliner in the reverse order of removal, and note these items:
 - If the side curtain airbag has deployed, replace the headliner and removed trim pieces with new ones (see **COMPONENT REPLACEMENT/INSPECTION AFTER DEPLOYMENT**).
 - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect removed pieces and replace them if they have any of these types of damage:
 - Any crease or tears in the headliner (A)
 - Any cracks or breakages in the grab handle (B)
 - Any damages around the grab handle holes (C) or sunvisor holes in the headliner
 - Any cracks in the sunvisor stay base (D)
 - Any bends or cracks in the sunvisor stay shaft (E)
 - Any cracks in the sunvisor base (F)
 - Any cracks or breakages in the vanity mirror base(G)
 - Any fasteners (H) and clip bases (I) which have come off the headliner
 - When installing the grab handle, push on the handle against the bracket (J) until the clips (K) snap into place securely.
 - Check if the clips are damaged or stress-whitened, and if necessary, replace them with new ones.
 - Replace the removed cushion tape with new ones.
 - Check that both sides of the headliner are securely attached to the trim.
 - Make sure the headliner overlaps the trim pieces correctly (see **CHECKING AND ADJUSTING THE HEADLINER/PILLAR TRIM OVERLAP**).
 - When reinstalling the headliner through the tailgate opening, be careful not to fold or bend it. Also, be careful not to scratch the body.

Headliner

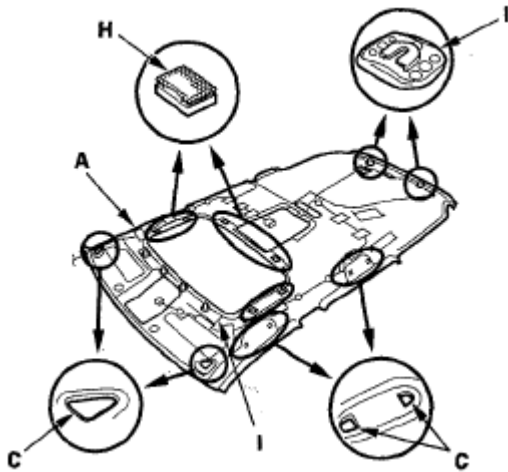


Fig. 78: Identifying Headliner Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Grab handle

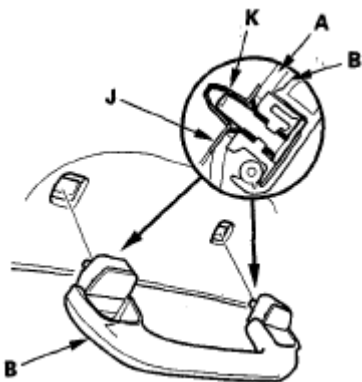


Fig. 79: Identifying Grab Handle Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Sunvisor

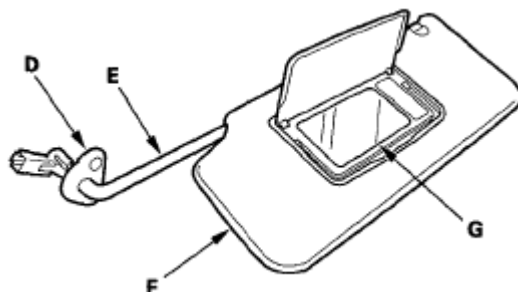


Fig. 80: Identifying Sunvisor Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CARPET REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to damage, wrinkle or twist the carpet.
- Be careful not to damage the dashboard and other interior trim pieces.

1. Remove these items:

- Front seats, both sides (see **FRONT SEAT REMOVAL/INSTALLATION**)
- Second row seats, both sides (see **SECOND ROW SEAT REMOVAL/INSTALLATION**)
- Third row seats, both sides (see **THIRD ROW SEAT REMOVAL/INSTALLATION**)
- Front door sill trim, both sides (see **FRONT DOOR SILL AREA**)
- Rear door sill trim, both sides (see **REAR DOOR SILL AREA**)
- Kick panels, both sides (see step 3)
- Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
- Passenger's dashboard undercover (see **PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
- Steering joint cover (see **STEERING COLUMN REMOVAL AND INSTALLATION**)

2. Detach the hooks (A), then remove the footrest plate (B).

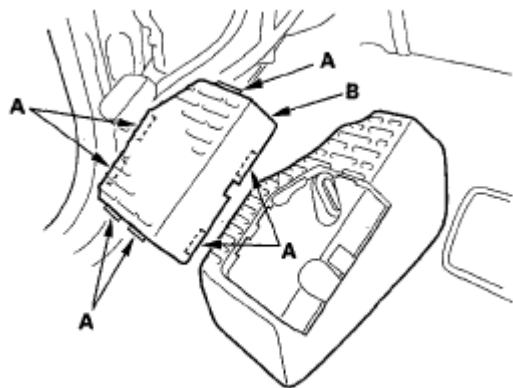


Fig. 81: Identifying Hooks And Footrest Plate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the nut (A). Using a 6 mm socket wrench, release the clip (B), then remove the footrest (C).

Fastener Locations

A ● : Nut, 1 B ▷ : Clip, 1

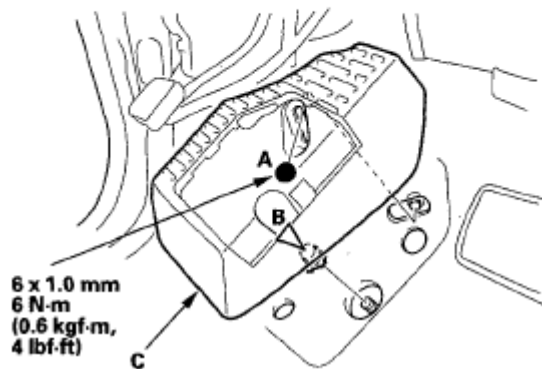


Fig. 82: Identifying Nut, Clip And Footrest With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the clips fastening both rear side trim panels (A). Pull out the edge of the carpet (B) from under the panels.

Fastener Locations

▷ : Clip, 4

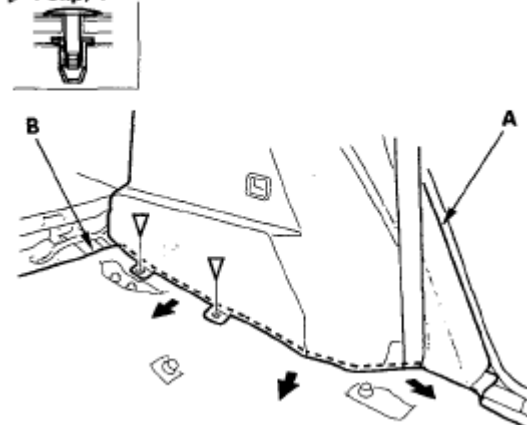


Fig. 83: Identifying Rear Side Trim Panels And Edge Of Carpet
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the clips fastening the edge of the carpet (A) from both front door sill areas and both rear door sill areas. Pull out the edge of the carpet from under the B-pillar lower trim (B).

Fastener Locations

▷ : Clip, 4

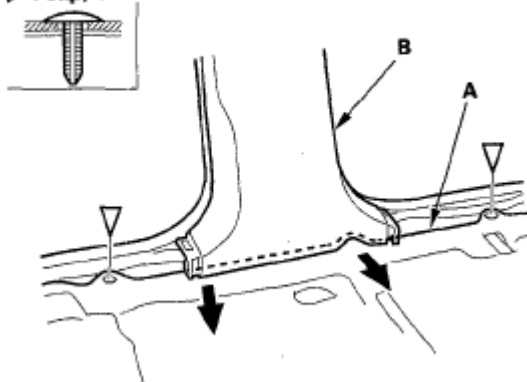


Fig. 84: Identifying Edge Of Carpet And B-Pillar Lower Trim
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull out the middle edge of the carpet (A) from under the center console (B), driver's/passenger's console trim (C), and console rear trim (D).

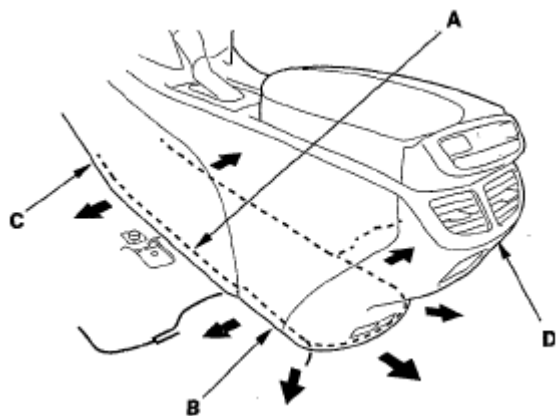


Fig. 85: Identifying Edge Of Carpet, Center Console, Driver'S/Passenger'S Console Trim And Console Rear Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Release the fastener (A) on the front edge of the carpet (B), then pull back the carpet from under the dashboard.

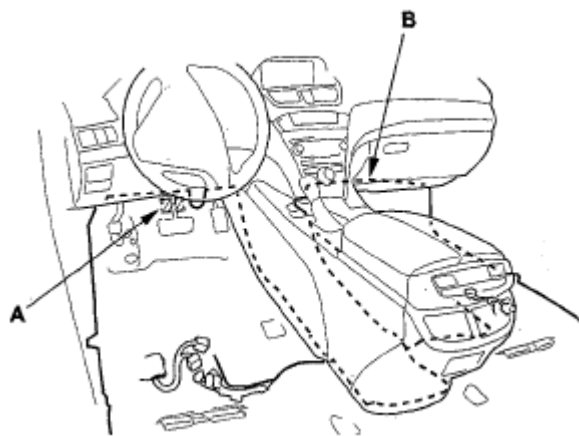


Fig. 86: Identifying Fastener And Edge Of Carpet

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the carpet.
9. Install the carpet in the reverse order of removal, and note these items:
 - Take care not to damage, wrinkle or twist the carpet.
 - Make sure the seat harnesses (A) are routed correctly.
 - Slip the slits (B) in the carpet over the rear heater duct (C) and the third row seat heater duct (D).
 - Slip the carpet under the center console, both B-pillar lower trim, and both rear side trim panels properly.

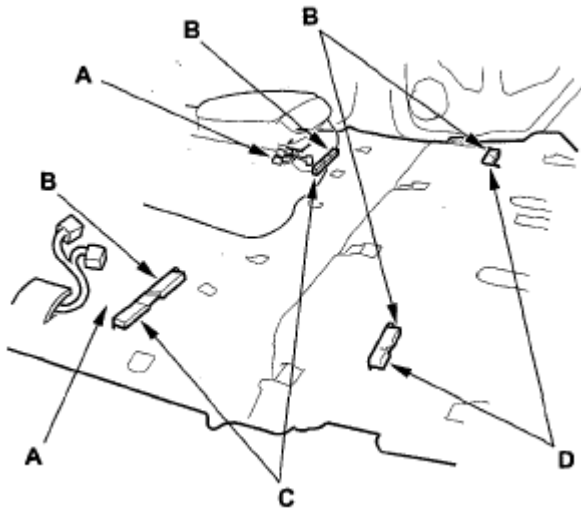


Fig. 87: Identifying Seat Harnesses, Slits, Rear Heater Duct And Third Row Seat Heater Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Keyless/Power Door Locks/Security System - MDX

COMPONENT LOCATION INDEX

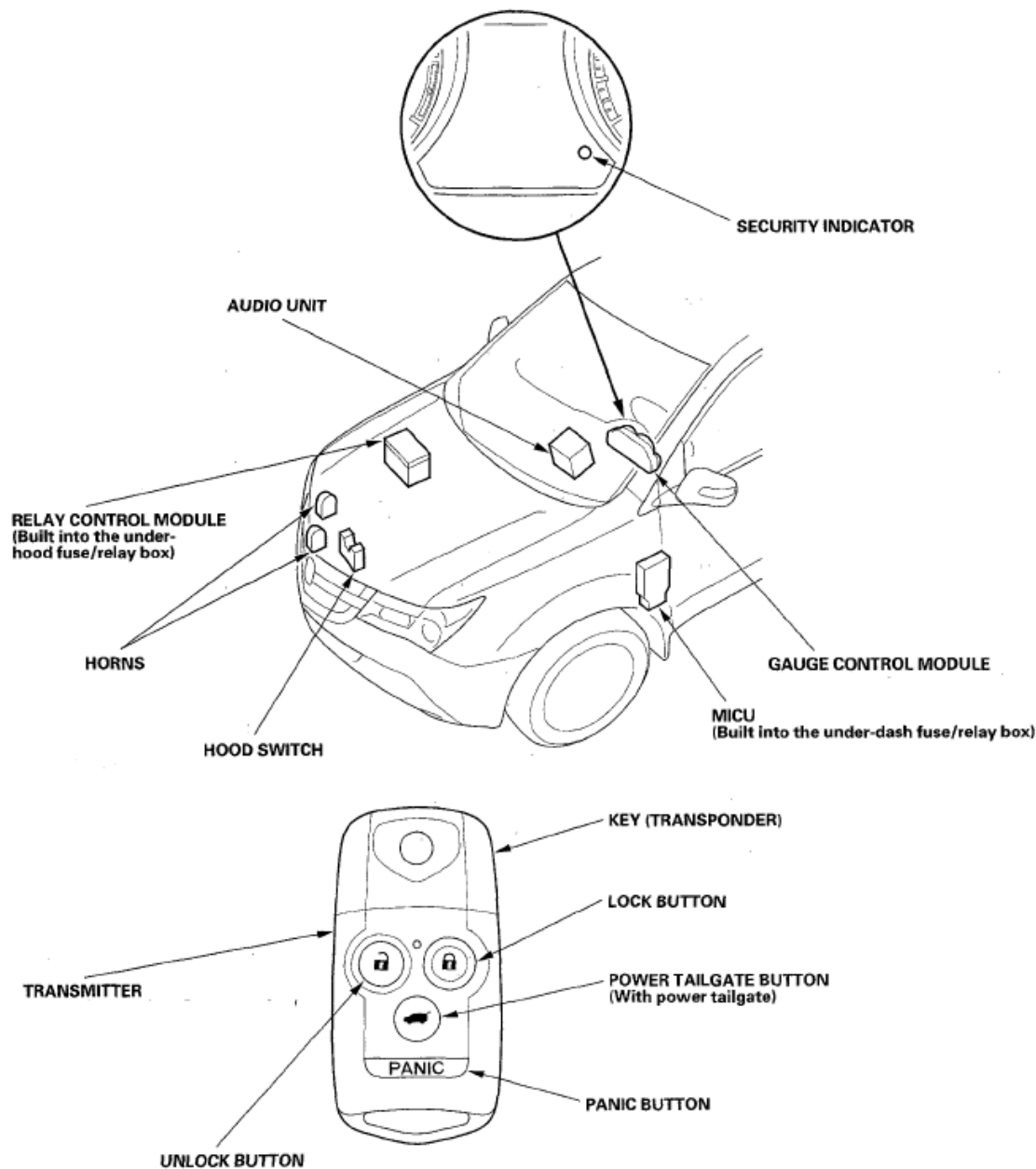


Fig. 1: Identifying Keyless/Power Door Locks/Security System Component Location (1 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

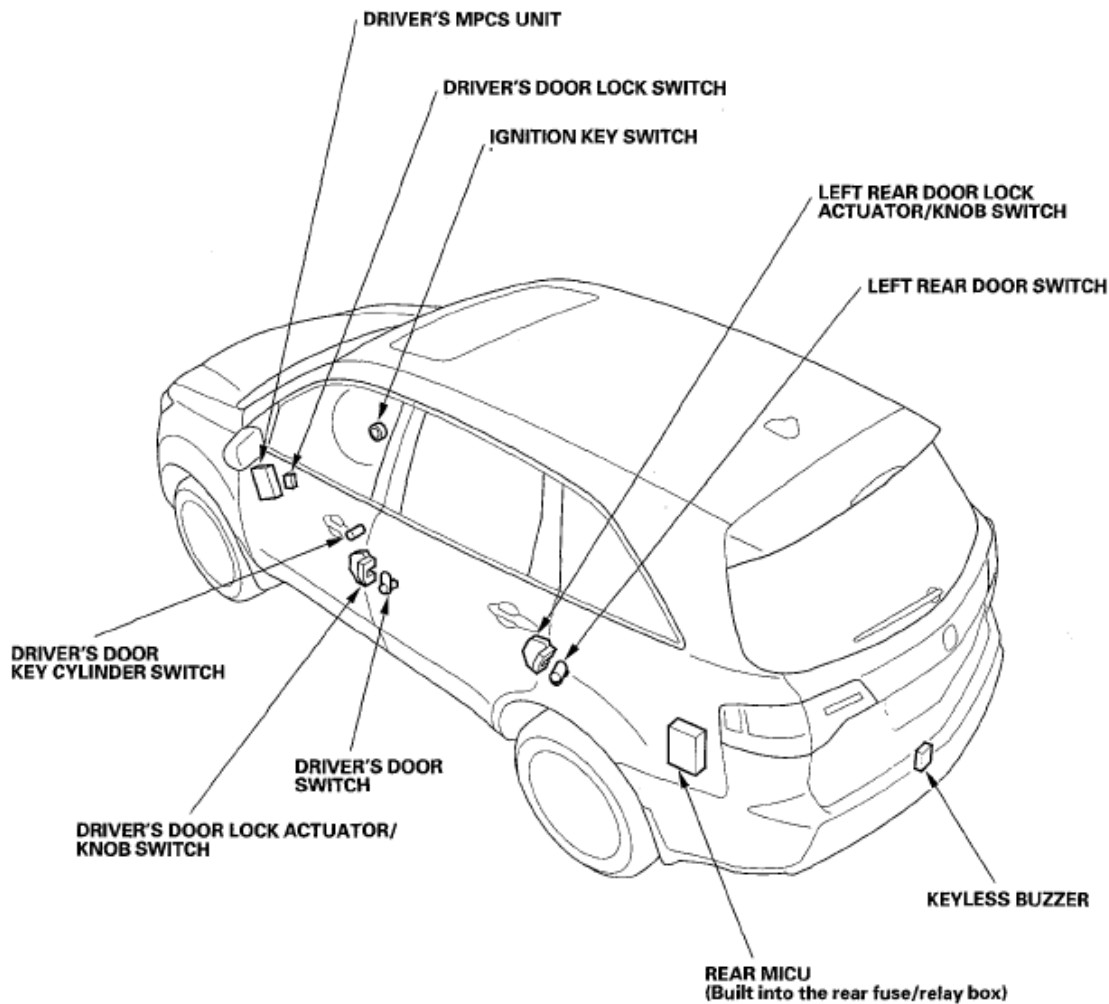


Fig. 2: Identifying Keyless/Power Door Locks/Security System Component Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

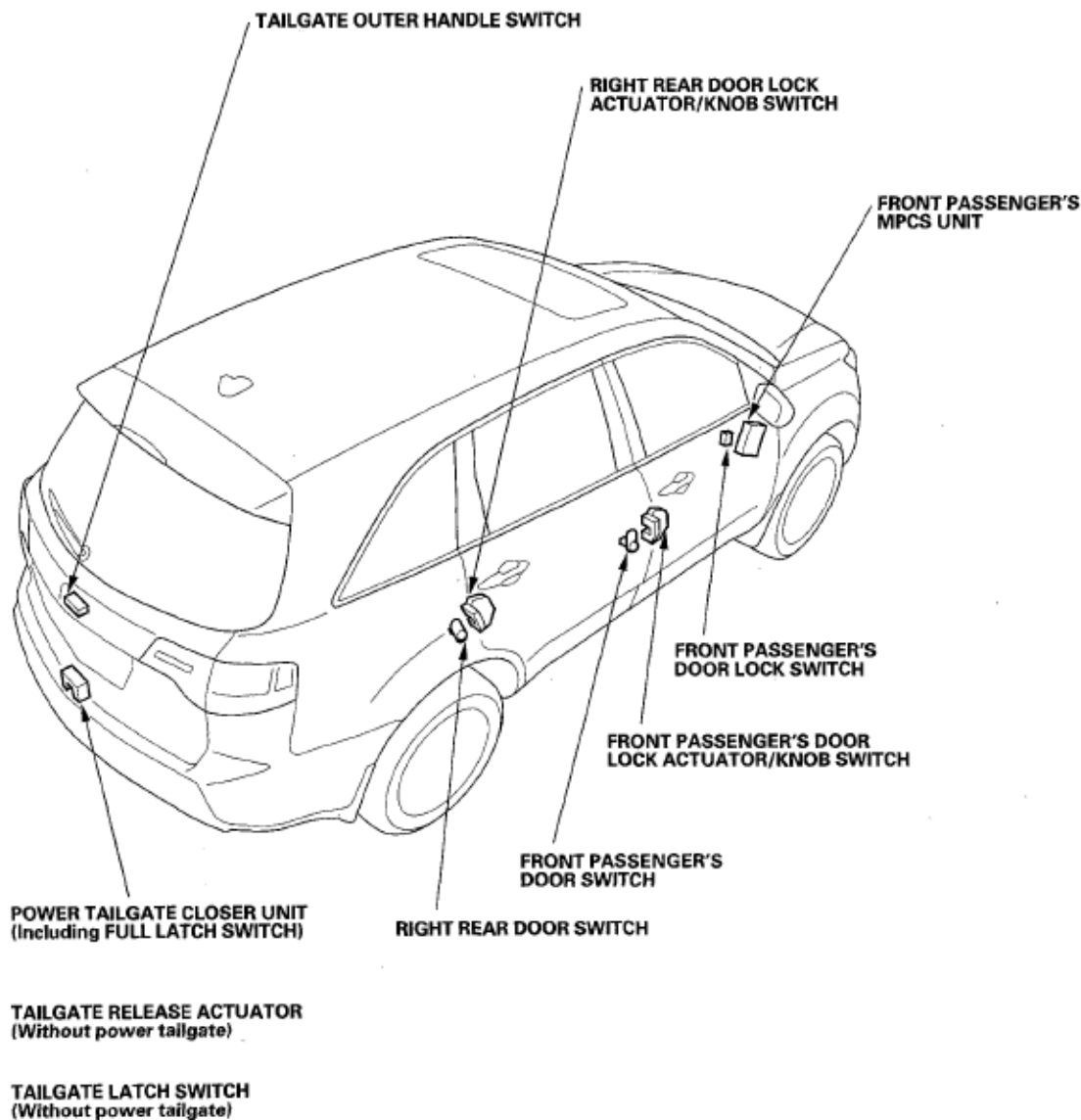


Fig. 3: Identifying Keyless/Power Door Locks/Security System Component Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

SECURITY ALARM SYSTEM

The security alarm system is integrated with the multiplex integrated control system. For the system to arm, the ignition switch must be in the LOCK (0) position, the key must be removed, and the MICU must receive signals that the doors, hood, and tailgate are closed and locked. The alarm can be armed or disarmed at anytime by locking or unlocking the driver's door with the key or pressing the LOCK/UNLOCK button on the transmitter, the alarm can also be armed by locking (with the lock knob) then closing the driver's door.

When everything is closed and locked, the only inputs that are grounded, and have 0 V, are the driver's door lock knob switch (LOCK position), and the audio unit. In other words, all of the other switches are open, and have about 5.0 V in sleep mode or 12 V in awake mode, including the key cylinder switches. The security indicator in the gauge control module begins to flash immediately after the doors, tailgate, and hood are closed and locked, and then, after 20 seconds, the flashing intervals of the security indicator change to indicate that the alarm is fully armed. If the security indicator does not flash, the system is not arming. If the LOCK button is pressed a second time within 5 seconds (Keyless LOCK acknowledgment is turned ON) and the vehicle is completely closed and locked, a beep sounds and parking lights flash one time to confirm the security alarm system is armed.

If one of the switches is misadjusted or shorted internally (0 V), or there is a short in the circuit (0 V), the security system will not arm. A switch that is slightly misadjusted can cause the alarm to sound for no apparent reason. In this case, a significant change in outside air temperature, the vibration of a passing vehicle, or something bumping into the vehicle could cause the alarm to sound. There is no glass breakage or motion detector feature.

If anything is opened or improperly unlocked after the system is armed, the control unit receives a ground signal from that switch, the 5-12 V reference drops to 0 V, and the system sounds the alarm. If the audio unit is disconnected, the input loses its ground, and the input voltage goes to 5-12 V, and the system sounds the alarm. The system sounds the alarm when any of following occur while the security system is armed:

- A door or the tailgate is forced open
- A door is unlocked without using the key or the transmitter
- The hood is opened
- The audio unit (or navigation unit, rear controller and screen) is disconnected
- The transmitter panic is operated
- The ignition switch is turned ON (II)

When the system sounds the alarm, the horns sound and the exterior lights flash for 2 minutes. The alarm can be stopped at any time by unlocking the driver's door with the key or by pressing any button on the transmitter.

Panic Mode

The panic mode sounds the alarm in order to attract attention. When the PANIC button on the transmitter is pressed and held for about 2 seconds, the alarm sounds and the exterior lights flash for about 20 seconds.

The panic mode can be cancelled at anytime by pressing any button on the remote or by turning the ignition switch ON (II). The panic mode will not function if the ignition switch is ON (II).

Keyless Entry System

The keyless entry system is integrated with the multiplex integrated control system. Transmitters 1 and 2 (Identified on the back of each transmitter) are linked to the DPMS, the climate control settings, the custom memory settings (in the MID), the audio, the navigation and the illumination settings. Depending on which transmitter unlocks the vehicle, these settings are chosen.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

Some functions of the security, keyless entry, and power door locks can be customized using the MID keyless memory setting. They include:

- **AUTO DOOR LOCK:** Door locking can be turned off, or turned on when shifting from Park or at a speed above 15mph.
- **AUTO DOOR UNLOCK:** Door unlocking can be turned off, or turned on when shifting to Park or turning the ignition switch OFF.
- **WHENEVER UNLOCKING:** Door unlocking can be set to unlock all doors or only the driver's door on the first push.
- **KEYLESS DOOR LOCK ACKNOWLEDGMENT:** The beep and the front parking lights can be turned on or off when pressing the LOCK/UNLOCK button on the remote.
- **SECURITY RELOCK TIMER:** Select the time (30,60, or 90 sec.) that the doors relock if you unlock the doors with the remote, but do not open any of them.
- **HEADLIGHT AUTO OFF TIMER:** Select time (0,15,30, or 60 sec.) to turn the headlights off after removing the key from the ignition opening, then closing the driver's door.
- **AUTO LIGHT SENSITIVITY:** Automatic lighting sensor sensitivity can be adjusted five steps (MIN/LOW/MID/HIGH/ MAX).
- **INTERIOR LIGHT DIMMING TIMER:** Select the dimming time (15,30, or 60 sec.) of the interior lights after closing the door with the key removed from the ignition.

○ **METER SETUP:**

Language-English/French/Espanol

Outside air temperature-+5 +4 +3+2+10-1 -2 -3 -4 -5

Trip A an average Fuel Reset w/fill-ON/OFF

Adjust alarm volume-HIGH/MID/LOW

Elapsed time reset-manually only, IGN OFF, Trip A, Trip B

Auto interior illumination-MAX MID LOW MIN OFF

○ **POSITION SETUP:**

Memory position link ON/OFF

Auto tilt telescope steering wheel ON/OFF

NOTE: If either of these functions are turned off, they will not function with a linked remote.

○ **LIGHTING SETUP:**

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

Interior light dimming time (15,30, 60 sec.)

Headlight auto OFF timer (0,15, 30,60 sec.)

Auto light sensitivity MAX HIGH MID LOW MIN

○ DOOR WINDOW SETUP:

Auto door lock-Shift from park with vehicle speed ON or OFF-Driver's door/All doors

Auto door unlock-Shift to park with ignition ON or OFF-Driver's door/All doors

Key and remote unlock mode-Driver's door/All doors

Keyless lock acknowledgement-ON/OFF

Security relock timer (90,60,30, sec)

○ WIPER SETUP:

Wiper action intermittent/with speed

The transmitters can be linked and unlinked to the keyless memory settings by pressing the LOCK and UNLOCK buttons at the same time for about 1 second. The LED on the transmitter blinks twice when unlinked, and once when linked.

The keyless entry system allows you to lock and unlock the vehicle with the transmitter. When you press the LOCK button, all the doors lock (unless any one of the doors is not fully closed or the key is in the ignition switch).

When you press the UNLOCK button the first time, only the driver's door unlocks, if keyless memory setting "WHENEVER UNLOCKING" is set to Driver's Door. The other doors unlock when you press the UNLOCK button a second time. All the doors unlock when you press the UNLOCK button the first time if keyless memory setting "WHENEVER UNLOCKING" is set to All Doors.

NOTE: The doors will not lock with the transmitter if a door is not fully closed, or if the ignition key is in the ignition switch.

If the UNLOCK button is pressed, released, then pressed and held, the windows and the moonroof begin to open. The windows and the moonroof stop if the button is released. The windows and moonroof cannot be closed with the remote. See power windows for more information and troubleshooting.

When the interior lights switch is in the "DOOR" position, the individual map lights will come on when the UNLOCK button is pressed. If a door is not opened, the lights will go off in about 30,60, or 90 seconds (depending on the keyless memory setting "SECURITY RELOCK TIMER"), and the doors will relock. If the doors are locked with the transmitter within 30 seconds, the lights will go off immediately.

CIRCUIT DIAGRAM

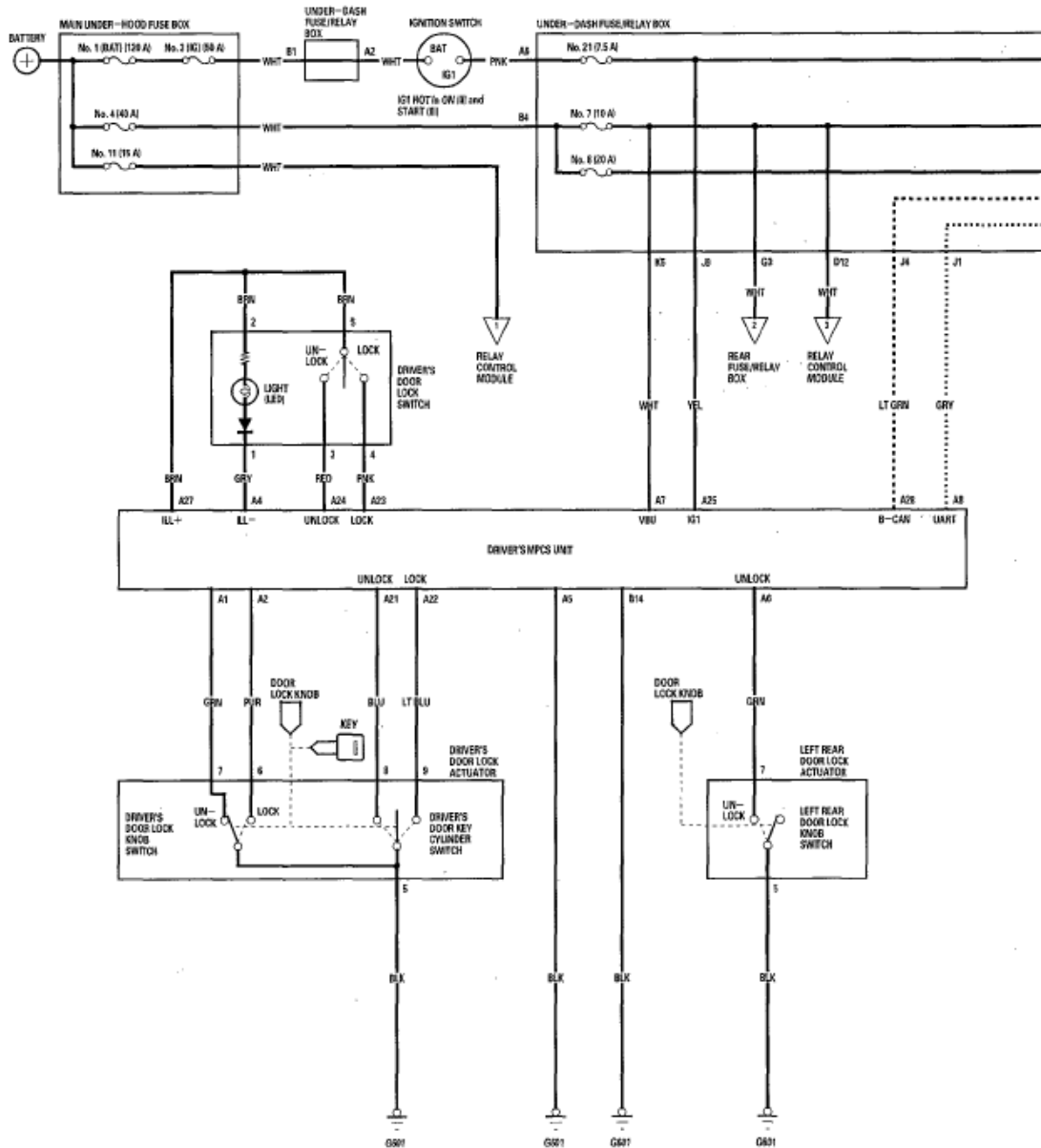
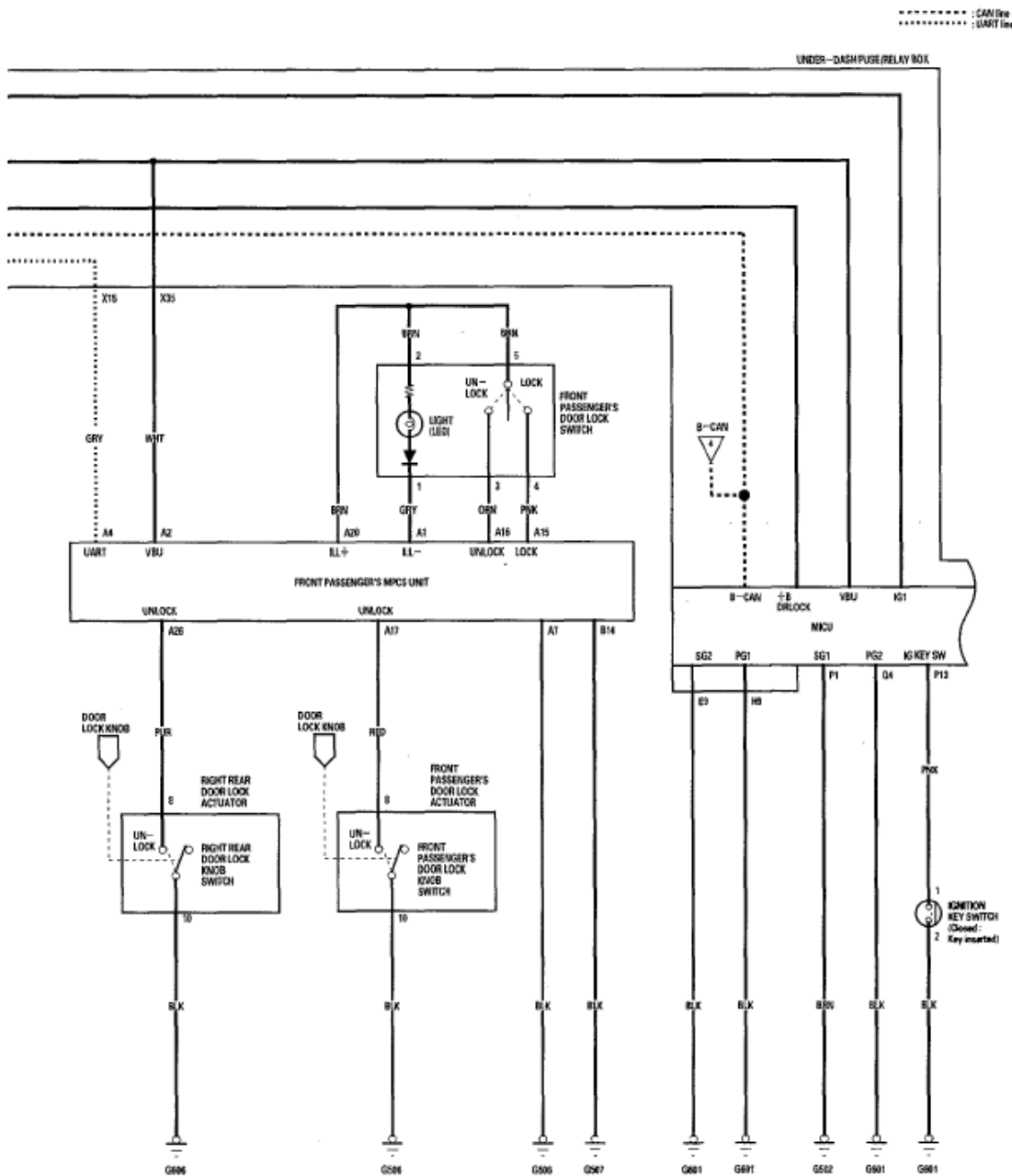


Fig. 4: Keyless/Power Door Locks/Security System Circuit Diagram (1 Of 4)
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2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX



2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

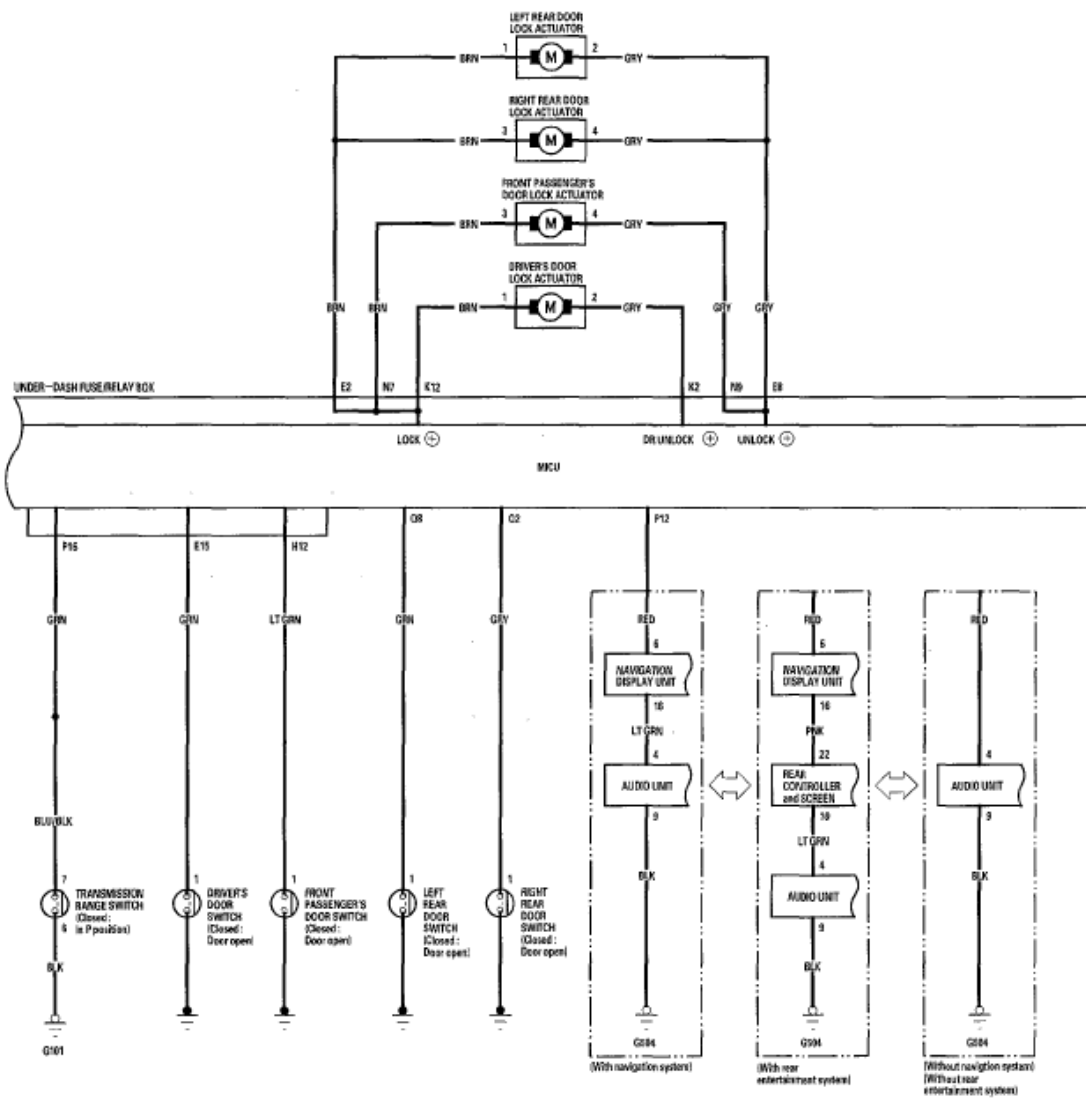


Fig. 6: Keyless/Power Door Locks/Security System Circuit Diagram (3 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the driver's door key cylinder to the LOCK and UNLOCK positions with the ignition key.
4. Check for DTCs with the HDS.

Is DTC B2179 indicated?

YES - Go to step 5.

NO - Intermittent failure, the driver's door key cylinder switch system is OK at this time. Check for loose or poor connections.

5. With the driver's door key cylinder switch in neutral position, select DOOR LOCK from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
6. Check the ON/OFF Information of the Driver's Door Key Cylinder Switch (LOCK) and Driver's Door Key Cylinder Switch (UNLOCK) in the DATA LIST.

Are both information indicators OFF?

YES - Go to step 7.

NO - Go to step 8.

7. Turn the driver's door key cylinder to the LOCK and UNLOCK positions with the ignition key, and check the ON/OFF information of the Driver's Door Key Cylinder Switch (LOCK) and Driver's Door Key Cylinder Switch (UNLOCK) in the DATA LIST.

Are both Driver's Door Key Cylinder Switch (LOCK) and Driver's Door Key Cylinder Switch (UNLOCK) information indicators ON at the same time with the door key cylinder switch in the LOCK or UNLOCK position?

YES - Test the key cylinder switch (see **DOOR KEY CYLINDER SWITCH TEST**). If it is OK, repair the short between the No. 8 BLU and No. 9 LT BLU wires.

NO - Replace the driver's MPCS unit.

8. Disconnect the driver's door lock actuator 10P connector.
9. Check the ON/OFF information of the Driver's Door Key Cylinder Switch (LOCK) and Driver's Door Key Cylinder Switch (UNLOCK) in the DATA LIST.

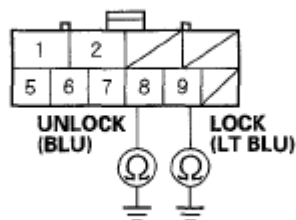
Are both information indicators OFF?

YES - Faulty driver's door key cylinder switch; replace the driver's door lock actuator assembly.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Disconnect driver's MPCS unit connector A (40P).
12. Check for continuity between body ground and the driver's door lock actuator 10P connector No. 8 and No. 9 terminals individually.

DRIVER'S DOOR LOCK ACTUATOR 10P CONNECTOR



Wire side of female terminals

Fig. 8: Identifying Continuity Between Driver's Door Lock Actuator 10P Connector No. 8 And No. 9 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Replace the driver's MPCS unit.

DTC B2180: DRIVER'S DOOR LOCK SWITCH LOCK/ UNLOCK SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Lock and unlock the driver's door with the driver's door lock switch.
3. Check for DTCs with the HDS.

Is DTC B2180 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MPCS unit and the driver's door lock switch.

4. With the driver's door lock switch in the neutral position, select the DOOR LOCK from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
5. Check the ON/OFF Information of the Driver's Door Lock Switch (LOCK) and Driver's Door Lock

Switch (UNLOCK).

Are both information indicators OFF?

YES - Go to step 6.

NO - Go to step 7.

6. Operate the driver's door lock switch in the LOCK and UNLOCK positions, and check the ON/OFF information of the Driver's Door Lock Switch (LOCK) and Driver's Door LOCK Switch (UNLOCK).

Are both Driver's Door LOCK Switch (LOCK) and Driver's Door LOCK Switch (UNLOCK) information indicators ON at the same time when the door lock switch is in the LOCK or UNLOCK position?

YES - Repair short between the wires.

NO - Replace the driver's MPCS unit.

7. Disconnect the driver's door lock switch 5P connector.
8. Check the ON/OFF information of the Driver's Door Lock Switch (LOCK) and Driver's Door Lock Switch (UNLOCK).

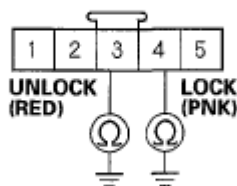
Are both information indicators OFF?

YES - Faulty driver's door lock switch.

NO - Go to step 9.

9. Disconnect driver's MPCS unit connector A (40P).
10. Check for continuity between body ground and the driver's door lock switch 5P connector No. 3 and No. 4 terminals individually.

DRIVER'S DOOR LOCK SWITCH 5P CONNECTOR



Wire side of female terminals

Fig. 9: Identifying Continuity Between Driver'S Door Lock Switch 5P Connector No. 3 And No. 4 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the driver's MPCS unit.

DTC B2181: DRIVER'S DOOR LOCK KNOB SWITCH LOCK/UNLOCK SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Lock and unlock the driver's door with the door lock knob switch.
4. Check for DTCs with the HDS.

Is DTC B2181 indicated?

YES - Go to step 5.

NO - Intermittent failure, the driver's door lock knob switch system is OK at this time. Check for loose or poor connections.

5. Select DOOR LOCK from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
6. Check the ON/OFF information of the Driver's Door Lock Knob Switch (LOCK) and Driver's Door Lock Knob Switch (UNLOCK) in the DATA LIST.

Does the Driver's Door Lock Knob Switch (LOCK) information indicate ON and Driver's Door Lock Knob Switch (UNLOCK) information indicate OFF with the door lock knob switch is in the LOCK position, and does the Driver's Door Lock Knob Switch (LOCK) information indicate OFF and Driver's Door Lock Knob Switch (UNLOCK) information indicate ON with the door lock knob switch is in the UNLOCK position?

YES - Replace the driver's MPCS unit.

NO - Go to step 7.

7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the Driver's Door Knob Switch (LOCK) and Driver's Door Lock Knob Switch (UNLOCK) in the DATA LIST.

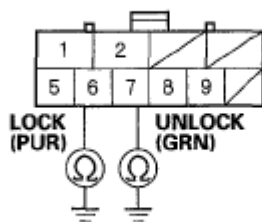
Are both information indicators OFF?

YES - Faulty driver's door lock knob switch; replace the driver's door lock actuator assembly.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect driver's MPCS unit connector A (40P).
11. Check for continuity between body ground and the driver's door lock actuator 10P connector No. 6 and No. 7 terminals individually, individually.

DRIVER'S DOOR LOCK ACTUATOR 10P CONNECTOR



Wire side of female terminals

Fig. 10: Identifying Continuity Between Driver'S Door Lock Actuator 10P Connector No. 6 And No. 7 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the driver's MPCS unit.

DTC B2186: FRONT PASSENGER'S DOOR LOCK SWITCH LOCK/UNLOCK SIGNAL ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Lock and unlock the front passenger's door with the door lock switch.
4. Check for DTCs with the HDS.

Is DTC B2186 indicated?

YES - Go to step 5.

NO - Intermittent failure, the front passenger's door lock switch system is OK at this time. Check for loose or poor connections.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

5. With the front passenger's door lock switch in the neutral position, select the DOOR LOCK from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
6. Check the ON/OFF information of the Front Passenger's Door Lock Switch (LOCK) and Front Passenger's Door Lock Switch (UNLOCK).

Are both information indicators OFF?

YES - Go to step 7.

NO - Go to step 8.

7. Operate the front passenger's door lock switch in the LOCK and UNLOCK positions, and check the ON/OFF information of the Front Passenger's Door Lock Switch (LOCK) and Front Passenger's Door Lock Switch (UNLOCK).

Are both the Front Passenger's Door Lock Switch (LOCK) and Front passenger's Door Lock Switch (UNLOCK) information indicators ON at the same time when the door lock switch is in the LOCK or UNLOCK position?

YES - Repair short between the wires.

NO - Replace the front passenger's MPCS unit.

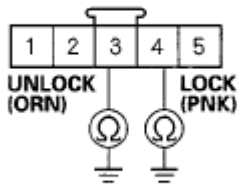
8. Disconnect the front passenger's door lock switch 5P connector.
9. Check the ON/OFF information of the Front Passenger's Door Lock Switch (LOCK) and Front Passenger's Door Lock Switch (UNLOCK).

Are both information indicators OFF?

YES - Faulty front passenger's door lock switch; replace it.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Disconnect front passenger's MPCS unit connector A (28P).
12. Check for continuity between body ground and the front passenger's door lock switch 5P connector No. 3 and No. 4 terminals individually.

FRONT PASSENGER'S DOOR
LOCK SWITCH 5P CONNECTOR

Wire side of female terminals

Fig. 11: Identifying Continuity Between Body Ground And Front Passenger's Door Lock Switch 5P Connector No. 3 And No. 4 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the front passenger's MPCS unit.

SYMPTOM TROUBLESHOOTING

POWER DOOR LOCKS/KEYLESS

1. If the door lock system works properly, but the vehicle does not start, refer to the immobilizer-keyless control unit symptom troubleshooting information (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

NOTE: All functions work with the key out of the ignition switch. Only the panic function will work with the key in the ignition switch and in the LOCK (0) position. There is no keyless function with the ignition turned ON (II).

POWER DOOR LOCKS/KEYLESS SYMPTOM TROUBLESHOOTING CHART

No.	Symptom	Check Items
1	The: doors will not lock or unlock. ⁽¹⁾	• MICU input test (see <u>CONTROL UNIT INPUT TEST</u>) • Driver's door key cylinder switch test (see <u>DOOR KEY CYLINDER SWITCH TEST</u>) • Door lock switch test (see <u>DOOR LOCK SWITCH TEST</u>) • Door lock knob switch test (see <u>DOOR LOCK KNOB SWITCH TEST</u>)
2	The doors will not lock. ⁽¹⁾	• MICU input test (see <u>CONTROL UNIT INPUT TEST</u>) • Door lock knob switch test (see <u>DOOR LOCK KNOB SWITCH TEST</u>)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

		• Driver's door switch test (check the door switch ON/OFF information with the HDS)
3	The doors will not unlock. ⁽¹⁾	• MICU input test (see <u>CONTROL UNIT INPUT TEST</u>) • Driver's door lock knob switch test (see <u>DOOR LOCK KNOB SWITCH TEST</u>)
4	Keyless operation does not work (LOCK, UNLOCK, PANIC).	Symptom troubleshooting (see <u>KEYLESS OPERATION DOES NOT WORK (LOCK, UNLOCK, PANIC)</u>).
5	Doors will not unlock with the transmitter, but will unlock with the door switch.	Symptom troubleshooting (see <u>DOORS WILL NOT UNLOCK (OR LOCK) WITH THE TRANSMITTER, BUT WILL UNLOCK (LOCK) WITH THE DOOR SWITCH</u>).
6	Doors will not lock with the transmitter, but will lock with the door switch.	Symptom troubleshooting (see <u>DOORS WILL NOT UNLOCK (OR LOCK) WITH THE TRANSMITTER, BUT WILL UNLOCK (LOCK) WITH THE DOOR SWITCH</u>).
7	Doors automatically relock 30,60, or 90 seconds after being unlocked with the transmitter even though a door has been opened.	• Driver's door switch test. • Symptom troubleshooting (see <u>DOORS AUTOMATICALLY RELOCK 30,60, OR 90 SECONDS AFTER BEING UNLOCKED WITH THE TRANSMITTER EVEN THOUGH A DOOR HAS BEEN OPENED</u>).
8	The horn does not sound and/or the headlights do not flash when PANIC button on the transmitter pressed.	Symptom troubleshooting (see <u>THE HORN DOES NOT SOUND AND/OR THE HEADLIGHTS DO NOT FLASH WHEN THE PANIC BUTTON ON THE TRANSMITTER IS PRESSED</u>).
9	Keyless lock or unlock operation will work even though the ignition key is in the ignition switch.	Ignition key switch test (see <u>TEST</u>).

(1) If only one door is not working properly, check that door's lock actuator first, then check the other items listed in this table.

KEYLESS OPERATION DOES NOT WORK (LOCK, UNLOCK, PANIC)**NOTE:**

- Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.
- Before troubleshooting, do the keyless transmitter test (see **TRANSMITTER TEST/REPLACEMENT**).

1. Turn the ignition switch ON (II).
2. Try to start the engine.

Does the engine start?

YES - The immobilizer system is OK, go to step 3.

NO - Go to the immobilizer symptom troubleshooting (see **SYMPTOM TROUBLESHOOTING INDEX**).

3. Turn the ignition switch to LOCK (0).
4. Connect the HDS to the data link connector.
5. Close all doors, then turn the ignition switch ON (II).
6. Enter the BODY ELECTRICAL menu, and check the door switch parameters.

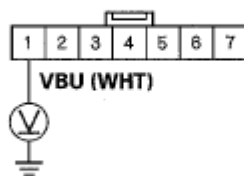
Do all door switches indicate OFF?

YES - Go to step 7.

NO - Faulty door switch, or shorted door switch wire. Repair as necessary.

7. Remove the ignition key from the ignition switch.
8. Measure the voltage between the immobilizer-keyless control unit 7P connector No. 1 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Fig. 12: Identifying Voltage Between Immobilizer-Keyless Control Unit 7P Connector No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

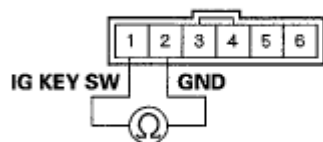
Is there battery voltage?

YES - Go to step 9.

NO - Check the No. 7 (10 A) fuse in the under-dash fuse/relay box. If the fuse is blown, replace the fuse and repair a short to ground in the wire. If the fuse is OK, repair open in the wire.

9. Disconnect the ignition key switch 6P connector.
10. At the ignition key switch side, check for continuity between the ignition key switch 6P connector No. 1 and No. 2 terminals.

IGNITION KEY SWITCH 6P CONNECTOR



Terminal side of male terminals

Fig. 13: Identifying Continuity Between Ignition Key Switch 6P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

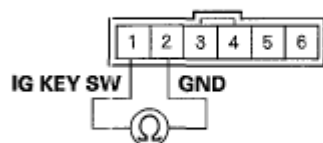
Is there continuity?

YES - Faulty ignition key switch or short to ground, replace the steering lock assembly.

NO - Go to step 11.

11. Insert the ignition key into the ignition switch.
12. At the ignition key switch side, check for continuity between the ignition key switch 6P connector No. 1 and No. 2 terminals.

IGNITION KEY SWITCH 6P CONNECTOR



Terminal side of male terminals

Fig. 14: Identifying Continuity Between Ignition Key Switch 6P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

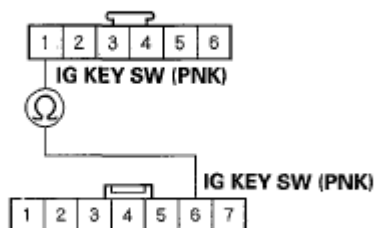
YES - Go to step 13.

NO - Faulty ignition key switch, replace the steering lock assembly.

13. Disconnect the immobilizer-keyless control unit 7P connector.
14. Check for continuity between the immobilizer-keyless control unit 7P connector No. 6 terminal and the

ignition key switch 6P connector No. 1 terminal.

IGNITION KEY SWITCH 6P CONNECTOR
Wire side of female terminals



IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR
Wire side of female terminals

Fig. 15: Identifying Continuity Between 7P Connector No. 6 Terminal And 6P Connector No. 1 Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

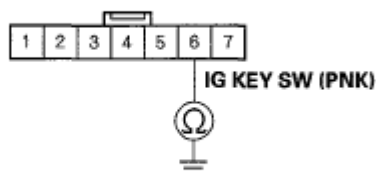
is there continuity?

YES - Go to step 15.

NO - Repair an open in the wire.

15. Check for continuity between the immobilizer-keyless control unit 7P connector No. 6 terminal and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Fig. 16: Identifying Continuity Between Immobilizer-Keyless Control Unit 7P Connector No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the immobilizer-keyless control unit.

DOORS WILL NOT UNLOCK (OR LOCK) WITH THE TRANSMITTER, BUT WILL UNLOCK (LOCK) WITH THE DOOR SWITCH

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.

1. Turn the ignition switch to LOCK (0).
2. Remove the ignition key from the ignition switch.
3. Close and lock the doors.
4. Try to lock/unlock the doors with the keyless transmitter.

Do the door lock actuators work normally?

YES - Intermittent failure, the system is OK at this time.

NO - Go to step 5.

5. Open the driver's door.

Does the key-in reminder chime sound?

YES - Faulty ignition key switch, or short to ground on the ignition key switch PNK wire. Repair as necessary.

NO - Go to step 6.

6. Do the transmitter test (see **TRANSMITTER TEST/REPLACEMENT**).

Is the transmitter OK?

YES - Substitute a known-good MICU and recheck.

NO - Replace the transmitter.

THE HORN DOES NOT SOUND AND/OR THE HEADLIGHTS DO NOT FLASH WHEN THE PANIC BUTTON ON THE TRANSMITTER IS PRESSED

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, troubleshoot the indicated DTC first.

1. Press the PANIC button.

Does the horn sound?

YES - Go to step 3.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

NO - Go to step 2.

2. Press the horn button.

Do the horns sound?

YES - Go to step 3.

NO - Check the horn circuit.

3. Turn the headlight switch ON.

Do the headlights come on?

YES - Go to step 4.

NO - Check the lighting circuit.

4. Do the transmitter test (see **TRANSMITTER TEST/REPLACEMENT**).

Is the transmitter OK?

YES - Substitute a known-good MICU and recheck.

NO - Replace the transmitter.

DOORS AUTOMATICALLY RELOCK 30,60, OR 90 SECONDS AFTER BEING UNLOCKED WITH THE TRANSMITTER EVEN THOUGH A DOOR HAS BEEN OPENED

1. Turn the ceiling light switch to the DOOR position.
2. Turn the ignition switch ON (II).
3. Close all doors.
4. Watch the ceiling light and the door indicator on the gauge control module.

Does the ceiling light and door indicator go off?

YES - Go to step 5.

NO - Repair short to ground in the wire between the MICU and door switch.

5. Open and close each door one at a time.
6. Watch the ceiling light and the door indicator on the gauge control module.

Does the ceiling light and door indicator come on when the door is open, and go off when the door is closed?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

YES - Substitute a known-good MICU and recheck. If the symptom goes away, replace the original MICU.

NO - Check for open in the wire between the MICU and the door switch. If the wire is OK, replace the door switch.

CONTROL UNIT INPUT TEST

NOTE: Before testing the keyless/power door locks/security system control unit, troubleshoot the multiplex integrated control unit first, using B-CAN system Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

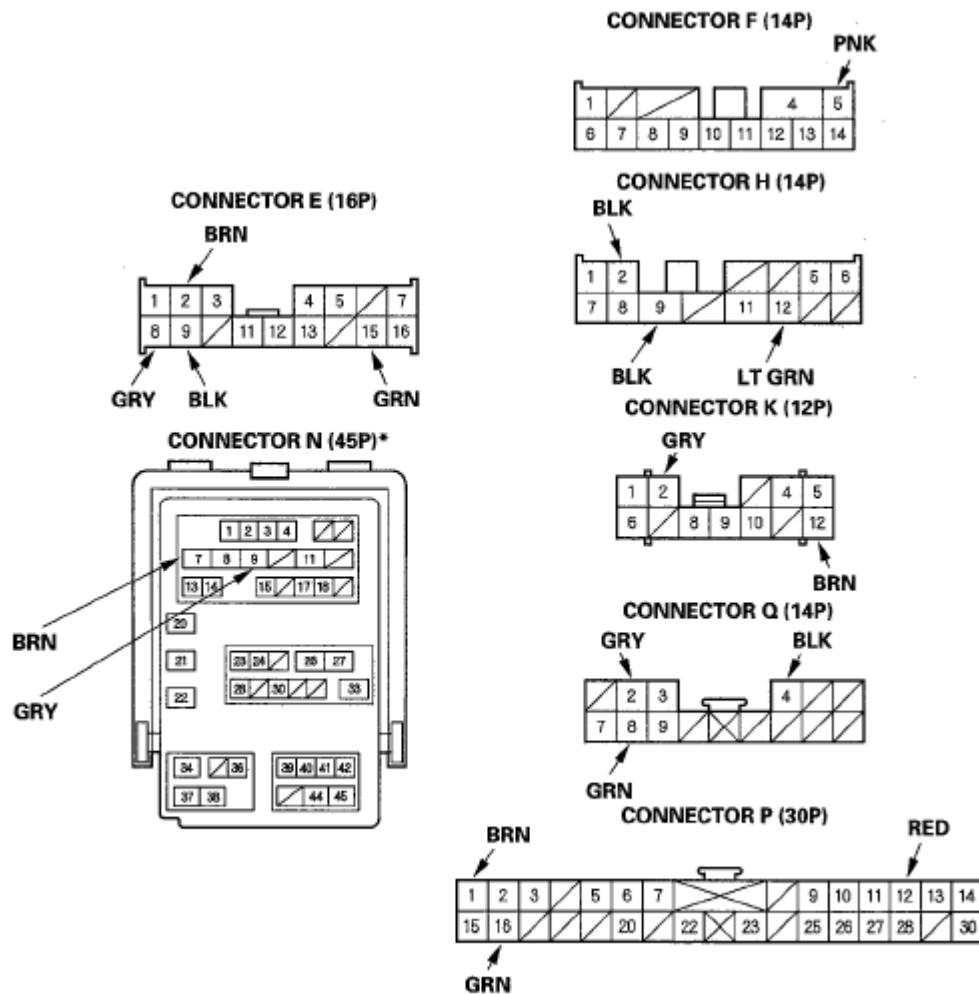
MICU

1. Turn the ignition switch to LOCK (0).
2. Remove the left kick panel (see TRIM REMOVAL/INSTALLATION - DOOR AREAS).
3. Disconnect under-dash fuse/relay box connectors E, F, H, K, N, Q, and P.

NOTE: All connector views are wire side of female terminals.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX



* Connector view shown rotated 180° from actual position in the under-dash fuse/relay box.

Fig. 17: Identifying Under-Dash Fuse/Relay Box Connectors E, F, H, K, N, Q, And P
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E2	BRN			• Faulty left rear door lock actuator

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

E8	GRY	Connect battery power to the E2 (E8) terminal, and the E8 (E2) terminal to body ground.	Check actuator operation: The left and right rear door lock actuators should LOCK (UNLOCK).	- Faulty right rear door lock actuator - An open in the wire
K2	GRY	Connect battery power to the K12 (K2) terminal, and the K2 (K12) terminal to body ground.	Check actuator operation: The driver's door lock actuator should LOCK (UNLOCK).	- Faulty driver's door lock actuator - An open in the wire
K12	BRN			
N7	BRN	Connect battery power to the N7 (N9) terminal, and the N9 (N7) terminal to body ground.	Check actuator operation: The front passenger's door lock actuator should LOCK (UNLOCK).	- Faulty front passenger's door lock actuator - An open in the wire
N9	GRY			
F5 ⁽¹⁾	PNK	Connect battery power to the F5 terminal.	Check tailgate release actuator operation: The tailgate should open.	- Faulty tailgate release actuator - Poor ground (G701) - Faulty rear fuse/relay box - An open in the wire

(1) Without power tailgate

6. Reconnect the connectors, then turn the ignition switch ON (II), and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 7.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
P1	BRN	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	- Poor ground(G502) - An open in the wire
E9	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	- Poor ground(G601) - An open in the wire
H9				
Q4				
			Measure the	

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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

E15	GRN	Driver's door open	voltage to ground: There should be less than 1 V.	- Faulty driver's door switch - An open in the wire
		Driver's door closed	Measure the voltage to ground: There should be more than 5 V.	- Faulty driver's door switch - A short to ground in the wire
H12	LT GRN	Front passenger's door open	Measure the voltage to ground: There should be less than 1 V.	- Faulty front passenger's door switch - An open in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be more than 5 V.	- Faulty front passenger's door switch - A short to ground in the wire
Q2	GRY	Right rear door open	Measure the voltage to ground: There should be less than 1 V.	- Faulty right rear door switch - An open in the wire
		Right rear door closed	Measure the voltage to ground: There should be more than 5 V.	- Faulty right rear door switch - A short to ground in the wire
Q8	GRN	Left rear door open	Measure the voltage to ground: There should be less than 1 V.	- Faulty left rear door switch - An open in the wire
		Left rear door closed	Measure the voltage to ground: There should be more than 5 V.	- Faulty left rear door switch - A short to ground in the wire
P12	RED	Under all conditions	Measure the voltage to ground: There should be less than 1 V.	- Faulty connection at the audio unit, navigation unit, and/or rear controller and screen - Faulty audio unit - Faulty navigation unit - Faulty rear controller and screen

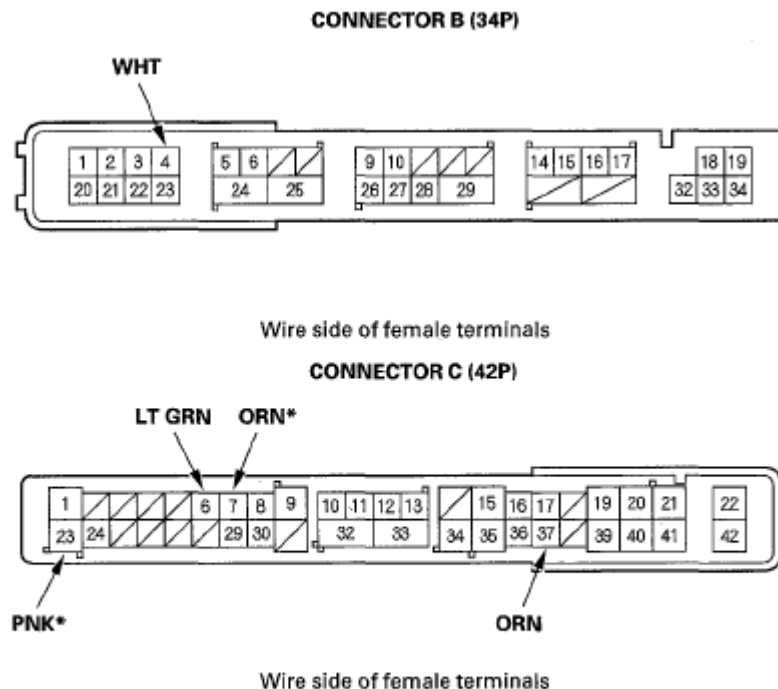
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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

				• An open in the wire • Poor ground (G504)
P16	GRN	Transmission range switch in P position	Measure the voltage to ground: There should be less than 1 V.	• Faulty transmission range switch • An open in the wire • Poor ground(G101)
		Transmission range switch in any other position than P	Measure the voltage to ground: There should be more than 5 V.	• Faulty transmission range switch • A short to ground in the wire

Rear Fuse/Relay Box

- Turn the ignition switch to LOCK (0).
- Remove the left rear trim (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
- Disconnect rear fuse/relay box connectors B (34P) and C (42P).



*: Without power tailgate

Fig. 18: Identifying Rear Fuse/Relay Box Connectors B (34P) And C (42P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Inspect the connector and socket terminals to be sure they are all making good contact.

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX**

- If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 11.
11. With the connectors still disconnected, make these input tests at the connectors.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 12.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
C23 ⁽¹⁾	PNK	Connect battery power to the C23 terminal momentarily.	Check tailgate release actuator operation: The tailgate should open.	• Poor ground(G701) • Faulty tailgate release actuator • An open in the wire
C37	ORN	Connect battery power to the C37 terminal momentarily.	Check keyless buzzer operation: The keyless buzzer should sound.	• Faulty keyless buzzer • Poor ground (G702)⁽²⁾ (G603)⁽³⁾ • An open in the wire
(1) Without power tailgate				
(2) '07 model				
(3) '08 model				

12. Reconnect the connectors, then turn the ignition switch ON (II), and make these input tests at the connectors.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 13.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B4	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • An open in the wire
C6	LT GRN	Tailgate open	Measure the voltage to ground: There should be less than 1 V.	• Poor ground(G702) • Faulty tailgate latch switch • An open in the wire
			Measure the voltage	

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		Tailgate closed	to ground: There should be more than 5 V.	• Faulty tailgate latch switch • A short to ground in the wire
C7 ⁽¹⁾	ORN	Tailgate outer handle pulled	Measure the voltage to ground: There should be less than 1 V.	• Poor ground(G702) • Faulty tailgate outer handle switch • An open in the wire
		Tailgate outer handle released	Measure the voltage to ground: There should be more than 5 V.	• Faulty tailgate outer handle switch • A short to ground in the wire
(1) Without power tailgate				

Driver's MPCS Unit

- Turn the ignition switch to LOCK (0).
- Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
- Disconnect driver's MPCS unit connectors A(40P) and B (14P).

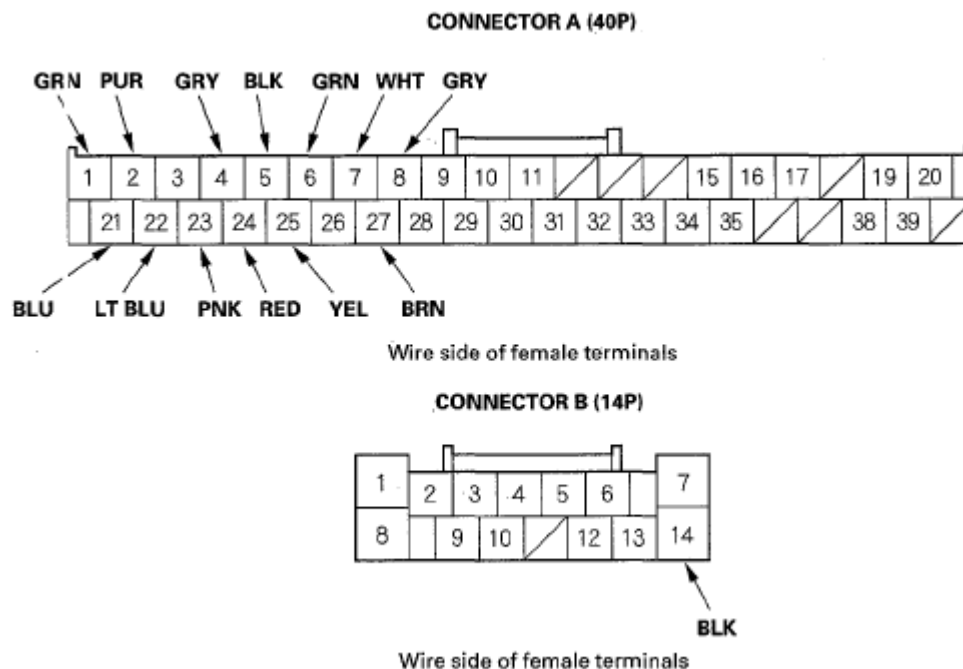


Fig. 19: Identifying Driver'S MPCS Unit Connectors A(40P) And B (14P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 17.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

17. With the connectors still disconnected, make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 18.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A8	GRY	Under all conditions	Check for continuity between the A8 terminal and the front passenger's MPCS unit connector A (28P) No. 4 terminal: There should be continuity.	• Faulty under-dash fuse/relay box • An open in the wire
			Check for continuity to ground: There should be no continuity.	• Faulty under-dash fuse/relay box • A short to ground in the wire
A23 • A27	PNK • BRN	Driver's door lock switch in UNLOCK	Check for continuity between the terminals: There should be continuity.	• Faulty driver's door lock switch • An open in the wire
		Driver's door lock switch in neutral or LOCK	Check for continuity between the terminals: There should be no continuity.	• Faulty driver's door lock switch • A short to ground in the wire
A24 • A27	RED • BRN	Driver's door lock switch in LOCK	Check for continuity between the terminals: There should be continuity.	• Faulty driver's door lock switch • An open in the wire
		Driver's door lock switch in neutral or UNLOCK	Check for continuity between the terminals: There should be no	• Faulty driver's door lock switch • A short to

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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

			continuity.	ground in the wire.
A27 • A4	BRN • GRY	Connect the A7 and A27 terminals, and A4 and A5 terminals with jumper wires	Check the driver's door lock switch lights: The switch light should come on.	- Faulty driver's door lock switch - Blown bulb - An open in the wire

18. Reconnect the connectors, then turn the ignition switch ON (II), and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 19.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A5	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	- Poor ground (G601) - An open in the wire
B14				
A7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 4 (40 A) fuse in the main under-hood fuse box - Blown No. 7 (10 A) fuse in the under-dash fuse/relay box - Faulty under-dash fuse/relay box - An open in the wire
A27	BRN			
A25	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box - Faulty under-dash fuse/relay box - An open in the wire
A1	GRN	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 1 V.	- Poor ground (G601) - Faulty driver's door lock knob switch - An open in the wire
		Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be battery voltage.	- Faulty driver's door lock knob switch - A short to ground in the wire
		Driver's door lock knob	Measure the voltage to ground:	- Poor ground (G601) - Faulty driver's door lock knob

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2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

A2	PUR	switch in LOCK	There should be less than 1 V.	switch • An open in the wire
		Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door lock knob switch • A short to ground in the wire
A21	BLU	Driver's door key cylinder switch in UNLOCK	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G601) • Faulty driver's door key cylinder switch ? An open in the wire
		Driver's door key cylinder switch in neutral or LOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door key cylinder switch • A short to ground in the wire
A22	LT BLU	Driver's door key cylinder switch in LOCK	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G601) • Faulty driver's door key cylinder switch • An open in the wire
		Driver's door key cylinder switch in UNLOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's door key cylinder switch • A short to ground in the wire
A6	GRN	Left rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G601) • Faulty left rear door lock knob switch • An open in the wire
		Left rear door lock knob switch in LOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty left rear door lock knob switch • A short to ground in the wire

Front Passenger's MPCS Unit

19. Turn the ignition switch to LOCK (0).
20. Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
21. Disconnect front passenger's MPCS unit connectors A(28P) and B (14P).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

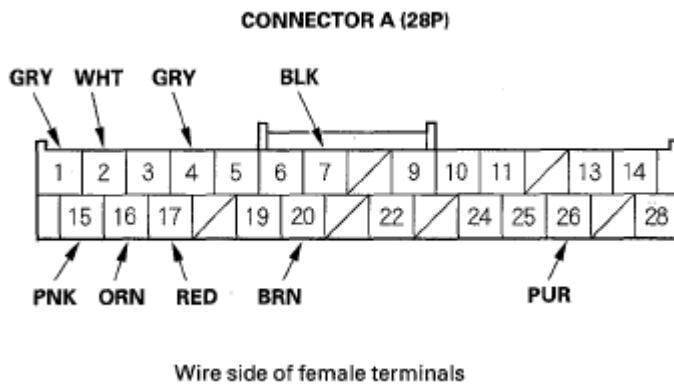


Fig. 20: Identifying Front Passenger'S MPCS Unit Connectors A(28P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

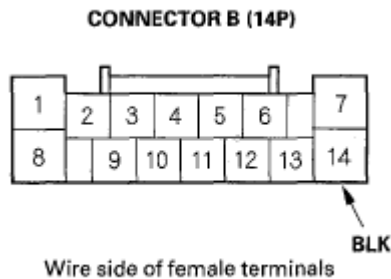


Fig. 21: Identifying Front Passenger'S MPCS Unit Connectors B (14P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 23.
23. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 24.

CONTROL INPUT TEST REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A4	GRY	Under all conditions	Check for continuity between the A4 terminal and the driver's MPCS unit connector A (40P) No. 8 terminal: There should be continuity.	• Faulty under-dash fuse/relay box • An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

			Check for continuity to ground: There should be no continuity.	- Faulty under-dash fuse/relay box - A short to ground in the wire
A15 • A20	PNK • BRN	Front passenger's door lock switch in LOCK	Check for continuity between the terminals: There should be continuity.	- Faulty front passenger's door lock switch - An open in the wire
		Front passenger's door lock switch in neutral or UNLOCK	Check for continuity between the terminals: There should be no continuity.	- Faulty front passenger's door lock switch - A short to ground in the wire
A16 • A20	ORN • BRN	Front passenger's door lock switch in UNLOCK	Check for continuity between the terminals: There should be continuity.	- Faulty front passenger's door lock switch - An open in the wire
		Front passenger's door lock switch in neutral or LOCK	Check for continuity between the terminals: There should be no continuity.	- Faulty front passenger's door lock switch - A short to ground in the wire.
A20 • A1	BRN • GRY	Connect the A2 and A20 terminals, and A1 and A7 terminals with jumper wires	Check the front passenger's door lock switch lights: The switch light should come on.	- Faulty front passenger's door lock switch - Blown bulb - An open in the wire

24. Reconnect the connectors, then turn the ignition switch ON (II), and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 25.

CONTROL INPUT TEST REFERENCE

			Test: Desired	Possible cause if desired result is not
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2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Keyless/Power Door Locks/Security System - MDX

Cavity	Wire	Test condition	result	obtained
A7	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground(G506) • An open in the wire
B14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground(G507) • An open in the wire
A2	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
A20	BRN			
A17	RED	Front passenger's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 1 V.	• Poor ground (G506) • Faulty front passenger's door lock knob switch • An open in the wire
		Front passenger's door lock knob switch in LOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty front passenger's door lock knob switch • A short to ground in the wire
A26	PUR	Right rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 1 V.	• Poor ground(G606) • Faulty right rear door lock knob switch • An open in the wire
		Right rear door lock knob switch in LOCK	Measure the voltage to ground: There should be battery voltage.	• Faulty right rear door lock knob switch • A short to ground in the wire

25. If multiple failures are found on more than one control unit, replace the under-dash fuse/relay box (includes the MICU) (see **REMOVAL AND INSTALLATION**). If input failures are related to a particular control unit, replace the control unit.

DOOR LOCK ACTUATOR TEST

DRIVER'S DOOR AND LEFT REAR DOOR

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the driver's door.

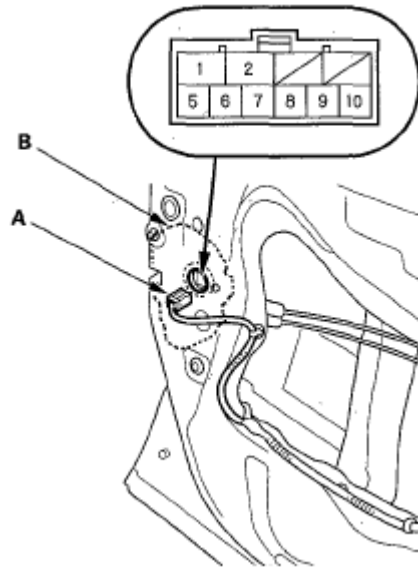


Fig. 22: Identifying 10P Connector And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check actuator operation by connecting power and ground according to **Fig. 23**. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal Position	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Fig. 23: Connecting Power And Ground Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the actuator does not operate as specified, replace it.

FRONT PASSENGER'S DOOR AND RIGHT REAR DOOR

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the front passenger's door.

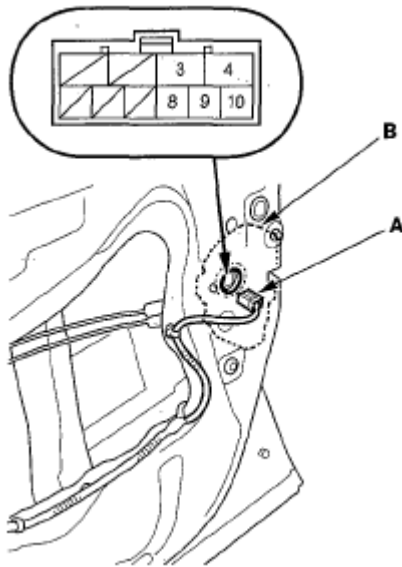


Fig. 24: Identifying 10P Connector And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check actuator operation by connecting power and ground according to **Fig. 25**. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal Position	3	4
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Fig. 25: Connecting Power and Ground Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the actuator does not operate as specified, replace it.

DOOR LOCK KNOB SWITCH TEST

DRIVER'S DOOR

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the actuator (B).

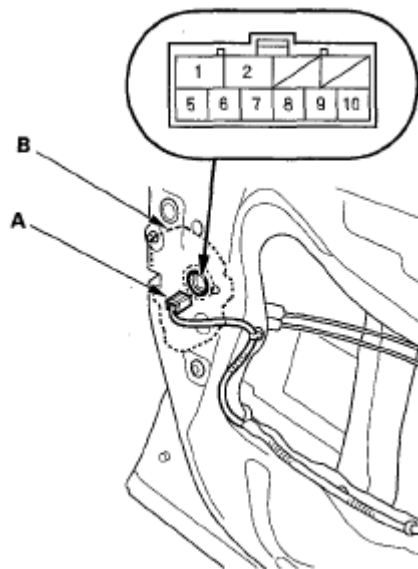


Fig. 26: Identifying 10P Connector Terminals And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
 - There should be continuity between the No. 6 and No. 5 terminals when the door lock knob switch is in the LOCK position and no continuity when the switch is in the UNLOCK position.
 - There should be continuity between the No. 7 and No. 5 terminals when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.
4. If the continuity is not as specified, replace the door lock actuator.

PASSENGER DOORS

1. Remove the passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the front passenger's door.

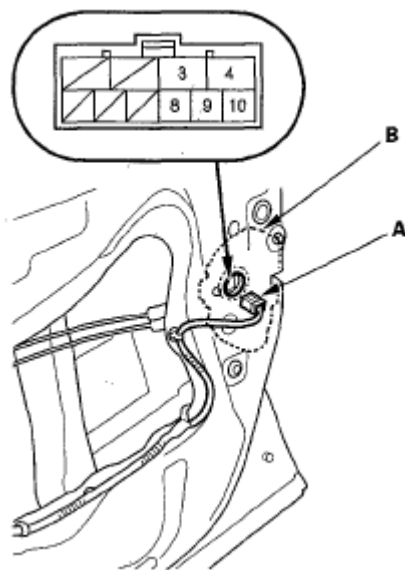


Fig. 27: Identifying 10P Connector Terminals And Actuator
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals. There should be continuity between the No. 8 [No. 7] and No. 10 [No. 5] terminals when the door lock knob switch in the UNLOCK position and no continuity when the switch is in the LOCK position.

[] : Left rear door

4. If the continuity is not specified, replace the door lock actuator.

DOOR LOCK SWITCH TEST

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 5P connector (A), remove the two screws, then remove the door lock switch (B).

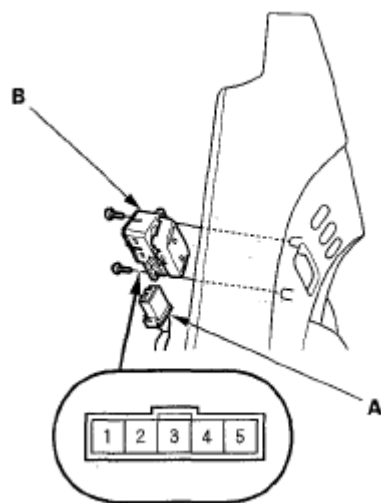


Fig. 28: Identifying 5P Connector Terminals And Door Lock Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
 - There should be continuity between the No. 5 and No. 4 terminals when the door lock switch is in the LOCK position.
 - There should be no continuity between the No. 5 and No. 4 terminals when the door lock switch is in the neutral position or UNLOCK position.
 - There should be continuity between the No. 5 and No. 3 terminals when the door lock switch is in the UNLOCK position.
 - There should be no continuity between the No. 5 and No. 3 terminals when the door lock switch is in the neutral position or LOCK position.
 - There should be continuity between the No. 2 (+) and No. 1 (-) terminals (bulb check).
4. If the continuity is not as specified, replace the bulb or switch.

DOOR KEY CYLINDER SWITCH TEST

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 10P connector (A) from the key cylinder switch (B).

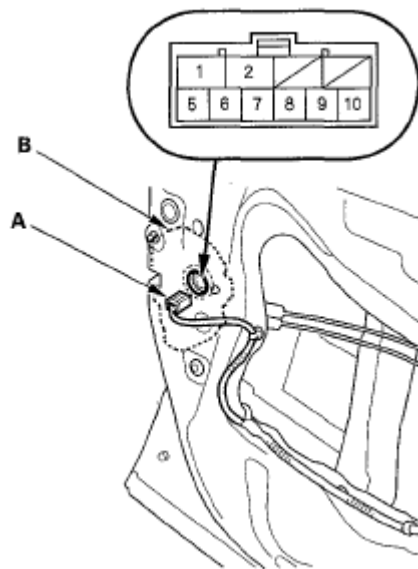


Fig. 29: Identifying 5P Connector Terminals And Key Cylinder Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
 - There should be continuity between the No. 9 and No. 5 terminals when the door key cylinder switch is in LOCK position.
 - There should be no continuity between the No. 9 and No. 5 terminals when the door key cylinder switch is in the neutral or UNLOCK position.
 - There should be continuity between the No. 8 and No. 5 terminals when the door key cylinder switch is in UNLOCK position.
 - There should be no continuity between the No. 8 and No. 5 terminals when the door key cylinder switch is in the neutral or LOCK position.
4. If the continuity is not as specified, replace the door key cylinder assembly (see **FRONT DOOR OUTER HANDLE REPLACEMENT**).

HOOD SWITCH TEST

1. Open the hood.
2. Disconnect the 2P connector (A) from the hood switch (B).

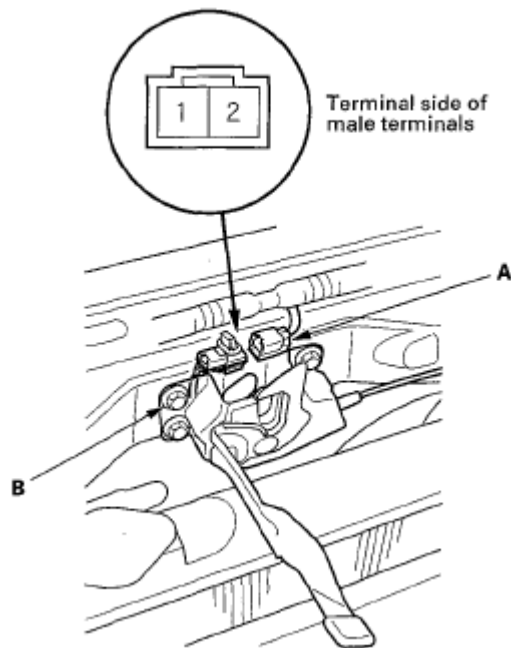


Fig. 30: Identifying 2P Connector Terminals And Hood Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals.
 - There should be continuity between the No. 1 and No. 2 terminals when the hood is opened (latch released).
 - There should be no continuity between the No. 1 and No. 2 terminals when the hood is closed (latch pushed down).
4. If the continuity is not as specified, replace the hood latch (see **HOOD LATCH REPLACEMENT**).

KEYLESS BUZZER TEST/REPLACEMENT

1. Remove the rear bumper (see **REAR BUMPER REMOVAL/INSTALLATION**).
2. Disconnect the 2P connector (A) from the keyless buzzer (B).

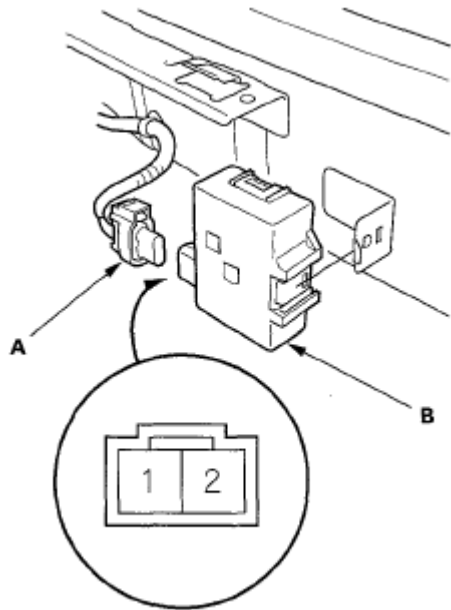


Fig. 31: Identifying 2P Connector Terminals And Keyless Buzzer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the buzzer by connecting battery power to the No. 1 terminal and ground to the No. 2 terminal. The buzzer should sound.
4. If the buzzer does not sound, replace it.
5. Install the buzzer in the reverse order of removal.

TAILGATE RELEASE ACTUATOR TEST

WITHOUT POWER TAILGATE

1. Remove the tailgate trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Disconnect the 2P connector (A) from the tailgate release actuator (B).

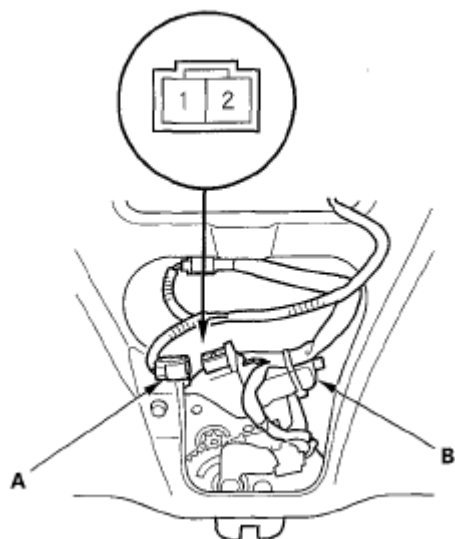


Fig. 32: Identifying 2P Connector Terminals And Tailgate Release Actuator
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check the actuator by connecting battery power to the No. 2 terminal and ground to the No. 1 terminal. To prevent damage to the actuator, apply battery voltage only momentarily.

The actuator should work.

4. If the actuator does not work, replace the tailgate latch assembly (see **TAILGATE LATCH REPLACEMENT**).

TAILGATE OUTER HANDLE SWITCH TEST/ REPLACEMENT

1. Remove the tailgate trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Disconnect the 3P connector (A) from the tailgate outer handle switch (B).

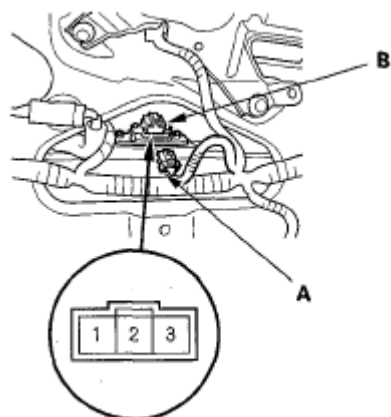


Fig. 33: Identifying 3P Connector Terminals And Tailgate Outer Handle Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the tailgate outer handle switch 3P connector No. 2 and No. 3 terminals.
 - There should be continuity when the tailgate outer handle is pulled.
 - There should be no continuity when the tailgate outer handle is released.
4. If the continuity is not as specified, remove the two bolts and the tailgate outer handle switch (A).

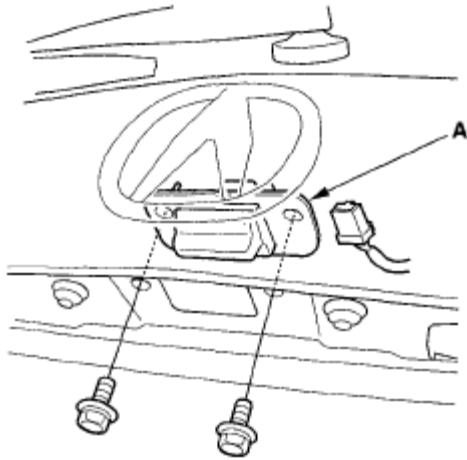


Fig. 34: Identifying Tailgate Outer Handle Switch With Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the switch in the reverse order of removal.

TRANSMITTER TEST/REPLACEMENT

NOTE:

- If the doors unlock or lock with the transmitter, but the LED on the transmitter does not come on, the LED is faulty; replace the transmitter.
- If any door is open, you cannot lock the doors with the transmitter.
- If you unlocked the doors with the transmitter, but do not open any of the doors within 30,60, or 90 seconds, the doors relock automatically.
- The lock or unlock does not work with the transmitter if the ignition key is inserted in the ignition switch.

WITH HDS

1. Press the lock or unlock button five or six times to reset the transmitter.
 - If the locks work, the transmitter is OK.
 - If any of the transmitter buttons does not work, replace the transmitter, then register the transmitter (see **IMMOBILIZER KEY REGISTRATION**).
 - If the locks don't work, go to step 2.
2. Connect the HDS to the data link connector.
3. Select KEYLESS from the BODY ELECTRICAL menu, then enter the KEYLESS CHECK.

4. Press lock, unlock, trunk, or panic button and check the response on the screen of the HDS.

NOTE: The door lock actuators may or may not cycle when receiving input from the transmitter.

- If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
 - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is not registered to the vehicle, if necessary, manually reprogram the transmitter (see IMMOBILIZER KEY REGISTRATION).
 - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 5.
5. Remove the transmitter cover (A) from the transmitter (B), and check for water damage.
 - If you find any water damage, replace the transmitter, then manually reprogram the transmitter (see IMMOBILIZER KEY REGISTRATION).
 - If there is no water damage, go to step 6.

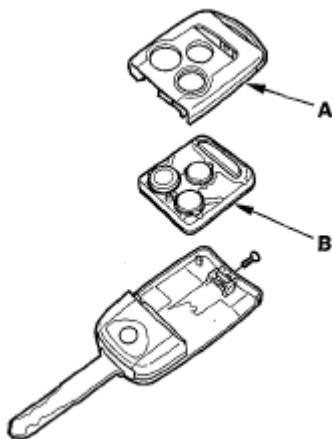


Fig. 35: Identifying Transmitter Cover And Transmitter
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Replace the transmitter battery (A) with a new one, and press lock or unlock button and check the receive condition on the screen of the HDS.
 - If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
 - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 7.

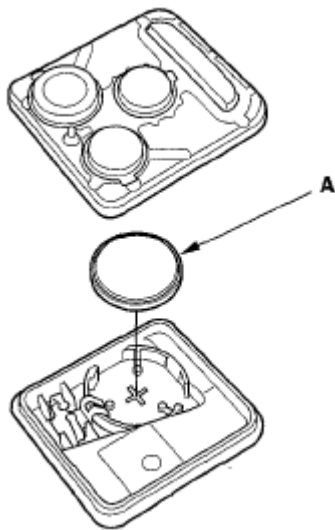


Fig. 36: Identifying Transmitter Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Use a different known-good keyless transmitter assembly and repeat steps 3 and 4.

NOTE: The keyless transmitter does not need to be programmed to the vehicle for this test.

- If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, replace the keyless transmitter and manually reprogram the transmitter (see **IMMOBILIZER KEY REGISTRATION**).
- If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, the immobilizer-keyless control unit is faulty, replace it and do the immobilizer system registration (see **IMMOBILIZER KEY REGISTRATION**).

WITHOUT HDS

1. Start the engine.
 - If the engine does not start, go to the immobilizer system troubleshooting (see **SYMPTOM TROUBLESHOOTING**).
 - If the engine starts, go to step 2.
2. Press the lock or unlock button five or six times to reset the transmitter.
 - If the locks work, the transmitter is OK.
 - If the locks don't work, go to step 3.
3. Manually program the transmitter (see **IMMOBILIZER KEY REGISTRATION**). If the transmitter does not program, go to step 4.
4. Manually program a known-good transmitter.
 - If you can program the transmitter, replace the original transmitter.

- If you can not program the transmitter, replace the original transmitter, go to step 5.
5. Remove the transmitter cover (A) from the transmitter (B), and check for water damage.
- If you find any water damage, replace the transmitter.
 - If there is no water damage, go to step 6.

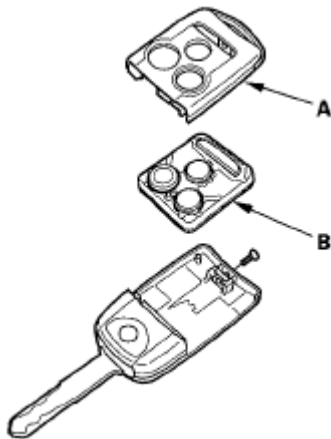


Fig. 37: Identifying Transmitter Cover And Transmitter
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Replace the transmitter battery (A) with a new one, and try to lock and unlock the doors with the transmitter by pressing the lock or unlock button five or six times.
- If the doors lock and unlock, the transmitter is OK.
 - If the doors don't lock and unlock, the HDS will be required for further diagnosis.

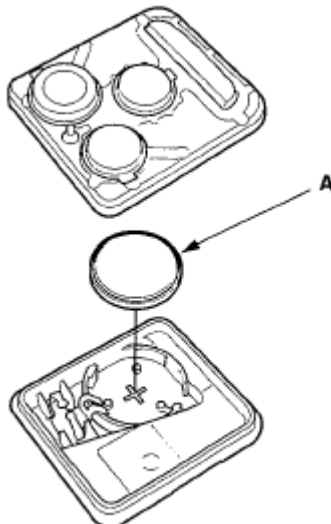


Fig. 38: Identifying Transmitter Battery
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LIFT AND SUPPORT POINTS

NOTE: If you are going to remove heavy components such as the suspension or the fuel tank from the rear of the vehicle, first support the front of the vehicle with tall safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change, causing the vehicle to tip forward on the lift.

VEHICLE LIFT

1. Position the lift blocks (A), under the vehicle's front support points (B) and rear support points (C).

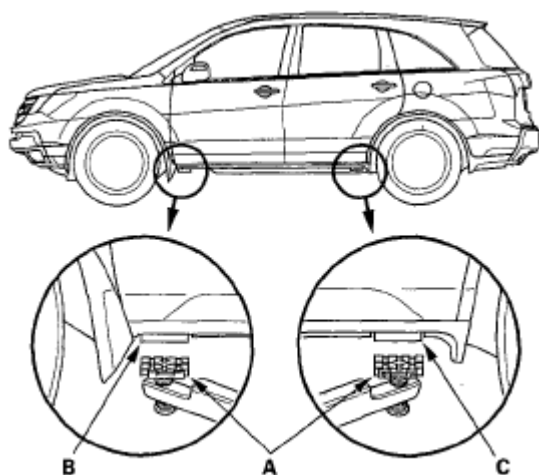


Fig. 25: Identifying Vehicle Support Points
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Raise the lift a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the lift to its full height, and inspect the vehicle support points for solid contact with the lift blocks.

SAFETY STANDS

To support the vehicle on safety stands, use the same support points (B and C) as for a vehicle lift. Always use safety stands when working on or under any vehicle that is supported only by a jack.

FLOOR JACK

1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in the P position.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or the rear jacking bracket (B). Center the jacking bracket on the jack lift platform (C) and jack up the vehicle high enough to fit the safety stands under it.

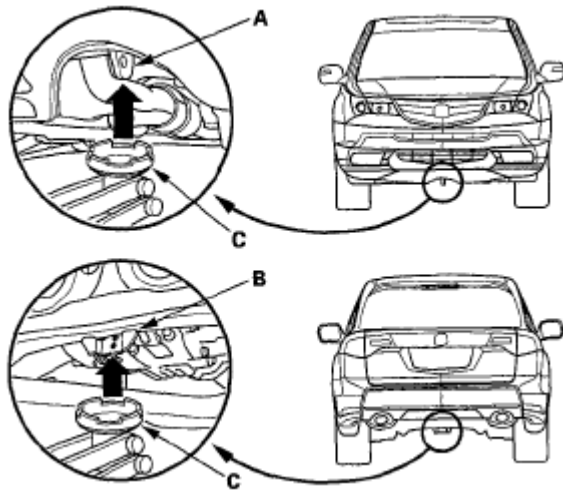


Fig. 26: Identifying Vehicle Support Points

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Position the safety stands under the support points and adjust them so the vehicle is level.
5. Lower the vehicle onto the stands.

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

GENERAL INFORMATION

Service Reminder Indicators - Acura

ENGINE OIL LIFE/MAINTENANCE MINDER

NOTE: To determine the appropriate reset procedure, refer to ENGINE OIL LIFE/MAINTENANCE MINDER RESET INDEX. Only the vehicles listed in this index have an engine oil life or maintenance minder indicator.

ENGINE OIL LIFE/MAINTENANCE MINDER RESET INDEX

Model & Year	Reset Procedure
MDX	
2007-09	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 1</u>
RDX	
2007-08	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 3</u>
2009	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 4</u>
RL	
2005	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 6</u>
2006	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 2</u>
2007-09	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 4</u>
TL	
2004-06	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 2</u>
2007-09	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 5</u>
TSX	
2007-09	<u>ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 5</u>

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 1

1. Turn ignition switch to ON (II) position.
2. If engine oil life is not displayed, press the SEL/RESET button on steering wheel repeatedly until the multi-information display shows blank, SH-AWD and tire pressure.
3. Press and hold SEL/RESET button for more than 10 seconds. The remaining engine oil life reset mode will be shown on multi-information display.

4. Select RESET by pressing INFO (up or down) button, then press the SEL/RESET button to reset the engine oil life display. The maintenance item code(s) will disappear, and engine oil life will reset to "100". If you want to cancel the oil life reset mode, select CANCEL.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 2

Resetting Multi-Information Display

1. Turn the ignition switch to ON (II).
2. Press the SELECT/RESET button repeatedly until the oil life is displayed (if more than 15%) or the maintenance message is displayed (if oil life is less than 15%).

NOTE: If you are resetting the display when the oil life is more than 15%, the maintenance message "SERVICE DUE SOON" will be displayed. Make sure the maintenance items requiring service have been performed before resetting this display.

3. Press and hold the SELECT/RESET button for 10 seconds until you see the maintenance message or "MAINTENANCE RESET". If the maintenance message is displayed, press and hold the SELECT/RESET button again for 10 seconds until you see "MAINTENANCE RESET".
 - To reset the display, press the SELECT/RESET button to select "OK". The next time the ignition switch is turned to "ON", the display will show "OIL LIFE 100%".
 - If you do not want to reset the display, press the <or> side of the INFO button to select "Cancel".

NOTE:

- If the required service is performed and the display is not reset or if the display is reset without performing the service, the system will not show the proper maintenance levels. This can lead to serious mechanical problems because there will be no record of when maintenance is needed.
- If the indicated maintenance service is not performed and the remaining engine oil life is less than 0 percent, "SERVICE PAST DUE" will display, have the service performed immediately and make sure to reset the display as previously described.



G00402110

Fig. 1: Pressing & Holding SELECT/RESET Button
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Maintenance Main Items

If the message "SERVICE DUE NOW" does not appear more than 12 months after the display is reset, change the engine oil every year.

NOTE:

- Independent of the maintenance messages in the Multi-information Display, replace the brake fluid every 3 years.
- Inspect idle speed every 160,000 miles (256,000 km).
- Adjust the valves during services A, B, 1, 2 or 3 if they are noisy.

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

Symbol	Maintenance Main Items
A	Replace engine oil Capacity: without oil filter: 4.0 ℓ (4.2 US qt).
B	Replace engine oil and oil filter (see page 8-6). Capacity: with oil filter: 4.3 ℓ (4.5 US qt).
	Rotate tires, and check tire inflation and condition. Follow the pattern shown in the Owner's Manual.
	Check front and rear brakes. • Check pads and discs for wear (thickness), damage, and cracks. • Check calipers for damage, leaks, and tightness of mount bolts.
	Check parking brake adjustment. Number of clicks (6 to 10) when the parking brake lever is pulled with 196 N (20 kgf, 44 lbf) of force.
	Visually inspect the following items: • Check for correct installation and position, check for cracks, deterioration, rust, and leaks. • Check tightness of screws, nuts, and joints. If necessary, retighten.
	Inspect tie rod ends, steering gearbox, and gearbox boots. • Check rack grease and steering linkage. • Check boots for damage and leaking grease. • Check fluid lines for damage and leaks.
	Inspect suspension components • Check bolts for tightness. • Check condition of ball joint boots for deterioration and damage.
	Inspect driveshaft boots. Check boots for cracks and boot bands for tightness.
	Inspect brake hoses and lines including VSA Check the master cylinder, and VSA modulator for damage and leakage.
	Inspect all fluid levels and condition of fluids. • Automatic transmission fluid (ATF-Z1). • Manual transmission fluid (MTF). • Clutch fluid . • Power steering fluid. • Brake fluid. • Windshield washer fluid. • Engine coolant.
	Inspect exhaust system. Check catalytic converter heat shields, exhaust pipes, and muffler for damage, leaks, and tightness.
	Inspect fuel lines and connections. Check for loose connections, cracks, and deterioration; retighten loose connections and replace damaged parts.

NOTE: According to state and federal regulations, failure to do the maintenance items marked with an asterisk (*) will not void the customer's emissions warranties. However, Honda recommends that all maintenance services be done at the recommended interval, to ensure long-term reliability.

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Fig. 2: Maintenance Main Items Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Maintenance Sub Items

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

Symbol	Maintenance sub Items
1	Rotate tires, and check tire inflation and condition. Follow the pattern shown in the Owner's Manual.
2	Replace air cleaner element. If you drive primarily in dusty conditions, replace every 15,000 miles (24,000 km). Replace dust and pollen filter. • Replace the filter at 15,000 miles (24,000) km intervals if the vehicle is driven mostly in urban areas that have high concentrations of soot in the air from industry and diesel-powered vehicles. • Replace the filter whenever airflow from the heating and cooling/climate control system is less than normal.
	Inspect drive belt. Look for cracks and damage, then check belt deflection by pushing on the belt about 98 N (10 kgf, 22 lbf) midway between the pulleys.
3	Replace automatic transmission fluid. • Driving in mountainous areas at very low vehicle speed requires transmission fluid changes more frequently than recommended by the Maintenance Minder. If you regularly drive your vehicle under this conditions, have the transmission fluid changed at 60,000 miles (96,000 km), then every 30,000 miles (48,000 km). • Capacity: 3.0 ℓ (3.2 US qt); use Honda ATF-Z1. Replace manual transmission fluid (see page 13-10). Capacity: 2.2 ℓ (2.3 US qt); use Honda MTF.
4	Replace spark plugs. Use IZFR6K-11 (NGK) or SKJ20DR-M11 (DENSO). Replace timing belt, if the vehicle is regularly driven in very high temperatures (over 110°F, 43°C), or in very low temperatures (under -20°F, -29°C), replace every 60,000 miles (U.S.)/ 100,000 km (Canada) and inspect water pump. Inspect the valve clearance (cold). • Otherwise adjust only if noisy. • Intake: 0.20—0.24 mm (0.008—0.009 in.); Exhaust: 0.28—0.32 mm (0.011—0.013 in.).
5	Replace engine coolant (see page 10-6). Capacity (including the reserve tank): M/T: 6.3 ℓ (6.7 US qt), A/T: 6.4 ℓ (6.8 US qt); use Honda All Season Antifreeze/Coolant Type 2.

G00402112

Fig. 3: Maintenance Sub Items Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 3

With Technology Package

1. Turn ignition switch to ON (II) position.
2. Press the SEL/RESET knob on steering wheel until engine oil life is displayed.
3. Press and hold SEL/RESET knob for about 10 seconds. The remaining engine oil life reset mode will be shown on multi-information display.
4. Select RESET by pressing INFO (up or down) button, then press the SEL/RESET button to reset the engine oil life display. The maintenance item code(s) will disappear, and engine oil life will reset to "100". To cancel the oil life reset mode, select CANCEL.

Without Technology Package

1. Turn ignition switch to ON (II) position.
2. Press the Select/Reset knob repeatedly until engine oil life is displayed.
3. Press and hold Select/Reset knob for about 10 seconds. The engine oil life and maintenance item code(s)

will blink.

- 4. Press Select/Reset knob for another 5 seconds. The maintenance item code(s) will disappear, and engine oil life will reset to "100".

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 4

- 1. Turn ignition switch to ON (II) position.
- 2. If engine oil life minder is not displayed, press the SEL/RESET button on steering wheel repeatedly until oil life minder is displayed.
- 3. To reset engine oil life, press the up or down arrow button on steering wheel to select RESET on display, and press SEL/RESET button. To cancel resetting the oil life reset mode, press the up or down arrow button on steering wheel to select CANCEL on display, and press SEL/RESET button.
- 4. If reset procedure is completed within 30 seconds after selecting the reset mode, the mode will be cancelled automatically.

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 5

- 1. Ensure all doors are closed. Turn ignition switch to ON (II) position.
- 2. Press the INFO up or down arrow (located on steering wheel) repeatedly until engine oil life is displayed.
- 3. Press and hold the SEL/RESET button for 10 seconds. The multi-information display will ask for a confirmation. If you are sure you want to reset the display, press SEL/RESET button to select OK. If you do not want to reset the display, press the INFO up or down arrow button to select "Cancel".

ENGINE OIL LIFE/MAINTENANCE MINDER - PROCEDURE 6

- 1. Turn ignition switch to ON (II) position.
- 2. If the oil life minder is not displayed, press the SEL/RESET button on the steering wheel repeatedly until it is.
- 3. Press and hold the SEL/RESET button on the steering wheel for 10 seconds. The remaining engine oil life reset mode will be shown on the multi-information display.
- 4. To reset the engine oil life, press the UP or DOWN button on steering wheel to select RESET on the display, and press the SEL/RESET button.
- 5. To cancel resetting the oil life, press the UP or DOWN button on steering wheel to select CANCEL on the display, and press SEL/RESET button.

MAINTENANCE REQUIRED LIGHT

NOTE: To determine the appropriate reset procedure, refer to **MAINTENANCE REQUIRED LIGHT RESET INDEX**. Only the vehicles listed in this index have a **MAINTENANCE REQUIRED** light.

MAINTENANCE REQUIRED LIGHT RESET INDEX

Model & Year	Reset Procedure

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

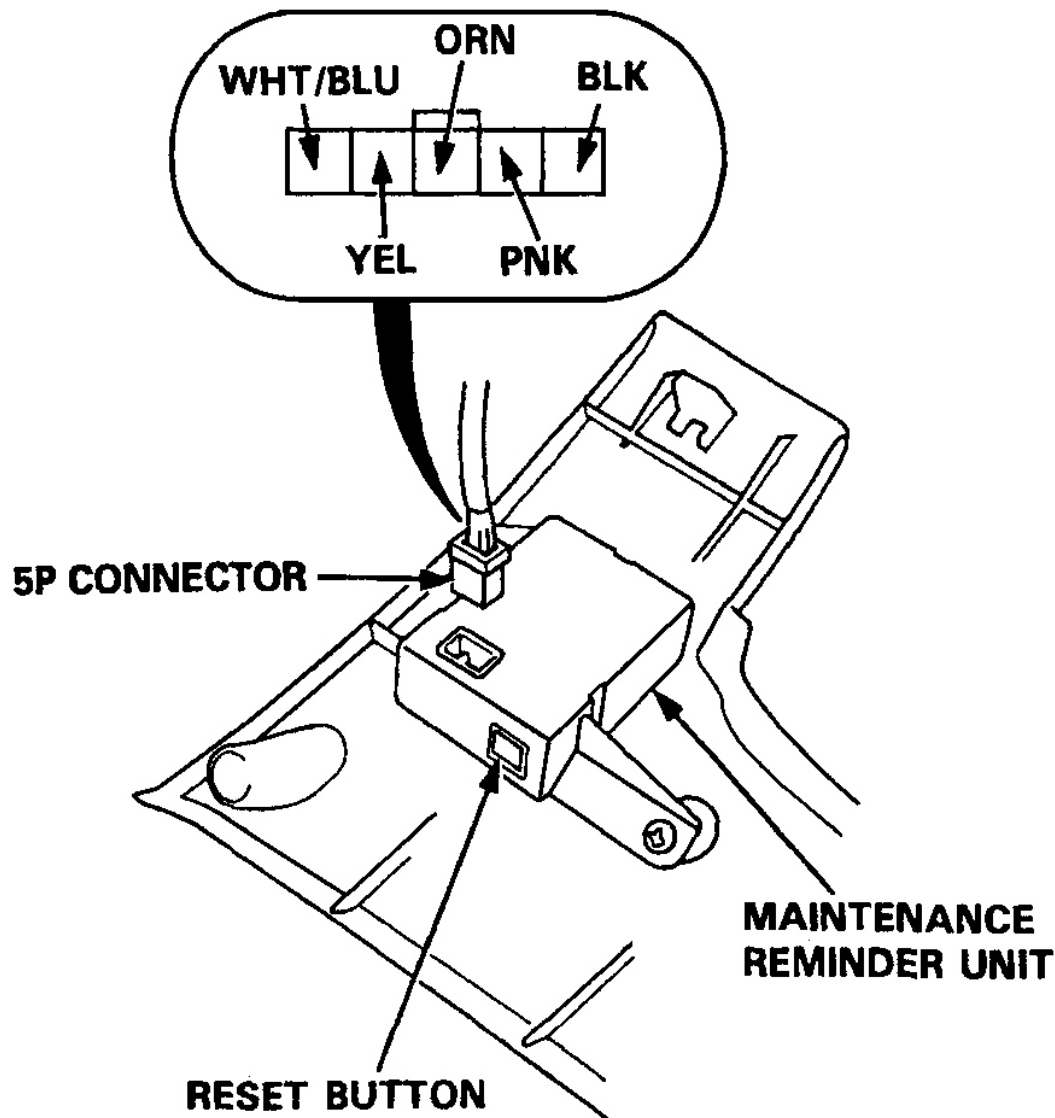
Integra	
1994-95	<u>MAINTENANCE REQUIRED - PROCEDURE 2</u>
1996-2001	<u>MAINTENANCE REQUIRED - PROCEDURE 1</u>
Legend Coupe	
1987-95	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
Legend	
1991-95	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
MDX	
2001-04	<u>MAINTENANCE REQUIRED - PROCEDURE 4</u>
2005-06	<u>MAINTENANCE REQUIRED - PROCEDURE 5</u>
RSX	
2002-06	<u>MAINTENANCE REQUIRED - PROCEDURE 6</u>
TSX	
2004-06	<u>MAINTENANCE REQUIRED - PROCEDURE 6</u>
Vigor	
1992-94	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
2.2CL	
1997	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
2.3CL	
1999	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
2.5TL	
1995-98	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
3.0CL	
1998-99	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
3.2CL	
2001-03	<u>MAINTENANCE REQUIRED - PROCEDURE 4</u>
3.2TL	
1996-98	<u>MAINTENANCE REQUIRED - PROCEDURE 3</u>
1999-2003	<u>MAINTENANCE REQUIRED - PROCEDURE 4</u>
3.5RL	
1996-2004	<u>MAINTENANCE REQUIRED - PROCEDURE 5</u>

MAINTENANCE REQUIRED - PROCEDURE 1

1. For the first 6000 miles after completion of scheduled maintenance and indicator light reset, the MAINT REQD reminder light will illuminate for 2 seconds when ignition is turned to ON position. Between 6000-7500 miles, the MAINT REQD reminder light will illuminate for 2 seconds, then flash for 8 seconds, and then go out. After exceeding 7500 miles without having scheduled maintenance performed, light will remain on until it is reset.
2. When service has been completed, reset MAINT REQD reminder light. To reset light, ensure ignition switch is in OFF position. Turn ignition switch to ON position, with engine off. Push RESET button on maintenance reminder unit located behind lower dash cover and hold for 3 seconds. See **Fig. 4**. Turn

ignition switch to OFF position. Turn ignition switch to ON position and verify MAINT REQD light has been reset.

View from wire side



G00077867

Fig. 4: Locating Maintenance Reminder Unit (Integra)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. At each 7500 mile service interval, the MAINTENANCE REQUIRED light will change from Green to Yellow. If service is not performed (and light is not reset), the MAINTENANCE REQUIRED light will change from Yellow to Red.
2. When service has been completed, reset MAINTENANCE REQUIRED reminder light. To reset light, turn ignition ON. Push button located under dash to the right of steering column (above gas pedal) and hold for 3 seconds. Turn ignition OFF. Start engine and verify light has been reset.

MAINTENANCE REQUIRED - PROCEDURE 3

1. At each 7500 mile service interval, the MAINTENANCE REQUIRED light will change from Green to Yellow. If service is not performed (and light is not reset), the MAINTENANCE REQUIRED light will change from Yellow to Red.
2. When service has been completed, reset MAINTENANCE REQUIRED reminder light. To reset reminder light, turn ignition off. Insert ignition key in slot provided below tachometer. See **Fig. 5**.

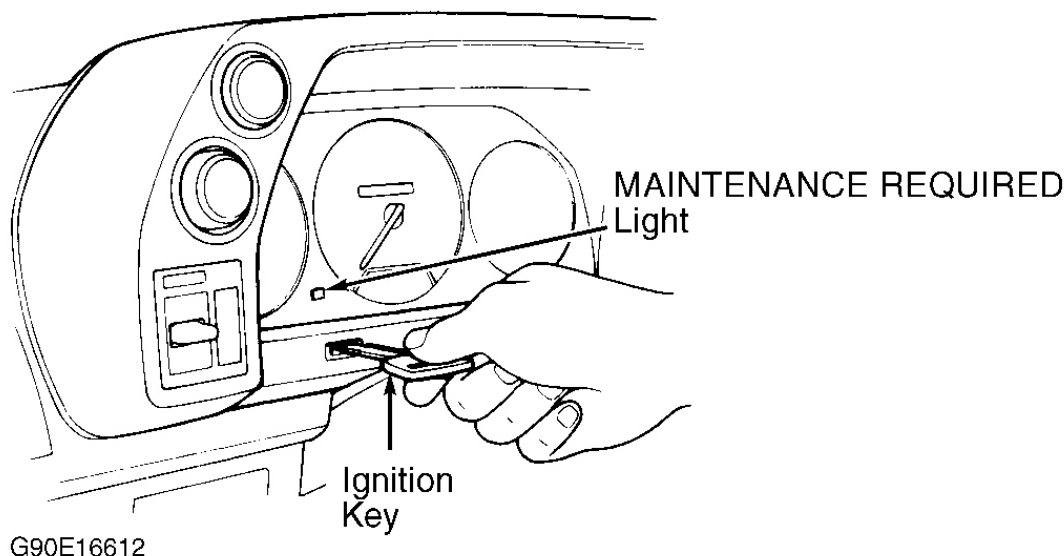


Fig. 5: Resetting Maintenance Required Light
Courtesy of AMERICAN HONDA MOTOR CO., INC.

MAINTENANCE REQUIRED - PROCEDURE 4

1. At 5900-6100 miles MAINT REQ'D light blinks for 10 seconds when the ignition switch is turned to ON (II) position. At 7400-7600 miles MAINT REQ'D light illuminates and stays on while ignition switch is in ON (II) position.
2. To reset MAINT REQ'D light, turn ignition switch to OFF position. Push and hold the Trip or Select and the reset buttons simultaneously. Turn ignition switch to ON (II) position, and continue to hold buttons for more than 10 seconds.

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

MAINTENANCE REQUIRED - PROCEDURE 5

1. For the first 6,000 miles after Maintenance Required Indicator is reset, will come on for 2 seconds when you turn ignition switch to ON (II). Between 6,000 and 7,500 miles, this indicator will light for 2 seconds when you first turn ignition switch to ON (II) and then flash for 10 seconds. If you exceed 7,500 miles without having scheduled maintenance preformed, this indicator will remain on as a constant reminder.
2. To reset, turn engine OFF. Press and hold Select and Reset buttons on instrument panel, then turn ignition switch to ON (II). Hold buttons for approximately 10 seconds until indicator goes off.

MAINTENANCE REQUIRED - PROCEDURE 6

1. For the first 8000 miles after completion of scheduled maintenance and indicator light reset, the MAINT REQ'D reminder light will illuminate for 2 seconds when ignition is turned to ON (II) position. Between 8000-10,000 miles, the MAINT REQ'D reminder light will illuminate for 2 seconds and then flash for 10 seconds, when ignition is turned on. After exceeding 10,000 miles without having scheduled maintenance performed, light will remain on until it is reset.
2. When service has been completed, reset MAINT REQ'D reminder light. To reset light, turn ignition switch to OFF position. Press and hold SELECT/RESET button located on right side of instrument cluster. While still holding button, turn ignition switch to ON (II) position, with engine off. Hold button until reminder light resets, after about 10 seconds.
3. If MAINT REQ'D reminder light does not reset, ensure headlights, parking lights, or both are turned off when resetting reminder light. The MAINT REQ'D indicator cannot be reset if any of these lights are on. If vehicle is equipped with daytime running lights and lights come on when ignition switch is turned to ON (II) position, daytime running lights must be disabled before indicator light can be reset.

SCHEDULED SERVICE DUE LIGHT

NOTE: To determine the appropriate reset procedure, refer to **SCHEDULED SERVICE DUE LIGHT RESET INDEX**. Only the vehicles listed in this index have a **SCHEDULED SERVICE DUE** light.

SCHEDULED SERVICE DUE LIGHT RESET INDEX

Model & Year	Reset Procedure
Legend	
1988-90	<u>SCHEDULED SERVICE DUE LIGHT - PROCEDURE 1</u>

SCHEDULED SERVICE DUE LIGHT - PROCEDURE 1

1. Every 7500 miles, a SCHEDULED SERVICE DUE warning light will illuminate as a reminder to change oil and oil filter. After servicing is completed, reset warning light.
2. To reset warning light, locate SERVICE RESET button. See **Fig. 6**. With ignition switch in the ON position, press SERVICE RESET button for 3 seconds. To verify reset, turn ignition switch off and on. Light should not come on.

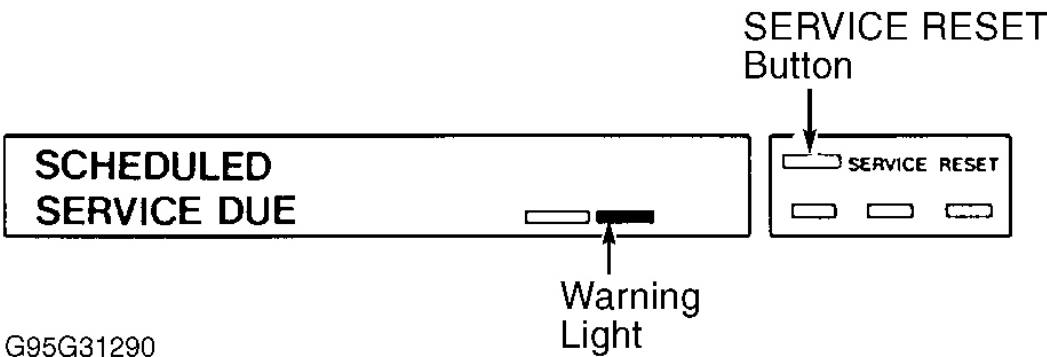


Fig. 6: Identifying Scheduled Service Light Reset Button
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIRE PRESSURE MONITOR SYSTEM (TPMS)

NOTE: To determine the appropriate reset procedure, refer to TPMS RESET PROCEDURE INDEX. Only the vehicles listed in this index are equipped with tire pressure monitor system.

TPMS RESET PROCEDURE INDEX

Model & Year	Reset Procedure
MDX	
2004-09	<u>TPMS RESET - PROCEDURE 1</u>
RDX	
2007-09	<u>TPMS RESET - PROCEDURE 1</u>
RL	
2005-09	<u>TPMS RESET - PROCEDURE 1</u>
TL	
2006-09	<u>TPMS RESET - PROCEDURE 1</u>
TSX	
2007-09	<u>TPMS RESET - PROCEDURE 1</u>

TPMS RESET - PROCEDURE 1

Tire Pressure Monitor Warning Indicators

NOTE: Tire pressures will increase slightly as the temperature in the tires rises during driving at highway speeds. Pressures will also increase or decrease slightly with changes in outside air temperature. A temperature change of about 50°F (10°C) will change tire pressure by about 1.5 psi (10 kPa). If temperature drops

2008 Acura MDX

GENERAL INFORMATION Service Reminder Indicators - Acura

and then rises, tire pressure could decrease just enough to turn on the low pressure and tire(s) indicators, but later increase enough to turn them off. To resolve a complaint of such intermittent indications, confirm and clear the stored DTC(s) and check the tire pressures. Then explain to customer how temperature changes can affect the system, especially when tire pressures are near the low end of the TPMS normal range at around 24-32 psi (168-220 kPa).

NOTE: On models equipped with PAX tire systems, if a tire is repaired or replaced, the warning indicator (and the mileage counter that supports it) must be reset, no matter how far the vehicle was driven in the run flat mode. See appropriate manufacturer service information.

If low tire pressure indicator and multi-information display indicator(s) are lit continuously due to low pressure in one or more tires, adjust tire inflation to proper pressure as indicated on the tire and loading information placard. The light will remain on until tire pressure is properly set. If warning light is still illuminated or the TPMS indicator is lit continuously, there is a problem in the TPM system. Refer to manufacturer service information.

2008 Acura MDX

2007-09 MAINTENANCE Maintenance - MDX

2007-09 MAINTENANCE**Maintenance - MDX****LUBRICANTS AND FLUIDS**

For details of the lubrication points and type of lubricants to be applied, refer to the illustrated index and various work procedures (such as Assembly/Reassembly, Replacement, Overhaul, Installation, etc.) contained in each section.

LUBRICATION POINTS REFERENCE CHART

Item	Lubrication Points	Lubricant
A	Engine	Acura Motor Oil: American Honda P/N 08798-9023A (5W-20), Honda Canada P/N CA66806 (5W-20) Look for the API certification seal on the oil container as shown below. Make sure it says "For Gasoline Engines." SAE viscosity: See chart.
B	Automatic transmission	Acura Automatic Transmission Fluid (ATF-Z1): American Honda P/N 08200-9001A, Honda Canada P/N CA66689 Always use Acura ATF-Z1. Using a non-Acura ATF can affect shift quality.
C	Transfer assembly	Hypoid gear oil GL4 or GL5 Use a SAE 90 or SAE 80W-90 viscosity hypoid gear oil, API classified GL4 or GL5 only. Viscosity SAE 90: above 0°F (-18°C) SAE 80W-90: below 0°F (-18°C)
D	Rear differential	Acura Automatic Transmission Fluid (ATF-Z1): American Honda P/N 08200-9001 A, Honda Canada P/N CA66689
E	Brake system (including VSA lines)	Acura DOT 3 Brake Fluid: P/N 08798-9008A Always use Acura DOT 3 Brake Fluid. Using a non-Acura brake fluid can cause corrosion and decrease the life of the system.
F	Brake booster clevis pin	Multipurpose grease
G	Battery terminals	
H	Fuel fill door	
I	Hood hinges and hood latch	
J	Door hinges: upper and lower	
K	Tailgate hinges	
L	Caliper piston boot, caliper pins, and boots	Honda Silicone Grease: P/N 08C30-B0234M
		Acura Power Steering Fluid: P/N 08206-9002A

2008 Acura MDX

2007-09 MAINTENANCE Maintenance - MDX

M	Power steering system	Always use Acura Power Steering Fluid. Using any other type of power steering fluid or automatic transmission fluid can cause increased wear and poor steering in cold weather.
N	Air conditioning compressor	Compressor oil: DENSO ND-OIL 8 (P/N 38897-PR7-A01AH or 38899-PR7-A01) for refrigerant HFC-134a (R-134a)
O	Cooling system	Acura Long Life Antifreeze/Coolant Type 2

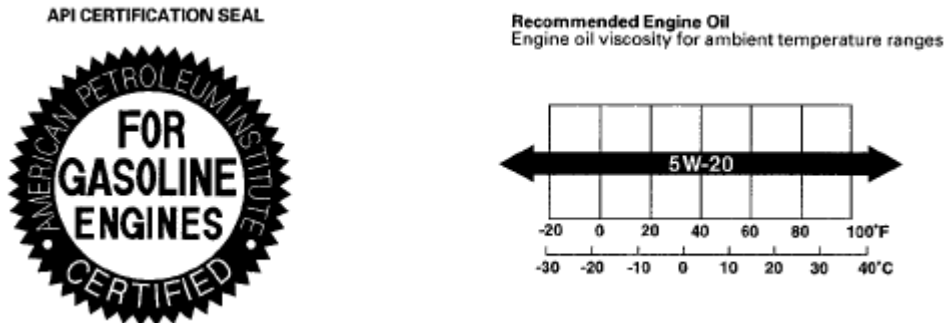


Fig. 1: Identifying API Certification Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- Lubricate the following areas using the recommended lubricants and fluids.
- In corrosive areas, more frequent lubrication is necessary.

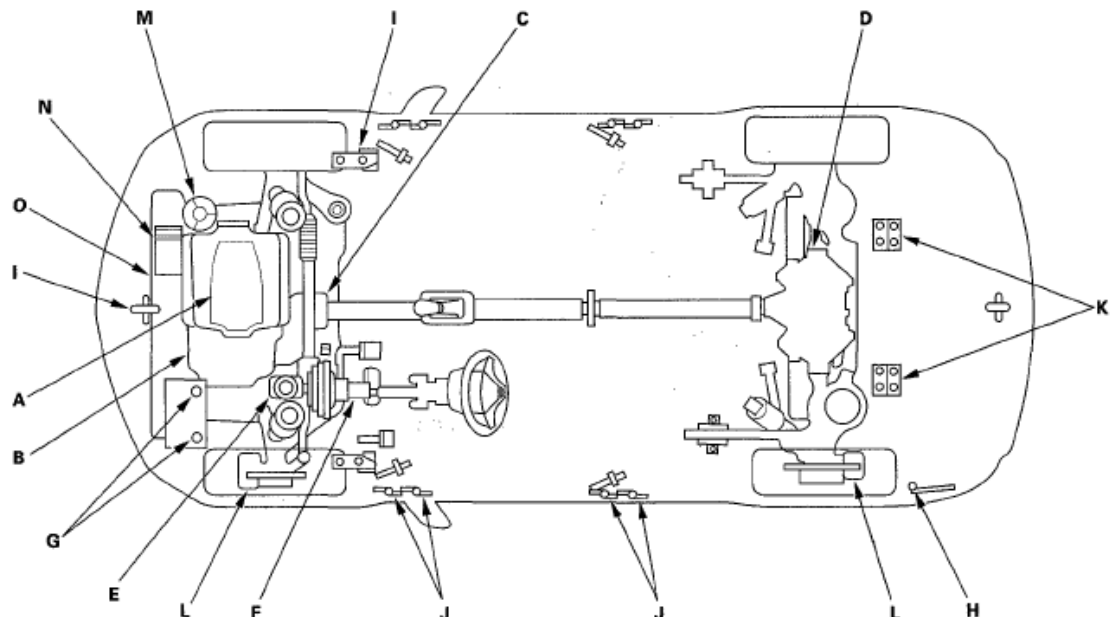


Fig. 2: Identifying Lubricate Applying Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL INFORMATION

MULTI-INFORMATION DISPLAY

The maintenance minder is an important feature of the multi-information display. Based on engine operating conditions and accumulated engine revolutions, the MDX's onboard computer (PCM) calculates the remaining engine oil and automatic transmission fluid life. The system also displays the codes for other scheduled maintenance items needing service.

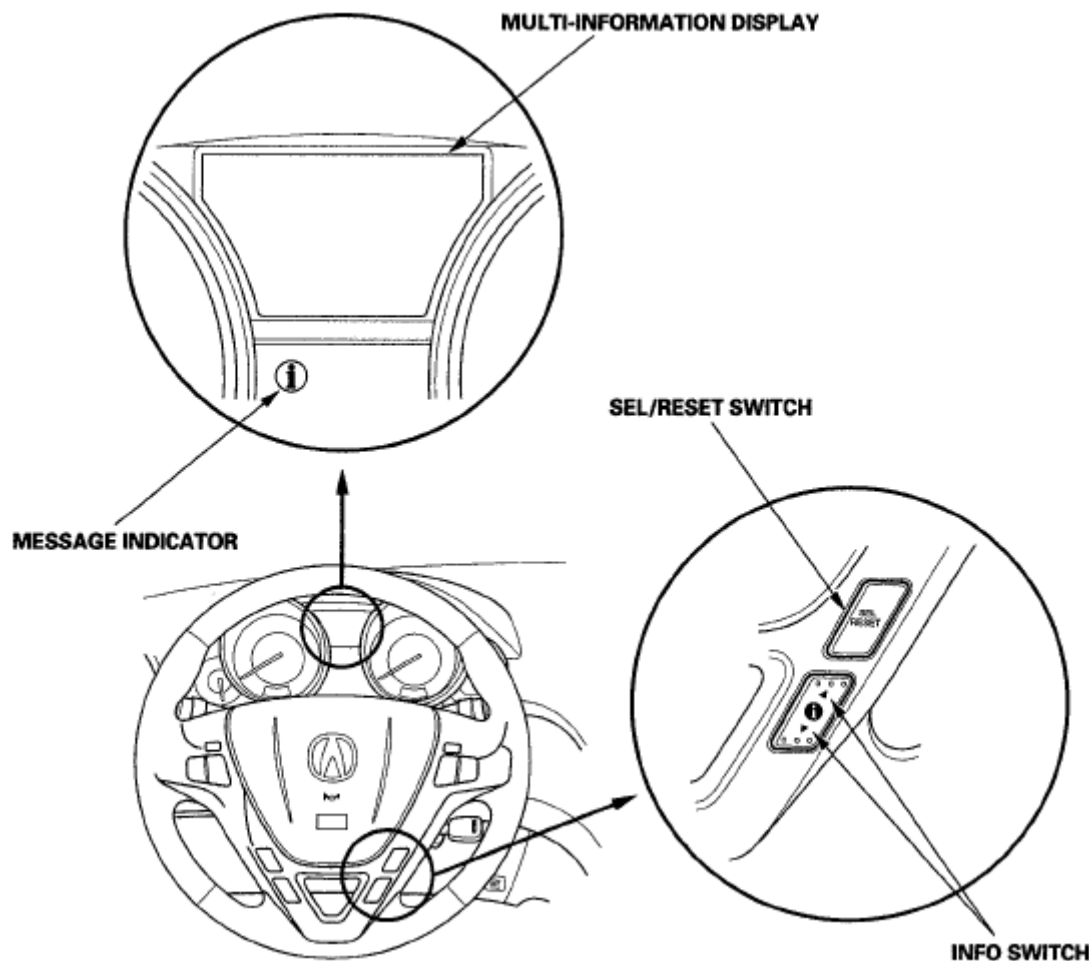


Fig. 3: Screen Display - Multi-Information
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Service Information

1. The remaining engine oil life (A) is shown as a percentage on the multi-information display. To see the current engine oil life, turn the ignition switch to the ON (II) position, then push and release the Sel/Reset switch repeatedly until the engine oil life displays.



Fig. 4: Screen Display - Engine Oil Life

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. When the ignition switch is in the ON (II) position, and the remaining engine oil life is 6% to 15%, the remaining engine oil life and other scheduled maintenance item(s) needing service are displayed. The maintenance system message "SERVICE DUE SOON" (A) also come on. To cancel the message, press the Info button. The display continues to show the remaining engine oil life (B) and the message indicator (C) until it is reset.
 - Complete list of maintenance main items (D) (see MAINTENANCE MAIN ITEMS).
 - Complete list of maintenance sub items (E) (see MAINTENANCE SUB ITEMS).

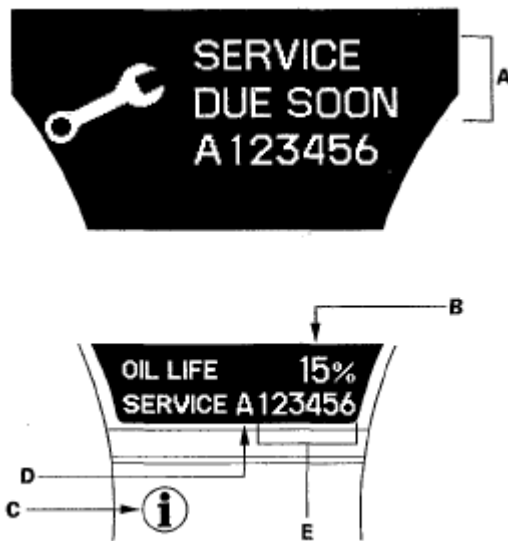


Fig. 5: Screen Display - SERVICE DUE SOON

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. When the ignition switch is in the ON (II) position, and the remaining engine oil life is 1 % to 5 %, the maintenance system message "SERVICE DUE NOW" is displayed along with the same maintenance item code(s). If the maintenance system message display is cancelled, a "SERVICE" message appears.



Fig. 6: Screen Display - SERVICE DUE NOW

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. When the ignition switch is in the ON (II) position, and the remaining engine oil life is 0 %, the maintenance system message "SERVICE PAST DUE" is displayed along with the same maintenance item code(s).

**Fig. 7: Screen Display - SERVICE PAST DUE**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the indicated maintenance is not done, the "SERVICE PAST DUE" message shows a negative mileage, for example "-10," on the display. If the negative mileage is between 0 and -9, the message is displayed for only a few seconds when the ignition switch is turned to the ON (II) position. The negative mileage (A) remains displayed after the vehicle is driven more than 10 miles (for USA models) or 10 km (for Canada models) after 0 % oil life is reached, and the display cannot be cancelled. This means the indicated maintenance item(s) should have been done more than 10 miles (or 10 km) ago.

**Fig. 8: Screen Display - SERVICE PAST DUE**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

RESETTING THE MAINTENANCE INFORMATION DISPLAY

NOTE:

- The vehicle must be stopped to reset the display.
- If a required service is done and the display is not reset, or if the maintenance display is reset without doing the service, the system will not show the proper maintenance timing. This can lead to serious mechanical problems because there will be no accurate record of when the required maintenance is needed.
- The engine oil life and the maintenance items can be reset independently only with the HDS.

1. Turn the ignition switch to ON (II) position.
2. If system message(s) are displayed, press the Info switch to cancel the display.
3. Push and release the Sel/Reset switch repeatedly until the engine oil life indicator is displayed.
4. Press and hold the Sel/Reset switch for about 10 seconds, the "OIL LIFE RESET" mode display appears.

NOTE:

- If you are resetting the display when the engine oil life is more than 15 %, make sure any maintenance item(s) requiring service are done before resetting the display.
- To cancel the "OIL LIFE RESET" mode, press the Info switch repeatedly until the "CANCEL" indicator is displayed, then press the Sel/Reset switch.



Fig. 9: Screen Display - OIL LIFE RESET
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Press Info button repeatedly until the "RESET" indicator is displayed, then press the Sel/Reset switch.

The maintenance item code(s) will disappear, and the engine oil life will reset to "100 %."



Fig. 10: Screen Display - Oil Life
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RESETTING INDIVIDUAL MAINTENANCE ITEMS

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (See Page 11-3)
2. Turn the Ignition Switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it does not communicate, troubleshoot the DLC circuit (see page 11-218)
4. Select BODY ELECTRICAL with the HDS.
5. Select ADJUSTMENT in the GAUGES MENU with the HDS.
6. Select RESET in the MAINTENANCE MINDER with the HDS.
7. Select the individual maintenance item you wish to reset.

MAINTENANCE MAIN ITEMS

2008 Acura MDX

2007-09 MAINTENANCE Maintenance - MDX

If the message "SERVICE DUE NOW" does not appear more than 12 months after the display is reset, change the engine oil every year.

NOTE:

- Replace the brake fluid every 3 years, independent of the maintenance messages in the multi-information display.
- Inspect idle speed every 160,000 miles (256,000 km).
- Adjust the valves during services A, B, 1, 2, or 3 if they are noisy.

MAINTENANCE MAIN ITEMS

Symbol	Maintenance Main Items
A	Replace engine oil (see <u>ENGINE OIL REPLACEMENT</u>). Engine oil capacity without oil filter: 4.0 L (4.2 US qt)
B	Replace engine oil and oil filter (see <u>ENGINE OIL FILTER REPLACEMENT</u>). Engine oil capacity with oil filter: 4.3 L (4.5 US qt)
	Check front and rear brakes (see <u>COMPONENT LOCATION INDEX</u>). • Check pads and discs for wear (thickness), damage, and cracks. • Check calipers for damage, leaks, and tightness of mounting bolts.
	Check parking brake adjustment (see <u>PARKING BRAKE INSPECTION AND ADJUSTMENT</u>). Number of clicks (9 to 11 when the parking brake pedal is pressed with 294 N (30 kgf, 66 lbf) of force
	Inspect tie-rod ends, steering gearbox, and gearbox boots (see <u>STEERING LINKAGE AND GEARBOX INSPECTION</u>). • Check rack grease and steering linkage. • Check boots for damage and leaking grease. • Check fluid lines for damage or leaks.
	Inspect suspension components (see <u>FRONT SUSPENSION</u>). • Check bolts for tightness. • Check condition of ball joint boots for deterioration and damage.
	Inspect driveshaft boots (see <u>DRIVESHAFT INSPECTION</u>). Check boots for cracks and boot bands for tightness.
	Inspect brake hoses and lines including VSA lines (see <u>BRAKE HOSE AND LINE INSPECTION</u>). Check the master cylinder and VSA modulator for damage and leakage.
	Inspect all fluid levels and condition of fluids. • Engine coolant (see <u>COOLANT CHECK</u>) • Automatic transmission fluid (see <u>ATF LEVEL CHECK</u>) • Rear differential fluid (see <u>REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT</u>)

2008 Acura MDX

2007-09 MAINTENANCE Maintenance - MDX

- Power steering fluid (see **FLUID REPLACEMENT**)
- Brake fluid (see **BRAKE SYSTEM BLEEDING**)
- Windshield washer fluid (see **REAR WINDOW WIPER MOTOR REPLACEMENT**)

Inspect exhaust system (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**)*.
Check catalytic converter heat shields, exhaust pipes, and muffler for damage, leaks, and tightness.

Inspect fuel lines (see **FUEL LINE INSPECTION**)*, and connections (see **FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS**)*.

Check for loose connections, cracks, and deterioration; retighten loose connections and replace damaged parts.

NOTE: According to state and federal regulations, failure to do the maintenance items marked with an asterisk (*) will not void the client's emissions warranties. However, Acura recommends that all maintenance services be done at the recommended interval, to ensure long-term reliability.

MAINTENANCE SUB ITEMS

MAINTENANCE SUB ITEMS CHART

Number	Maintenance Sub Items
1	Rotate tires, and check tire inflation and condition. Follow the pattern shown in the Owner's Manual.
2	Replace air cleaner element (see <u>AIR CLEANER ELEMENT INSPECTION/REPLACEMENT</u>). If the vehicle is regularly driven in dusty conditions, replace every 15,000 miles (24,000 km).
	Replace dust and pollen filter (see <u>DUST AND POLLEN FILTER REPLACEMENT</u>).
	• If the vehicle is driven mostly in areas that have high concentrations of dust, pollen, or soot in the air, replace the filter at 15,000 miles (24,000 km). • Replace the filter whenever airflow from the heating and air conditioning system is less than normal.
3	Inspect drive belt (see <u>DRIVE BELT INSPECTION</u>). Look for cracks and damage, and inspect auto tensioner; no adjustment is needed.
	Replace automatic transmission fluid (see <u>ATF REPLACEMENT</u>) and transfer fluid (see <u>TRANSFER ASSEMBLY FLUID REPLACEMENT</u>).
	• Automatic transmission fluid capacity: 2.8 L (3.0 US qt), use Acura ATF-Z1 • Transfer fluid capacity: 0.43 L (0.45 US qt), use hypoid gear oil GL4 or GL5
4	Replace spark plugs (see <u>SPARK PLUG INSPECTION</u>). Use IZFR5K11 (NGK) or SKJ20DR-M11 (DENSO).
	Replace timing belt (see <u>TIMING BELT REPLACEMENT</u>). If the vehicle is regularly driven in very high temperatures (over 110°F, 43°C), or in very low temperatures (under -20°F, -29°C), replace every 60,000 miles (USA)/100,000 km (Canada)

2008 Acura MDX

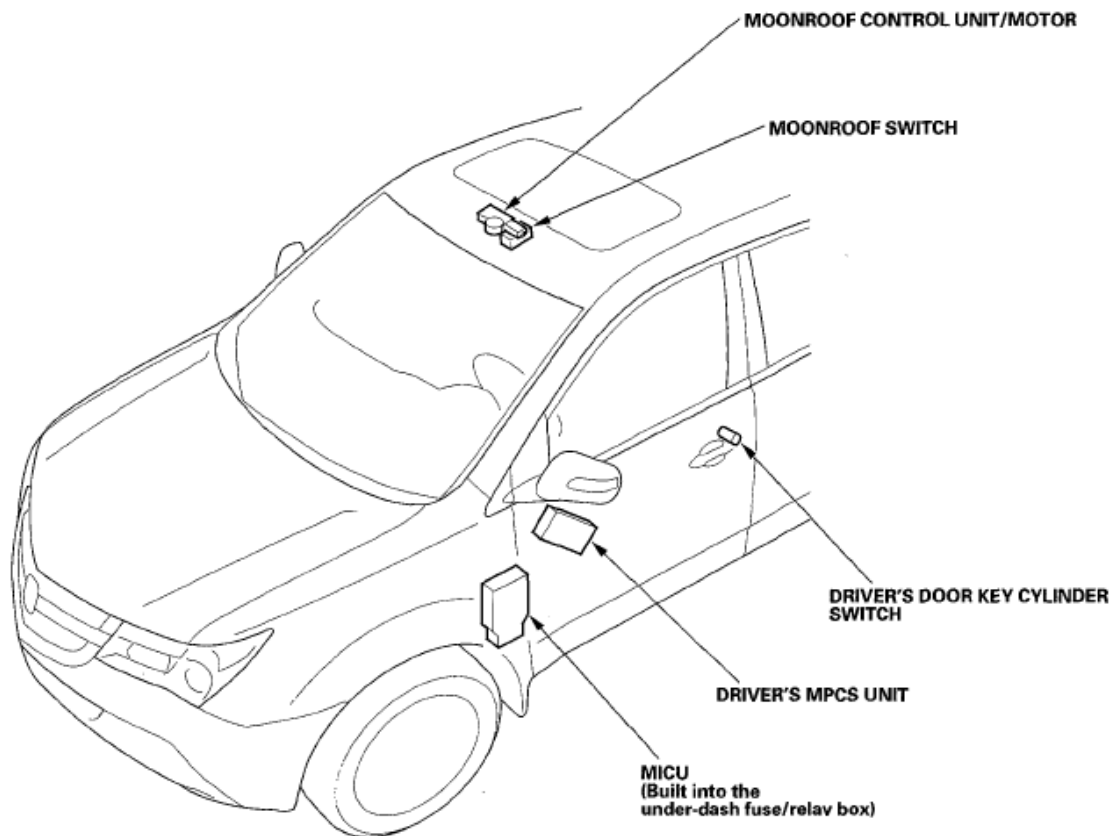
2007-09 MAINTENANCE Maintenance - MDX

	and inspect water pump (see <u>WATER PUMP INSPECTION</u>).
	Inspect the valve clearance (cold) (see <u>VALVE CLEARANCE ADJUSTMENT</u>). • Otherwise adjust only if noisy • Intake: 0.20-0.24 mm (0.008-0.009 in.). Exhaust: 0.28-0.32 mm (0.011-0.013 in.)
5	Replace engine coolant (see <u>COOLANT REPLACEMENT</u>). Capacity (including the reserve tank): 7.3 L (1.93 US gal), use Acura Long Life Antifreeze/Coolant Type 2
6	Replace rear differential fluid (see <u>REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT</u>). • Driving in mountainous areas at very low vehicle speeds or trailer towing results in higher level of mechanical (shear) stress to fluid. This requires differential fluid changes more frequently than recommended by the maintenance minder. If the vehicle is regularly driven in these conditions, have the differential fluid changed at 7,500 miles (12,000 km), then every 15,000 miles (24,000 km). • Capacity: Clutch chambers 2.53 L (2.67 US qt), use Acura ATF-Z1

2007-09 ACCESSORIES AND EQUIPMENT

Moonroof - MDX

COMPONENT LOCATION INDEX

**Fig. 1: Identifying Moonroof Component Location**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

CAVITY AND TEST CONDITION CHART

Symptom	Diagnostic procedure
Water leaks from moonroof	1. Check for a clogged drain tube. 2. Check for a gap between the glass weatherstrip and the roof panel. 3. Check for a defective or an improperly installed glass weatherstrip or drain channel. 4. Check for a gap between the drain seal and the roof panel.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Moonroof - MDX

Wind noise from moonroof	Check for excessive clearance between the glass weatherstrip and the roof panel.
Motor noise from moonroof	1. Check for a loose motor. 2. Check for a worn gear or bearing. 3. Check for a deformed cable assembly.
Moonroof glass does not move, but motor turns	1. Check for a defective gear or inner cable. 2. Check for foreign matter stuck between the guide rail and the slider. 3. Check for a loose inner cable. 4. Make sure the cable assembly is attached properly.
Moonroof glass does not move and motor does not turn (glass can be moved with 5 mm hexagonal wrench)	1. Check for a blown fuse. 2. Check for a faulty moonroof switch. 3. Check for a run down battery. 4. Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>). 5. Check for a defective motor control unit.
Moonroof glass does not stop at proper flush closed position.	• Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>). • Check glass position adjustment.
Moonroof glass moves in a jerking motion (moves 40mm (1.57 in.), stops for 0.4 seconds, and repeats)	Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).
During auto close operation, moonroof glass reverses when no object is trapped	Check for dirt and debris in the track. Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).
Moonroof glass moves, but there is no AUTO function	Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).

CIRCUIT DIAGRAM

2007-09 ACCESSORIES AND EQUIPMENT Moonroof - MDX



- If the moonroof works OK manually, but will not work in AUTO, or reverses frequently (pinch detection) do the moonroof calibration (see **RESETTING THE MOONROOF CONTROL UNIT**) before proceeding with the input test.

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Close the driver's door, and keep it closed until the procedure is complete.
3. Turn the ignition switch to LOCK (0).
4. Disconnect the 10P connector (A) from the moonroof control unit (B).

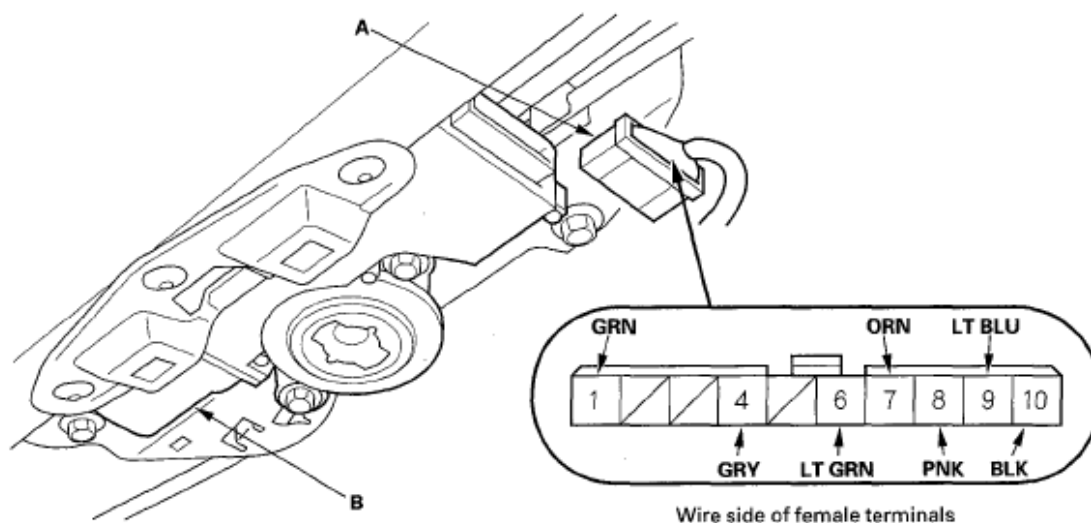


Fig. 4: Identifying Moonroof Control Unit And 10P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 6.
6. With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 7.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
4	GRY	Under all conditions	Check for continuity between the No. 4 terminal and the under-dash fuse/relay box connector X (39P) No. 15 terminal, and the No. 4 terminal and the front passenger's MPCS unit connector A (28P) No. 4 terminal: There should be continuity.	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Moonroof - MDX

7. Reconnect the connector, and make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 8.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
10	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G501) • An open in the wire
1	GRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 2 (OP1) (40 A) fuse in the main under-hood fuse box • Blown No. 3⁽¹⁾ fuse in the under-dash fuse/relay box • An open in the wire
6	LT GRN	Moon roof switch in AUTO OPEN or AUTO CLOSE position	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 6 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • Faulty moonroof switch • An open in the wire
7	ORN	Moon roof switch in TILT position	Measure the voltage to ground: There should be battery voltage.	
8	PNK	Moon roof switch in CLOSE position	Measure the voltage to ground: There should be battery voltage.	
9	LT BLU	Moonroof switch in OPEN position	Measure the voltage to ground: There should be battery voltage.	
(1) No. 3 (10 A): '07 model No. 3 (15 A): '08 model				

8. If all the input tests are OK and multiple failures are found, replace the moonroof control unit/motor assembly. If the problem is related to the key-off operation, go to the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**), and front passenger's MPCS unit input test (see **FRONT PASSENGER'S MPCS UNIT INPUT TEST**).

MOONROOF SWITCH TEST/REPLACEMENT

Special Tools required

KTC trim tool set SOJATP2014

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damaging

components.

- Take care not to scratch the roof console and related parts.
- The moonroof can still be operated for about 10 minutes after the ignition switch is turned from the "II" to the "I" or "0" positions, as long as none of the doors have been opened. This provides a convenience to parked occupants while offering a degree of security against unwanted or accidental moonroof operation.

1. Carefully pry the moonroof switch (A) out of the roof console.

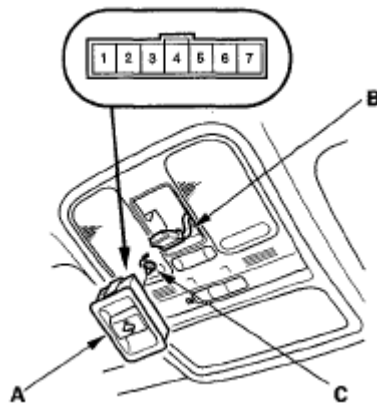


Fig. 5: Identifying Moonroof Switch Of Roof Console
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 7P connector (B) from the moonroof switch.
3. Check for continuity between the terminals in each switch position according to **Fig. 6**.

Terminal Position	1	2	3	6	7	4	5
OPEN	○				○		
CLOSE	○		○				
TILT	○	○				○	○
CLOSE+AUTO	○		○	○			
OPEN+AUTO	○			○	○		

Fig. 6: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the illumination bulb (C) or the switch.
5. Install in the reverse order of removal.

RESETTING THE MOONROOF CONTROL UNIT

NOTE: Do the moonroof control unit reset with all the doors and tailgate closed.

Resetting the moonroof is required when any of the following have occurred.

- The moonroof was moved manually with the battery dead or disconnected.
- The moonroof motor was replaced with a new one.
- Any components related to the moonroof were replaced. -Wind deflector
 - Moonroof glass
 - Moonroof seal
 - Moonroof glass bracket
 - Moonroof cables, etc.

To reset the moonroof control unit, do these steps

1. Close all the doors and the tailgate.
2. Turn the ignition switch to LOCK (0).
3. Press and hold the center of the moonroof switch (tilt), and turn the ignition switch ON (II).
4. Release the moonroof switch and turn the ignition switch to LOCK (0).
5. Repeat steps 3 and 4 an additional four times.
6. Pull and hold the moonroof switch (open) an additional 3 seconds after the moonroof is fully opened.
7. Press and hold the moonroof switch (close) an additional 3 seconds after the moonroof is fully closed.
8. Confirm that the moonroof control unit is reset by using the moonroof AUTO OPEN and AUTO CLOSE function.

2007-09 ACCESSORIES AND EQUIPMENT

Moonroof - MDX

COMPONENT LOCATION INDEX

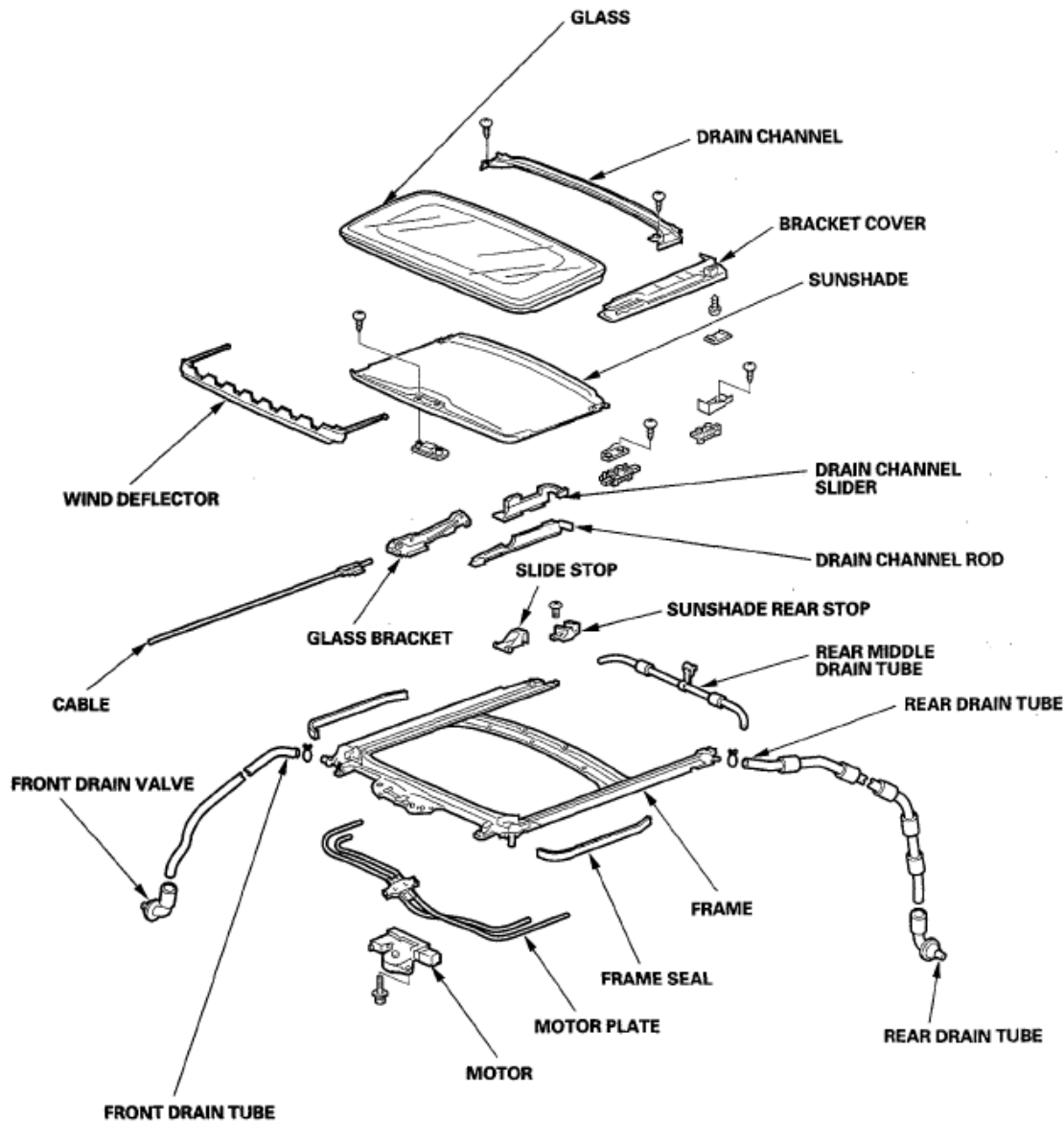


Fig. 1: Identifying Moonroof Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING INDEX

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Moonroof - MDX

Symptom	Diagnostic procedure
Water leaks from moonroof	1. Check for a clogged drain tube. 2. Check for a gap between the glass weatherstrip and the roof panel. 3. Check for a defective or an improperly installed glass weatherstrip or drain channel. 4. Check for a gap between the drain seal and the roof panel.
Wind noise from moonroof	Check for excessive clearance between the glass weatherstrip and the roof panel.
Motor noise from moonroof	1. Check for a loose motor. 2. Check for a worn gear or bearing. 3. Check for a deformed cable assembly.
Moonroof glass does not move, but motor turns	1. Check for a defective gear or inner cable. 2. Check for foreign matter stuck between the guide rail and the slider. 3. Check for a loose inner cable. 4. Make sure the cable assembly is attached properly.
Moonroof glass does not move and motor does not turn (glass can be moved with 5 mm hexagonal wrench)	1. Check for a blown fuse. 2. Check for a faulty moonroof switch. 3. Check for a run down battery. 4. Check for a defective motor control unit.
Moonroof glass does not stop at proper flush closed position	1. Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>). 2. Check glass position adjustment.
Moonroof glass moves in a jerking motion (moves 40 mm (1.57 in.), stops for 0.4 seconds, and repeats)	Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).
During auto close operation, moonroof glass reverses when no object is trapped	Check for dirt and debris in the track. Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).
Moonroof glass moves, but there is no AUTO function	Reset the moonroof control unit (see <u>RESETTING THE MOONROOF CONTROL UNIT</u>).

GLASS POSITION ADJUSTMENT

The roof panel (A) should be even with the glass weatherstrip (B), to within 0+1/-1 mm (0+0.04/-0.04 in.) all the way around. If not, make the following adjustment:

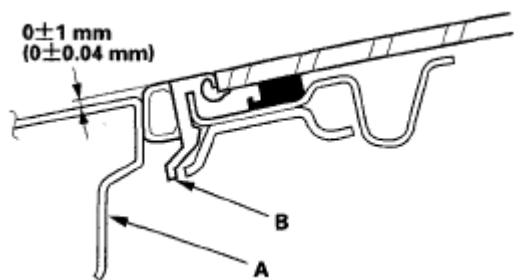


Fig. 2: Identifying Roof Panel And Glass Weatherstrip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the bracket cover.
2. With a TORX T25 bit, loosen the bolts on each side, and adjust the glass (A).

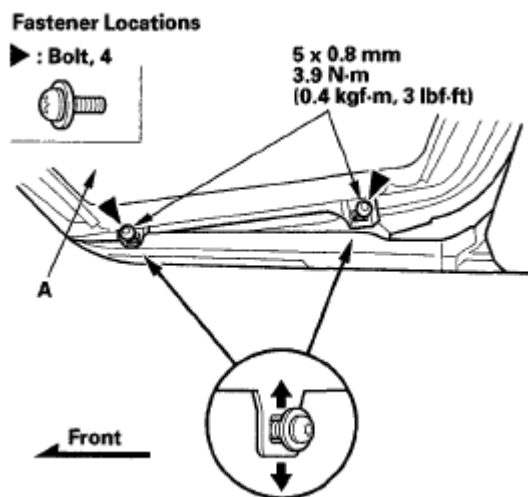


Fig. 3: Identifying Glass Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If necessary, repeat on the opposite side.

GLASS REPLACEMENT

1. Tilt the glass all the way up.
2. Slide the sunshade all the way back.
3. Pry out the cap (A), remove the screws (B), release the hooks (C), and remove the bracket cover (D). Repeat on opposite side. Use a TORX T25 bit to remove the bolts (E) from the glass brackets (F) on both sides.

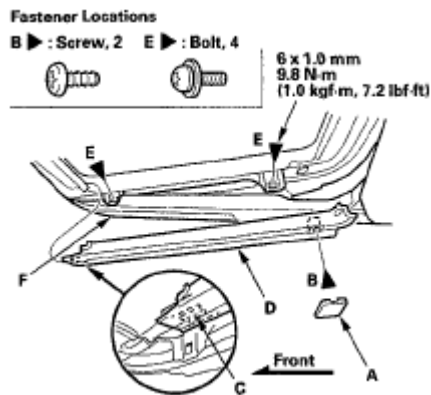


Fig. 4: Identifying Cap, Screws, Hooks And Bracket Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the glass (A) by lifting it up. Do not damage the roof panel.

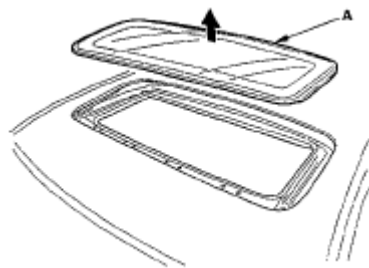


Fig. 5: Identifying Glass
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the glass in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the glass mounting bolts before reinstallation.
 - Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
 - Adjust the glass position alignment (see **GLASS POSITION ADJUSTMENT**).
6. Check for water leaks. Use free-flowing water from a hose without a nozzle. Do not use high-pressure water.

NOTE: It is normal for some water to seep past the moonroof into the moonroof frame, and exit through the drains.

WIND DEFLECTOR REPLACEMENT

1. Open the glass fully.
2. Disconnect the deflector springs (A) from the bushings (B) on both sides.

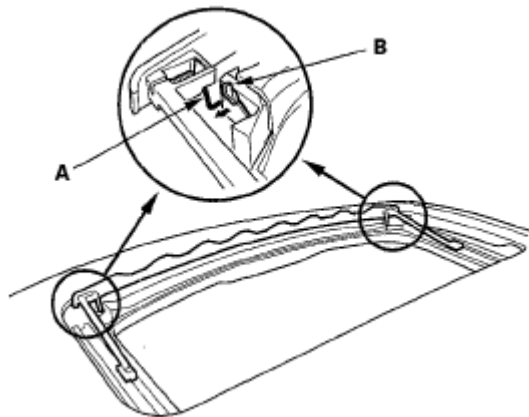


Fig. 6: Identifying Deflector Springs And Bushings
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the wind deflector (A). A.

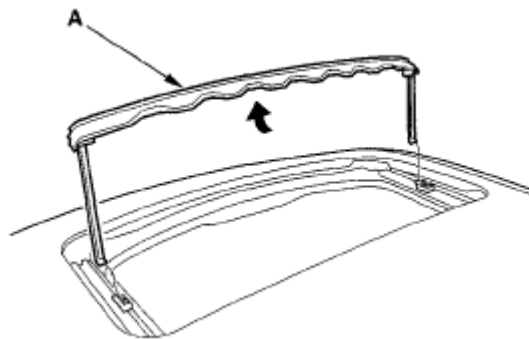


Fig. 7: Identifying Wind Deflector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the deflector in the reverse order of removal.
5. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

DRAIN CHANNEL REPLACEMENT

1. Remove the glass (see **GLASS REPLACEMENT**).
2. Move both glass brackets (A) to the position where the moonroof normally pivots down, and remove the screws securing the drain channel (B).

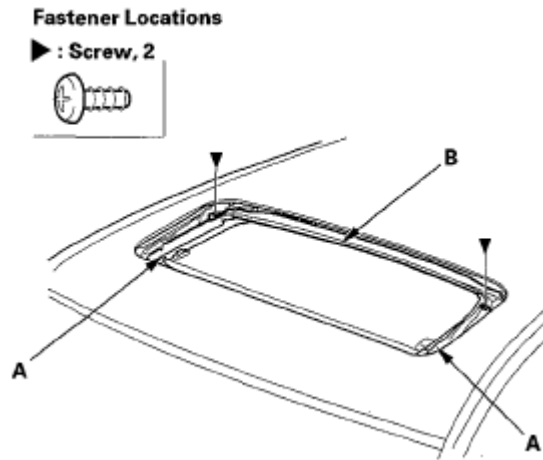


Fig. 8: Identifying Glass Brackets And Drain Channel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the drain channel (A) from both hooks (B) of the drain channel slider by pulling the drain channel forward.

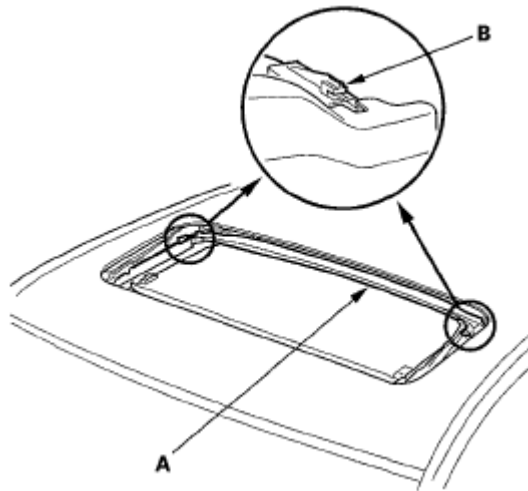


Fig. 9: Identifying Drain Channel And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the drain channel (A).

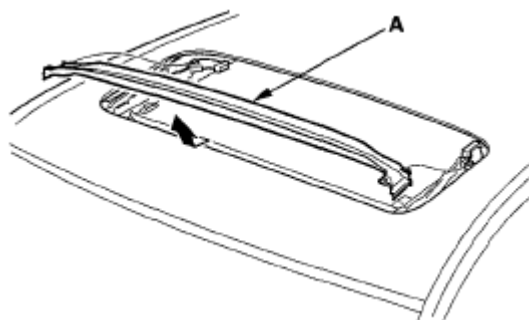


Fig. 10: Identifying Drain Channel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the channel in the reverse order of removal, and note these items:
 - Push the drain channel onto the hooks until a faint click is heard.
 - Check the glass position adjustment (see GLASS POSITION ADJUSTMENT).
6. Reset the moonroof control unit (see RESETTING THE MOONROOF CONTROL UNIT).
7. Check for water leaks. Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

SUNSHADE REPLACEMENT

1. Remove the drain channel (see DRAIN CHANNEL REPLACEMENT).
2. Slide the sunshade all the way forward.
3. Disconnect both drain channel rods (A) from both glass brackets (B) by pulling the front of them inside, then remove the rods from both drain channel sliders (C) by lifting them up.

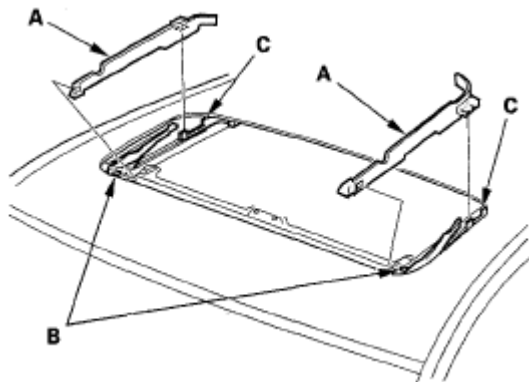


Fig. 11: Identifying Drain Channel Rods, Glass Brackets And Drain Channel Sliders

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Slide both drain channel sliders (A) forward until they contact both glass brackets (B).

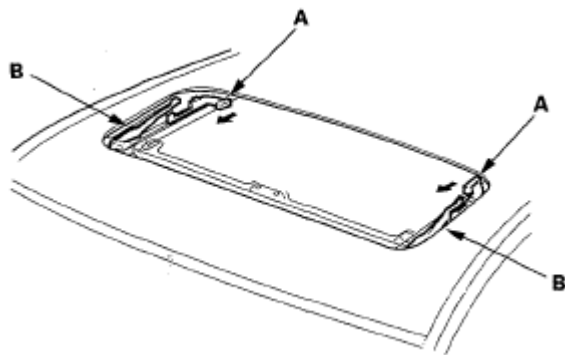


Fig. 12: Identifying Drain Channel Sliders And Glass Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screws, then remove both sunshade slider spacers (A).

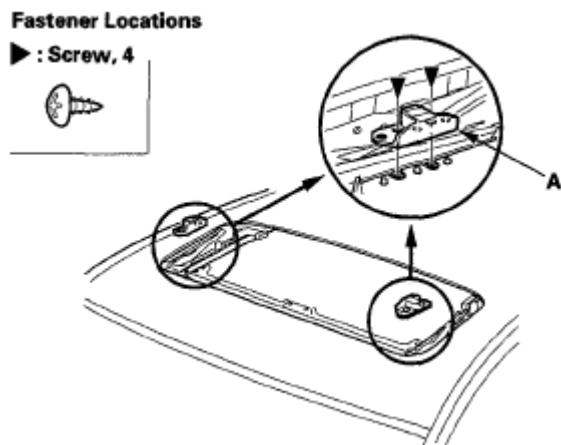


Fig. 13: Identifying Sunshade Slider Spacers
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. While lifting the front portion of the sunshade (A), move the sunshade forward until you can see both sunshade rear hooks (B). Do not damage the sunshade and hooks.

Fastener Locations

► : Screw, 4

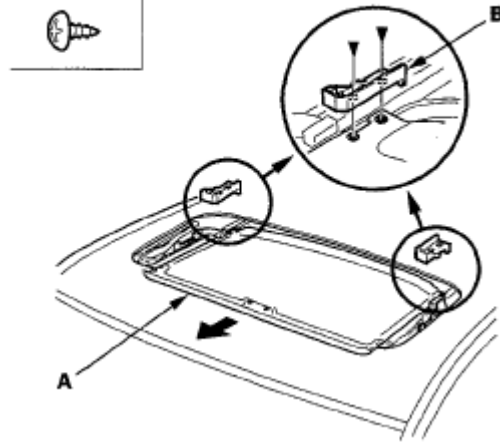


Fig. 14: Identifying Sunshade And Sunshade Rear Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws, then remove both hooks.
8. Remove the sunshade (A).

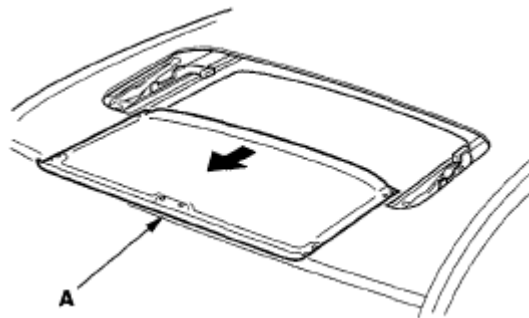


Fig. 15: Identifying Sunshade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove both front sunshade base sliders (A) and both rear sunshade base sliders (B).

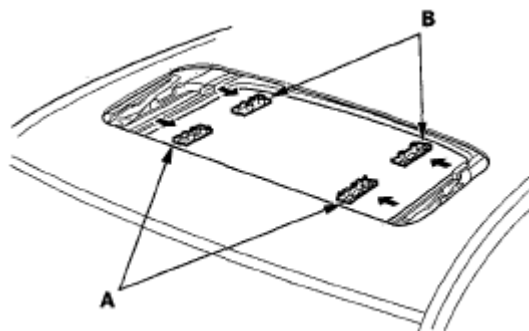


Fig. 16: Identifying Front Sunshade Base Sliders And Rear Sunshade Base Sliders

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the sunshade in the reverse order of removal, and check the glass position adjustment (see GLASS POSITION ADJUSTMENT).
11. Reset the moonroof control unit (see RESETTING THE MOONROOF CONTROL UNIT).
12. Check for water leaks. Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

MOTOR REPLACEMENT

1. Remove these items:
 - Roof console (see INTERIOR LIGHT SWITCH TEST/REPLACEMENT)
 - Roof console bezel (see step 2 on HEADLINER REMOVAL/INSTALLATION)
2. Put on gloves to protect your hands. Disconnect the connector (A), and remove the bolts, then remove the motor (B).

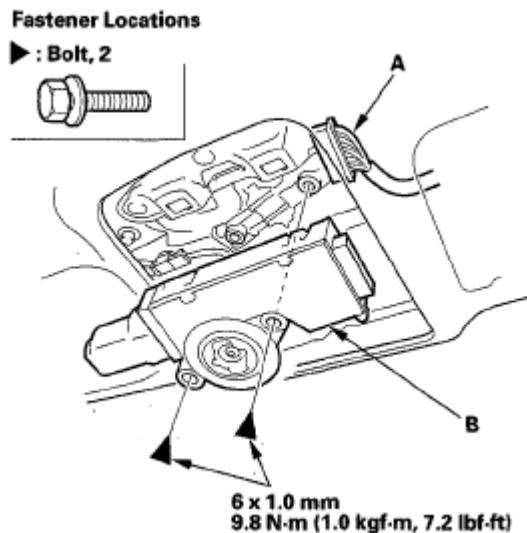


Fig. 17: Identifying Connector And Motor With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the motor in the reverse order of removal, and note these items:
 - Make sure the connector is plugged in properly.
 - Reset the moonroof control unit (see RESETTING THE MOONROOF CONTROL UNIT).
 - Check the motor operation.

FRAME AND DRAIN TUBE REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX) and the precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or service.

1. Remove these items:
 - Headliner (see **HEADLINER REMOVAL/INSTALLATION**)
 - Moonroof glass (see **GLASS REPLACEMENT**)
 - With rear entertainment system: Rear controller and screen (see **REAR CONTROLLER AND SCREEN REMOVAL/INSTALLATION**)
2. Put on gloves to protect your hands. Disconnect the motor connector (A), and detach the moonroof wire harness connector (B) from the moonroof frame.

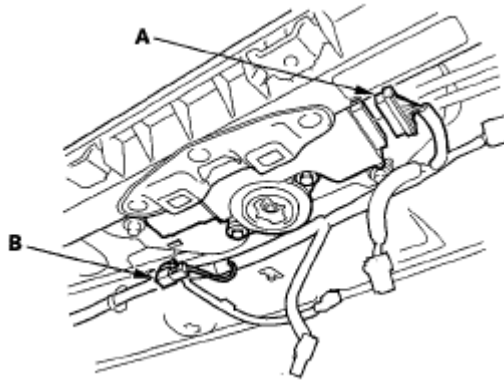


Fig. 18: Identifying Motor Connector And Moonroof Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the drain tubes (A).

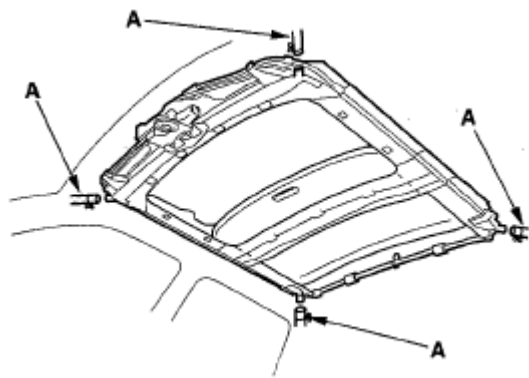


Fig. 19: Identifying Drain Tubes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With an assistant holding the frame (A), remove the bolts and release the rear middle drain tube clip (B), then remove the frame.

Fastener Locations

► : Bolt, 8

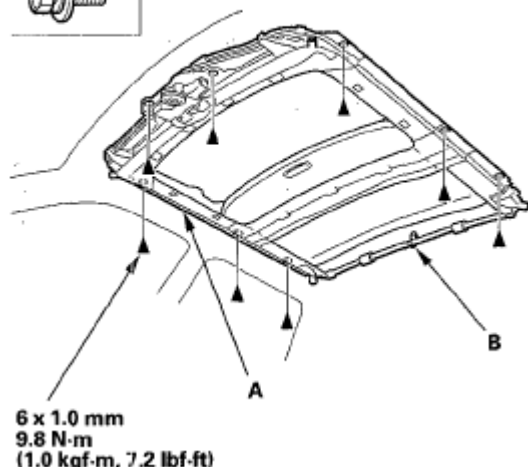


Fig. 20: Identifying Frame And Rear Middle Drain Tube Clip With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front drain tube

5. Remove these items:
 - Front door sill trim (see TRIM REMOVAL/INSTALLATION - DOOR AREAS)
 - Kick panel (see TRIM REMOVAL/INSTALLATION - DOOR AREAS)
 - Driver's dashboard undercover (see DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION)
 - Passenger's dashboard undercover (see PASSENGER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION)
6. Passenger's side: Remove the glove box damper from the pivot on the glove box (see step 3 on GLOVE BOX REMOVAL/INSTALLATION). While holding the glove box, release the glove box stop on each side from the dashboard by pushing them in, then lower the glove box (see step 6 on GLOVE BOX REMOVAL/INSTALLATION).
7. Driver's side: Remove the bolts, then move the under-dash fuse/relay box (A) as needed.

Fastener Locations

► : Bolt, 2

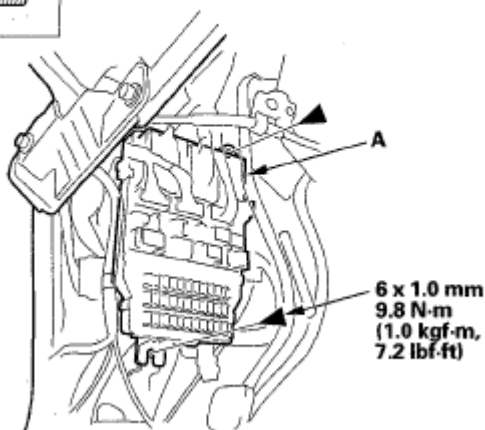


Fig. 21: Identifying Under-Dash Fuse/Relay Box With Torque Specificaiton
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. To remove a front drain valve (A) from the body, tie a string to the top end of the drain tube, then pull the front drain tube (B) down out of the A-pillar. Leave the string in the pillar to use when reinstalling the drain tube.

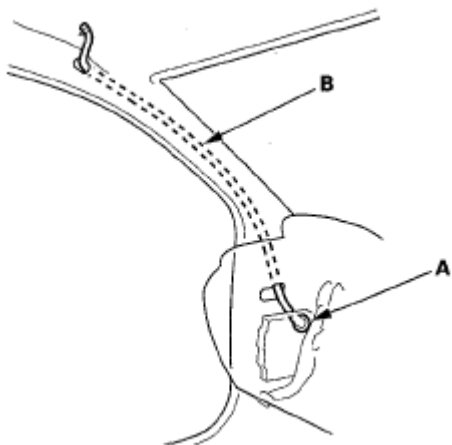


Fig. 22: Identifying Front Drain Valve And Front Drain Tube
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear Drain Tube

9. Remove these items:
 - Rear side trim panel (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**)
 - Left side: Subwoofer box (see **SUBWOOFER/AMPLIFIER UNIT (WITH NAVIGATION)**)
10. Tie a string to the top end of the rear drain tube (A), then pull the drain tube down out of the pillar. Leave the string in the pillar to use when reinstalling the drain tube.

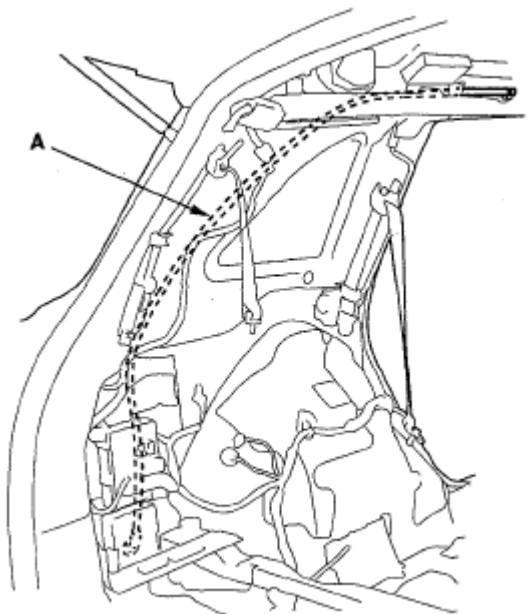


Fig. 23: Identifying Rear Drain Tube

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the frame and drain tube in the reverse order of removal, and note these items:
- Before installing the frame, clear the drain tubes and drain valves using compressed air.
 - When installing, tie the string that was left in the pillar to the top end of the new drain tube and pull it up into the roof.
 - Check the frame seal.
 - Clean the surface of the frame.
 - Make sure the connectors are plugged in properly.
 - When connecting the drain tube, slide it over the frame nozzle at least 10 mm (0.39 in.).
 - Install the tube clip (A) on the drain tube (B) as shown.
 - After all parts are installed, including the headliner, reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).
 - Adjust the glass position alignment (see **GLASS POSITION ADJUSTMENT**).

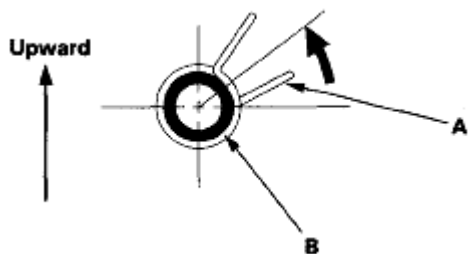


Fig. 24: Identifying Tube Clip And Drain Tube

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for water leaks. Let the water run freely from a hose without a nozzle. Do not use a high-pressure spray.

DRAIN CHANNEL SLIDER AND CABLE ASSEMBLY REPLACEMENT

1. Remove the frame (see **FRAME AND DRAIN TUBE REPLACEMENT**).
2. Remove these parts from the frame:
 - Sunshade (see **SUNSHADE REPLACEMENT**)
 - Moonroof motor (see **MOTOR REPLACEMENT**)
3. Disconnect and remove the rear middle drain tube (A).

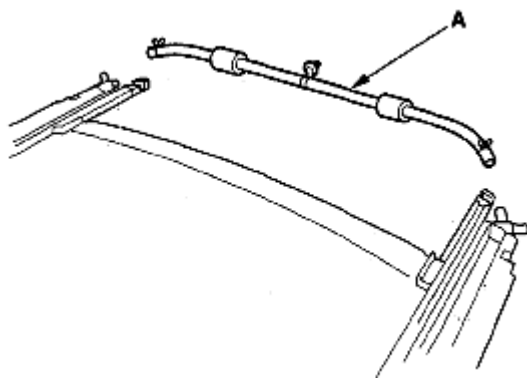


Fig. 25: Identifying Rear Middle Drain Tube

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Put on gloves to protect your hands. Remove the screw securing the sunshade rear stop (A), and remove it from the frame (B). Release the rear hook of the slide stop (C) by pushing it forward, and pivot the stop up.

Fastener Location

►: Screw, 1

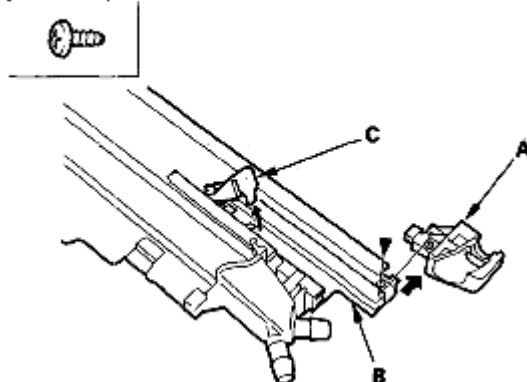


Fig. 26: Identifying Sunshade Rear Stop, Frame And Rear Hook Of Slide Stop

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the slide stop (A) and the drain channel slider (B).

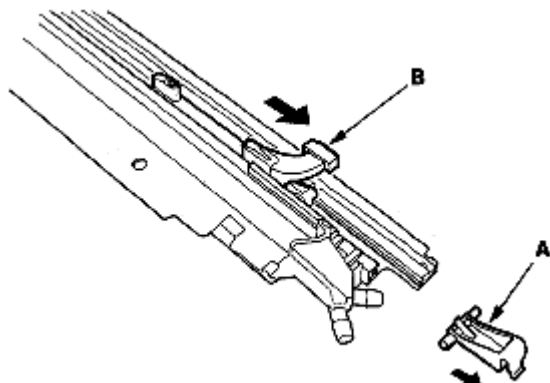


Fig. 27: Identifying Slide Stop And Drain Channel Slider
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pivot the glass bracket (A) down by sliding the link lifter (B) back, then slide the glass bracket back with the link lifter.

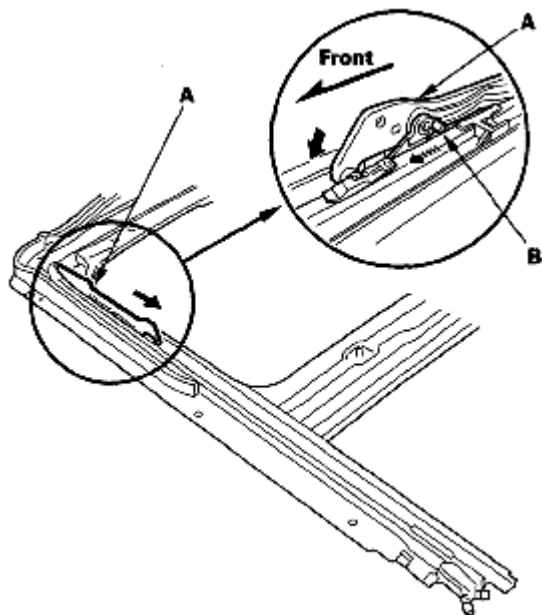


Fig. 28: Identifying Glass Bracket And Link Lifter
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Slide the glass bracket (A) along with the cable (B) back, then remove them from the frame (C).

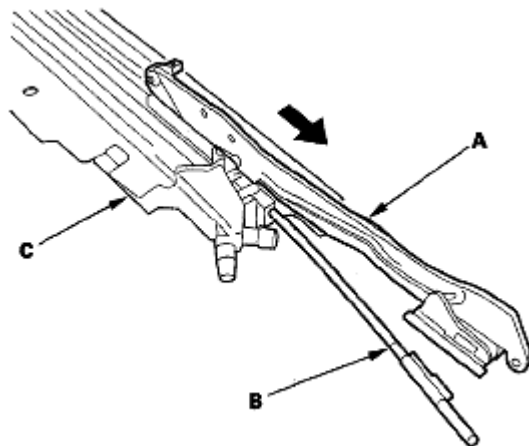


Fig. 29: Identifying Glass Bracket, Cable And Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the slider and cable assembly in the reverse order of removal, and note these items:
 - Damaged parts should be replaced.
 - Apply molybdenum grease to the glass bracket (A) and guide rail portion of the frame (B) indicated by the arrows.
 - Before reinstalling the motor, make sure both link lifters are parallel, and in the tilt-up position.
 - Before reinstalling the motor, install the frame and glass, then check the opening drag (see **CLOSING FORCE AND OPENING DRAG CHECK**).
 - After reinstalling the motor reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**).

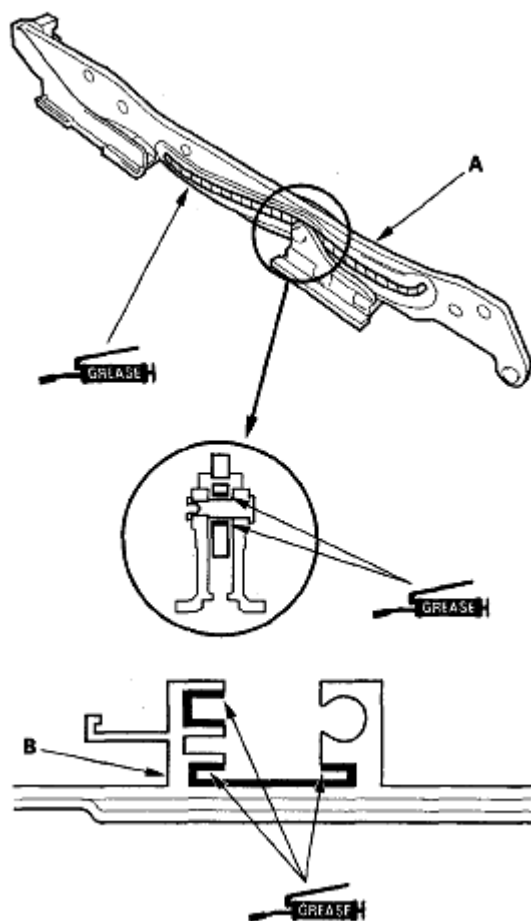


Fig. 30: Identifying Glass Bracket And Guide Rail Portion Of Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CLOSING FORCE AND OPENING DRAG CHECK

1. Remove the headliner (see **HEADLINER REMOVAL/INSTALLATION**).
2. Closing force check:
 - With a shop towel (A) on the leading edge of the glass (B), attach a spring scale (C) as shown.
 - Have an assistant hold the switch to close the glass while you measure the force required to stop it.
 - Read the force as soon as the glass stops moving, then immediately release the switch and spring scale.

Closing force: 200-290 N (20-30 kgf, 44-66 lbf)

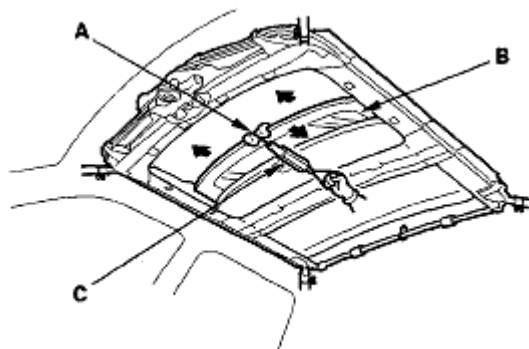


Fig. 31: Identifying Shop Towel, Glass And Spring Scale
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the force is not within specification, remove the moonroof motor (see **MOTOR REPLACEMENT**), then check:
 - The gear teeth and the inner cable for breakage and damage. If the gear teeth are broken, replace the motor. If the inner cable is damaged, remove the frame (see **FRAME AND DRAIN TUBE REPLACEMENT**), and replace the cable (see **DRAIN CHANNEL SLIDER AND CABLE ASSEMBLY REPLACEMENT**).
 - Do the moonroof control unit input test (see **MOONROOF CONTROL UNIT INPUT TEST**). If the motor fails to run or doesn't turn smoothly, replace it.
 - The opening drag. Go to step 4.
4. Opening drag check: Protect the leading edge of the glass with a shop towel (A). Measure the effort required to open the glass using a spring scale (B) as shown.

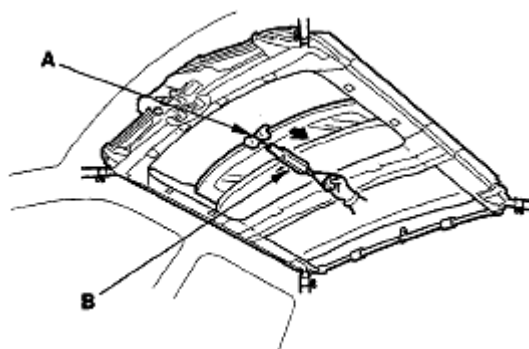


Fig. 32: Identifying Shop Towel, Glass And Spring Scale
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the load is over 40 N (4 kgf, 9 lbf), check:
 - The side clearance and glass position adjustment (see **GLASS POSITION ADJUSTMENT**).
 - For broken or damaged sliding parts. If any sliding parts are damaged, replace them.
6. Reset the moonroof control unit (see **RESETTING THE MOONROOF CONTROL UNIT**) after reinstalling the moonroof motor.

2007-09 ACCESSORIES AND EQUIPMENT

Multiplex Integrated Control System - MDX

COMPONENT LOCATION INDEX

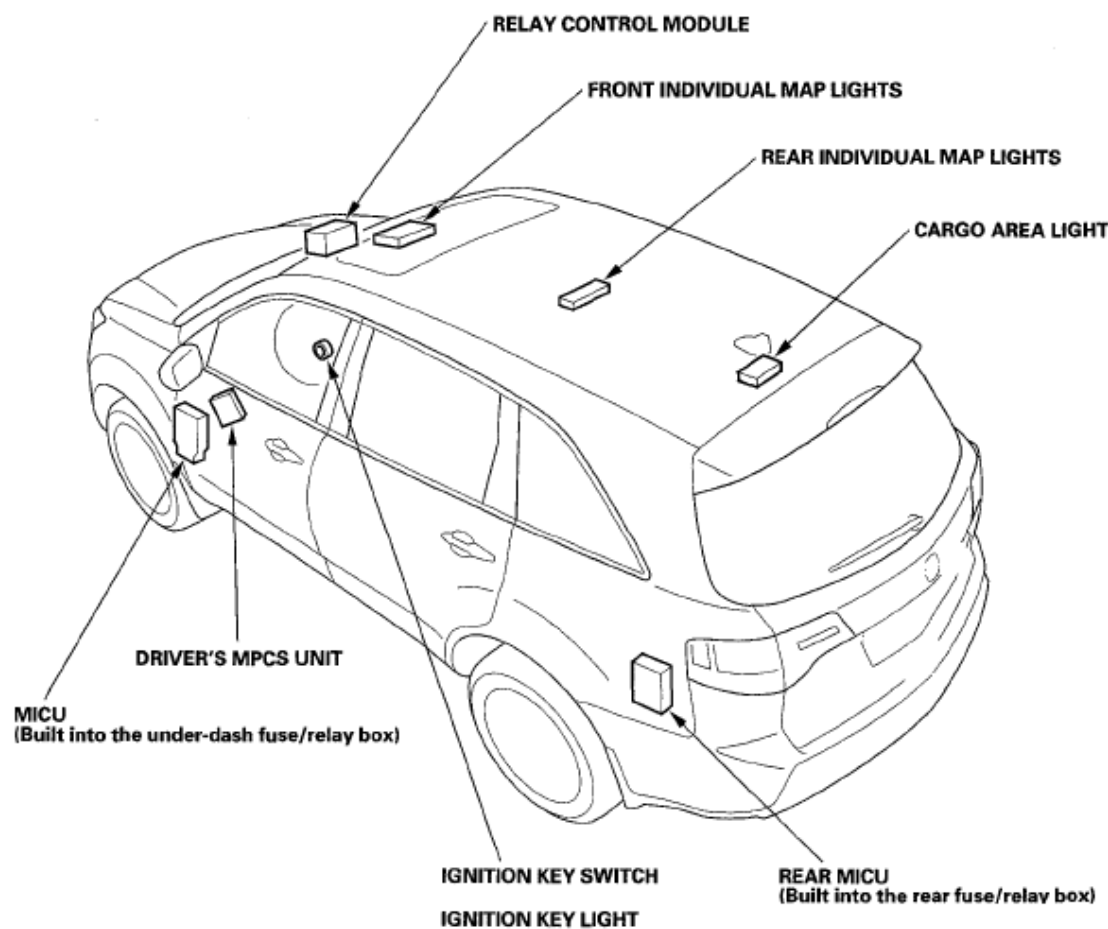


Fig. 1: Identifying Multiplex Integrated Control System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

TROUBLESHOOTING CAN CIRCUIT RELATED PROBLEMS

NOTE: Check the powertrain control module (PCM) for DTCs and troubleshoot PCM (see GENERAL TROUBLESHOOTING INFORMATION) or F-CAN loss of communication errors first.

Using the HDS (Preferred method)

1. Go to **B-CAN SYSTEM DIAGNOSIS TEST MODE A** to check for "Connected units" and DTCs .
2. If no DTCs are retrieved, go to **B-CAN SYSTEM DIAGNOSIS TEST MODE C** or **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE D** .

Without HDS (Use only if the HDS is unavailable)

1. Check for communication circuit problems using B-CAN System Diagnostic Test (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).
2. Check for DTCs.
3. Sort, and then troubleshoot the DTCs in this order:
 1. Battery voltage DTCs
 2. Internal error DTCs
 3. Loss of communication DTCs (beginning with the lowest number first; for example, if B1008 and B1011 are retrieved, troubleshoot B1008 first). Refer to loss of communication cross reference chart.
 4. Signal error DTCs
4. If no DTCs are retrieved, use B-CAN System Diagnostic Test Mode 2 to check all inputs related to the failure (see step 10 on **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)**).

How to display DTCs on the gauge control module

1. Set the multiplex in Test Mode 1 (see **TEST MODE 1**).
2. While in Test Mode 1, the DTCs which have been detected and stored individually by various B-CAN units, will be shown one by one on the multi-information display on the gauge control module when the communication between the MICU and the gauge control module is normal. To scroll through the DTCs, press the select/reset button.

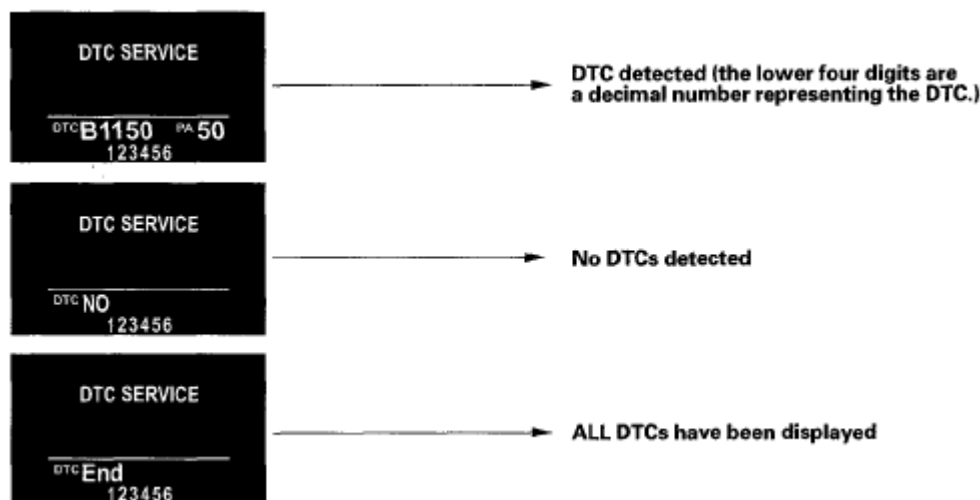


Fig. 2: Gauge Control Module DTCS Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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3. The unit that has stored the code can be identified by the number shown on the multi-information display (MID).

MULTI-INFORMATION DISPLAY (MID) CODE REFERENCE

Unit	Code (Control Unit I.D. Number)
MICU	10
Relay control module	11
Rear MICU	12
Power tailgate control unit	31
Driver's MPCS unit	35
Gauge control module	50
Climate control unit	51
Combination switch control unit	70
HandsFreeLink control unit	94
Power seat control unit	95
Immobilizer-keyless control unit	96
AcuraLink control unit (XM receiver)	97

How to clear the DTC

While in DTC indication status, press and hold down the select/reset button for more than 10 seconds.

Loss of Communication DTC cross-reference chart

When an electronic control unit (ECU) is unable to communicate with the other ECUs on the CAN circuit, the other control units will set loss of communication DTCs. Use this chart to find the control unit that is not communicating.

1. Find the Transmitting Control Unit that is in the same row as all of the loss of communication DTCs retrieved.
2. Do the input test for the transmitting control unit.

BUS OFF and Internal Error Codes

BUS OFF AND INTERNAL ERROR CODES REFERENCE

DTC type	Related Unit										
	MICU	Rear MICU	Relay Control Module	Driver's MPCS Unit	Combination Switch Control Unit	Gauge Control Module	Climate Control Unit	Immobilizes Keyless Control unit	Power Tailgate Control Unit	Power Seat Control Unit	H
BUS OFF	B1000	B1950	B1050	B2150	B1250	B1150	B1200	B1900	B1350	B1800	B
ECU (CPU) Error	B1001		B1051								

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ECU (EEPROM) Error	B1002		B1052	B2152	B1252	B1152	B1202		B1352	B1802	B
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BUS OFF AND INTERNAL ERROR CODES REFERENCE

Transmitting Control Unit	Message	Receiving Unit/Loss of Communication								
		MICU	Rear MICU	Relay Control Module	Driver's MPCS Unit	Combination Switch Control Unit	Gauge Control Unit	Climate Control Unit	immobilizer- Keyless Control Unit	Po Tai Co U
MICU	ALARM			B1056						
	MICU		B1955	B1055	B2155	B1255	B1157			B1
	DOORSW			B1057	B2161		B1159			
	MIRRORSW				B2156					
	AUTOLT						B1180			
	RM						B1188			
Rear MICU	RJC	B1012								
Relay Control Module	RM	B1005	B1959		B2162		B1158	B2970		
Driver's MPCS Unit	DRLOCKSW	B1015		B1065			B1182		B1905	B1
	ASLOCKSW	B1013								B1
	MENSW									
Combination Switch Control Unit	HLSW	B1007	B1957	B1062			B1155			
	WIPSW		B1958	B1063			B1156	B2969		
Gauge Control Module	VSP/NE	B1011		B1060	B2160			B1205		B1
	AT		B1956	B1061					B1906	B1
	ENGTEMP							B1206		
	ILLUMI				B2157			B1207		
	SRS	B1032								
	VEHINFO									
Power Tailgate Control Unit	PTG						B1162			
PCM	ENG						B1168			
	AT						B1169			
VSA Modulator- Control Unit	VSA						B1170			
TPMS Control Unit	TPMS						B1173			
SRS Control	SRS						B1187			

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Active Damper Control Unit	ADS						B1189			
Navigation Unit								B2981		
AcuraLink Control Unit										
Hands Free Link Control Unit										
Audio Unit								B2991		

DTC TROUBLESHOOTING INDEX

NOTE: Record all DTCs, and sort them by DTC type using the DTC troubleshooting index, then troubleshoot the DTC(s) in this order:

- Battery voltage DTCs
- Internal error DTCs
- Loss of communication DTCs (beginning with the lowest number first; for example, if B1005 and B1016 are retrieved, troubleshoot B1005 first).
- Signal error DTCs

MICU

DTC TROUBLESHOOTING CHART

DTC	Description	DTC Type
<u>B1000</u>	Communication bus line error	Loss of communication
<u>B1001</u>	MICU internal (CPU) error	Internal error
<u>B1002</u>	MICU internal (EEPROM) error	Internal error
<u>B1005</u>	MICU lost communication with relay control module (RM message)	Loss of communication
<u>B1007</u>	MICU lost communication with combination switch control unit (HLSW message)	Loss of communication
<u>B1011</u>	MICU lost communication with gauge control module (VSP/NE message)	Loss of communication
<u>B1012</u>	MICU lost communication with the rear fuse/relay box (RJC message)	Loss of communication
<u>B1013</u>	MICU lost communication with	Loss of communication

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

	driver's MPCS unit (ASLOCKSW message) _	
<u>B1015</u>	MICU lost communication with driver's MPCS unit (DRLOCKSW message)	Loss of communication
<u>B1032</u>	MICU lost communication with the SRS unit (CDS message)	Signal error
<u>B1575</u>	Automatic lighting sensor circuit malfunction	Signal error

Relay Control Module**RELAY CONTROL MODULE - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1050</u>	Communication bus line error	Loss of communication
<u>B1051</u>	Relay control module internal (CPU) error	Internal error
<u>B1052</u>	Relay control module internal (EEPROM) error	Internal error
<u>B1055</u>	Relay control module lost communication with MICU (MICU message)	Loss of communication
<u>B1056</u>	Relay control module lost communication with MICU (ALARM message)	Loss of communication
<u>B1057</u>	Relay control module lost communication with MICU (DOORSW message)	Loss of communication
<u>B1060</u>	Relay control module lost communication with gauge control module (VSP/NE message)	Loss of communication
<u>B1061</u>	Relay control module lost communication with gauge control module (A/T message)	Loss of communication
<u>B1062</u>	Relay control module lost communication with combination switch control unit (HLSW message)	Loss of communication
<u>B1063</u>	Relay control module lost communication with combination switch control unit (WIPSW message)	Loss of communication
<u>B1065</u>	Relay control module lost communication with driver's MPCS unit (DRLOCKSW	Loss of communication

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	message)	
<u>B1075</u>	Headlight switch back-up circuit malfunction	Signal error
<u>B1076</u>	Windshield wiper switch back-up circuit malfunction	Signal error
<u>B1077</u>	Windshield wiper (As) auto switch circuit malfunction	Signal error
<u>B1078</u>	Daytime running lights system error (Canada)	Loss of communication
<u>B1079</u>	Daytime running lights system error (USA)	Loss of communication
<u>B1080</u>	Power supply circuit (IG1 line) input error for relay control module and MICU	Signal error

Gauge Control Module**GAUGE CONTROL MODULE - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1150</u>	Communication bus line error	Loss of communication
<u>B1152</u>	Gauge control module internal (EEPROM) error	Internal error
<u>B1155</u>	Gauge control module lost communication with combination switch control unit (HLSW message)	Loss of communication
<u>B1156</u>	Gauge control module lost communication with combination switch control unit (WIPSW message)	Loss of communication
<u>B1157</u>	Gauge control module lost communication with MICU (MICU message)	Loss of communication
<u>B1158</u>	Gauge control module lost communication with relay control module (RM message)	Loss of communication
<u>B1159</u>	Gauge control module lost communication with MICU (DOORSW message)	Loss of communication
<u>B1162</u>	Gauge control module lost communication with Power tailgate control unit (PTG message)	Loss of communication
<u>B1168</u>	Gauge control module lost	Loss of communication

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

	communication with PCM (ENG messages)	
<u>B1169</u>	Gauge control module lost communication with PCM (A/T messages)	Loss of communication
<u>B1170</u>	Gauge control module lost communication with VSA modulator-control unit (VSA message)	Loss of communication
<u>B1173</u>	Gauge control module lost communication with TPMS control unit (TPMS message)	Loss of communication
<u>B1175</u>	Fuel level sensor (fuel gauge sending unit) circuit open	Signal error
<u>B1176</u>	Fuel level sensor (fuel gauge sending unit) circuit short	Signal error
<u>B1177</u>	Battery voltage abnormal	Battery voltage
<u>B1178</u>	F-CAN communication line error	Loss of communication
<u>B1180</u>	Gauge control module lost communication with MICU (AUTOLT message)	Loss of communication
<u>B1182</u>	Gauge control module lost communication with driver's MPCS unit (DRLOCKSW message)	Loss of communication
<u>B1187</u>	Gauge control module lost communication with SRS unit (SRS message)	Loss of communication
<u>B1188</u>	Gauge control module lost communication with the MICU (RM message)	Loss of communication
<u>B1189</u>	Gauge control module lost communication with active damper system control unit (ADS message)	Loss of communication

Climate Control Unit**CLIMATE CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1200</u>	Communication bus line error	Loss of communication
<u>B1202</u>	Climate control unit internal error	Internal error
<u>B1205</u>	Climate control unit lost communication with gauge control	Loss of communication

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

	module (VSP/NE message)	
<u>B1206</u>	Climate control unit lost communication with gauge control module (ECT message)	Loss of communication
<u>B1207</u>	Climate control unit lost communication with gauge control module (ILLUMI message)	Loss of communication
<u>B1213</u>	An open in the rear evaporator temperature sensor circuit	Signal error
<u>B1214</u>	An open in the rear evaporator temperature sensor circuit	Signal error
<u>B1215</u>	An open in the recirculation control motor circuit	Signal error
<u>B1223</u>	A problem in the rear blower motor circuit	Signal error
<u>B1225</u>	An open in the in-car temperature circuit	Signal error
<u>B1226</u>	A short in the in-car temperature sensor circuit	Signal error
<u>B1227</u>	An open in the outside air temperature sensor circuit	Signal error
<u>B1228</u>	A short in the outside air temperature sensor circuit	Signal error
<u>B1229</u>	An open in the sunlight sensor circuit	Signal error
<u>B1230</u>	A short in the sunlight sensor circuit	Signal error
<u>B1231</u>	An open in the evaporator temperature sensor circuit	Signal error
<u>B1232</u>	A short in the evaporator temperature sensor circuit	Signal error
<u>B1233</u>	An open in the driver's air mix control motor circuit	Signal error
<u>B1234</u>	A short in the driver's air mix control motor circuit	Signal error
<u>B1235</u>	A problem in the driver's air mix control linkage, door, motor or motor circuit	Signal error
<u>B1236</u>	An open in the passenger's air mix control motor circuit	Signal error
<u>B1237</u>	A short in the passenger's air mix control motor circuit	Signal error
<u>B1238</u>	A problem in the passenger's air mix control linkage, door, motor	Signal error

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	or motor circuit	
<u>B1239</u>	An open or short in the mode control motor circuit	Signal error
<u>B1240</u>	A problem in the mode control linkage, doors, motor, or motor circuit	Signal error
<u>B1241</u>	A problem in the blower motor circuit	Signal error

Climate Control Unit**CLIMATE CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1244</u>	An open in the rear air mix control motor circuit	Signal error
<u>B1245</u>	An short in the rear air mix control motor circuit	Signal error
<u>B1246</u>	A problem in the rear air mix control linkage, door, motor, or motor circuit	Signal error
<u>B2965</u>	Climate control unit lost communication with rear climate control panel	Loss of communication
<u>B2967</u>	An open in the humidity sensor circuit	Signal error
<u>B2968</u>	A short in the humidity sensor circuit	Signal error
<u>B2969</u>	Climate control unit lost communication with gauge control module (WIPSW message)	Loss of communication
<u>B2970</u>	Climate control unit lost communication with gauge control module (RM message)	Loss of communication
<u>B2979</u>	An open in the A/C pressure sensor circuit	Signal error
<u>B2980</u>	A short in the A/C pressure sensor circuit	Signal error
<u>B2981</u>	Climate control unit lost communication with navigation unit	Loss of communication
<u>B2983</u>	A problem in the recirculation control linkage, door, motor, or motor circuit	Signal error
<u>B2991</u>	Climate control unit lost	Loss of communication

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communication with audio unit

Combination Switch Control Unit**COMBINATION SWITCH CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1250</u>	Communication bus line error	Loss of communication
<u>B1252</u>	Combination switch control unit internal (EEPROM) error	Internal error
<u>B1255</u>	Combination switch control unit lost communication with MICU	Loss of communication
<u>B1275</u>	Combination light switch OFF position circuit malfunction	Signal error
<u>B1276</u>	Combination light switch parking (SMALL) position circuit malfunction	Signal error
<u>B1277</u>	Headlight switch AUTO position circuit malfunction	Signal error
<u>B1278</u>	Headlight switch ON position circuit malfunction	Signal error
<u>B1279</u>	Headlight switch DIMMER position circuit malfunction	Signal error
<u>B1280</u>	Turn signal switch circuit malfunction	Signal error
<u>B1281</u>	Windshield wiper switch MIST position circuit malfunction	Signal error
<u>B1282</u>	Windshield wiper switch INT position circuit malfunction	Signal error
<u>B1283</u>	Windshield wiper switch LOW position circuit malfunction	Signal error
<u>B1284</u>	Windshield wiper switch HIGH position circuit malfunction	Signal error

Power Tailgate Control Unit**POWER TAILGATE CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1350</u>	Communication bus line error	Loss of communication
<u>B1352</u>	Power tailgate control unit internal (EEPROM) error	Internal error
<u>B1355</u>	Power tailgate control unit lost communication with MICU (MICU message)	Loss of communication
<u>B1356</u>	Power tailgate control unit lost	Loss of communication

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	communication with driver's MPCS unit (DRLOCKSW message)	
<u>B1357</u>	Power tailgate control unit lost communication with gauge control module (VSP/NE message)	Loss of communication
<u>B1358</u>	Power tailgate control unit lost communication with driver's MPCS unit (ASLOCKSW message)	Loss of communication
<u>B1359</u>	Power tailgate control unit lost communication with gauge control module (A/T message)	Loss of communication
<u>B1375</u>	Driver's door power tailgate switch circuit malfunction	Signal error
<u>B1376</u>	Power tailgate outer handle switch circuit malfunction	Signal error
<u>B1377</u>	Inside tailgate switch circuit malfunction	Signal error
<u>B1378</u>	Power tailgate right pinch sensor circuit malfunction	Signal error
<u>B1379</u>	Power tailgate left pinch sensor circuit malfunction	Signal error
<u>B1380</u>	Tailgate closer unit open switch circuit malfunction	Signal error
<u>B1381</u>	Tailgate closer unit close switch circuit malfunction	Signal error
<u>B1382</u>	Tailgate closer unit full latch switch circuit malfunction	Signal error.
<u>B1383</u>	Tailgate closer unit ratchet switch circuit malfunction	Signal error
<u>B1384</u>	Tailgate closer unit half latch switch circuit malfunction	Signal error
<u>B1386</u>	Power tailgate sensor pulse A circuit malfunction	Signal error
<u>B1387</u>	Power tailgate sensor pulse B circuit malfunction	Signal error
<u>B1388</u>	Power tailgate motor circuit malfunction	Signal error
<u>B1389</u>	Power tailgate motor clutch circuit malfunction	Signal error
<u>B1390</u>	Power tailgate closer function error	Signal error

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Hands Free Link Control Unit**HANDS FREE LINK CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1750</u>	Communication bus line error	Loss of communication
<u>B1775</u>	Microphone input/output short to power/open	Signal error
<u>B1776</u>	Microphone input/output short to ground/open	Signal error
<u>B1779</u>	HFL switch or HFL-voice control switch (HFL talk/ HFL back buttons) circuit open/short	Signal error
<u>B1780</u>	HFL-voice control switch (HFL talk/HFL back buttons) circuit short	Signal error
<u>B1785</u>	Incorrect configuration (VEHINFO Frame)	Signal error
<u>B1786</u>	HandsFreeLink control unit lost communication with gauge control module (VEHINFO Frame)	Signal error
<u>B1792</u>	HandsFreeLink control unit internal error	Internal error

Immobilizer-Keyless Control Unit**IMMOBILIZER-KEYLESS CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1900</u>	Communication bus line error	Loss of communication
<u>B1905</u>	Immobilizer-keyless control unit lost communication with driver's MPCS unit (DRLOCKSW message)	Signal error
<u>B1906</u>	Immobilizer-keyless control unit lost communication with gauge control module (A/T message)	Signal error

Rear MICU**REAR MICU - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1950</u>	Communication bus line error	Loss of communication
<u>B1955</u>	Rear MICU lost communication with MICU (MICU message)	Loss of communication
<u>B1956</u>	Rear MICU lost communication	Loss of communication

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	with gauge control module (A/T message)	
<u>B1957</u>	Rear MICU lost communication with combination switch control unit (HLSW message)	Loss of communication
<u>B1958</u>	Rear MICU lost communication with combination switch control unit (WIPSW message)	Loss of communication
<u>B1959</u>	Rear MICU lost communication with relay control module (RM message)	Loss of communication

Power Seat Control Unit**POWER SEAT CONTROL UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B1800</u>	Communication bus line error	Loss of communication
<u>B1802</u>	Power seat control unit internal (EEPROM) error	Internal error
<u>B1805</u>	Power seat control unit lost communication with gauge control module (VSP/NE message)	Loss of communication
<u>B1806</u>	Power seat control unit lost communication with MICU (MICU message)	Loss of communication
<u>B1808</u>	Power seat control unit lost communication with gauge control module (A/T message)	Loss of communication
<u>B1810</u>	Power seat control unit lost communication with MICU (MIRRORSW message)	Loss of communication
<u>B1811</u>	Power seat control unit lost communication with MICU (DOORSW message)	Loss of communication
<u>B1812</u>	Power seat control unit lost communication with driver's MPCS unit (MEMSW message)	Loss of communication
<u>B1825</u>	Power seat slide motor pulse error	Signal error
<u>B1826</u>	Power seat front up-down motor pulse error	Signal error
<u>B1827</u>	Power seat rear up-down motor pulse error	Signal error
<u>B1828</u>	Power seat recline motor pulse error	Signal error

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<u>B1829</u>	A/T P signal and VSS signal mismatch	Signal error
<u>B1835</u>	Tilt/telescopic switch signal input error	Signal error
<u>B1836</u>	Power seat position sensor circuit short	Signal error
<u>B1837</u>	Driving position memory recall timeout	Signal error
<u>B1840</u>	Tilt motor pulse error	Signal error
<u>B1841</u>	Telescopic motor pulse error	Signal error
<u>B1842</u>	Power tilt/telescopic position sensor power supply circuit (SVCC line) short	Signal error
<u>B1843</u>	Power seat control unit lost communication with power tilt/telescopic steering control unit (UART line)	Signal error
<u>B1844</u>	Power seat slide switch circuit malfunction	Signal error
<u>B1845</u>	Power seat recline switch circuit malfunction	Signal error
<u>B1846</u>	Power seat front up-down switch circuit malfunction	Signal error
<u>B1847</u>	Power seat rear up-down switch circuit malfunction	Signal error

Driver's MPCS Unit**DRIVER'S MPCS UNIT - DTC TROUBLESHOOTING CHART**

DTC	Description	DTC Type
<u>B2150</u>	Communication bus line error	Loss of communication
<u>B2152</u>	Driver's MPCS unit internal (EEPROM) error	Internal error
<u>B2155</u>	Driver's MPCS unit lost communication with MICU (MICU message)	Loss of communication
<u>B2156</u>	Driver's MPCS unit lost communication with MICU (MIRRORSW message)	Loss of communication
<u>B2157</u>	Driver's MPCS unit lost communication with gauge control module (ILLUMI message)	Loss of communication
<u>B2160</u>	Driver's MPCS unit lost communication with gauge control	Loss of communication

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	module (VSP/NE message)	
<u>B2161</u>	Driver's MPCS unit lost communication with MICU (DOORSW message)	Loss of communication
<u>B2162</u>	Driver's MPCS unit lost communication with relay control module (RM message)	Loss of communication
<u>B2175</u>	Driver's window motor pulse A error	Signal error
<u>B2176</u>	Driver's window motor pulse B error	Signal error
<u>B2177</u>	Front passenger's window motor pulse A error	Signal error
<u>B2178</u>	Front passenger's window motor pulse B error	Signal error
<u>B2179</u>	Driver's door key cylinder switch LOCK/UNLOCK signal error	Signal error
<u>B2180</u>	Driver's door lock switch LOCK/UNLOCK signal error	Signal error
<u>B2181</u>	Driver's door lock knob switch LOCK/UNLOCK signal error	Signal error
<u>B2182</u>	Left power mirror horizontal sensor signal error	Signal error
<u>B2183</u>	Left power mirror vertical sensor signal error	Signal error
<u>B2184</u>	Right power mirror horizontal sensor signal error	Signal error
<u>B2185</u>	Right power mirror vertical sensor signal error	Signal error
<u>B2186</u>	Front passenger's door lock switch LOCK/UNLOCK signal error	Signal error
<u>B2187</u>	Communication line (UART line) communication error (Driver's MPCS unit from Driver's MPCS unit)	Signal error
<u>B2188</u>	Communication line (UART line) circuit open	Signal error
<u>B2189</u>	Driver's window position detect circuit error	Signal error
<u>B2190</u>	Front passenger's window position detect circuit error	Signal error
<u>B2191</u>	Front passenger's MPCS unit internal (EEPROM) error	Internal error

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AcuraLink Control Unit

AcuraLink Control Unit - DTC TROUBLESHOOTING CHART

DTC	Description	DTC Type
<u>B2200</u>	Communication bus line error	Loss of communication
<u>B2202</u>	AcuraLink control unit EEPROM error	Loss of communication
<u>B2204</u>	B-CAN communication line error	Loss of communication
<u>B2205</u>	F-CAN communication line error	Loss of communication
<u>B2207</u>	Navigation unit control unit lost communication with AcuraLink control unit	Loss of communication
<u>B2208</u>	HandsFreeLink control unit lost communication with AcuraLink control unit	Loss of communication
<u>B2209</u>	AcuraLink control unit internal error	Loss of communication
<u>B2240</u>	XM antenna error	Signal error

SYSTEM DESCRIPTION

MICU CONTROL FUNCTIONS

The MICU (built into the under-dash fuse/relay box) is one of the B-CAN system components. The MICU controls many systems related to the body controller area and security system, and also works as a gateway to diagnose the other B-CAN connected ECUs with the HDS.

The MICU also controls the function of these circuits:

Refer to each system circuit diagram for details.

- Entry lights control (individual map lights and ceiling light)
- Exterior lights control (including the daytime running lights control and back-up lights)
- Interlock system
- Keyless entry
- Power door locks
- Security alarm
- Turn signal/hazard warning lights
- Tailgate actuator
- Automatic lighting
- Impact sensing door lock release
- Door mirror switch

- IMOCD(S-NET)

Body Controller Area Network (B-CAN) and Fast Controller Area Network (F-CAN)

The body controller area network (B-CAN) and the fast controller area network (F-CAN) share information between multiple electronic control units (ECUs). B-CAN communication moves at a slower speed (33.33 kbps) for convenience related items and for other functions. F-CAN information moves at a faster speed (500 kbps) for "real time" functions such as fuel and emissions data. To allow both systems to share information, the gauge control module translates information from B-CAN to F-CAN and from F-CAN to B-CAN.

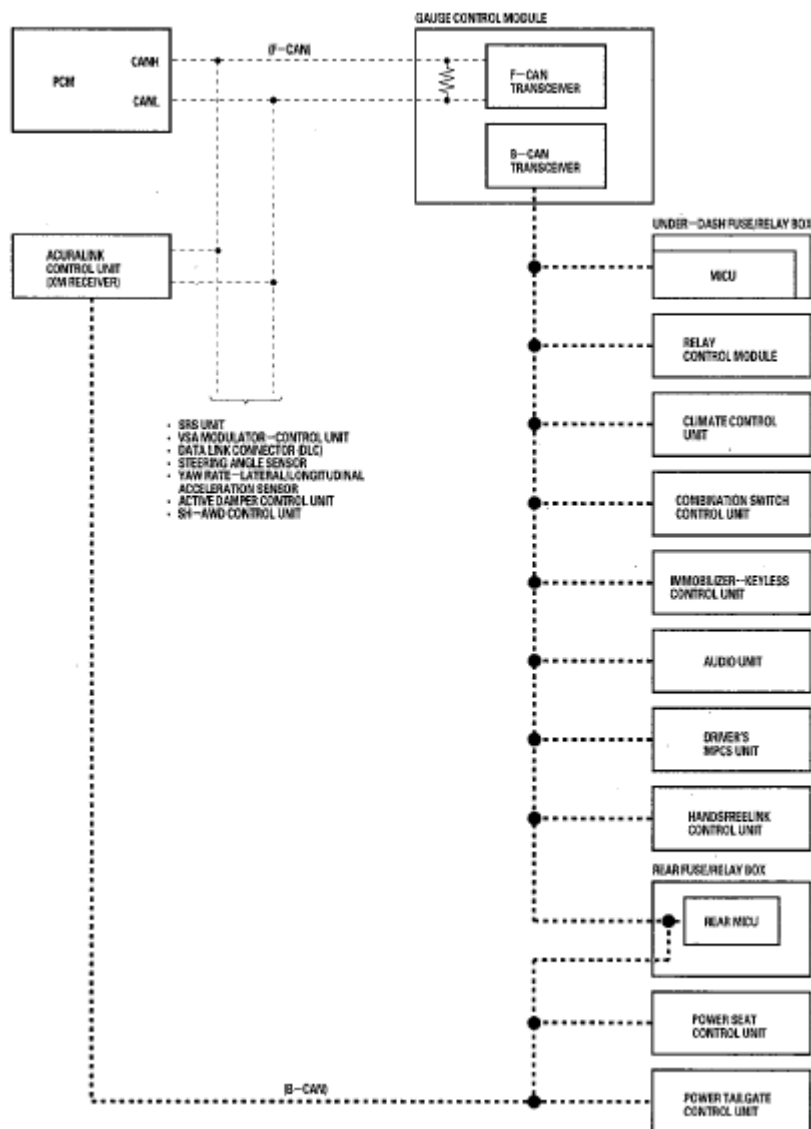


Fig. 3: Body Controller Area Network (B-Can) And Fast Controller Area Network (F-CAN) Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The single wire method is used between the units not requiring the communication to move at a fast

speed.

- Using a single wire method reduces the number of the wires used on the body controller area network.

GATEWAY FUNCTION

The gauge control module acts as a gateway to allow both systems to share information, the gauge control module translates information from B-CAN to F-CAN and from F-CAN to B-CAN.

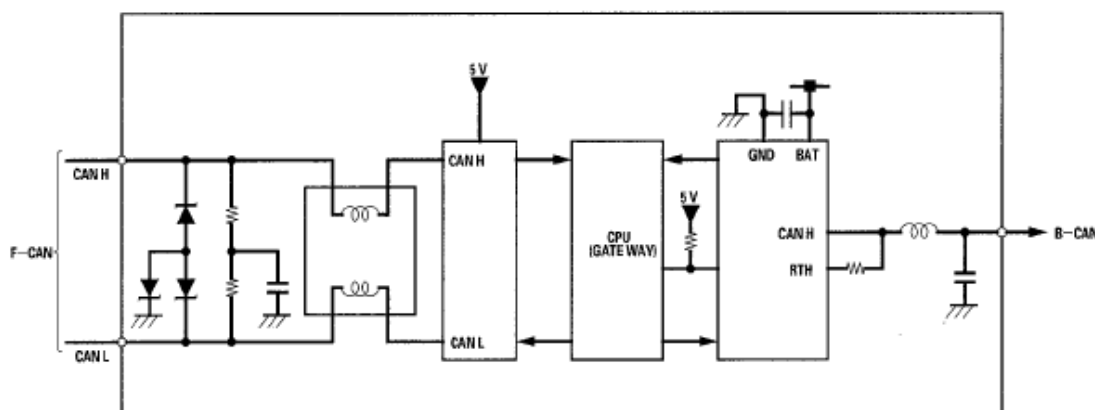


Fig. 4: Gateway Function Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NETWORK "LOSS OF COMMUNICATION" ERROR CHECKING FUNCTION

The ECUs on the CAN circuit send messages to each other. If there are any malfunctions on the network, the odo/trip display on the gauge control module can indicate the error messages by entering the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**). There are three types of messages as follows:

Error Code List

ERROR CODE LIST

Error code	Type of communication line(s) error
Error 1	F-CAN communication
Error 2	B-CAN communication
Error 12	F-CAN and B-CAN communication

Example: Error 1

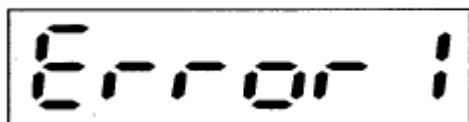


Fig. 5: Error Message Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Self-diagnostic Function

By connecting the HDS to the data link connector (DLC), the HDS can retrieve the diagnostic results from the MICU via a diagnostic BUS called the K-LINE. The K-LINE is different from the CAN line, and connected to the CAN related ECUs. The MICU is a gateway between the HDS and B-CAN related ECUs, and sends B-CAN diagnostic results to the HDS. When performing a function test with the HDS, the HDS sends an output signal through the K-LINE to the MICU. The MICU either relays the request to another ECU, or commands the function itself.

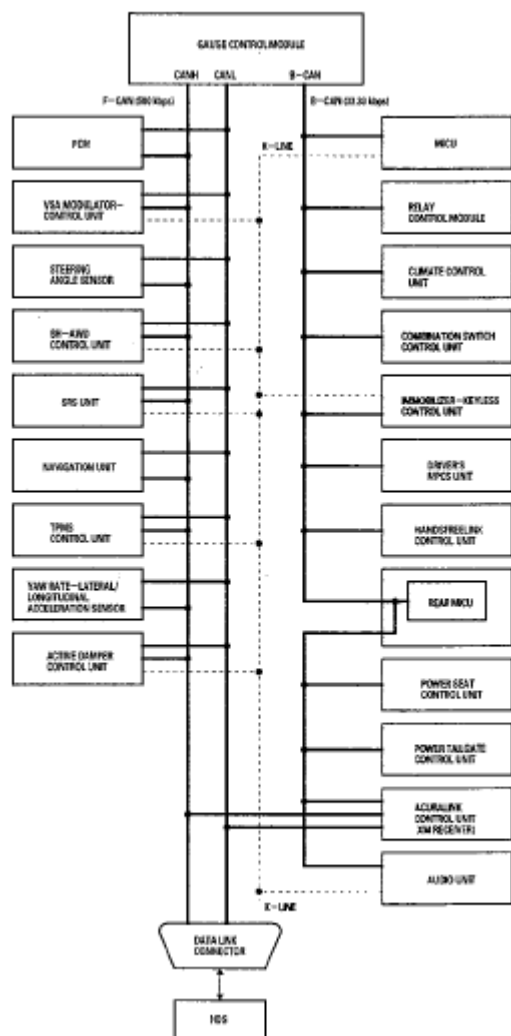


Fig. 6: Self-Diagnostic Block Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Wake-up and Sleep Function

The multiplex integrated control system has "wake-up" and "sleep" functions to decrease parasitic draw on the battery when the ignition switch is in LOCK (0) position.

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

- In the sleep mode, the MICU stops functioning (communication and CPU control) when it is not necessary for the system to operate.
- As soon as any operation is requested (for example, a door is unlocked), the related control unit in the sleep mode immediately wakes up and begins to function.
- When the ignition switch is turned to LOCK (0), and the driver's door is opened, then closed, there is a delay about 40 seconds before the control unit goes from the wake-up mode to the sleep mode.
- The sleep mode will not function if any door is opened or if the ignition switch is turned ON (II).
- The draw is reduced from 2.6 A to less than 35 mA when in the sleep mode.

NOTE: **Sleep and Wake-up Mode Test (see SLEEP AND WAKE-UP MODE TEST).**

Fail-safe Function

To prevent improper operation, the MICU has a fail-safe function. In the fail-safe mode, the output signal is fixed when any part of the system malfunctions (for example, a faulty control unit or communication line).

Each control unit has a hardware fail-safe function that fixes the output signal when there is a CPU malfunction, and a software fail-safe function that ignores the signal from a malfunctioning control unit, which allows the system to operate normally.

Hardware Fail-safe Control

Fail-safe function

When a CPU problem or a abnormal power supply voltage is detected, the MICU moves to the hardware fail-safe mode, and each system output load is set to the pre-programmed fail-safe value.

Software Fail-safe Control

When any of the data from the B-CAN circuit cannot be received within a specified time, or an unusual combination of the data is recognized, the MICU moves to the software fail-safe mode. The data that cannot be received is forced to a pre-programmed value.

Power Supply Voltage Monitoring Function

The MICU monitors the power supply voltage (back-up voltage). If the voltage goes below 10 V, the MICU sends an MICU message and will not store DTCs.

POWER SUPPLY VOLTAGE MONITORING FUNCTION INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Battery voltage	
B-CAN		MICU message

Entry Lights Control System (Ceiling Lights, Ignition Key Light)

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The MICU controls the ceiling light and ignition key light ON/OFF based upon the input signals from each switch.

ENTRY LIGHTS CONTROL SYSTEM INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Interior lights Ignition key light
B-CAN	Driver's door lock knob switch (LOCK) Keyless LOCK/UNLOCK signal Tailgate latch switch	

Back-up Lights

The MICU controls the back-up lights based upon the ignition switch (IG1) and the transmission range switch (R) signals.

BACK-UP LIGHTS INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Ignition switch (ACC) Transmission range switch (R)	Back-up lights

Turn Signal/Hazard Warning Lights

The MICU controls the turn signal/hazard warning lights based upon the input signals from the turn signal switch and the hazard warning switch.

TURN SIGNAL/HAZARD WARNING LIGHTS INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Hazard warning switch	Turn signal lights (left) Turn signal lights (right)
B-CAN	Turn signal switch (left) Turn signal switch (right)	

Collision Detection Signal (CDS)

The MICU controls the door lock actuators based upon the IG1 and the SRS signals.

COLLISION DETECTION SIGNAL (CDS) INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply	Door lock actuators (LOCK/UNLOCK) Tailgate release actuator (UNLOCK)

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B-CAN	Front impact sensor Side impact sensor (first) Side impact sensor (second) SRS unit rollover signal	
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Automatic Lighting System

The MICU controls the automatic lighting system based upon the IG1, IG2, automatic lighting sensor signals, and B-CAN signals.

AUTOMATIC LIGHTING SYSTEM INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Ignition switch (IG1) Ignition switch (IG2) Automatic lighting sensor signal	Headlight back-up signal
B-CAN	Headlight switch (AUTO) Vehicle speed pulse signal Engine speed signal	AUTOLT messages

Headlight Washer Operation

The MICU controls the headlight washer system based upon the headlight switch and washer switch signals.

HEADLIGHT WASHER OPERATION INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Windshield washer switch	
B-CAN		Headlight washer messages

Key Interlock

The MICU controls the key interlock solenoid based upon the ignition switch (ACC), the transmission range switch, and the park-pin switch signals.

KEY INTERLOCK INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Ignition switch (ACC) Transmission range switch (P) Park-pin switch	Key interlock solenoid

Power Door Locks (Unlock all doors and tailgate at the same time)

The MICU controls the door lock actuators based upon the input signals of each switch.

POWER DOOR LOCKS INPUT AND OUTPUT REFERENCE

	Input	Output

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MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Tailgate latch switch	

Power Door Locks (Unlock only the driver's door first)

The MICU controls the door lock actuators based upon the input signals of each switch.

POWER DOOR LOCKS INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Tailgate latch switch	

Door Lock Response Operation

The MICU controls the door lock actuators based upon the B-CAN signals.

DOOR LOCK RESPONSE OPERATION INPUT AND OUTPUT REFERENCE

	Input	Output
B-CAN	Door lock signal	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator (UNLOCK)

Keyless Entry System (Unlock all doors and tailgate at the same time)

The MICU controls the door lock actuators based upon the input signals of each switch and the B-CAN signals.

KEYLESS ENTRY SYSTEM INPUT AND OUTPUT REFERENCE

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	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Keyless LOCK/UNLOCK signal Tailgate latch switch	Relock message

Keyless Entry System (Unlock only the driver's door first)

The MICU controls the door lock actuators based upon the input signals of each switch and the B-CAN signals.

KEYLESS ENTRY SYSTEM INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (LOCK) Front passenger's door lock switch (LOCK/UNLOCK) Keyless LOCK/UNLOCK signal Tailgate latch switch	Relock message

Answer Back Response Operation

The MICU controls the turn signal lights based upon the B-CAN signals.

ANSWER BACK RESPONSE OPERATION INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply	Turn signal lights (left) Turn signal lights (right)
B-CAN	Answer back signal (buzzer) Answer back signal (hazard) Vehicle speed pulse signal Engine speed signal	

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Auto Power Door Locks (LOCK operation)

The MICU controls the door lock actuators based upon the input signals of each switch.

AUTO POWER DOOR LOCKS INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Ignition key switch Transmission range switch (P position) Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (LOCK)
B-CAN	Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Vehicle speed pulse signal Engine speed signal Tailgate latch switch	

Auto Power Door Locks (UNLOCK operation)

The MICU controls the door lock actuators based upon the input signals of each switch.

AUTO POWER DOOR LOCKS INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Transmission range switch (P position) Ignition key switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock knob switch (UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Tailgate latch switch	

Tailgate Outer Handle Switch Operation (Unlock all doors and tailgate at the same time)

The MICU controls the tailgate release actuator based upon the tailgate outer handle switch and the B-CAN signals.

TAILGATE OUTER HANDLE SWITCH OPERATION INPUT AND OUTPUT REFERENCE

	Input	Output
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	Input	Output
MICU		Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock knob switch (LOCK/UNLOCK) Door lock signal Tailgate outer handle switch	

Tailgate Outer Handle Switch Operation (Unlock only the driver's door first)

The MICU controls the tailgate release actuator based upon the tailgate outer handle switch and the B-CAN signals.

TAILGATE OUTER HANDLE SWITCH OPERATION INPUT AND OUTPUT REFERENCE

	Input	Output
MICU		Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock knob switch (LOCK/UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Tailgate outer handle switch	

Security Alarm System

The MICU controls the lighting system and horn based upon the input signals of each switch and the B-CAN signals.

SECURITY ALARM SYSTEM INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	IG1 power supply Ignition key switch Audio switch Driver's door switch Front passenger's door switch Left rear door switch Right rear door switch	Inclining sensor
B-CAN	Driver's door key cylinder switch (LOCK/UNLOCK) Front passenger's door lock knob switch (UNLOCK) Left rear door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Keyless LOCK/UNLOCK signal Door lock signal Relay control module (Hood switch) Tailgate latch switch	MICU (SET 1) message MICU (SET 2) message ALARM (ACTION) message ALARM (HORN) message ALARM (H/L LOW) message ALARM (SMALL LT) message ALARM (CYCLE) message ANSWER BACK (SMALL LT) message ANSWER BACK (BUZZER) message

Prevention of Key Locked Inside Vehicle

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

The MICU controls the door lock actuators based upon the input signals of each switch.

PREVENTION OF KEY LOCKED INSIDE VEHICLE INPUT AND OUTPUT REFERENCE

	Input	Output
MICU	Ignition key switch Driver's door switch	Door lock actuators (LOCK) Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK) Tailgate release actuator (UNLOCK)
B-CAN	Driver's door lock knob switch (UNLOCK)	

HDS Inputs and Commands

Certain inputs happen so quickly that the HDS can not update fast enough. Hold the switch that is being tested while monitoring the Data List. This should give the HDS time to update the signal on the Data List.

Because the HDS software is updated to support the release for newer vehicles it is not uncommon to see system function tests that are not supported.

Make sure that the most current software is loaded.

Input:

HDS INPUT REFERENCE

System Menu	Data List	Data List Indication
	Cruise Control Main Switch (ACC Switch)	ON/OFF
	Cruise Control Set Switch	ON/OFF
	Cruise Control Resume Switch	ON/OFF
	Washer Fluid Level Switch	ON/OFF
	VSA/TCS Off Switch	ON/OFF
	Parking Brake Switch	ON/OFF
	Illumination Plus Switch	ON/OFF
	Illumination Minus Switch	ON/OFF
	Select/Reset Switch	ON/OFF
	INFO Previous Switch	ON/OFF
	INFO Next Switch	ON/OFF
	Fuel Sending Unit Input 1	deg
	Fuel Sending Unit Input 2	V
	VSA/TCS Active Indicator	ON/OFF
	VSA/TCS Indicator (Warning)	ON/OFF
	ABS Indicator	ON/OFF
	EBD Indicator (Electronic Brake Distribution)	ON/OFF
	Cruise Control Main Switch Indicator	ON/OFF
	MIL Indicator	ON/OFF

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Gauge	Washer Fluid Level Indicator (Canada)	ON/OFF
	DRL Indicator	ON/OFF
	Low Oil Pressure Indicator	ON/OFF
	Charging System Indicator	ON/OFF
	Cruise Main Switch ON Indicator	ON/OFF
	Maintenance Minder Indicator	ON/OFF
	High Beam Indicator	ON/OFF
	Parking Light ON Indicator	ON/OFF
	Low Fuel Warning Indicator	ON/OFF
	Security Indicator	ON/OFF
	Fog Light Indicator	ON/OFF
	Master Warning Indicator	ON/OFF
	Seatbelt Indicator	ON/OFF
	Low Tire Pressure Indicator	ON/OFF
	TPMS Indicator	ON/OFF
	Power Tailgate Indicator	ON/OFF
	SH-AWD Indicator	ON/OFF
	Door Open Indicator	ON/OFF
	Differential Oil Temp Indicator	ON/OFF
	Maintenance Minder Change Oil Indicator	ON/OFF
	Fuel Fill Cap Caution	ON/OFF
	A/T Indicator	ON/OFF
	SRS Indicator	ON/OFF
	Side Airbag Cutoff Indicator	ON/OFF
	Outside Temperature Indicator	ON/OFF
	Radiator Fan Indicator	ON/OFF
	Starter Relay Indicator	ON/OFF
	A/T Gear Position Switch (R)	ON/OFF
	A/T Gear Position Switch (P)	ON/OFF

HDS Inputs and Commands

Input:

HDS INPUT REFERENCE

System Menu	Data List	Data List Indication
	Headlight Switch (OFF)	OFF/ON
	Headlight Switch (PARKING)	OFF/ON
	Headlight Switch (HEADLIGHT)	OFF/ON
	Headlight Switch (AUTO)	OFF/ON
	Headlight Switch (High Beam)	OFF/ON

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2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Lighting	Headlight Switch (PASSING)	OFF/ON
	Turn Signal Switch (LEFT)	OFF/ON
	Turn Signal Switch (RIGHT)	OFF/ON
	Fog Light Switch	OFF/ON
	Driver's Door Switch	OFF/ON
	Ignition Key Cylinder Light Command	OFF/ON
	Interior Light Command	OFF/ON
	Left Turn Signal Command	OFF/ON
	Right Turn Signal Command	OFF/ON
	Autolight Small Command	OFF/ON
	Autolight Headlight Command	OFF/ON
	Autolight Warning Command	V
	Autolight Headlight Backup line Command	OFF/ON
	Headlight Switch (BACK-UP)	OFF/ON
	Ignition Switch (IG1)	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Fog Light Command	OFF/ON
	DRL Command	OFF/ON
Doors	Interior Small Light Command	OFF/ON
	Inner Taillight Command	OFF/ON
	Rear Fog Light Command	OFF/ON
	Driver's Door Lock Switch Illumination Command	OFF/ON
	Driver's Door Courtesy Light Command	OFF/ON
	Front Passenger's Door Courtesy Light Command	OFF/ON
	Front Passenger's Door Lock Switch Illumination Command	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Tailgate Switch	OFF/ON
	Tailgate Knob Switch (UNLOCK)	OFF/ON
	Fuel Fill Door Command	OFF/ON
	Driver's Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON

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Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
Front Passenger's Door Switch (LOCK)	OFF/ON
Front Passenger's Door Switch (UNLOCK)	OFF/ON
Front Passenger's Door Knob Switch (UNLOCK)	OFF/ON
Left Rear Door Knob Switch (UNLOCK)	OFF/ON
Right Rear Door Knob Switch (UNLOCK)	OFF/ON

Input:**HDS INPUT REFERENCE**

System Menu	Data List	Data List Indication
Keyless	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Trunk Lid Release Command	OFF/ON
	Ignition Switch (IG1)	OFF/ON
	Tailgate Knob Switch (UNLOCK)	OFF/ON
	Keyless Buzzer Command	OFF/ON
	Driver's Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Front Passenger's Door Switch (LOCK)	OFF/ON
	Front Passenger's Door Switch (UNLOCK)	OFF/ON
	Front Passenger's Door Knob Switch (UNLOCK)	OFF/ON
	Left Rear Door Knob Switch (UNLOCK)	OFF/ON
	Right Rear Door Knob Switch (UNLOCK)	OFF/ON
	Power Window Main Switch	OFF/ON
	Power Window Master, Driver's AUTO Switch	OFF/ON
	Power Window Master, Driver's UP Switch	OFF/ON
	Power Window Master, Driver's DOWN Switch	OFF/ON
	Power Window Master, Front Passenger's UP Switch	OFF/ON
	Power Window Master, Front Passenger's DOWN Switch	OFF/ON
	Power Window Master, Left Rear UP Switch	OFF/ON
	Power Window Master, Left Rear DOWN Switch	OFF/ON

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Power windows	Power Window Master, Right Rear UP Switch	OFF/ON
	Power Window Master, Right Rear DOWN Switch	OFF/ON
	Power Window Master, Passenger's AUTO Switch	OFF/ON
	Front Passenger's Window Switch (UP)	OFF/ON
	Front Passenger's Window Switch (DOWN)	OFF/ON
	Front Passenger's Window Switch (AUTO)	OFF/ON
	Driver's Window Motor A-phase Pulse Signal	NONE/DETECT
	Driver's Window Motor B-phase Pulse Signal	NONE/DETECT
	Front Passenger's Window Motor A-phase Pulse Signal	NONE/DETECT
	Front Passenger's Window Motor B-phase Pulse Signal	NONE/DETECT
	Driver's Window Motor Command	OFF/UP/DOWN
	Front Passenger's Window Motor Command	OFF/UP/DOWN

Input:**HDS INPUT REFERENCE**

System Menu	Data List	Data List Indication
	Power Mirror UP Switch	OFF/ON
	Power Mirror MOVE LEFT Switch	OFF/ON
	Power Mirror DOWN Switch	OFF/ON
	Power Mirror MOVE RIGHT Switch	OFF/ON
	Power Mirror LEFT Switch	OFF/ON
	Power Mirror RIGHT Switch	OFF/ON
	Slide Switch Backward	OFF/ON
	Slide Switch Forward	OFF/ON
	Recline Switch Backward	OFF/ON
	Recline Switch Forward	OFF/ON
	Front Up-Down Switch Down	OFF/ON
	Front Up-Down Switch Up	OFF/ON
	Rear Up-Down Switch Down	OFF/ON
	Rear Up-Down Switch Up	OFF/ON
	Ignition Switch for Power Seat Control	OFF/ON
	A/T Gear Position Switch (P)	OFF/ON
	Seat MEMO Switch	OFF/ON
	Driver 1 Position Switch	OFF/ON
	Driver 2 Position Switch	OFF/ON
	Column Tilt UP Switch	OFF/ON
	Column Tilt DOWN Switch	OFF/ON
	Column Telescopic Pull Switch	OFF/ON
	Column Telescopic Push Switch	OFF/ON
	Column Auto Switch	OFF/ON

2008 Acura MDX

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Power Seat/Power Mirror	Ignition Switch (ETS)	OFF/ON
	Slide Sensor	OFF/ON
	Front UP-DOWN Sensor	OFF/ON
	Recline Sensor	OFF/ON
	Rear UP-DOWN Sensor	OFF/ON
	Column Tilt Sensor	OFF/ON
	Column Telescopic Sensor	OFF/ON
	Slide Motor Command	OFF/FWD/RWD
	Recline Motor Command	OFF/FWD/RWD
	Front Height Motor Command	OFF/UP/DOWN
	Rear Height Motor Command	OFF/UP/DOWN
	Power Seat Buzzer Command	OFF/ON
	Headrest Motor	OFF/ON
	Column Tilt Motor	OFF/UP/DOWN
	Column Telescopic Motor	OFF/UP/DOWN
	DPMS MEM Switch	OFF/ON
	DPMS POS1 Switch	OFF/ON
	DPMS POS2 Switch	OFF/ON
	Left Power Mirror Horizontal Sensor	NORMAL/ABNORMAL
	Left Power Mirror Vertical Sensor	NORMAL/ABNORMAL
	Right Power Mirror Horizontal Sensor	NORMAL/ABNORMAL
	Right Power Mirror Vertical Sensor	NORMAL/ABNORMAL
	Left Power Mirror UP-DOWN Motor Command	OFF/UP/DOWN
	Left Power Mirror LEFT-RIGHT Motor Command	OFF/LEFT/RIGHT
	Right Power Mirror UP-DOWN Motor Command	OFF/UP/DOWN
	Right Power Mirror LEFT-RIGHT Motor Command	OFF/LEFT/RIGHT
	Memory Switch Position 1 Indicator Command	OFF/ON
	Memory Switch Position 2 Indicator Command	OFF/ON
	Memory Switch Illumination Command	OFF/ON

Input:

HDS INPUT REFERENCE

System Menu	Data List	Data List Indication
	Windshield Wiper Switch (LOW)	OFF/ON
	Windshield Wiper Switch (HIGH)	OFF/ON
	Windshield Wiper Switch (MIST)	OFF/ON
	Rear Wiper Switch	OFF/ON
	Windshild Washer Switch	OFF/ON
	Rear Washer Switch	OFF/ON
	Intermittent Wiper Dwell Timer	1-255

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Wipers	Brake Pedal Position Switch	OFF/ON
	Windshield Wiper Motor PARK Switch	OFF/ON
	Windshield Wiper Switch (BACK-UP)	OFF/ON
	Windshield Wiper Motor HI Command	OFF/ON
	Windshield Wiper Motor LO Command	OFF/ON
	Windshield Washer Motor Command	OFF/ON
	Rear Window Washer Motor Command	OFF/ON
	Rear Window Wiper Switch	OFF/ON
	Rear Window Wiper Command	OFF/ON
Security	Ignition Key Cylinder Switch	OFF/ON
	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Radio Switch	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command	OFF/ON
	Tailgate Release Command	OFF/ON
	Hood Switch	OFF/ON
	Ignition Switch (IG1)	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Horn Command	OFF/ON
	Tailgate Switch	OFF/ON
	Tailgate Knob Switch (UNLOCK)	OFF/ON
	Security Hazard Signal Command	OFF/ON
	Driver's Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON

Input:

HDS INPUT REFERENCE

System Menu	Data List	Data List Indication
	Power Tailgate Switch	OFF/ON
	Power Tailgate Outer Handle Switch	OFF/ON

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Power Tailgate	Power Tailgate Inner Switch	OFF/ON
	A/T Shift Position Switch (P)	OFF/ON
	Latch Gear Position Switch (Neutral)	OFF/ON
	Latch Gear Position Switch (Release)	OFF/ON
	Full Latch Switch	OFF/ON
	Ratchet Switch	OFF/ON
	Half Latch Switch	OFF/ON
	Power Tailgate Drive Motor Pulse A	NONE/DETECT
	Power Tailgate Drive Motor Pulse B	NONE/DETECT
	Right Power Tailgate Upper Pinch Sensor	NONE/DETECT
	Left Power Tailgate Upper Pinch Sensor	NONE/DETECT
	Power Tailgate Motor Command	OFF/OPEN/CLOSE
	Power Tailgate Clutch Command	OFF/ON
	Closer Motor Command	OFF/RELEASE/CLOSE
	Power Tailgate Buzzer	OFF/ON

Output:

HDS OUTPUT REFERENCE

System Menu	Data List	Data List Indication	Operation Time
	Speedometer displays value inputted	Speedometer	
	Tachometer displays value inputted	Tachometer	
	Fuel gauge displays value inputted	Fuel Level Gauge	
	Temperature gauge displays value inputted	Engine Temperature Gauge	
	Turns VSA activation indicator on/off	VSA/TCS Activation Indicator	Illuminates for 10 sec.
	Turns VSA indicator on/off	VSA/TCS Indicator	Illuminates for 10 sec.
	Turns ABS indicator on/off	ABS Indicator	Illuminates for 10 sec.
	Turns EBD indicator on/off	EBD Indicator (Electronic Brake Display)	Illuminates for 10 sec.
	Turns cruise indicator on/off	Cruise Activation Indicator	Illuminates for 10 sec.
	Turns MIL on/off	MIL Status	Illuminates for 10 sec.
	Turns DRL indicator on/off	Daytime Running Light indicator (Canada)	Illuminates for 10 sec.
	Turns low oil pressure indicator on/off	Engine Oil Pressure Indicator	Illuminates for 10 sec.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Gauge	Turns charging system indicator on/off	Charging System Indicator	Illuminates for 10 sec.
	Turns cruise main indicator on/off	Cruise Control Main Switch Indicator	Illuminates for 10 sec.
	Turns maintenance required indicator on/off	Maintenance Required Indicator	Illuminates for 10 sec.
	Turns high beam indicator on/off	High Beam Indicator	Illuminates for 10 sec.
	Turns light-on indicator on/off	Light On Indicator	Illuminates for 10 sec.
	Turns low fuel indicator on/off	Low Fuel Level Indicator	Illuminates for 10 sec.
	Turns security indicator on/off	Security Indicator	Illuminates for 10 sec.
	Display inputted value	Trip Meter	
	Turns A/T P position indicator on/off	A/T Gear Position Indicator (P)	Illuminates for 10 sec.
	Turns A/T R position indicator on/off	A/T Gear Position Indicator (R)	Illuminates for 10 sec.
	Turns A/T N position indicator on/off	A/T Gear Position Indicator (N)	Illuminates for 10 sec.
	Turns A/T D position indicator on/off	A/T Gear Position Indicator (D)	Illuminates for 10 sec.
	Turns A/T D3 position indicator on/off	A/T Gear Position Indicator (D3)	Illuminates for 10 sec.
	Turns A/T 2 position indicator on/off	A/T Gear Position Indicator (2)	Illuminates for 10 sec.
	Controls gauge illumination brightness to inputted value	Illumination Brightness Control	
	Turns key-in beeper on/off	Key Alarm Chime	Sounds alarm for 10 sec.
	Turns light-on beeper on/off	Headlight Alarm Chime	Sounds alarm for 10 sec.
	Turns seat belt reminder beeper on/off	Seat belt Reminder Chime	Sounds alarm for 10 sec.
	Turns ignition key cylinder light on/off	Ignition Key Cylinder Light Command	Illuminates for 30 sec.
	Turns interior light on/off	Interior Light Command	Illuminates for 30 sec.
	Turns left turn signal lights on/off	Left Turn Signal Command	Blinks for 5 sec.
	Turns right turn signal lights on/off	Right Turn Signal Command	Blinks for 5 sec.
	Turns headlight on/off	Headlight Command	Operates for 15 sec.
		Headlight High Beam	Operates for 15

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Lighting	Turns headlight high beam on/off	Command	sec.
	Turns parking lights on/off	Parking Light Command	Operates for 15 sec.
	Turns front fog lights on/off	Front Fog Light	Operates for 15 sec.
	Turns daytime running lights on/off	Daytime Running Light Signal (Canada)	Operates for 15 sec.
	Turns automatic headlights on/off	Automatic Lighting Headlight	Operates for 15 sec.
	Turns cargo area lights on/off	Cargo Area Light	Illuminates for 30 sec.

Output:

HDS OUTPUT REFERENCE

System Menu	Data List	Data List Indication	Operation Time
Power window	Runs driver's window up	Driver's Window Up	Drives for 3 sec.
	Runs driver's window down	Driver's Window Down	Drives for 3 sec.
	Runs front passenger's window up	Front Passenger's Window Up	Drives for 3 sec.
	Runs front passenger's window down	Front Passenger's Window Down	Drives for 3 sec.
	Runs left rear window up	Left Rear Window Up	Drives for 3 sec.
	Runs left rear window down	Left Rear Window Down	Drives for 3 sec.
	Runs right rear window up	Right Rear Window Up	Drives for 3 sec.
	Runs right rear window down	Right Rear Window Down	Drives for 3 sec.
	Turns power window relay on/off	Power Window Relay	Drives for 3 sec.
Wiper	Turns wiper low speed on/off	Windshield Wiper Motor Low Command	Operates for 5 sec.
	Turns wiper high speed on/off	Windshield Wiper Motor High Command	Operates for 5 sec.
	Turns windshield washer on/off	Windshield Washer Command	Operates for 5 sec.
	Turns rear window washer on/off	Rear Window Washer Motor Command	Operates for 5 sec.
	Turns rear window wiper on/off	Rear Wiper Motor	Operates for 5 sec.
Security	Turn horns on/off	Horn Command	Operates horn for 1 sec.
	Turns power seat indicator on/off	Memory Seat Indicator 1	Illuminates for 3 sec.
		Memory Seat Indicator 2	Illuminates for 3 sec.
		Power Seat: Slide Motor-Full Forward	--
		Power Seat: Slide Motor-Full	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Power Seat	Runs power seat motors	Backward	--
		Power Seat: Front UP-DOWN Motor-Full Up	--
		Power Seat: Front UP-DOWN Motor-Full Down	--
		Power Seat: Rear UP-DOWN Motor-Full Up	--
		Power Seat: Front UP-DOWN Motor-Full Down	--
		Power Seat: Recline Motor-Full Forward	--
		Power Seat: Recline Motor-Full Backward	--
		Power Seat: Memory Buzzer-5 seconds	Drives for 5 sec.
Power Sliding Door	Operates left power sliding door	Power Slide Door Motor: Open (2 sec.)	Drives for 2 sec.
		Power Slide Door Motor: Close (2 sec.)	Drives for 2 sec.
		Magnet Clutch (2 sec.)	Drives for 2 sec.
		Release Actuator (1.3 sec.)	Drives for 1.3 sec.
		Closer Motor	--
		Buzzer	--
	Operates right power sliding door	Power Slide Door Motor: Open (2 sec.)	Drives for 2 sec.
		Power Slide Door Motor: Close (2 sec.)	Drives for 2 sec.
		Magnet Clutch (2 sec.)	Drives for 2 sec.
		Release Actuator (1.3 sec.)	Drives for 1.3 sec.
		Closer Motor	--
		Buzzer	--
Door	Outputs LOCK signal 1 time to all doors	Lock All Doors	0.6 sec.
	Outputs LOCK signal 1 time to all doors	Unlock All	0.6 sec.
	Outputs UNLOCK signal 1 time to driver's door	Unlock Driver's Side Door	0.6 sec.
	Runs left sliding door lock actuator	Left Sliding Door Lock	Lock signal 1 time
		Left Sliding Door Unlock	Unlock signal 1 time
	Runs power tailgate motor	Full Open Position	--
		Full Close Position	--
	Operates power tailgate		

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Power Tailgate	electromagnetic clutch	Operates On For 1 sec.	Operates for 1 sec.
	Runs power tailgate release actuator	Open	-
		Close	-
A/C	Turn rear window defogger relay on/off	Rear Defogger	Operates a relay for 60 sec.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A

Check the PCM for DTCs and troubleshooting PCM (see **GENERAL TROUBLESHOOTING INFORMATION**) or F-CAN loss of communication errors first, then perform this diagnosis if the symptom is related to the B-CAN system.

Perform this diagnosis first if the symptom is related to the B-CAN system.

NOTE: Always turn the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures .

1. Check the symptom against this list of B-CAN related systems:

- Gauge control module
- Exterior lights
- Turn signals
- Entry light control
- Interior lights
- Safety indicators
- Rear window defogger
- HandsFreeLink
- Horns (security and panic)
- Chimes (key-in, seat belt, lights-on and parking brake)
- Power windows
- Power window/moonroof timer
- Wiper/washer
- Security
- Keyless entry
- Power door locks
- Climate control
- Key interlock
- Dash light brightness
- Driving position memory
- Power tailgate
- XM radio

- Immobilizer

Is the symptom related to the B-CAN system?

YES - Go to step 2.

NO - Go to the system troubleshooting for the system with the symptom.

2. Connect the HDS, then turn the ignition switch ON (II).

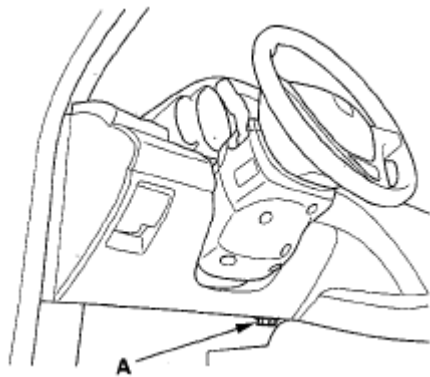


Fig. 7: Connecting HDS

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. From the BODY ELECTRICAL system select menu, select UNIT INFORMATION, and then select CONNECTED UNIT listed to see if it is communicating with the HDS.
 - MICU
 - Gauge control module
 - Combination switch control unit
 - Relay control module
 - Power seat control unit
 - HandsFreeLink control unit
 - Driver's MPCS unit
 - Rear MICU
 - AcuraLink control unit (XM receiver)
 - Power tailgate control unit
 - Climate control unit
 - Immobilizer-keyless control unit

NOTE:

- If the unit is communicating with the HDS, DETECT will be displayed.
- If the unit is not communicating, "Not Available" will be displayed.

Are all control units communicating with the HDS?

YES - Go to step 4.

NO - If any of the control unit are not communicating, go to **B-CAN System Diagnosis Test Mode B** (see). If all units are not communicating or only the MICU is communicating, go to **DTC B1000 troubleshooting** .

4. Select the system that has the problem from BODY ELECTRICAL system select menu, then select DTCs.

Are any DTCs indicated?

YES - Go to step 5.

NO - If the problem is related to one of the following items, go to **B-CAN System Diagnosis Test Mode C** , if the system does not stop or turn off. Go to **Troubleshooting - B-CAN System Diagnosis Test Mode D** if the system does not run or turn on.

- Exterior lights
- Turn signals
- Entry light control
- Interior lights
- Horns (security and panic)
- Power windows
- Wiper/washer
- Power door locks

If the problem is related to one of the following items, go to the troubleshooting for that individual system.

- Gauge control module
- Safety indicators
- Chimes (key-in, seat belt and lights-on)
- Rear window defogger (climate control)
- Security
- Keyless entry
- Climate control
- Key interlock
- Dash lights brightness
- Audio system
- Navigation

- Driving position memory
 - HandsFreeLink
 - Power tailgate
 - Immobilizer
5. Record all DTCs, and sort them by DTC type.
 6. Troubleshoot the DTC(s) in this order:
 - Battery voltage DTCs.
 - Internal error DTCs.
 - Loss of communication DTCs. Begin troubleshooting with the lowest number first (Example: if DTC B1008 and B1011 are retrieved, begin by troubleshooting B1008). Refer to loss of communication DTC cross reference chart (see [LOSS OF COMMUNICATION DTC CROSS-REFERENCE CHART](#)).
 - Signal error DTCs.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE B

Perform this diagnosis if any of the control units are not communicating (Not Available is displayed in the HDS) as found by the B-CAN System Diagnosis Test Mode A (see [TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A](#)).

1. Using the HDS, select the system that has the symptom from BODY ELECTRICAL.
2. Select DTCs, and then check for loss of communication DTCs. Refer to loss of communication DTC cross reference chart.

Are any loss of communication DTCs indicated?

YES - Go to step 3.

NO - Replace the MICU.

3. Perform the input test for the unit not communicating with the HDS.

NOTE: **Troubleshoot Rear MICU loss of communication DTCs before troubleshooting AcuraLink control unit (XM receiver) the power tailgate control unit, and the power seat control unit DTC.**

UNIT NOT COMMUNICATING - INPUT TEST REFERENCE

Unit not communicating
MICU (see MICU INPUT TEST)
Gauge control module (see GAUGE CONTROL MODULE INPUT TEST)
Relay control module (see RELAY CONTROL MODULE INPUT TEST)
Driver's MPCS unit (see DRIVER'S MPCS UNIT INPUT TEST)

Combination switch control unit (see WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST)

Immobilizer-keyless control unit (see IMMOBILIZER-KEYLESS CONTROL UNIT INPUT TEST)

Rear MICU (see REAR MICU INPUT TEST)

Power seat control unit (see POWER SEAT CONTROL UNIT INPUT TEST)

Power tailgate control unit (see CONTROL UNIT INPUT TEST/REPLACEMENT)

Climate control unit troubleshooting (see CLIMATE CONTROL UNIT TROUBLESHOOTING)

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE C

Perform this diagnosis if a component that is controlled by the B-CAN system does not stop or turn off.

NOTE:

- If the component does not turn ON, go to B-CAN System Diagnosis Test Mode D .
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and controls the output devices (see SYSTEM DESCRIPTION).
- Always turn the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures .

1. Check for DTCs by selecting the TEST MODE menu from the HDS.

Are any DTCs indicated?

YES - Go to B-CAN System Diagnosis Test Mode A (see).

NO - Go to step 2.

2. Turn OFF the switch that controls the malfunctioning component.
3. Select DATA LIST from the TEST MODE menu, and check the input of the switch that controls the component.

Does the HDS indicate the switch is OFF?

YES - Go to step 4.

NO - Go to step 6.

4. In DATA LIST, check the output signal of the malfunctioning component.

Is the output signal OFF?

YES - Go to step 5.

NO - Replace the control unit that controls the device that will not turn OFF.

5. Check the relay if applicable, then check for a short in the wire between the relay and the component, the relay and control unit, or the component and control unit.

Are the relay and the wire harness OK?

YES - Replace the control unit that controls the component that will not turn OFF.

NO - Replace the relay or repair the wire harness.

6. Check the switch, then check for a short in the wire between the switch and the control unit that monitors the switch.

Is the switch and wire harness OK?

YES - Replace the control unit that monitors the switch.

NO - Replace the switch or repair the wire harness.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE D

Perform this diagnosis if a component that is controlled by the B-CAN system does not run or come on.

NOTE:

- If the component does not turn off or stop, go to **B-CAN System Diagnosis Test Mode C** .
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and controls the output devices (see **SYSTEM DESCRIPTION**).
- Always turn the ignition switch within 3 seconds when prompted in the DTC troubleshooting procedures .

1. Check the fuse of the malfunctioning output device.

Is the fuse OK?

YES - Go to step 2.

NO - Replace the fuse and recheck.

2. Check for DTCs by selecting the TEST MODE menu from the HDS.

Are any DTCs indicated ?

YES - Go to **B-CAN System Diagnosis Test Mode A** .

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

NO - Go to step 3.

3. Turn ON the switch that controls the malfunctioning component.
4. Select DATA LIST from the TEST MODE menu, and check output signal for the malfunctioning component.

Is there an output signal?

YES - Go to step 5.

NO - Go to step 9.

5. Check the relay and ground, then check for an open or a short in the circuit for the malfunctioning component.

Are the relay and circuit OK ?

YES - Go to step 6.

NO - Replace the relay or repair the wire circuit.

6. Perform the function test for the malfunctioning component.

Does the output device pass the function test?

YES - Go to step 7.

NO - Replace the component.

7. With the malfunctioning output device connected, connect a voltmeter between the malfunctioning output device and body ground on the wire that the control unit uses to control the output device circuit.
8. Select MISC. TEST from the TEST MODE menu, and do the forced operation test of the malfunctioning component.

Is there a change in voltage (12 V to 0 V or 0V to 12 V)?

YES - Replace the component.

NO - Replace the control unit that controls the malfunctioning component.

9. Select DATA LIST from the TEST MODE menu, and make sure the switch signal input for the malfunctioning system indicates a change when operated.

Does the switch input indicate ON when the switch is ON?

YES - Replace the control unit that controls the malfunctioning component.

NO - Go to step 10.

10. Check the switch and its ground (if applicable), then check for an open or a short in the wire between the switch and the control unit that monitors it.

Are the switch and the wire harness OK?

YES - Replace the control unit that monitors the switch.

NO - Replace the switch or repair the wire harness.

TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE 1 AND TEST MODE 2 (WITHOUT THE HDS)

Special Tools Required

MPCS (MCIC) service connector 07WAZ-001010A

TEST MODE 1

Check the PCM for DTCs and troubleshoot PCM (see **GENERAL TROUBLESHOOTING INFORMATION**) or F-CAN loss of communication errors first, then perform this diagnosis if the HDS is not available.

1. Check the No. 7 (10 A) and No. 21 (7.5 A) fuses in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 2.

NO - Find and repair the cause of the blown fuse.

2. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
3. Turn the ignition switch ON (II), and move the ceiling light switch to the middle (door) position.
4. Connect the MPCS service connector (A) to the MCIC socket (B) in the under-dash fuse/relay box.

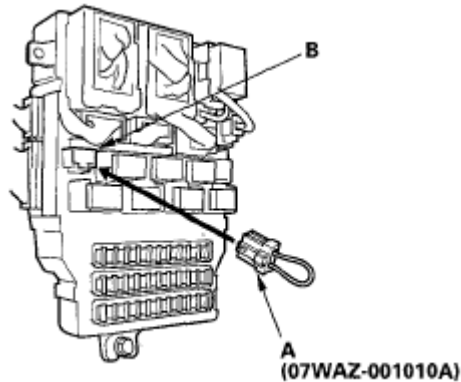


Fig. 8: Identifying MPCS Service Connector And MCIC Socket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Wait 5 seconds, and watch the ceiling lights. When the ceiling lights flash quickly once, and then go off, the system is in Test Mode 1.
6. Check for B-CAN DTCs indicated by the gauge control module LCD display while still in Test Mode 1. Push the odometer select/reset button to display the next code. After you get to the last code, the display shows END. If no DTCs are stored, the display will read NO.

Are any DTCs indicated?

YES - Go to Step 7.

NO - Go to Step 10.

7. Record all DTCs and sort them.
8. Troubleshoot the DTCs in this order:
 - Battery voltage DTCs
 - Internal error DTCs
 - Loss of communication DTCs (begin with the lowest number first; for example, if B1008 and B1011 are retrieved, troubleshoot B1008 first). Refer to loss of communication DTC cross reference chart (see **LOSS OF COMMUNICATION DTC CROSS-REFERENCE CHART**).
 - Signal error DTCs
9. Clear the DTCs by pressing and holding the select/ reset button for about 10 seconds. You will hear a beep to confirm the codes have been cleared. Operate the devices that failed, and recheck for codes.

Test Mode 2

10. Remove the MPCS service connector from the under-dash fuse/relay box socket for 5-10 seconds, then re-insert it to enter Mode 2. When the system enters Mode 2, the ceiling light will flash two times quickly and then go off.

NOTE: If the MPCS connector is disconnected for too short or too long of a time,

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

or the ignition switch is turned OFF, the system will return to Test Mode 1.

11. The following tables list the circuits that can be checked in Test Mode 2. Operate the switch that is most closely related to the problem. If the circuit is OK, the ceiling lights will blink once. If the circuit is faulty, there will be no indication.

MICU

MICU REFERENCE

Item
Driver's door switch (OPEN)
Front passenger's door switch (OPEN)
Left rear door switch (OPEN)
Right rear door switch (OPEN)
Audio security ground (when disconnected)
Mirror select switch (LEFT, CENTER, RIGHT)
Mirror switch (LEFT, RIGHT, UP, DOWN)
* The front passenger's and door lock knob switches must be in the locked position when beginning the test.

RELAY CONTROL MODULE

RELAY CONTROL MODULE REFERENCE

Item
Windshield wiper switch (AUTO STOP/PARK)
Hood switch (OPEN)

COMBINATION SWITCH CONTROL UNIT

COMBINATION SWITCH CONTROL UNIT REFERENCE

Item
Turn signal switch (LEFT)
Turn signal switch (RIGHT)
Combination light switch (ON; each position)
Dimmer switch (ON)
Passing switch (ON)
Windshield wiper switch (ON)
Intermittent wiper dwell timer
Windshield washer switch (ON)
Fog light switch (ON)
Rear window wiper switch (ON)
Rear window washer switch (ON)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

REAR MICU

REAR MICU REFERENCE

Item
Tailgate latch switch (ON)
Tailgate outer handle switch (Without power tailgate) (ON)

DRIVER'S MPCS UNIT

DRIVER'S MPCS UNIT REFERENCE

Item
Power window master switch (Driver's window UP)
Power window master switch (Driver's window DOWN)
Power window master switch (Driver's window AUTO UP)
Power window master switch (Driver's window AUTO DOWN)
Power window master switch (Front passenger's window UP)
Power window master switch (Front passenger's window DOWN)
Power window master switch (Front passenger's window AUTO UP)
Power window master switch (Front passenger's window AUTO DOWN)
Power window master switch (Left rear window UP)
Power window master switch (Left rear window DOWN)
Power window master switch (Right rear window UP)
Power window master switch (Right rear window DOWN)
Driver's door key cylinder switch ⁽¹⁾ (LOCK)
Driver's door key cylinder switch ⁽¹⁾ (UNLOCK)
Driver's door lock switch (LOCK)
Driver's door lock switch (UNLOCK)
Driver's door lock knob switch (LOCK)
Driver's door lock knob switch (UNLOCK)
Left rear door lock knob switch ⁽²⁾ (UNLOCK)
Driving position memory switches (1,2, memo)
Left rear power window switch (UP)
Left rear power window switch (DOWN)
Fuel fill door opener switch (ON)
(1) A second key is necessary to check the key cylinder inputs. Be sure to rotate the key cylinder switch two times to each position (lock and lock, unlock and unlock) to ensure the door lock knob switch is in the appropriate position.
(2) The left rear door lock knob switches must be in the locked position when beginning the test.

GAUGE CONTROL MODULE

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

GAUGE CONTROL MODULE REFERENCE

Item
Parking brake switch (ON; parking brake applied)
Cruise control main SET/RESUME/CANCEL switch (ON; switch pressed)
Transmission range switch (P, R, N, D)
Washer fluid level switch (fluid removed) (Canada)
Brake fluid level switch (fluid removed)
Illumination control switches (+, -)
MID switches (Select/Reset, < INFO, INFO >)

POWER SEAT CONTROL UNIT

POWER SEAT CONTROL UNIT REFERENCE

Item
Power seat slide switch (FORWARD, BACKWARD)
Power seat front up-down switch (UP, DOWN)
Power seat rear up-down switch (UP, DOWN) Power seat recline switch (FORWARD, RECLINE)
Power tilt/telescopic steering switch (UP, DOWN, PUSH, PULL)

FRONT PASSENGER'S MPCS UNIT

FRONT PASSENGER'S MPCS UNIT REFERENCE

Item
Front passenger's door lock knob switch ⁽¹⁾ (UNLOCK)
Right rear door lock knob switch ⁽¹⁾ (UNLOCK)
Front passenger's door lock switch (LOCK)
Front passenger's door lock switch (UNLOCK)
Front passenger's power window switch (UP, DOWN, AUTO)
Right rear power window switch (UP, DOWN)
(1) The front passenger's and right rear door lock knob switches must be in the locked position when beginning the test.

Do the map lights indicate proper switch operation?

YES - Go to function and input test for the system related to the failure.

NO - Repair the open, short, or replace the faulty switch.

SLEEP AND WAKE-UP MODE TEST

1. Shift to the sleep mode:

Turn the ignition switch to LOCK (0), and close the driver's door. If the MICU receives no signals from the inputs listed below, it will go into sleep mode in less than 40 seconds.

Driver's door lock switch (LOCK or UNLOCK)

Driver's door key cylinder switch (LOCK or UNLOCK)

Front passenger's door lock switch (LOCK or UNLOCK)

Tailgate latch switch (Tailgate closed)

Hazard warning switch (OFF)

Power tailgate outer handle switch

Power tailgate inside switch

Power tailgate opener switch

2. Confirm the sleep mode:

Measure the frequency on the B-CAN communication line (LT GRN wires); there should be 0 Hz in the sleep mode. Check the parasitic draw at the battery while shifting into the sleep mode; amperage should change from about 2.6 A to less than 35 mA.

3. Shift to the wake up mode:

When the ignition switch is turned ON (II), the MICU, and all B-CAN system components wake up. When any switch in the multiplex integrated control system is turned on, a message is sent to the related control unit(s) to command the desired function. After confirming the sleep mode, look in the following table for the switch most related to the problem. Operate that switch and see if its control unit wakes up.

NOTE: If any control unit is faulty and will not wake up, several circuits in the system will malfunction at the same time. In the table below, the control unit is followed by a list of the switches and input signals that can wake it up.

Door switches (door open)

Driver's door lock switch (LOCK or UNLOCK)

Driver's door lock knob switch (LOCK or UNLOCK)

Driver's door key cylinder switch (LOCK or UNLOCK)

Front passenger's door lock switch (LOCK or UNLOCK)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

Front passenger's door lock knob switch (LOCK or UNLOCK)

Left rear door lock knob switch

Right rear door lock knob switch

Tailgate latch switch (Tailgate open)

Hood switch (hood open)

Hazard warning switch (ON)

Combination light switch (Parking, Headlight, Dimmer, Passing ON)

Ignition key switch (key inserted)

CIRCUIT DIAGRAM

2008 Acura MDX

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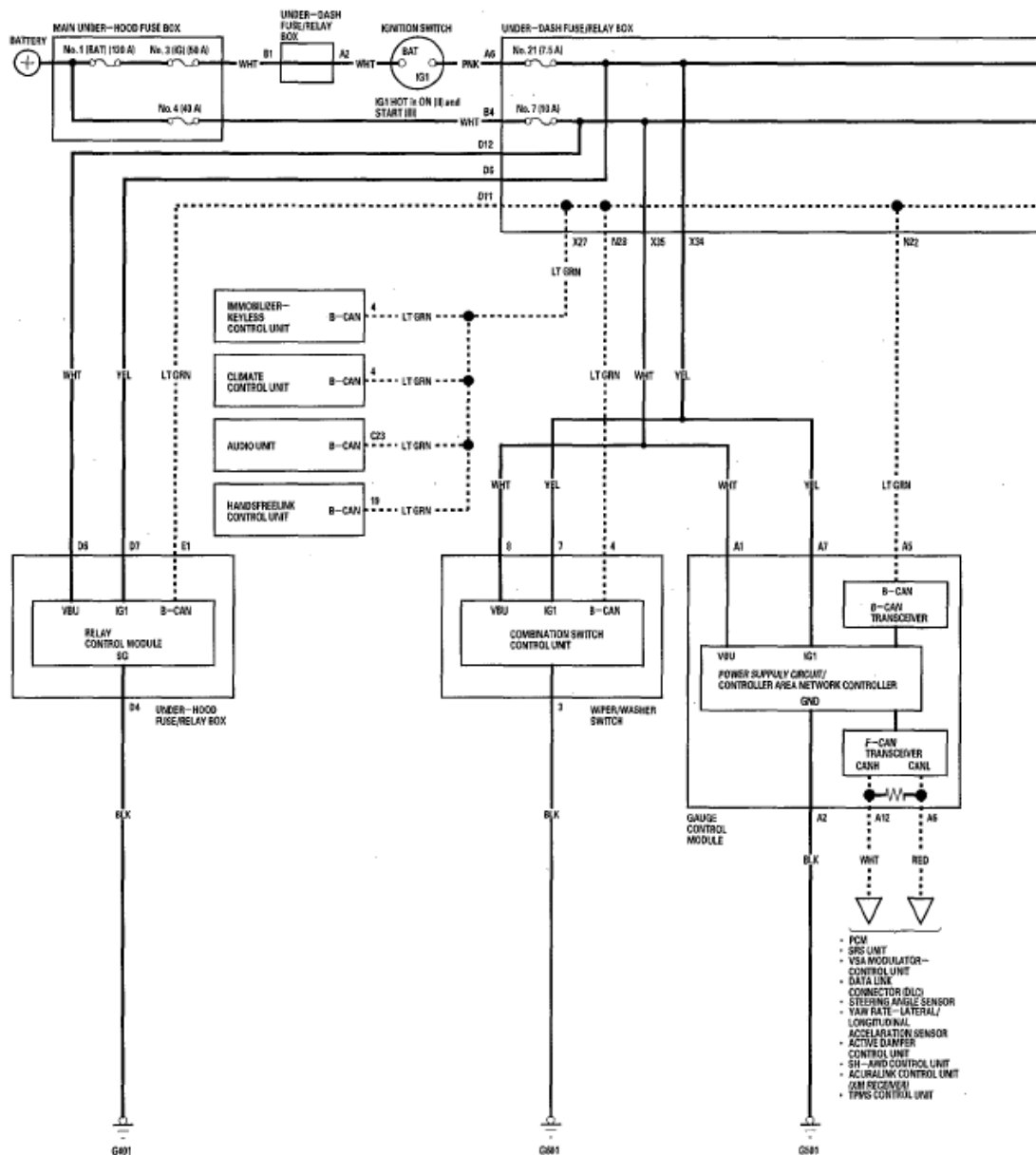


Fig. 9: Multiplex Integrated Control System - Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

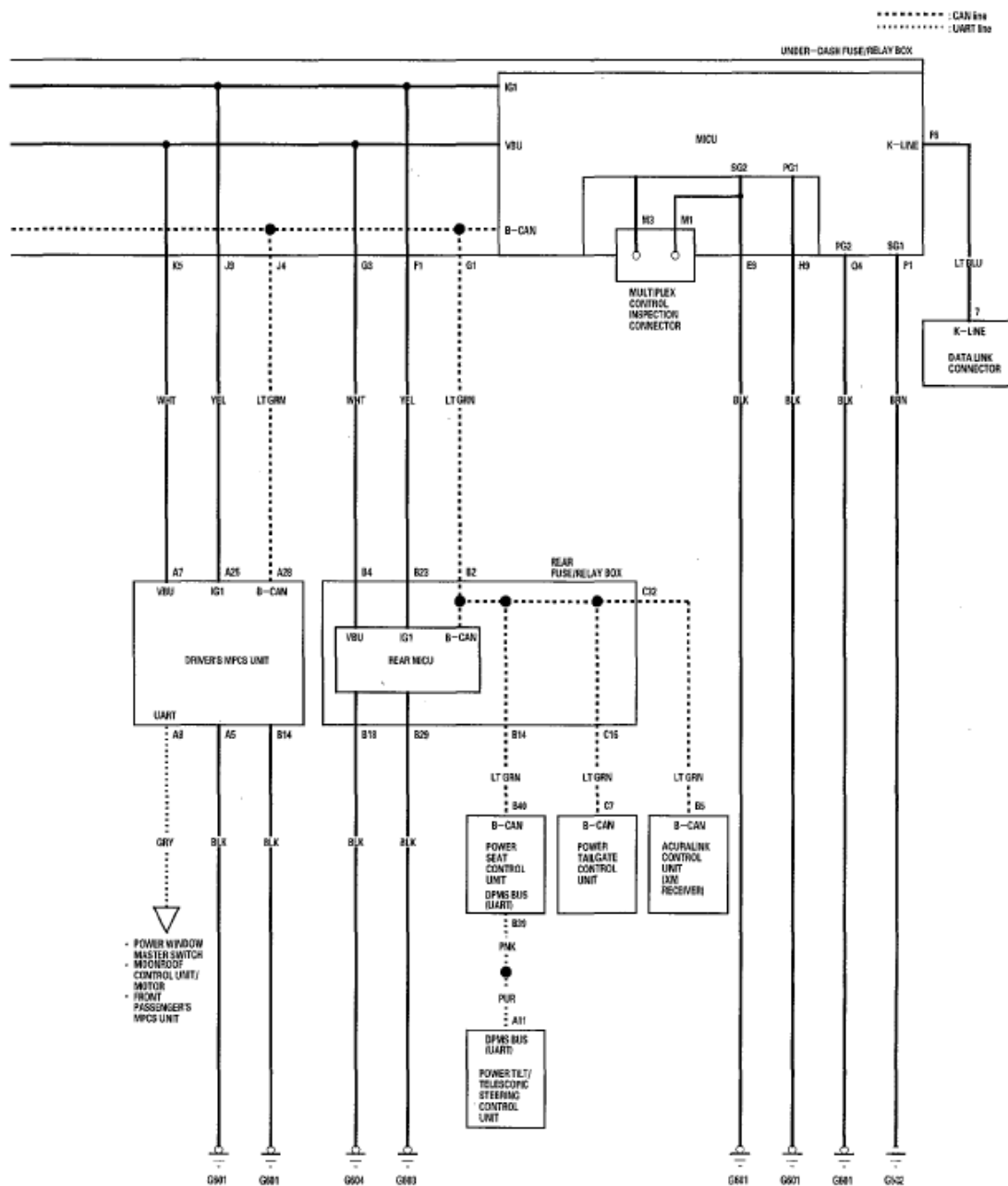


Fig. 10: Multiplex Integrated Control System - Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1000: COMMUNICATION BUS LINE ERROR

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

4. Check for DTCs with the HDS.

Is DTC B1000 indicated?

YES - Go to step 5.

NO - Intermittent failure, the communication bus line is OK at this time. Check for loose or poor connections, or worn/shorted wires. If the connections are good, check the battery condition (see **BATTERY TEST**) and the charging system.

5. Check for DTCs with the HDS.

Are DTCs B1000, B1005, B1007, B1011, B1012, B1013, B1015 and B1032 all indicated?

YES - Go to step 6.

NO - Faulty MICU; replace the under-dash fuse/ relay box.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the appropriate connector at each control unit in the table one at a time. Clear the DTC, then recheck for DTCs after each unit is disconnected.

CONTROL UNIT CONNECTOR REFERENCE

Control unit	Connector
Relay control module	Under-hood fuse/relay box connector E (14P)
Gauge control module	Connector A (12P)
Immobilizer-keyless control unit	7P connector
Combination switch control unit	8P connector
Driver's MPCS unit	Connector A (40P)
Climate control unit	40P connector
Audio unit	Connector C (24P)
HandsFreeLink control unit	28P connector
Power seat control unit	Connector A (40P)
Power tailgate control unit	Connector C(14P)
AcuraLink control unit (XM receiver)	Connector B(16P)
Rear MICU ⁽¹⁾	Rear fuse/relay box connector B (34P)
(1) Disconnect this one last	

Is DTC B1000 indicated with each individual unit disconnected?

YES - Go to step 11.

NO - Replace the control unit that was disconnected when B1000 did not reset (If the unit is the rear

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX**

MICU, go to step 8.)

8. Disconnect rear fuse/relay box connectors B (34P) and C (42P).
9. Check for continuity between each of the rear fuse/ relay box connector terminals listed in the table and body ground.

REAR FUSE/ RELAY BOX CONNECTOR TERMINALS REFERENCE

Connected control unit	Rear fuse/relay box connector terminal
Power seat control unit	B14
Power tailgate control unit	C16
AcuraLink control unit (XM receiver)	C32

Is there continuity?

YES - Repair short to ground in the wire between the rear fuse/relay box and the affected control unit.

NO - Go to step 10.

10. Measure the voltage between each of the rear fuse/ relay box connector terminals listed in the table and body ground.

REAR FUSE/ RELAY BOX CONNECTOR TERMINALS REFERENCE

Connected control unit	Rear fuse/relay box connector terminal
Power seat control unit	B14
Power tailgate control unit	C16
Acura Link control unit (XM receiver)	C32

Is there less than 1 V?

YES - Replace the rear fuse/relay box.

NO - Repair short to power in the wire between the rear fuse/ relay box and the affected control unit.

11. Disconnect each control unit connectors in the table.

CONTROL UNIT CONNECTOR REFERENCE

Control unit	Connector
Relay control module	Under-hood fuse/relay box connector E (14P)
Gauge control module	Connector A (12P)
Immobilizer-keyless control unit	7P connector
Combination switch control unit	8P connector
Driver's MPCS unit	Connector A (40P)
Climate control unit	40P connector
Audio unit	Connector C (24P)

HandsFreeLink control unit | 28P connector

12. Check for continuity between the under-dash fuse/ relay box connector N (45P) No. 22 terminal and body ground.

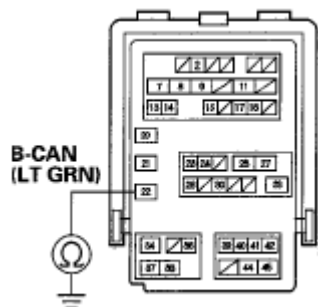


Fig. 11: Identifying Continuity Between Under-Dash Fuse/ Relay Box Connector N (45P) No. 22 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 13.

13. Turn the ignition switch ON (II).
14. Measure the voltage between the under-dash fuse/ relay box connector N (45P) No. 22 terminal and body ground.

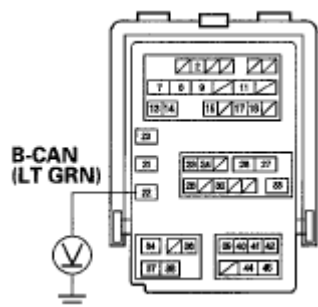


Fig. 12: Measuring Voltage Between Under-Dash Fuse/ Relay Box Connector N (45P) No. 22 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire.

NO - Faulty MICU, replace the under-dash fuse/ relay box.

DTC B1001: MICU INTERNAL (CPU) ERROR; DTC B1002: MICU INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1001 and/or B1002 indicated?

YES - Faulty MICU, replace the under-dash fuse/ relay box.

NO - Intermittent failure, the system is OK at this time.

DTC B1005: MICU LOST COMMUNICATION WITH RELAY CONTROL MODULE (RM MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1005 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the MICU and the relay control module.

5. Check for DTCs with the HDS.

Are DTCs B1158, B1959, B2162, and B2970 also indicated with B1005?

YES - Do the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**).

NO - Do the MICU input test (see **MICU INPUT TEST**).

DTC B1007: MICU LOST COMMUNICATION WITH COMBINATION SWITCH CONTROL UNIT (HLSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1007 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the MICU and the combination switch control unit.

5. Check for DTCs with the HDS.

Are DTCs B1062, B1155, and B1957 also indicated with DTC B1007?

YES - Do the combination switch control unit input test (see **WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST**).

NO - Do the MICU input test (see **MICU INPUT TEST**).

DTC B1011: MICU LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VSP/NE MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1011 indicated?

YES - Go to step 5

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the MICU and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1060, B1205, B1357, B1408, B1805, and/or B2160 also indicated with DTC B1011?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the MICU input test (see **MICU INPUT TEST**).

DTC B1012: MICU LOST COMMUNICATION WITH REAR MICU (RJC MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1012 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the MICU and the rear MICU.

5. Check for DTCs with the HDS.

Is DTC B1955 indicated with DTC B1012?

YES - Do the rear MICU input test (see **REAR MICU INPUT TEST**).

NO - Do the MICU input test (see **MICU INPUT TEST**).

DTC B1013: MICU LOST COMMUNICATION WITH DRIVER'S MPC'S UNIT (ASLOCKSW MESSAGE); DTC B1015: MICU LOST COMMUNICATION WITH DRIVER'S MPC'S UNIT (DRLOCKSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1013 and/or B1015 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the MICU and the driver's MPCs unit.

5. Check for DTCs with the HDS.

Are DTCs B1065, B1082, B1356, B1358, and/or B1905 also indicated with B1013 and/or B1015?

YES - Do the driver's MPCs unit input test (see **DRIVER'S MPCs UNIT INPUT TEST**).

NO - Do the MICU input test (see **MICU INPUT TEST**).

DTC B1032: MICU LOST COMMUNICATION WITH THE SRS UNIT (CDS MESSAGE)

NOTE: **If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).**

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1032 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Check for DTCs with the HDS.

Is DTC B1011 also indicated with DTC B1032?

YES - Check for an open in the wire between the MICU and the gauge control module. If the circuit is bad, repair the open.

NO - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

DTC B1080: IGNITION KEY SWITCH CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

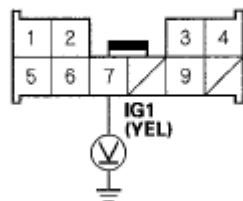
Is DTC B1080 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Turn the ignition switch to LOCK (0).
6. Disconnect under-hood fuse/relay box connector D (10P).
7. Turn the ignition switch ON (II).
8. Measure the voltage between the under-hood fuse/ relay box connector D (10P) No. 7 terminal and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR D (10P)



Wire side of female terminals

Fig. 13: Measuring Voltage Between Under-Hood Fuse/ Relay Box Connector D (10P) No. 7 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

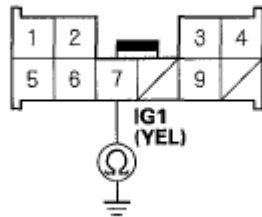
Is there battery voltage?

YES - Substitute a known-good under-hood fuse/ relay box and recheck.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Check for continuity between the under-hood fuse/ relay box connector D (10P) No. 7 terminal and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR D (10P)



Wire side of female terminals

Fig. 14: Identifying Continuity Between Under-Hood Fuse/ Relay Box Connector D (10P) No. 7 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

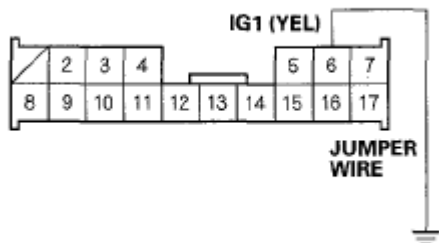
Is there continuity?

YES - Repair a short to ground in the wire. After repairing, replace the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

NO - Go to step 11.

11. Disconnect under-dash fuse/relay box connector D (17P).
12. Connect the under-dash fuse/relay box connector D (17P) No. 6 terminal and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (17P)



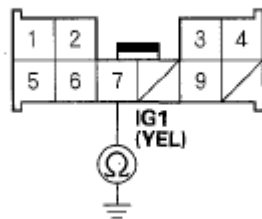
Wire side of female terminals

Fig. 15: Identifying Under-Dash Fuse/Relay Box Connector D (17P) No. 6 Terminal And Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between the under-hood fuse/ relay box connector D (10P) No. 7 terminal and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR D (10P)



Wire side of female terminals

Fig. 16: Identifying Continuity Between Under-Hood Fuse/ Relay Box Connector D (10P) No. 7 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good under-dash fuse/ relay box and recheck.

NO - Repair open in the wire.

DTC B1050: COMMUNICATION BUS LINE ERROR; DTC B1150: COMMUNICATION BUS LINE ERROR; DTC B1200: COMMUNICATION BUS LINE ERROR; DTC B1250: COMMUNICATION BUS LINE ERROR; DTC B1350: COMMUNICATION BUS LINE ERROR; DTC B1750: COMMUNICATION BUS LINE ERROR; DTC B1800: COMMUNICATION BUS LINE ERROR; DTC B1900: COMMUNICATION BUS LINE ERROR; DTC B1950: COMMUNICATION BUS LINE ERROR; DTC B2150: COMMUNICATION BUS LINE ERROR; DTC B2200: COMMUNICATION BUS LINE ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Are DTCs B1050, B1150, B1200, B1250, B1350, B1750, B1800, B1900, B1950, B2150, and/or B2200 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the MICU and B-CAN connected units in the table.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

5. Check for DTCs with the HDS.

UNDER-DASH FUSE/ RELAY BOX CONNECTOR REFERENCE

Under-dash fuse/ relay box connector	B-CAN connected unit connector
Connector D(17P) No. 11 terminal	Under-hood fuse/relay box connector E (14P) No. 1 terminal
Connector N (45P) No. 22 terminal	Gauge control module connector A (12P) No. 5 terminal
Connector N (45P) No. 28 terminal	Combination switch control unit 8P connector No. 4 terminal
Connector J (21P) No. 4 terminal	Driver's MPCS unit connector A (40P) No. 28 terminal
Connector X (39P) No. 27 terminal	Immobilizer-keyless control unit 7P connector No. 4 terminal
Connector X (39P) No. 27 terminal	Climate control unit 40P connector No. 4 terminal
Connector X(39P) No. 27 terminal	Audio unit connector C (24P) No. 23 terminal
Connector X (39P) No. 27 terminal	HandsFreeLink control unit 28P connector No. 19 terminal
Connector G (6P) No. 1 terminal	Power seat control unit connector A (40P) No. 40 terminal
Connector G (6P) No. 1 terminal	Power tailgate control unit connector C (14P) No. 7 terminal
Connector G (6P) No. 1 terminal	AcuraLink control unit (XM receiver) connector B(16P) No. 5 terminal
Connector G (6P) No. 1 terminal	Rear MICU (rear fuse/ relay box connector B (34P)

Is DTC B1000 also indicated?

YES - Troubleshoot DTC B1000.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the MICU and B-CAN connected units in the table.

DTC B2152: DRIVER'S MPCS UNIT INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B2152 indicated?

YES - Replace the driver's MPCS unit.

NO - Intermittent failure, the system is OK at this time.

DTC B2155: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH MICU (MICU MESSAGE); DTC B2156: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH MICU (MIRRORSW MESSAGE); DTC B2161: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH MICU (DOORSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Are DTCs B2155, B2156, and/or B2161 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MPCS unit and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1056, B1157, B1159, B1255, B1955, B2156, and/or B2161 also indicated?

YES - Faulty MICU, replace the under-dash fuse/ relay box (see **REMOVAL AND INSTALLATION**).

NO - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

DTC B2157: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (ILLUMI MESSAGE); DTC B2160: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VSP/NE MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Are DTCs B2157 and/or B2160 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MPCS unit and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1011, B1060, B1061, B1205, B1206, B1207, B1359, B1906, B1956, B2157, and/or B2160 also indicated?

YES - Do the gauge control module input test (see **GAUGE CONTROL MODULE INPUT TEST**).

NO - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

DTC B2162: DRIVER'S MPCS UNIT LOST COMMUNICATION WITH RELAY CONTROL MODULE (RM MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B2162 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the driver's MPCS unit and the relay control module.

5. Check for DTCs with the HDS.

Are DTCs B1005, B1158, B1959, B2162, and/or B2970 also indicated?

YES - Do the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**).

NO - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

MICU INPUT TEST

NOTE: Before testing the MICU, troubleshoot the multiplex integrated control unit first, using **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Turn the ignition switch to LOCK (0).
2. Remove the left kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**).
3. Disconnect under-dash fuse/relay box connectors D, E, F, G, H, J, N, P, Q, W, and X.

NOTE: All connector views are wire side of female terminals.

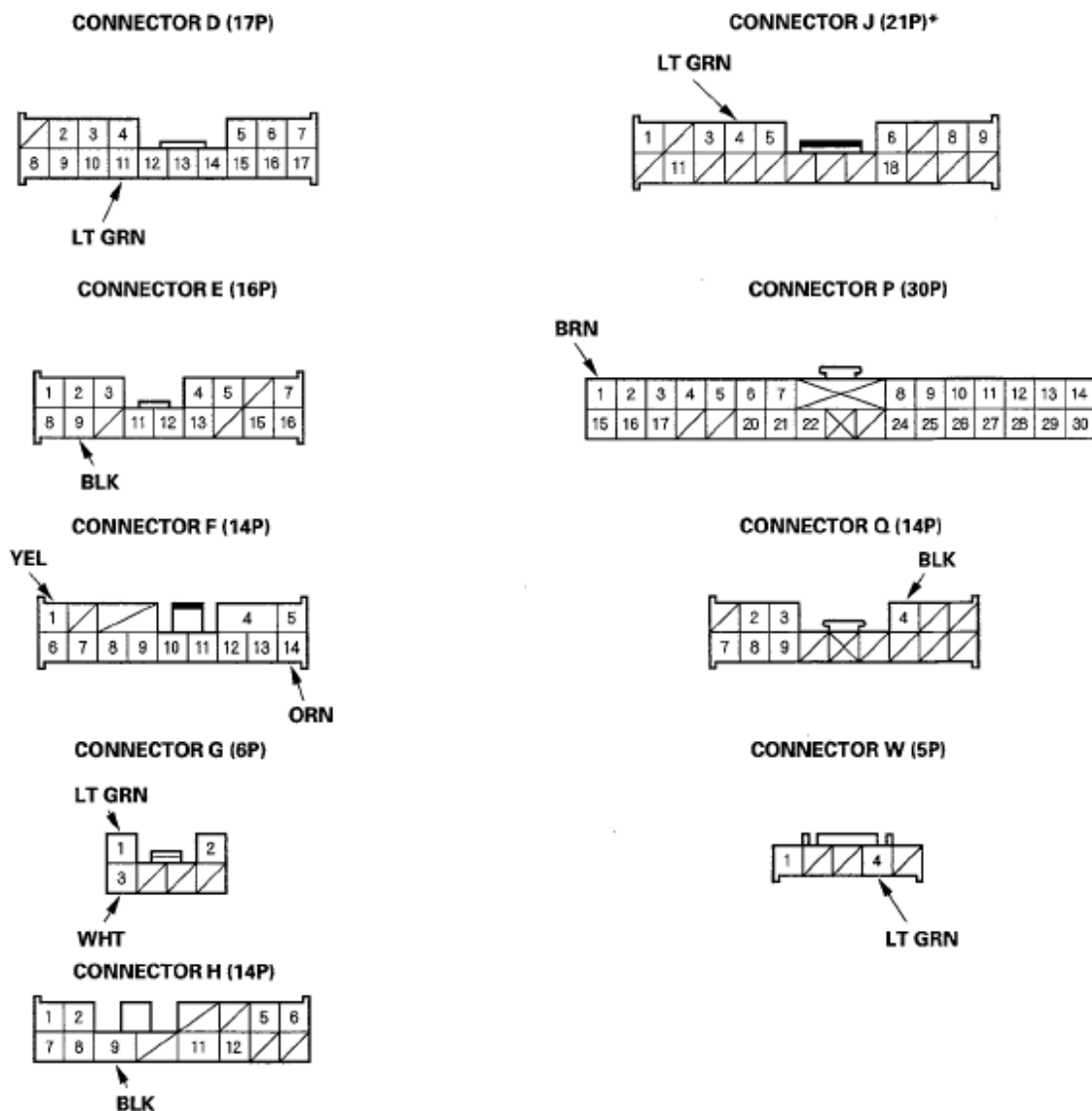
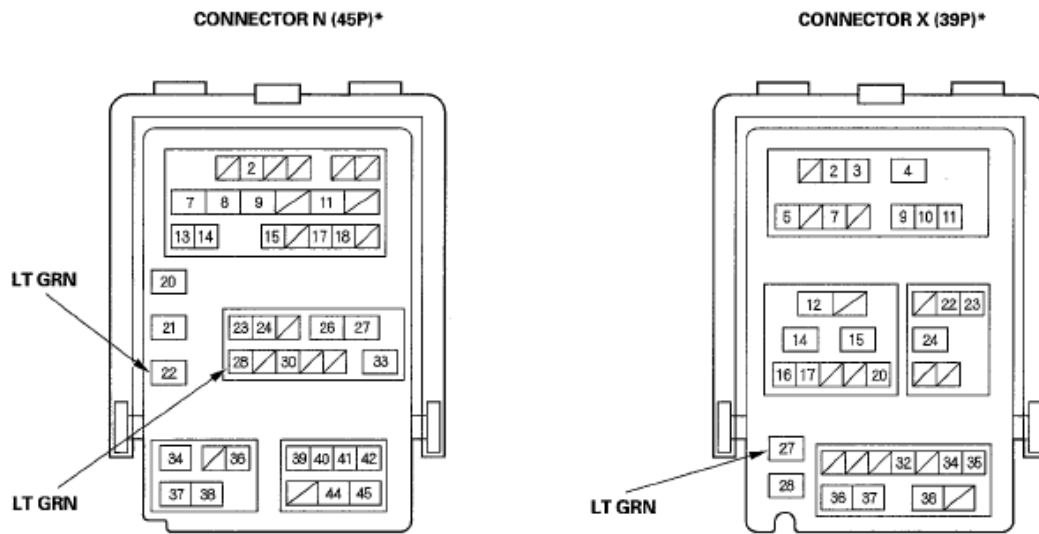


Fig. 17: Identifying Under-Dash Fuse/Relay Box Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX



*Connector view shown rotated 180 ° from actual position in the under-dash fuse/relay box.

Fig. 18: Identifying Under-Dash Fuse/Relay Box Connectors
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
D11	LT GRN	Under all conditions (Under-hood fuse/relay box connector E (14P) disconnected)	Check for continuity between the D11 terminal and the under-hood fuse/relay box connector E (14P) No. 1 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
G1	LT GRN	Under all conditions (Rear fuse/ relay box connector B (34P) disconnected)	Check for continuity between the G1 terminal and the rear fuse/relay box connector B (34P) Non terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
			Check for continuity between the J4	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

J4	LT GRN	Under all conditions (Driver's MPC unit connector A (40P) disconnected)	terminal and the driver's MPC unit connector A (40P) No. 28 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
P6	LT BLU	Under all conditions (MICU connector P (30P) disconnected)	Check for continuity between the P6 terminal and the DLC Non terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
N22	LT GRN	Under all conditions (Gauge control module connector A (12P) disconnected)	Check for continuity between the N22 terminal and the gauge control module connector A (12P) No. 5 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
N28	LT GRN	Under all conditions (Combination switch control unit 8P connector disconnected)	Check for continuity between the N28 terminal and the combination switch control unit 8P connector No. 4 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
X27	LT GRN	Under all conditions (Immobilizer-keyless control unit 7P connector disconnected)	Check for continuity between the X27 terminal and the immobilizer-keyless control unit 7P connector No. 4 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
X27	GRY	Under all conditions (Climate control unit 40P connector disconnected)	Check for continuity between the X27 terminal and the climate control unit 40P connector No. 4 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
X27	LT GRN	Under all conditions (Audio unit connector C (24P) disconnected)	Check for continuity between the X27 terminal and the audio unit connector C (24P) No. 23 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
		Under all conditions	Check for continuity between the X27 terminal and the HandsFreeLink control unit 28P connector No. 19	An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

X27	LT GRN	(HandsFreeLink control unit 28P connector disconnected)	terminal: There should be continuity.	
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the connectors, and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION**).

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E9	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G601) • An open in the wire
H9				
O4				
P1	BRN	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G502) • An open in the wire
F1	YEL	Ignition switch ON (II) (Rear fuse/relay box connector B (34P) disconnected)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • A short to ground in the wire between the MICU and rear fuse/relay box
G3	WHT	Under all conditions (Rear fuse/relay box connector B (34P) disconnected)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • A short to ground in the wire between the MICU and rear fuse/relay box
				• Blown No. 4 (40 A) fuse in the main under-hood fuse box

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

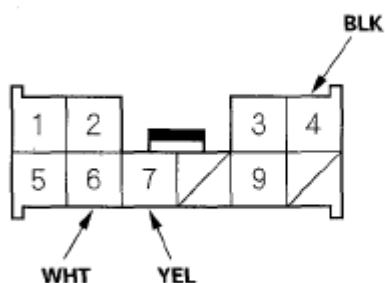
F14	ORN	Under all conditions	Short connection to ground: The ignition key light should come on.	• Blown No. 6(7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • Faulty ignition key light • An open in the wire
W4	LT GRN	Under all conditions, (Interior lights switch in DOOR position)	Short connection to ground: The interior lights should come on.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 6 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • Blown map lights or ceiling light bulb(s) • An open in the wire

RELAY CONTROL MODULE INPUT TEST

NOTE: Before testing the relay control module, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

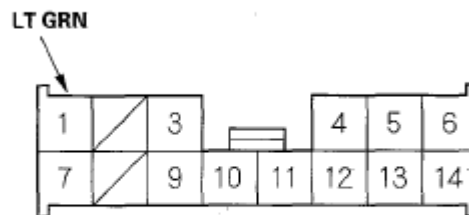
1. Turn the ignition switch to LOCK (0).
2. Remove the under-hood fuse/relay box (see REMOVAL AND INSTALLATION).
3. Disconnect under-hood fuse/relay box connectors D (10P) and E (14P).

**UNDER-HOOD FUSE/RELAY BOX
CONNECTOR D (10P)**



Wire side of female terminals

**UNDER-HOOD FUSE/RELAY BOX
CONNECTOR E (14P)**



Wire side of female terminals

Fig. 19: Identifying Under-Hood Fuse/Relay Box Connectors D (10P) And E (14P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E1	LT GRN	Under all conditions (Under-dash fuse/relay box connector D(17P) disconnected	Check for continuity between the E1 terminal and the under-dash fuse/ relay box connector D (17P) No. 11 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the connectors, and make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, replace the relay control module.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
D4	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
D6	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
D7	YEL	Ignition switch ON (ID	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire

DRIVER'S MPCS UNIT INPUT TEST

NOTE: Before testing the driver's MPCS unit, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK(O).
2. Remove the driver's door panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION).
3. Disconnect driver's MPCS unit connectors A (40P) and B (14P).

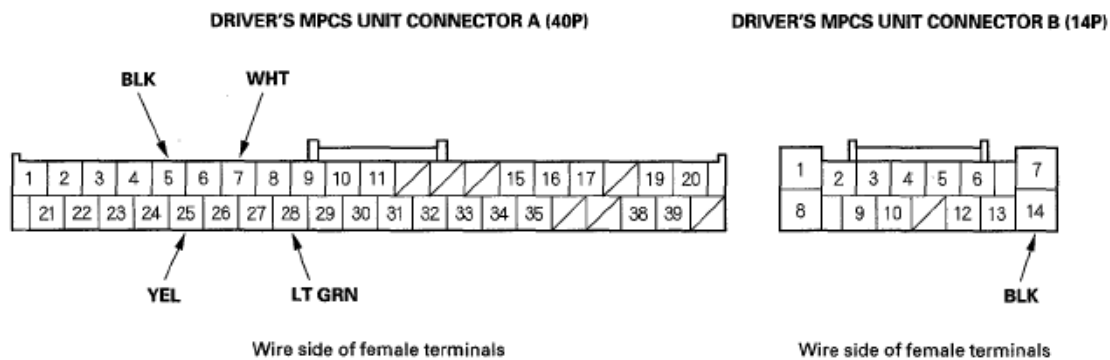


Fig. 20: Identifying Driver'S MPCS Unit Connectors A (40P) And B (14P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A28	LT GRN	Under all conditions (Under-dash fuse/relay box connector J (21P) disconnected	Check for continuity between the A28 terminal and the under-dash fuse/relay box connector J (21P) Non terminal: There should be continuity.	An open in the wire.
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the connectors, and make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

- If all the input tests prove OK, replace the driver's MPCS unit.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A5 B14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G401) • An open in the wire
A7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
A25	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire

REAR MICU INPUT TEST

NOTE: Before testing the rear MICU, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK (0).
2. Remove the left rear trim (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
3. Disconnect rear fuse/relay box connectors B (34P) and C (42P).

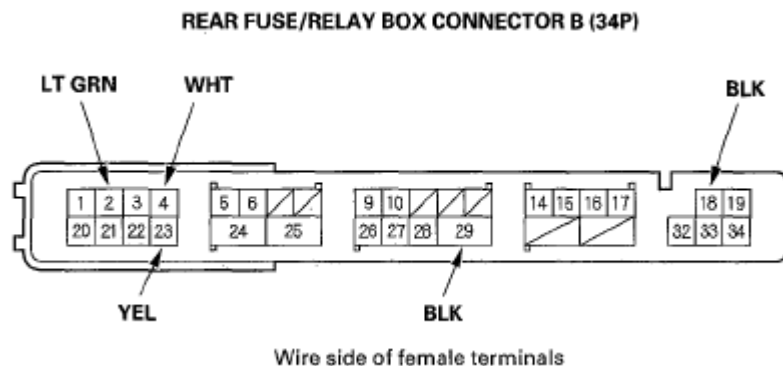


Fig. 21: Identifying Rear Fuse/Relay Box Connectors B (34P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

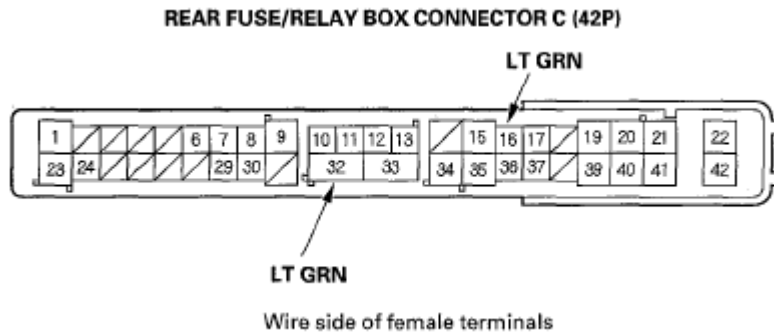


Fig. 22: Identifying Rear Fuse/Relay Box Connectors C (42P)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B2	LT GRN	Under all conditions (Under-dash fuse/relay box connector G (6P) disconnected)	Check for continuity between the B2 terminal and the under-dash fuse/ relay box connector G (6P) No. 1 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
B14	LT GRN	Under all conditions (Power seat control unit connector A (40P) disconnected)	Check for continuity between the B14 terminal and the power seat control unit connector A (40P) No. 40 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
C16 ⁽¹⁾	LT GRN	Under all conditions (Power tailgate control unit connector C (HP) disconnected)	Check for continuity between the C16 terminal and the power tailgate control unit connector C(14P) No. 7 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
			Check for continuity between the C32	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Multiplex Integrated Control System - MDX

C32 ⁽²⁾	LT GRN	Under all conditions (AcuraLink control unit (XM receiver) connector B (16P) disconnected)	terminal and the (AcuraLink control unit (XM receiver) connector B (16P) No. 5 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
(1) With power tailgate				
(2) With AcuraLink				

6. Reconnect the connectors, and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the rear MICU must be faulty, replace the rear fuse/relay box (see **REMOVAL AND INSTALLATION**).

INPUT TESTS REFERENCE

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B18	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G603, G604) • An open in the wire
B29				
B4	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • Faulty rear fuse/relay box • An open in the wire
B23	YEL	Ignition switch ON (ID	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • Faulty rear fuse/relay box • An open in the wire

2007-09 ACCESSORIES AND EQUIPMENT

Navigation System - MDX

COMPONENT LOCATION INDEX

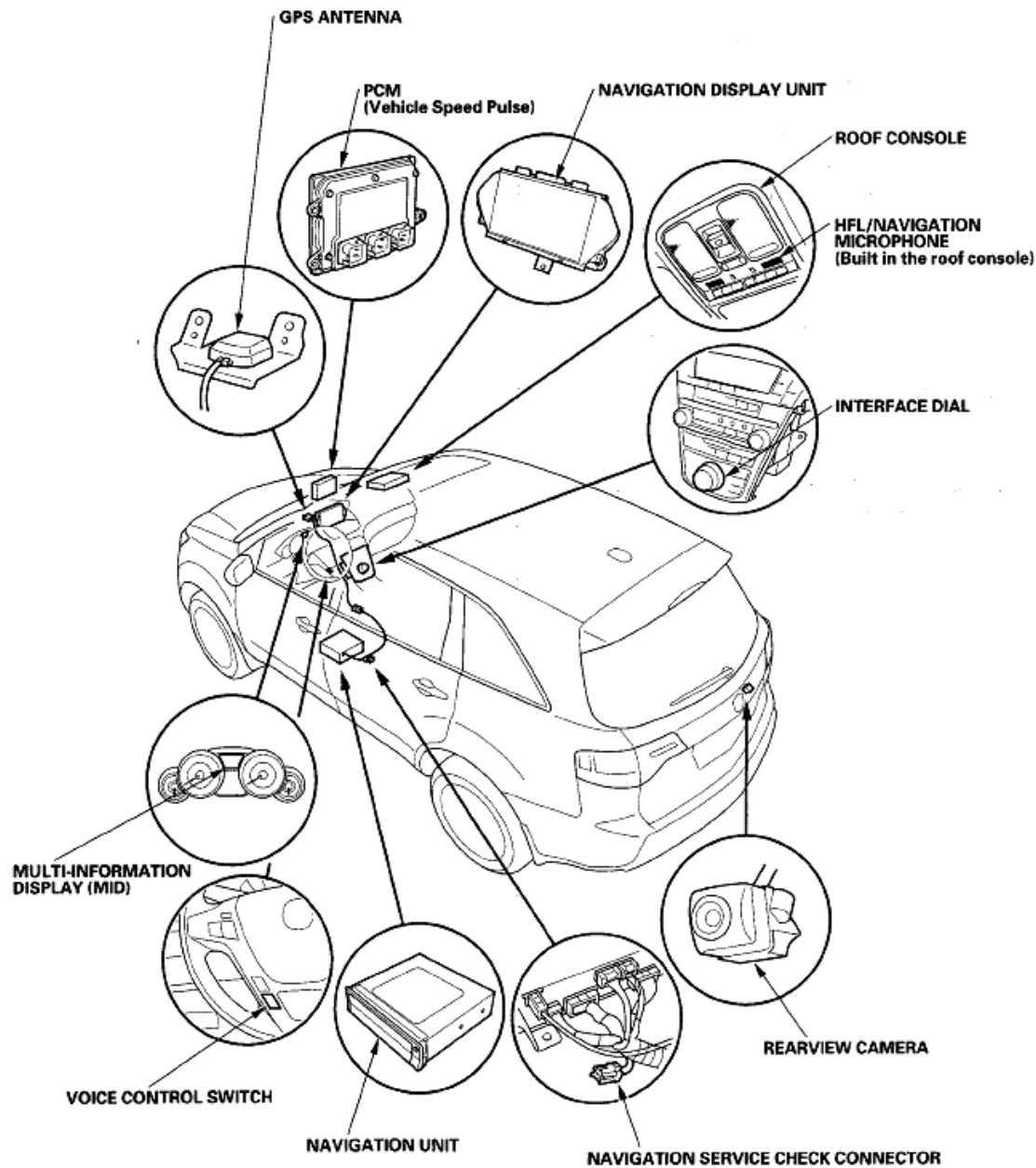


Fig. 1: Identifying Navigation System Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

GENERAL OPERATION

Refer to the Navigation System Manual for the navigation system operating procedures.

Anti-theft Feature

The navigation system and audio unit have a coded theft protection circuit. Make sure you have the anti-theft security code before:

- Disconnecting the battery.
- Disconnecting the navigation unit 8P connector.
- Removing the No. 7 (10 A) fuse from the under-dash fuse/relay box.

After service, reconnect power to the navigation unit, and turn the ignition switch to ON (II). Enter the 4-digit anti-theft security code, then select Done.

If the code cannot be found, use the interactive Network (iN) to look it up. You can view the serial number in one of the Navi ECU diagnostic screen (see **VERSION**). Alternatively, you will need the serial number from the navigation unit under the driver's seat.

When replacing the navigation unit, be sure to give the client the new anti-theft security code.

Symptom Diagnosis

Certain circumstances and system limitations will result in occasional vehicle positioning errors. Some clients may think this indicates a problem with the navigation system when, in fact, the system is normal. Keep the following items in mind when interviewing clients about symptoms of the navigation system.

Self-Inertial Navigation Limitations

The limitations of the self-inertial portion of the navigation system (the yaw rate sensor and the vehicle speed signal) can cause some discrepancies between the vehicle's actual position and the indicated vehicle's position (GPS vehicle position).

The following circumstances may cause vehicle positioning errors:

- Moving the vehicle with the engine stopped and the vehicle stopped, such as by ferry or tow truck, or if the vehicle is spun on a turn table.
- Tire slippage, changes in tire rolling diameters, and some driving situations may cause discrepancies in travel distances. Examples of this include:
 - Continuous tire slippage on a slippery surface
 - Driving with snow chains mounted
 - Abnormal tire pressure
 - Incorrect tire size
 - Frequent lane changes across a wide highway

- Continuous driving on a straight or gently curving highway
- Very bumpy roads
- Tolerances in the system and map inaccuracies sometimes limit how precisely the vehicle's position is indicated. Examples of this include:
 - Driving on roads not shown on the map (map matching is not possible)
 - Driving on a road that winds in one direction, such as a loop bridge, an interchange, or a spiral parking garage
 - Driving on a road with a series of sharp hair-pin turns
 - Driving near a gradual highway exit or transition
 - Driving on one of two close parallel roads
 - Making many 90 degree turns

Global Positioning System (GPS) Limitations

The GPS cannot detect the vehicle's position or elevation during the following instances:

- For the first 5 to 10 minutes after reconnecting the battery (This process can take as long as 45 minutes).
- When the satellite signals are blocked by tall buildings, mountains, tunnels, large trees, inside parking structures or large trucks.
- When the GPS antenna is blocked by metallic window tinting or by an object placed above it in the vehicle. The GPS antenna requires a clear unobstructed view of the sky.
- When there is no satellite signal output (Signal output is sometimes stopped for satellite servicing).
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (radio, CD players/changers, radar detectors and theft recovery systems) and cell phones placed near the navigation system.

The accuracy of GPS is reduced during these instances:

- Metallic window tinting above the GPS antenna.
- When only three or less satellite signals can be received (Four satellite signals are required for accurate positioning).
- When driving near high tension power lines.
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (radio, CD players/changers, radar detectors and theft recovery systems) and cell phones placed near the navigation system.
- When the satellite control centers are experiencing problems.

MUTING LOGIC

Whenever the navigation system is giving guidance, the front speakers are muted. When the voice control system is being used, all of the speakers are muted. If the HandsFreeLink is in use, the voice control system is unavailable.

LCD DISPLAY UNIT LIMITATIONS

NOTE: **The screen is not touch sensitive. Use the interface dial and buttons to select items on the screen.**

- In cold temperatures, the display may stay dark for the first 2 or 3 minutes until it warms up.
- When the display is too hot because of direct summer sunlight, it will remain dark until the temperature drops (You may see an error message displayed stating this fact).
- When the humidity is high and the interior temperature is low, the display may appear cloudy. The display will clear up after some use.
- Fingerprints on the screen may sometimes be noticeable because of the panel's low-reflection coating. Clean the screen with a soft, damp cloth. You may use a mild cleaner intended for eye glasses or computer screens.

Symptom Duplication

- When the symptom can be duplicated, verify that it is not a characteristic of the system. Review the navigation system manual and compare it to a known-good vehicle (with the same software and database), under the same conditions. If the symptom is not the same, as the known-good follow the self-diagnostic procedures and the appropriate troubleshooting procedures.
- When the symptom does not reappear or only reappears intermittently, ask the client about the conditions when the symptom occurred.
 - Always ask the client to demonstrate the problem.
 - Try to establish possible user error or misunderstanding of the system.
 - Try to establish if outside interference may have been the cause.
 - Try to duplication the symptom under the same conditions the client experienced.
 - Vibration, temperature extremes, and moisture (dew, humidity) are factors that are difficult to duplicate.
 - Inspect the vehicle for after-market electronic devices (vehicle locators, amps, radar detectors, etc.) that may be hidden.

NOTE: **When interchanging navigation DVD/parts during diagnosis**

When troubleshooting navigation system problems, ensure that the known-good vehicle is the same software version year and model as the vehicle being serviced. Mixing incompatible navigation DVDs or other system components can delay the troubleshooting process by causing can effects unrelated to the original problem.

Service Precautions

- If the navigation unit needs to be replaced, you can back-up the navigation data and transfer it to a new navigation unit. See **SAVE USERS MEMORY** (see).
- Before disconnecting the battery, make sure you have the anti-theft codes for the audio system and the navigation system, and write down the audio presets. Also obtain any PGM-FI or transmission DTCs and freeze frame date (which will be lost when the ECM/ PCM loses power).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- When the battery is disconnected, the internal GPS clock is reset to 0:00. The clock will reset to the correct time after the system finishes GPS initialization.
- After reconnecting the battery, you have to wait to get the initial signal from the satellite. It will take from 10 to 45 minutes.
- Before returning the vehicle to the client, enter the anti-theft codes for the audio system and navigation system.
- Adjust the setup clock settings (time zone and daylight savings) in the navigation system.

System Initialization

If for any reason, you lose power to the navigation system (like the battery was disconnected). The navigation system will require initialization. Once completed, your system will be ready to use.

This initialization requires the following:

- Entering the 4-digit anti-theft security code to unlock the system
- GPS initialization (may not be needed depending of the length of time the system was without power)
- Map matching to align the GPS to a location on the map

Entering Security Code

Any time power is disconnected from the navigation unit, the 4-digit anti-theft code must be entered on the navigation system display. This 4-digit code can be found on a small code card that was given to the client. Enter the 4-digit code, then select Done.

If the navigation system anti-theft code cannot be found, use the interactive Network (iN) to lock it up. You will need the serial number for the navigation unit to do this. You can view the serial number by entering the diagnostic mode. Select Unit Check from the main menu, then the Navi ECU diagnostic screen. This allows you to get the serial number without removing the navigation unit.

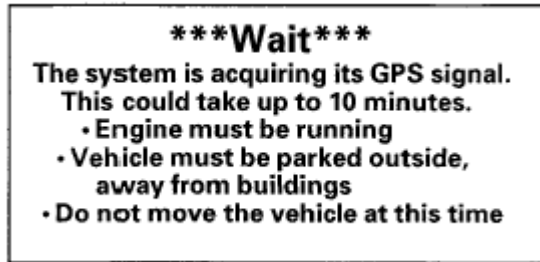
The iN may display more than one code for a given serial number. This is because serial numbers are not unique. You may have to try more than one 4-digit code. If no code is shown, or if the code(s) given do not work in the navigation unit, contact the Automobile Warranty department. If the code 0000 works, then replace the navigation unit.

When replacing the navigation unit or audio unit, be sure to give the client the new anti-theft security code.

GPS Initialization

NOTE: **You must park the vehicle outside with a clear view of the southern sky.**

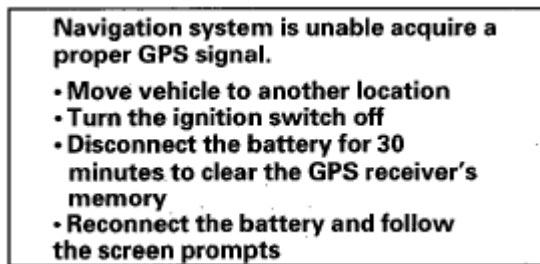
Depending on the length of time the battery was disconnected, your system may require GPS initialization. If it does, the following screen appears:

**Fig. 2: GPS Screen Display**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

If this procedure is not necessary the system proceeds directly to the Disclaimer screen. During initialization, the system searches for all available GPS satellites, and obtains their orbital information. During this procedure the vehicle should be out in the open with a clear view of the sky.

If the navigation system finds the satellites properly, this box clears, and changes to the Disclaimer screen. If within 10 minutes the system fails to locate a sufficient number of satellites to locate your position, the following screen appears.

**Fig. 3: Navigation Screen Display**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

If this screen is displayed, turn off the engine, then restart the vehicle and move it to a different location. If you now see the Disclaimer screen, the GPS initialization is complete.

NOTE:

- The average acquiring time is less than 10 minutes, but it can take as long as 45 minutes.
- If the system is still unable to acquire a signal, follow the instructions on the screen. If this screen appears again, go to troubleshooting for the GPS icon is white or not shown (see GPS icon is white or not shown).

Map Matching

This part of the initialization matches the GPS coordinates with a road on the map screen. To perform this part of the procedure, ensure that the navigation system is displaying a map, and drive the vehicle on a mapped road shown on the map screen. Do not enter a destination at this time. When the name of the current road you are driving on, appears at the bottom of the screen, the entire procedure is complete. Your system is now ready to

use.

Obtaining A Navigation DVD

If the Navigation DVD is lost or damaged, or you need a yearly updated DVD, you have 2 ways to purchase one. You can either call (888) 549-3798, or order on-line at www.acura.com.

Both methods require a credit card. The DVD for this model has a white label, and cannot be ordered through the parts system. The following DVDs will not work in this navigation system:

- Earlier model navigation DVDs (black label)
- Map software programs manufactured by other companies
- DVD movies, or DVDs containing audio recordings

Update DVDs are available for purchase usually in the fall of each year. They may contain the following:

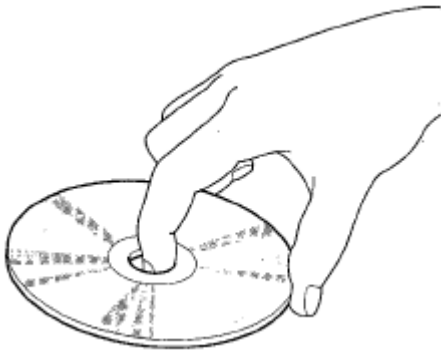
- Enhanced maps and points of interest (POI) coverage
- Fixes for minor software bugs
- Additional features

NOTE:

- **Map matching must be done any time the DVD is removed or replaced.**
- **Always order navigation DVDs on an as-needed basis. During a typical model year, each color DVD may undergo a half a dozen software only version upgrades to fix minor issues on some or all models the DVD supports. This is normal. Usually only the letter at the end of the version number changes, while the database (maps and POIs) remain unchanged.**
- **Never promise your clients future free updates. There are no free programs for updating the navigation DVD. Update DVDs are generally available for purchase each fall. The on-time DVD order site provides information when an update for a particular color DVD is available.**
- **Damaged discs are not covered by warranty unless the disc is damaged by the navigation unit.**

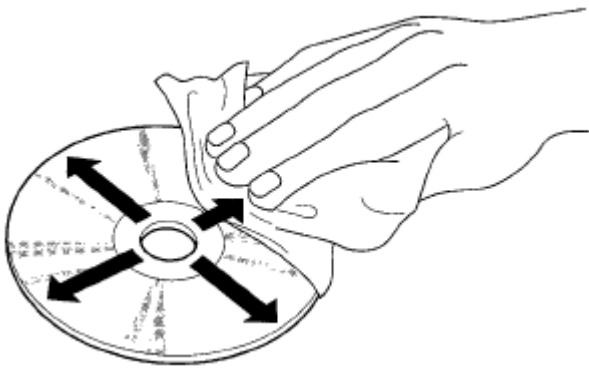
DVD Handling and Cleaning

To avoid damaging or leaving fingerprints on the DVD, always handle it by the edges and place it in a jewel case whenever it is outside the navigation unit. Deep scratches or fingerprints on the back of the DVD can cause intermittent rebooting or other system errors.

**Fig. 4: Handling DVD**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Smudges and fingerprints can be carefully removed using a mild cleaner and tissues designed to clean eyeglasses. To clean a DVD, use a clean soft cloth. Very gently wipe across the DVD from the center to the outside edge, never in a circular motion.

**Fig. 5: Cleaning DVD**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do not place stabilizer rings or labels on the DVD.

Earliest DVD Version Application for Each Model

Each navigation system DVD contains a map/POI (point of interest) database and the navigation system software for each model that it supports. Inserting an older DVD can cause problems since it lacks the software to provide the specific features needed for that model. Unfortunately, the navigation software does not detect or warn you that the version is outdated, and it may even appear to operate.

NOTE: Replacing a DVD just because the version number is higher is not always warranted. A higher software version does not necessarily mean it contains newer software for your model. The DVD contains software for all models that use the same color DVD, and a revised number may or may not have software fixes or upgrades for the model in question.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Typical warning symptoms that an outdated DVD is being used include:

- The Acura model navigation screen may display a Honda logo while booting up.
- A newly introduced model feature or current accessory may not display properly, and Extension will display instead.

NOTE: **Extension may be displayed when using Music Link, but should never be displayed when XM is selected.**

- The current street (the street being driven on) may not appear properly at the bottom of the map screen display when the vehicle is driven on a main road.

NOTE: **If necessary, compare the operation to the navigation system of the same model and year vehicle that has a current DVD.**

How to Identify Navigation DVD Versions, and How to Inspect A DVD for Damage

To determine the navigation version on a particular model, start the engine, then locate the navigation unit. Open the DVD door, and push the eject button to eject the DVD. Hold the DVD by the edges, and check for these items:

- The label color.
- Read the DVD version on the label, and note it on the repair order. The version number is near the bottom of the label text (for example, ver: 4.23A). You will need this version number:
 - To verify that the DVD version is appropriate for the vehicle.
 - Any time you call Tech Line regarding a navigation system issue.
 - To answer client inquiries concerning update or coverage issue.

NOTE: **Clients may obtain DVDs from sources outside the normal ordering process. If you determine this is the case, recommend that your client purchase the appropriate DVD from the Acura Disc Fulfillment Center.**

- Check the underside of the DVD for signs of mishandling. Deep scratches, swirl marks, or fingerprints can cause random lock-ups, reboots, and DVD read or format errors.

NOTE: **A damaged DVD is not covered under warranty unless the disc is damaged by the navigation unit. Damage by the navigation unit typically appears as circular scratches caused by something rubbing against the DVD as it spins. The damage may appear as arcs or complete circles on the DVD reading surface.**

- Verify that the underside of the DVD is silver, and not a copy with a blue color. Copies will not work properly and can cause other symptoms that mimic hardware problems.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- Incorrectly colored DVDs being put into navigation vehicles. This causes the system to either display error messages, or it causes system malfunctions that mimic a hardware problem. This result in the client driving away with a malfunctioning navigation system.
- The DVD version provided to the client is out-of date or incompatible with a particular model. This inconveniences your client by delaying the repair, or by causing additional (and unnecessary) returns to your dealership.
- The client experiences bugs or other issues that have already been resolved in later versions currently available at the fulfillment desk.

If the DVD is defective, or has any of the issues mentioned above, return the vehicle to your client and recommend that they order the proper DVD from the Acura Disc Fulfillment Center.

NOTE: **If it is determined that the navigation unit is defective (through the appropriate service manual troubleshooting procedures) and the DVD will not eject, order a replacement navigation unit, and also order a DVD from the Acura Disc Fulfillment Center.**

How to Answer Client Questions About Navigation Coverage

Some clients may ask questions regarding a city, address or POI (point of interest) covered by the navigation system. It is better to verify a coverage question on an actual vehicle than to disappoint your client by promising coverage that may be incomplete or missing in their area. The following suggestions can be used to answer coverage inquiries from your client.

Is my address covered by the navigation system?

Using a current production vehicle (of the same model), try entering the client's address (street first) to see if their area is covered. Always enter the street first, because sometimes their city may be included in a neighboring township, or under some larger metropolitan city name. If the address is shown in a later year vehicle, but not your client's vehicle, you might want to recommend that your client purchase an update.

Is my city covered by the navigation system?

For general questions about whether a city is covered, view the map coverage link on the DVD order site. On the site, you enter a year and model, and then click on the Coverage link. You then select a state or province, and the cities are listed. Of course, this does not guarantee that the client's road or address is in the system. Verifying on an actual production vehicle is always the best guarantee that your information is accurate.

The gas station on my corner is now a restaurant. Why is it still incorrect in the navigation system?

For POI-related client questions, explain that businesses are constantly moving, and there can be a considerable lag in updating the millions of POIs in the system. The database is updated annually, and the best way to the verify whether the POI is accurate is verify the inquiry on a current production vehicle.

Answers to these and other questions regarding coverage can be found in these locations:

- In the Frequently Asked Questions section of the navigation system manual.
- At the on-line DVD order site, by clicking on the **FAQs** link.

How do I find the local address of a business that is part of a national chain (for example, Starbucks)?

There are three ways to find the local address to businesses:

- If you know the phone number of the business, select Phone Number and enter the 10 digit phone number (area code plus seven digit number).
- Select Category, then Restaurant. Enter the keyword Star. The resulting list includes all restaurants that have the letters Star anywhere in the name.
- Select Name and enter Starbucks. For more common business names, like McDonalds, you may have to search through a list that includes other businesses like McDonalds welding. McDonalds Automotive, etc.

Precaution on Client Sneak Previews

Your client might request a look (or sneak preview) at features in the latest navigation software; You should never preview a navigation DVD in a client's vehicle. Inserting a new DVD installs the latest software from the DVD into the memory of the client's navigation system. When the original DVD is reinstalled, the newer software remains in memory and is often incompatible with the client's original DVD Map and POI database.

If your client wishes to see the latest navigation coverage or software features, demonstrate it on an in-stock vehicle that already has the latest DVD version.

If, by chance, a newer version is located accidentally, either by the dealer or the client, the only remedy is to enter the navigation diagnostic mode's Version screen and do a forced download. Refer to the iN for applicable patches that may need reinstalling.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
Navigation system stays on the GPS initialization screen	System Initialization (see <u>SYSTEM INITIALIZATION</u>)	• Navigation unit • GPS antenna/cable is disconnected or damaged • The wrong color DVD is installed • The DVD is damaged or dirty • Harness/fuses/switches
Vehicle position icon constantly leaves road, moves erratically, or is very far from actual	Symptom Troubleshooting (see <u>VEHICLE POSITION ICON CONSTANTLY LEAVES ROAD, MOVES ERRATICALLY, OR IS VERY FAR FROM ACTUAL</u>)	• Navigation unit • GPS antenna/cable • PCM (speed and fuel pulses)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

position	<u>POSITION)</u>	• Harness/fuses/switches
System always comes up in in-line diagnostic mode	See factory Diagnostic screen In-Line Diag (see <u>FACTORY DIAGNOSTIC SCREEN "IN LINE DIAG")</u>	
Navigation system will not accept security code	Symptom Troubleshooting (see <u>NAVIGATION SYSTEM WILL NOT ACCEPT SECURITY CODE)</u>	Wrong color DVD
Navigation frequently asks for anti-theft code and needs GPS initialization	Symptom Troubleshooting (see <u>NAVIGATION FREQUENTLY ASKS FOR ANTI-THEFT CODE AND NEEDS GPS INITIALIZATION)</u>	• Loss of voltage or poor ground (G 605) • Navigation unit • Low battery voltage • Harness/fuses/switches
GPS icon is white or not shown	Symptom Troubleshooting (see <u>GPS icon is white or not shown)</u>	• Navigation unit • Aftermarket accessories connected to the system • The wrong color DVD is installed • The DVD is damaged or dirty • GPS antenna/cable • Harness/fuses/switches
Vehicle icon wanders across the map when driving (does not follow a displayed road) or map or vehicle ICON spins	Symptom Troubleshooting (see <u>VEHICLE ICON WANDERS ACROSS THE MAP WHEN DRIVING (DOES NOT FOLLOW A DISPLAYED ROAD) OR MAP VEHICLE ICON SPINS)</u>	• Navigation unit • GPS antenna/cable • PCM (speed signal)
No picture is displayed	Symptom Troubleshooting (see <u>NO PICTURE IS DISPLAYED)</u>	• Navigation unit • Display unit • The wrong color DVD is installed • The DVD is damaged or dirty • Harness/fuses/switches
Picture has lines or rolls	Symptom Troubleshooting (see <u>PICTURE HAS LINES OR ROLLS)</u>	• Navigation unit • Aftermarket accessories connected to the system • Display unit • Harness/fuses/switches
		• Navigation unit • The wrong color DVD is installed

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Picture is missing a color or tone or is an odd color	Symptom Troubleshooting (see <u>PICTURE IS MISSING A COLOR OR TONE OR IS AN ODD COLOR</u>)	• The DVD is damaged or dirty • Display unit • Aftermarket accessories connected to the system • Harness/fuses/switches
Traffic information is not being shown on map screen	Symptom Troubleshooting (see <u>TRAFFIC INFORMATION IS NOT BEING SHOWN ON MAP SCREEN</u>)	• Client account status • Area outage • Area not covered • Traffic icons are turned OFF • AcuraLink (XM receiver) • Navigation unit • Low or weak battery • Harness/fuses/switches
Display day/night mode does not work	Symptom Troubleshooting (see <u>DISPLAY DAY/NIGHT MODE DOES NOT WORK</u>)	• Display brightness set to High in day or night mode • Display unit • Gauge control module (CAN) • The wrong color DVD is installed • The DVD is damaged or dirty • Harness/fuses/switches
System locks up or freezes constantly	Symptom Troubleshooting (see <u>SYSTEM LOCKS UP OR FREEZES CONSTANTLY</u>)	• Navigation unit • The wrong color DVD is installed • The DVD is damaged or dirty • Harness/fuses/switches
Voice guidance cannot be heard, is broken up, or there is static	Symptom Troubleshooting (see <u>GPS icon is white or not shown</u>)	• Volume or voice feedback setting (See Owner's manual) • Navigation unit • Audio unit/amplifier • Harness/fuses/switches
Voice control does not work/respond	Symptom Troubleshooting (see <u>VOICE CONTROL DOES NOT WORK/RESPOND</u>)	• Navigation unit • The wrong color DVD is installed • The DVD is damaged or dirty • Microphone harness/switches • HandsFreeLink control unit
		• Wrong color DVD installed

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Navigation cannot control HVAC by voice command	Symptom Troubleshooting (see <u>NAVIGATION CANNOT CONTROL HVAC BY VOICE COMMAND</u>)	• Harness/fuses/switches • Wrong navigation unit (model code)
Navigation cannot control XM radio	Symptom Troubleshooting (see <u>NAVIGATION CANNOT CONTROL XM RADIO</u>)	Low or weak battery
Navigation cannot control audio/disc/ rear entertainment	Symptom Troubleshooting (see <u>NAVIGATION CANNOT CONTROL AUDIO/DISC/REAR ENTERTAINMENT</u>)	Wrong color DVD
Interface dial buttons do not work	Symptom Troubleshooting (see <u>INTERFACE DIAL BUTTONS DO NOT WORK</u>)	• Navigation unit • Display unit • Interface dial • The wrong color DVD is installed • The DVD is damaged or dirty • Harness/fuses/switches
Today's Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The client has not entered a group of locations for Today's Destinations. This is normal. The button is only selectable if the client is using this function.	See Owner's manual
Some set-up and information functions of the navigation system are grayed-out and do not work	Client did not select OK from Disclaimer screen. Refer to <u>SYSTEM FUNCTION DIAGRAM</u> .	
Previous Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The vehicle may be new, or the client deleted the destination. Enter a destination, and allow the system to route to it. After the trip, the Previous Destinations button will be selectable.	
Address cannot be found or system gives poor routing	• Verify proper operation and system limitations using the owner's manual • See Answering client question Navigation coverage in general troubleshooting	• Database limitations (address not in database) • Wrong color DVD installed
Rearview camera image does not come on or work properly	Symptom Troubleshooting (see <u>REARVIEW CAMERA IMAGE DOES NOT COME ON OR WORK PROPERLY</u>)	• Software for the latest up-dates • Scratched or damaged DVD • No backup signal • Wrong disc installed in

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

		navigation unit • Harness
The map will not display the Southern portion of the U.S. or the Northern parts of Canada	North American coverage is different for USA/Canada markets. See the Version Diagnostic Screen (see <u>VERSION</u>) for details on coverage differences.	• See Owner's manual • The wrong colored DVD or version is installed
Navigation display stays on with ignition switch OFF	Symptom Troubleshooting (see <u>NAVIGATION DISPLAY STAYS ON WITH IGNITION SWITCH OFF</u>)	• Harness/fuses/switches • Aftermarket accessories connected to the system
DVD screen error messages	Symptom Troubleshooting (see <u>DVD screen error messages</u>)	• Navigation unit • Wrong color DVD installed • Display unit • Damaged DVD
Navigation system will not go beyond the disclaimer screen and displays the OK button		• Wrong color DVD installed • Scratched or damaged DVD • Navigation unit
The navigation anti-theft code card is lost or missing	See anti-theft feature (see <u>ANTI-THEFT FEATURE</u>)	
The vehicle icon lags behind when the vehicle turns	See self-inertial navigation limitations (see <u>SELF-INERTIAL NAVIGATION LIMITATIONS</u>)	• Aftermarket accessories connected to the system • GPS antenna/cable
Navigation screen is darker than normal or takes time to start up when it is cold	See LCD unit limitations (see <u>LCD DISPLAY UNIT LIMITATIONS</u>)	
The navigation clock is off by 1 to 3 hours after replacing the navigation unit	See service precautions (see <u>SERVICE PRECAUTIONS</u>)	• Perform map matching (see <u>MAP MATCHING</u>) • GPS antenna/cable • Check and adjust the clock settings
A new navigation DVD is needed	See obtaining a navigation DVD (see <u>OBTAINING A NAVIGATION DVD</u>)	
Time is not correct	Reset Time Adjustment in set-up	The wrong colored DVD or version is installed
The DVD is scratched or dirty	See DVD Handling and Cleaning (see <u>DVD HANDLING AND CLEANING</u>)	Navigation unit
The wrong DVD was installed and now the	See Precaution client Sneak Previews (see <u>PRECAUTION ON CLIENT SNEAK</u>)	• Install the correct version DVD • Check any official Honda

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

system does not function properly	<u>PREVIEWS)</u>	service Web site for more service information about the navigation system.
A POI cannot be found	See How to answer client questions about navigation coverage (see <u>HOW TO ANSWER CLIENT QUESTIONS ABOUT NAVIGATION COVERAGE)</u>)	The DVD is scratched or dirty
A specific city cannot be found	See How to answer client questions about navigation coverage (see <u>HOW TO ANSWER CLIENT QUESTIONS ABOUT NAVIGATION COVERAGE)</u>)	The DVD is scratched or dirty
An In Line Diagnosis screen appears every time vehicle is started	See factory diagnostic screen In Line Diag (see <u>FACTORY DIAGNOSTIC SCREEN "IN LINE DIAG")</u>)	
The Honda Globe Screen appears every time the vehicle is started	Symptom troubleshooting (see <u>THE HONDA GLOBE SCREEN APPEARS EVERY TIME THE VEHICLE IS STARTED)</u>)	Also see the symptom "The wrong DVD was installed and now the system does not function properly"
Navigation unit will not eject or accept the navigation DVD	Symptom troubleshooting (see <u>NAVIGATION UNIT WILL NOT EJECT OR ACCEPT THE NAVIGATION DVD)</u>)	

SYSTEM DESCRIPTION

OVERVIEW

The navigation system is a highly-sophisticated, hybrid locating system that uses satellites and a map database to show you where you are and to help guide you to a desired destination.

The navigation system receives signals from the global positioning system (GPS), a network of 24 satellites in orbit around the earth. By receiving signals from several of these satellites, the navigation system can determine the latitude, longitude, and elevation of the vehicle. In addition, signals from the system's yaw rate sensor and the PCM (vehicle speed pulse) enable the system to keep track of the vehicle's direction and speed of travel.

This hybrid system has advantages over a system that is either entirely self-contained or one that relies totally on the GPS. For example, the self-contained portion of the system can keep track of vehicle position even when satellite signals cannot be received. When the navigation system is on, the GPS can keep track of the vehicle position even when the vehicle is transported by ferry.

The navigation system applies all location, direction, and speed information to maps and calculates a route to the destination entered. As you drive to that destination, the system provides both visual and audio guidance.

This navigation system also has voice recognition that allows voice control of most of the navigation functions.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

The Navigation TALK and BACK buttons on the steering wheel activate the voice control. The voice control also allows control of the audio and climate functions.

The illumination signal (headlights ON) is used by the navigation unit to automatically switch the display between Night and Day brightness modes. When the instrument panel brightness control is set to full brightness (hold both "+" and "-" key at the same time), the navigation system stays in the day mode, even with the headlights on.

The GA-NET II communication bus passes information back and forth between the display panel control unit, the navigation unit and the RES/audio system. The information passed on this bus is audio climate control settings directed by the navigation unit.

The Comm. Bus connects the HFL, XM (HIP) (AcuraLink), and navigation units. This bus supports these functions:

- The navigation control unit receives traffic and AcuraLink message information from the AcuraLink Control unit.
- The navigation control unit sends a POI phone number (on the Calculate route to screen) to the HandsFreeLink control unit for dialing.
- If vehicle problems are detected, and the client's cellular contract includes data service, then the AcuraLink control unit can send vehicle data to the HFL unit for transmitting back to the AcuraLink servers.
- The AcuraLink server can pass additional problem details back through the AcuraLink Control unit, to the navigation unit for display.

System Diagram

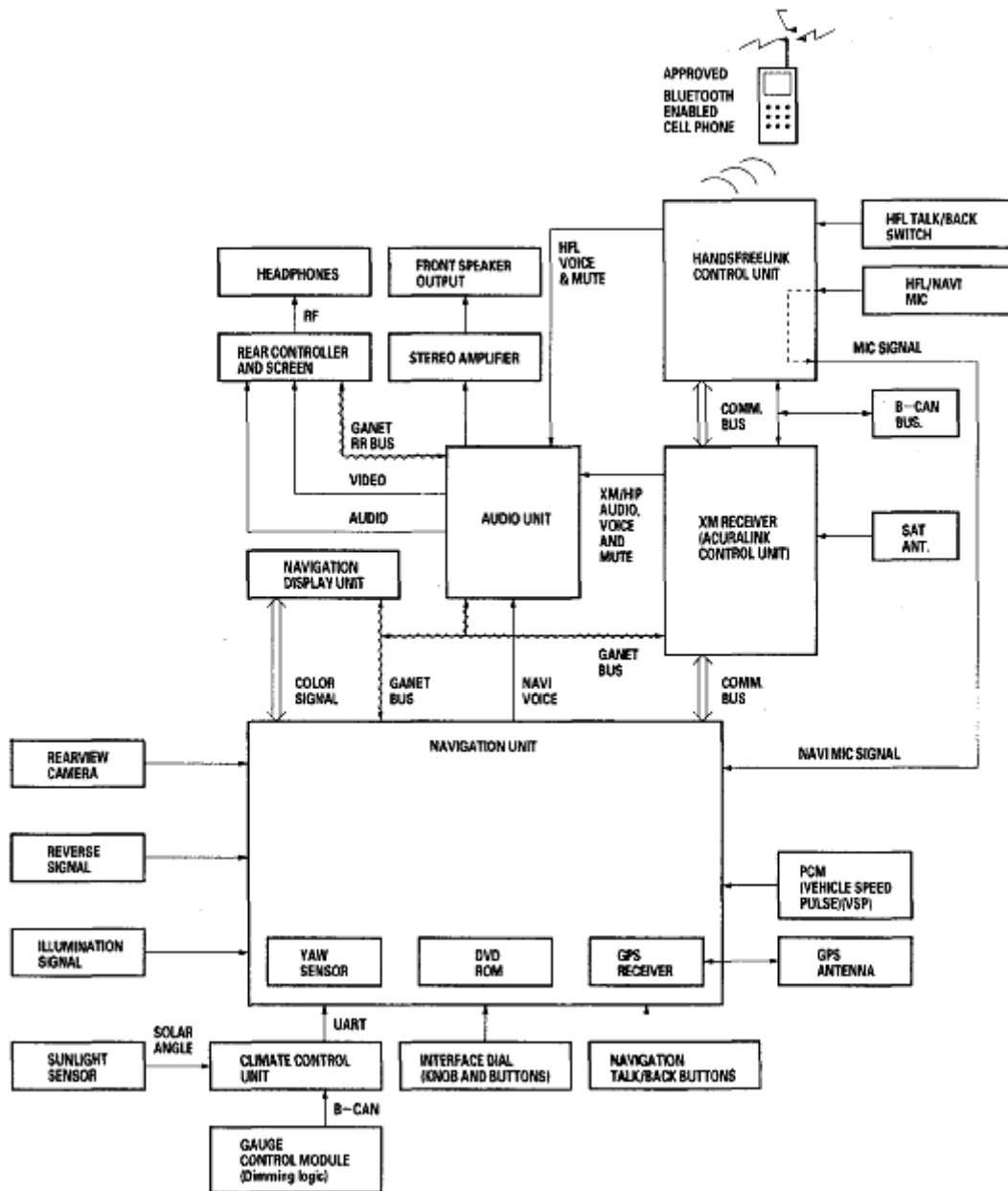


Fig. 6: Navigation System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION FUNCTION

The navigation system is composed of the navigation unit, the PCM (vehicle speed signal), the GPS antenna, the microphone, the voice control switch, the audio unit, the display unit, and the interface dial.

Function Diagram

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

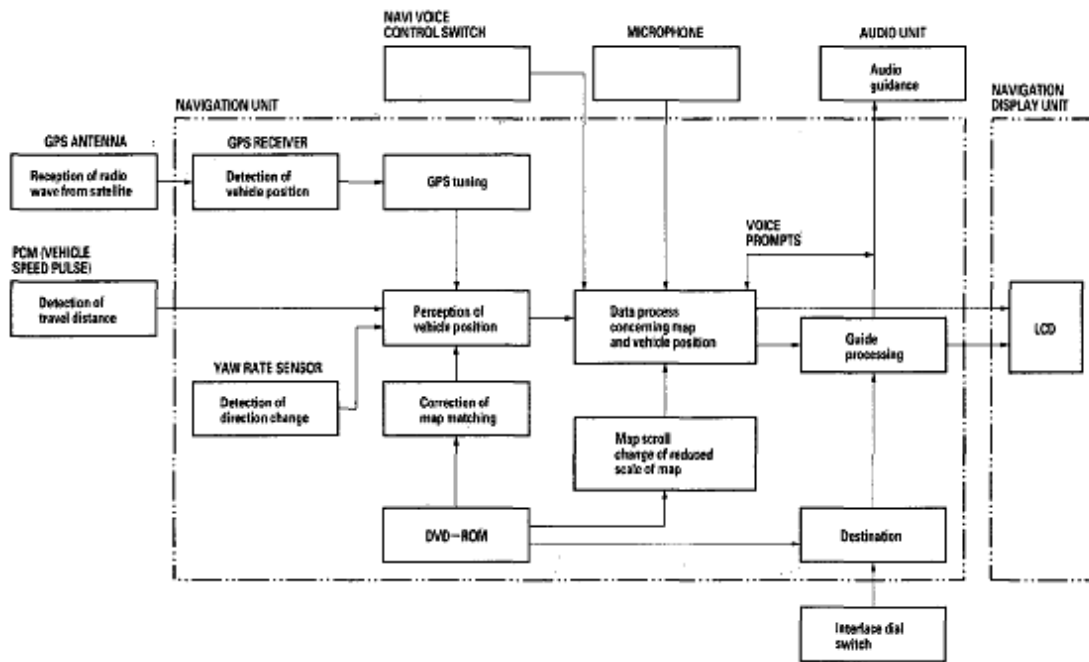


Fig. 7: Navigation System Function Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GA-Net Bus Configuration

The GA-Net bus passes audio and navigation commands throughout the navigation and RES/audio components. These commands include navigation audio/XM selections by voice, and XM station and music title names. Because the entire bus is interconnected between components, an open or short in the GA-Net bus harness may cause any or all of these functions to become inoperative.

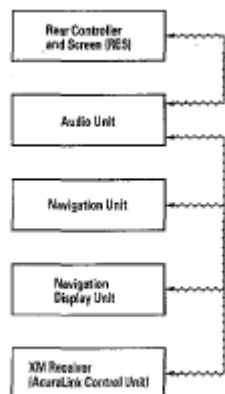


Fig. 8: GA-Net Bus Configuration Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Vehicle Speed Pulse

The vehicle speed pulse is sent by the PCM. The PCM receives a signal from the countershaft speed sensor,

then processes the signal and transmits it to the speedometer and other systems.

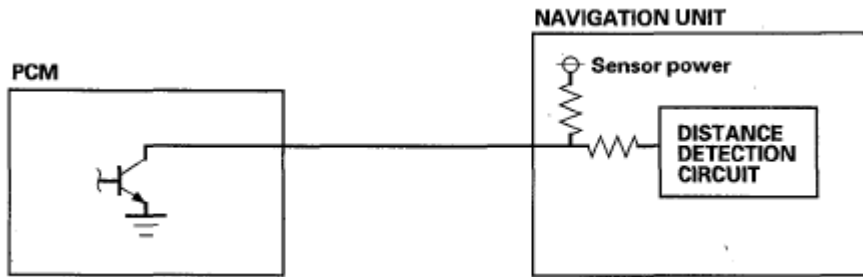


Fig. 9: Communication Diagram Between PCM And Navigation Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Charge Signal and Navigation Unit Cooling Fan Operation

The ECM/PCM sends a charge signal to the navigation unit via F-CAN. A thermister inside the navigation unit monitors the units internal temperature. This information combined with charge signal determines the control units internal cooling fan operation.

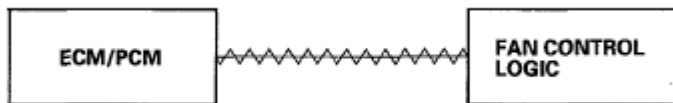


Fig. 10: Charge Signal And Navigation Unit Cooling Fan Operation
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Yaw Rate-Lateral Acceleration Sensor

The yaw rate-lateral acceleration sensor (located in the navigation unit) detects the direction change (angular speed) of the vehicle. The sensor is an oscillation gyro built into the navigation unit.

Sensor Element Structure

The sensor element is shaped like a tuning fork, and it consists of the piezoelectric parts, the metal block, and the support pin. There are four piezoelectric parts: one to drive the oscillators, one to monitor and maintain the oscillation at a regular frequency, and two to detect angular velocity. The two oscillators, which have a 90-degree twist in the center, are connected at the bottom by the metal block and supported by the support pin. A detection piezoelectric part is attached to the top of each oscillator. The driving piezoelectric part is attached to the bottom of one oscillator, and the monitoring piezoelectric part is attached to the bottom of the other oscillator.

Oscillation Gyro Principles

The piezoelectric parts have electric/mechanical transfer characteristics. They bend vertically when voltage is applied to both sides of the parts, and voltage is generated between both sides of the piezoelectric parts when they are bent by an external force. The oscillation gyro functions by utilizing this characteristic of the piezoelectric parts and Coriolis force. (Coriolis force deflects moving objects as a result of the earth's rotation.)

In the oscillation gyro, this force moves the sensor element when angular velocity is applied.

Operation

1. The driving piezoelectric part oscillates the oscillator by repeatedly bending and returning when an AC voltage of 6 kHz is applied to the part. The monitoring-side oscillator resonates because it is connected to the driving-side oscillator by the metal block.
2. The monitoring piezoelectric part bends in proportion to the oscillation and outputs voltage (the monitor signal). The navigation unit control circuit controls the drive signal to stabilize the monitor signal.
3. When the vehicle is stopped, the detecting piezoelectric parts oscillate right and left with the oscillators, but no signal is output because the parts are not bent (no angular force).
4. When the vehicle turns to the right, the sensor element moves in a circular motion with the right oscillator bending forward and the left oscillator bending rearward. The amount of forward/rearward bend varies according to the angular velocity of the vehicle.
5. The detecting piezoelectric parts output voltage (the yaw rate signal) according to the amount of bend. The amount of vehicle direction change is determined by measuring this voltage.

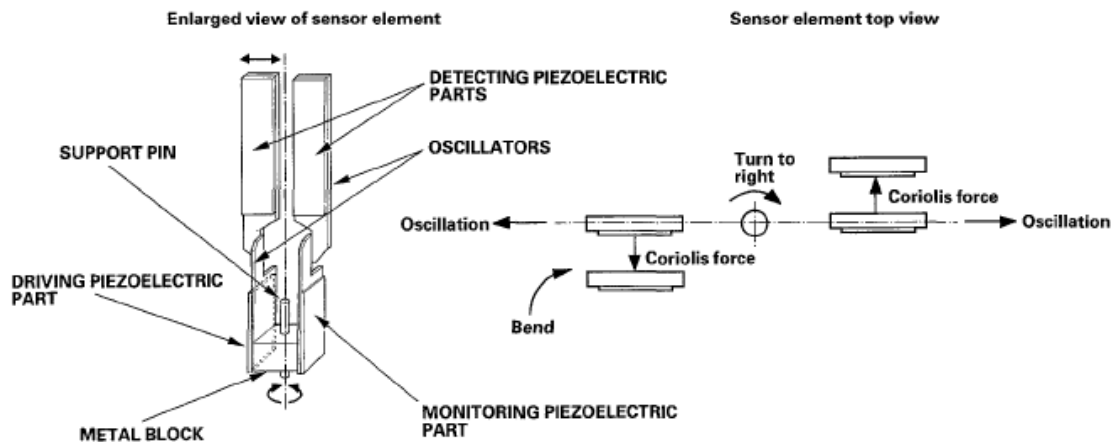


Fig. 11: Top View Of Sensor Element
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Global Positioning System (GPS)

The global positioning system (GPS) enables the navigation system to determine the current position of the vehicle by using the signals transmitted from the satellites in orbit around the earth. The satellites transmit the satellite identification signal, orbit information, transmission time signal, and other information. When the GPS receiver receives a signal from four or more satellites simultaneously, it calculates the current position of the vehicle based on the distance to each satellite and the satellite's position in its respective orbit.

Position detection Image with GPS satellite

Position detection Image with GPS satellite

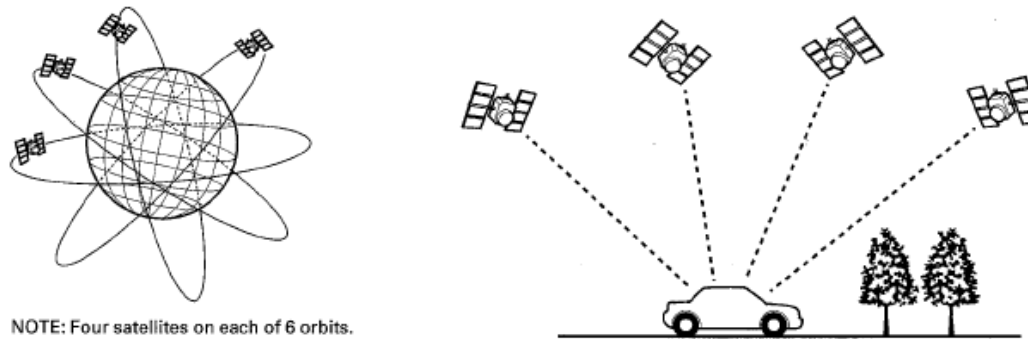


Fig. 12: Position Detection Image With GPS Satellite
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Four satellites on each of 6 orbits.

Precision of GPS

The precision of the GPS varies according to the number of satellites from which signals are received and the view of the sky. The precision is indicated by the color of the GPS icon shown on the display.

GPS PRECISION CHART

GPS ICON COLOR	NUMBER OF SATELLITES	CONDITION	DESCRIPTION
White GPS icon	None	Faulty	The GPS can't be utilized due to a faulty GPS receiver, open in the wire, or other fault or interference.
	2 or less	Impossible to detect vehicle position	GPS function is normal. The satellite signals received by the GPS are too few to detect the vehicle position.
Green GPS icon	3	Vehicle position detectable in 2 dimensions	The longitude and latitude of the vehicle position can be detected. (Less precise than detection in three dimensions)
	4 or more	Vehicle position detectable in 3 dimensions (elevation displayed)	The longitude, latitude and the altitude of the vehicle position can be detected. (More precise than detection in two dimensions)

GPS Antenna

The GPS antenna amplifies and transmits the signals received from the satellites to the GPS receiver.

GPS Receiver and Clock

The GPS receiver is built into the navigation unit. It calculates the vehicle position by receiving the signal from the GPS antenna. The current time, vehicle position and signal reception condition is transmitted from the GPS receiver to the navigation control unit to adjust vehicle position.

Navigation Unit

The navigation unit calculates the vehicle position and guides you to the destination. The unit performs map matching correction, GPS correction, and distance tuning. It also controls the menu functions and the DVD-ROM drive, and interprets voice commands. With control of all these items, the navigation unit makes the navigation picture signal, then it transmits the signal to the display panel control unit and audio driving instructions to the audio unit.

Calculation of Vehicle Position

The navigation unit calculates the vehicle position (the driving direction and the current position) by receiving the directional change signals from the yaw rate sensor and the travel distance signals from vehicle speed pulse (VSP) signal of the PCM.

Map Matching Tuning

The map matching occurs when you drive the vehicle along a mapped road until the road name appears of the bottom of the screen. The map data transmitted from the DVD-ROM is checked against the vehicle position data, and the vehicle position is indicated on the nearest road. Map matching tuning does not occur when the vehicle travels on a road not shown on the map, or when the vehicle position is far away from a road on the map.

GPS Tuning

The GPS tuning is accomplished by indicating the vehicle position as the GPS's vehicle position. The navigation unit compares its calculated vehicle position data with the GPS vehicle position data. If there is large difference between the two, the indicated vehicle position is adjusted to the GPS vehicle position.

Distance Tuning

The distance tuning reduces the difference between the travel distance signal from the VSP and the distance data on the map. The navigation unit compares its calculated vehicle position data with the GPS vehicle position data. The navigation unit then decreases the tuning value when the vehicle position is always ahead of the GPS vehicle position, and it increases the tuning value when the vehicle position is always behind the GPS vehicle position.

Route Guidance

The navigation unit can calculate different routes to a selected destination. You have five options:

- Direct Route-Calculate a route that is the most direct.
- Easy Route-Calculate a route that minimizes the number of turns needed.
- Minimize Freeways-Calculate a route that avoids freeway travel. If that is not possible, keep the amount of freeway travel to a minimum.
- Minimize Toll Roads-Calculate a route that avoids or minimizes travel on toll roads.
- Maximize Freeways-Calculate a route that uses freeways as much as possible.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Audio Guidance

The navigation unit transmits audio driving instructions before entering an intersection or passing a junction. The audio instructions come through the audio unit to the center speaker.

NOTE: **The front speakers are muted whenever the navigation system is giving guidance commands, and all of the speakers are muted when the voice control system is being used.**

Solar Angle

The climate control unit uses the sun's angle, along with the sunlight sensor, to control the driver/passenger A/C air flow.

Off Road Tracking (bread-crumbs)

Off road tracking dots that can be followed on the map to retrace your route back to a mapped (digitized) road.

Clock and Time Zone

The clock set up allows you to set daylight savings time, auto time zone and time adjustment.

Muting Signal Logic

The audio muting logic is orchestrated by the audio unit. The audio unit determines what audio source has priority to use the speakers.

The priority of the audio sources is as follows:

HandsFreeLink has the highest priority, followed by, AcuraLink, navigation, and finally the radio/CD-DVD player. The priority is passed by HandsFreeLink and AcuraLink to the audio unit by dedicated mute wires. The navigation mute signal is passed to the stereo amplifier.

The navigation unit temporarily disables the voice control buttons, but allows guidance to be heard. In addition, the audio unit suppresses the output from the audio unit, XM receiver, disc player, or other audio accessories.

When the navigation system sends out a voice route guidance command, the door speakers are muted, and the navigation voice is heard in the center speaker.

When the navigation voice control system is in use, all of the speakers are muted, and the navigation voice prompts are heard from the center speaker.

DVD-ROM

The DVD includes:

- Map Database

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- Point of interest (POI) Database
- Navigation software

Audio Unit

The audio unit receives the voice guidance instructions from the navigation unit, and transmits the instructions through the center speaker even when the audio system is in use.

NOTE: If the navigation volume and/or voice feedback is turned OFF, this feature is disabled.

Display Unit

The display unit uses a liquid crystal display (LCD). The LCD is a 8-inch-diagonal, thin film transistor (TFT), strip type with 336,960 picture elements. The color film and fluorescent light are laid out on the back of the liquid crystal film.

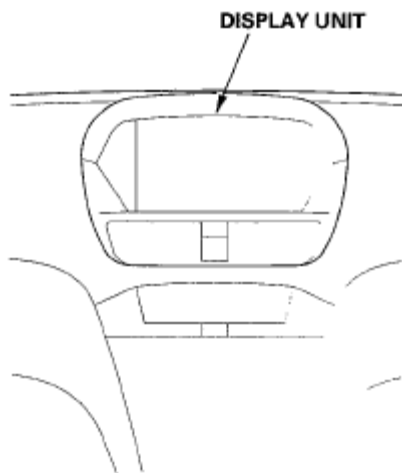


Fig. 13: Identifying Display Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

System Set-up

SYSTEM SET-UP CHART

Illumination control	Priority	Operation	Override conditions
Display mode button	1	Allows selection of Day, Night or Off display mode. This button has the highest priority and overrides all other display control adjustments listed below.	When the car is restarted, the display mode previously selected by this button is canceled, and the display mode is determined by one of the controls below.
Sunlight Sensor (Middle of dash near		If the sunlight sensor detects daylight and the headlights are turned on, the navi automatically overrides (cancels)	If desired, use the Display mode

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

the windshield).(See Owner's manual for location)	2	the Night display and displays the Day display mode. Once the vehicle begins to move, after the word mode.	button to override this automatic choice.
Dash illumination adjustment knob (See Owner's manual for location)	3	When headlight are turned on, and you wish to have the Day display mode, then adjust the illumination to the full bright setting (beeps).	When the headlights are turned ON, adjust the dash brightness down (counterclockwise) from the maximum brightness position.
Headlights (On/Off)	4	When turned on, it changes the display to the Night display mode. The previous 3 controls listed above can cancel this function.	Use the Display mode button , or adjust the dash illumination to full bright to set the display to your desired choice.
Map Day/Night screen color choice	N/A	The user can select the color of the screen that will be displayed for the Day, and Night display modes described above.	For best contrast, ensure that the Map color is white for Day, and black for Night.

Recommended Display mode Day/Night settings:

- With the headlights on, select mid range for the dash illumination (See Owner's manual for location of knob).
- With the headlights off, select mid range for the dash illumination (See Owner's manual for location of knob).
- On the Setup Color adjustment screen, choose white for the map Day display, and black for the map Night display. Inappropriate adjustment of these colors can cause the Day/Night modes to appear inoperative.

Microphone (Mic)

Receives voice commands and transmits them to the navigation unit or HandsFreeLink unit for interpretation. Both system share the same microphone.

TALK Button

Activates the voice control system in the navigation unit to accept voice commands.

BACK Button

Returns the display to the previous screen (similar function as the CANCEL button).

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2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

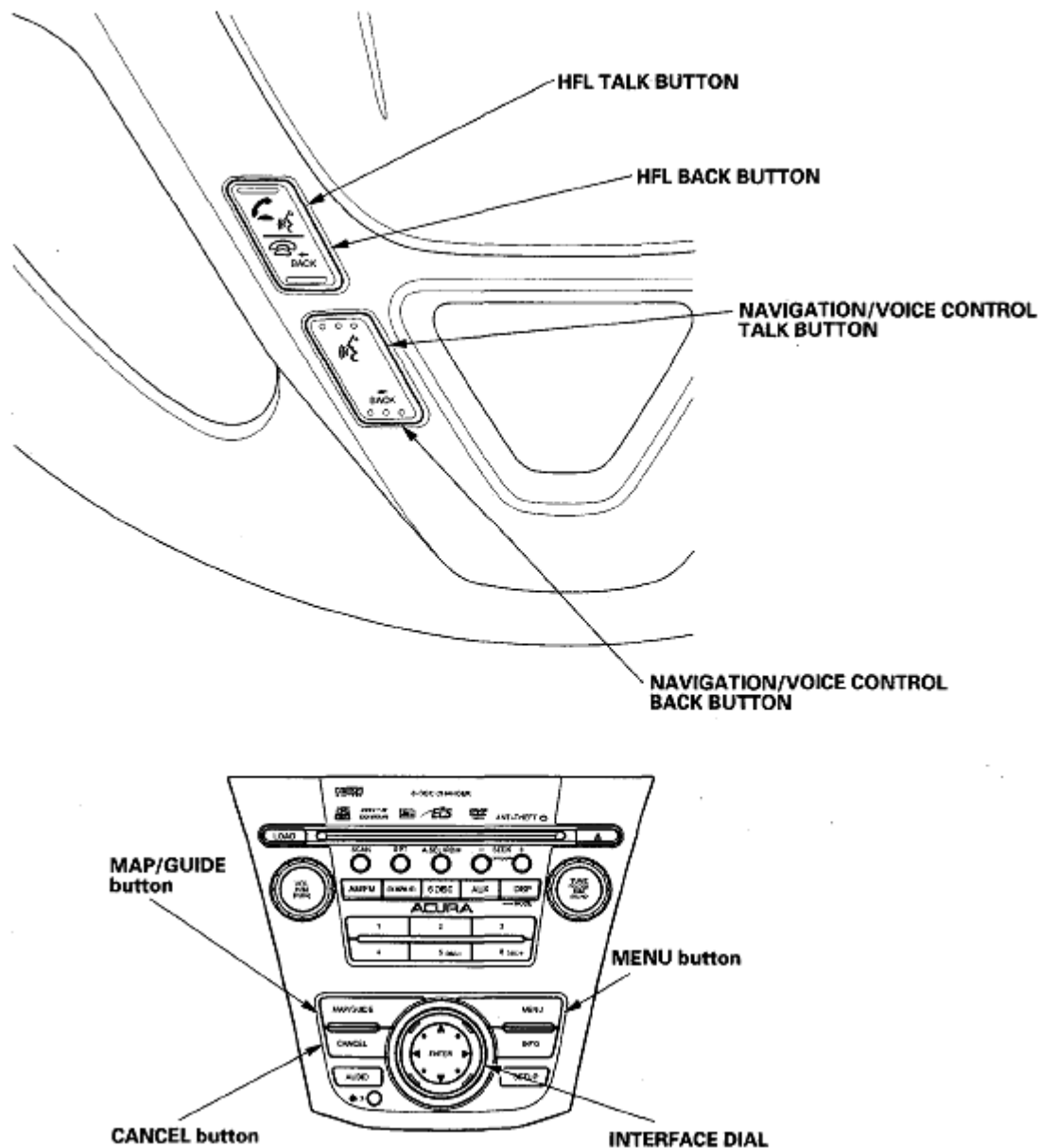


Fig. 14: Identifying Navigation Unit Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Glossary

The following is a glossary of terms pertaining to the Voice Recognition Navigation System.

GLOSSARY OF TERMS

Item	Definition
AcuraLink	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic information is sent to

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2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

	the navigation unit.
Address Book	The HFL system can import a copy of the phone book from an approved HFL compatible phone and can display the imported phone book on the navigation screen as the address book. See the Owner's Manual for more information.
B-CAN	Body CAN Bus (see CAN)
Bread-crumbs (White dots)	Off road tracking dots that can be followed on the map to retrace your route back to a mapped (digitized) road. This function can be turned on/off in Setup screen 1.
CAN	Controller Area Network. This communication network allows processors in the vehicle to send/receive information. The fuel pulses used by the MID trip computer are received from the PCM using the F-CAN (Fast Controller Area Network) bus.
CPU	Central Processing Unit. The main device within the navigation unit that coordinates the rest of the electronic functions.
CSS	Countershaft (Output) Speed Sensor. This sensor reads the output shaft speed at the transmission and provides a speed pulse to the PCM.
Database	This consists of the Map data, and the POI (Points Of Interest) data stored on the DVD.
DBW	Drive By Wire. Allows electrical control of the throttle without the need of a mechanical linkage.
DCA	Detailed Coverage Area. Main metropolitan areas in the Lower 48 states, and Canada are mapped to this level. See the navigation system manual for a list of these areas.
DTC	Diagnostic Trouble Codes. Use the PGM Tester, or HDS tablet to obtain, and troubleshoot the cause of these codes.
Dead reckoning	The use of the speed signal, and yaw rate sensor to position the vehicle on the map even when tall buildings, or driving in a tunnel obscures the GPS signal
Digitized road	A road that appears on the navigation screen. The road name will appear at the bottom of the navigation screen. If the user drives off road the navigation system will display Not on a digitized road, and after 1/2 mile, the bread-crumbs will appear.
Disclaimer screen	Screen containing cautionary information. It is meant to be read carefully, and acknowledged by the

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

	client when using the navigation system.
DVD or DVD-ROM	Digital Versatile Disk. The navigation program and database resides on this disk. See the Navigation Owner's Manual for information on how to order a replacement or an update DVD.
ECM	Engine Control Module. Typically referred to as the ECM.
FAQ	Frequency Asked Questions. See the navigation system manual for a list of the client FAQs, and troubleshooting information.
F-CAN	Fast CAN Bus (see CAN)
GA-NET	The GA-NET allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-NET, components or the entire audio and navigation system may appear inoperative.
GPS	Global Positioning System. A network of 24 satellites in orbit around the earth. The navigation system can simultaneously receive signals from up to 12 satellites to accurately position the vehicle on the map.
HDS	Honda Diagnostic System. A hand held tablet PC used for diagnosing vehicle problems. This device can be used to obtain DTC codes for diagnosis of the navigation system and CAN related problems.
HFL	HandsFreeLink uses Bluetooth technology as a wireless link between it and an approved Bluetooth compatible cell phone. See the vehicle Owner's manual or Quick Start Guide for more information.
HIP (AcuraLink)	Honda Information Platform (see AcuraLink)
H/U	Head Unit. The audio unit in the dash.
Initialization	This refers to the period needed to re-acquire the GPS satellite orbital information whenever the navigation system power has been disconnected. This can take from 10 to 45 minutes.
Interface Dial	This control device consists of a rotating knob and the buttons surrounding it. This device allows control of the navigation, audio, and climate functions displayed on the screen.
LCD	Liquid Crystal Display (the navigation screen)
Map matching	The received GPS information allows the navigation system to position the vehicle on the map. Map matching has occurred if the map screen is displaying the current street name in the bottom-shaded area.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Mic	Abbreviation for the microphone used for receiving voice commands. It is located near the map light in the ceiling.
MID	Multi-Information Display
MW	Maneuver Window. While on-route to a destination, this window displays information about the next maneuver.
Navi	Abbreviation for the Navigation System.
Off-road tracking	See bread-crumbs.
Off route	This occurs when the user leaves mapped roads. Off road tracking dots (bread-crumbs) are displayed if the option is enabled in the setup menu. The user can use them to return to a mapped road. The bottom of the navigation screen will say Not on a digitized road.
Outlying areas	These are rural areas that typically have only their main roads mapped. All other roads are shown in light brown for reference only, since they have not been verified.
Paired	Linking your cell phone to the HFL.
PC Card Slot	The PC Card (PCMCIA, type II) slot is for factory use only. Make sure that the sliding door is closed at all times, if opened, an error message is displayed on the screen.
PCM	Powertrain Control Module. This unit supplies the navigation system speed signal, Also referred to as PCM.
PCMCIA	A computer industry defined term referring to the PC Card slot standard.
PIN	Personal Identification Number, a random 4 digit number created by the client to protect personal information.
POI	Point Of Interest. These are the businesses, schools, etc. found under the places option on the main menu.
Polygon	Colored areas on the map screen denoting parks, schools, etc. See the Navigation System Manual Driving to Your Destination for a list of the assigned colors.
QWERTY	Keyboard layout resembling the typewriter keys. The keyboard layout can be changed to an alphabetical layout in the Setup mode.
SCS connector	The service check signal 2-pin connector used to put the navigation system into the diagnostic mode.
Security code	Code needed to activate the navigation system. You can get the security code from the iN by entering the

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

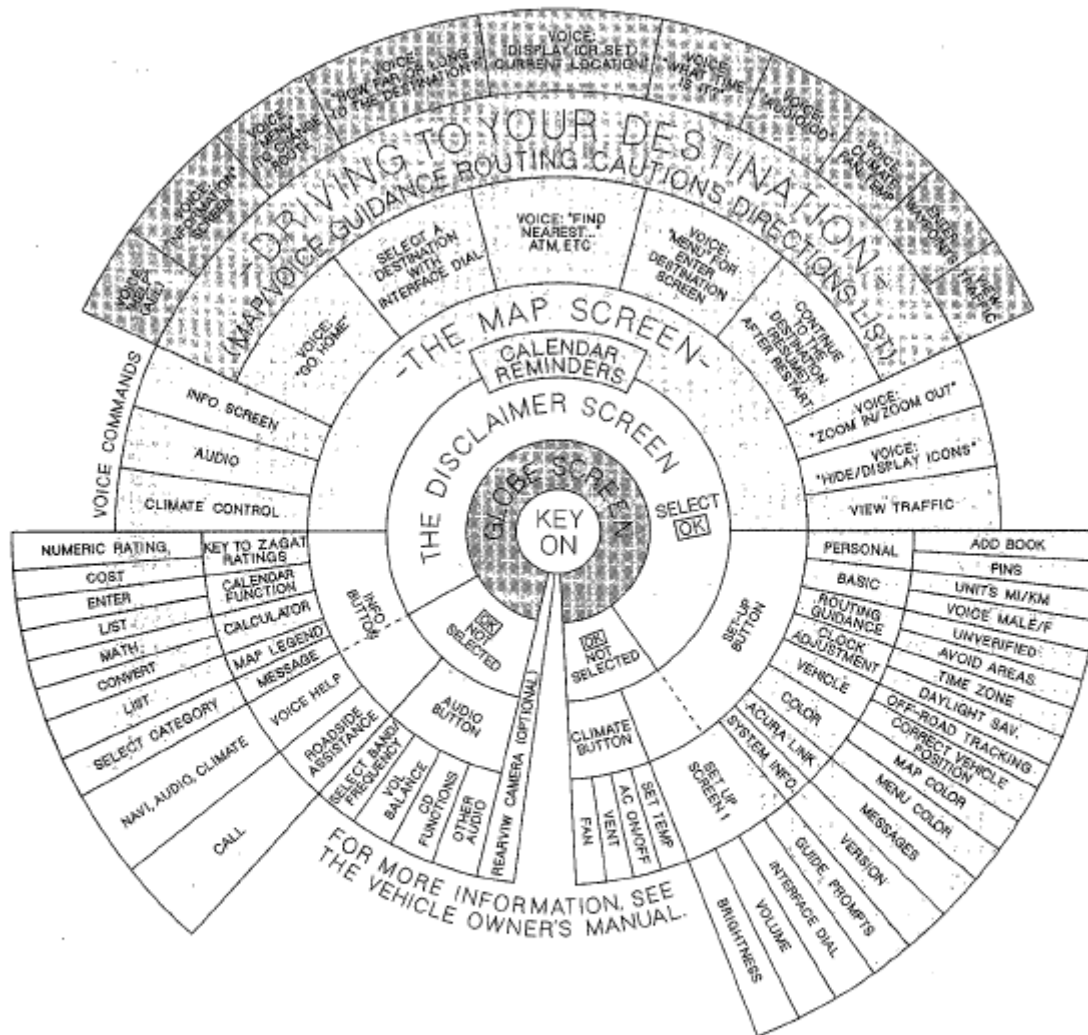
	navigation unit serial number. You can find the serial number on the diagnostic screens (unit check, Navi ECU), or on the underside of the navigation unit.
Tuning	A continual update of internal navigation system scaling factors. See the individual sensor tuning discussions under either System Description, or System Diagnosis Mode (see SYSTEM DIAGNOSTIC MODE) in this manual.
Unverified streets	These streets have not been verified for turn restrictions, one-way, etc. They are shown in light brown on the map. You can enter address destinations in these areas, but depending on your Unverified Routing choice in setup, voice guidance may end at the last verified street closest to your destination.
Verified streets	These streets consist of the detailed metropolitan coverage areas, and all other inter-town connection roads. These roads are shown in black or red on the map. (interstates are red)
VP	Vehicle Position. When in map mode, this circular icon shows the vehicle position on the map.
VR	Voice Recognition. This allows voice control of many of the navigation functions. The hardware consists of the microphone, voice control switch (TALK/BACK buttons), and the center speaker. See the overview for more information.
VSP	Vehicle Speed Pulse. This pulse signal coming from the PCM (via the CSS) is used to update the Vehicle position on the map. These pulses do not indicate direction (forward or backward). When in reverse, the navigation receives a signal and directs the VP to move backwards on the map.
XM	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic information is sent to the navigation unit.
Yaw sensor	This device is located in the navigation system control unit and senses the side-to-side twisting force generated when the vehicle turns. See a detailed description of how this sensor works in this manual.

System Function Diagram

This diagram shows the features of the navigation system starting at the center and working outward in layers.

The navigation program starts at Key ON, and then displays the globe screen. Once the disclaimer screen is acknowledged, the next shaded portions of the diagram become active. However, some functions of the INFO and SET UP buttons, and all functions of the AUDIO and A/C buttons can be accessed immediately after the globe screen (white).

The items above the map screen show various ways to set a destination, such as Go Home. Once you begin driving to your destination, you are provided with map/voice guidance, routing cautions (in unverified areas), and a directions list. While driving to your destination, use the voice control system as much as possible to interact with the navigation, audio, and climate control systems.



- ☐ Functions accessible at any time
- ☐ Disclaimer screen
- ☐ Map screen/voice commands to enter a destination
- ☐ Driving to your destination
- ☐ Voice commands while driving to your destination
- ☐ Globe screen

Fig. 15: Navigation System Function Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Diagnostic System Diagram

This diagram represents the diagnostic slice in the Navigation Functional diagram. The diagram shows an overview of the navigation diagnostic features starting at the center and working outward in layers. The diagram starts with Key on. The diagram shows two ways to get to the diagnostic main menu:

- By starting the vehicle with the SCS connector plugged in, you will enter the diagnostic System Links screen, select Return to get to the main diagnostic menu.
- From any of the navigation Map or Menu screens, press and simultaneously hold the keys Menu + Map + Cancel.

The diagram shows the available diagnostic menu choices, starting at the bottom left, and moving clockwise. In most cases, do not clear or change settings in any diagnostic screen unless instructed to do so in the explanation, or by the factory.

If the factory asks you to insert a PCMCIA memory card into the PC Slot, insert the PC card and the menu options referring to the PC card become available.

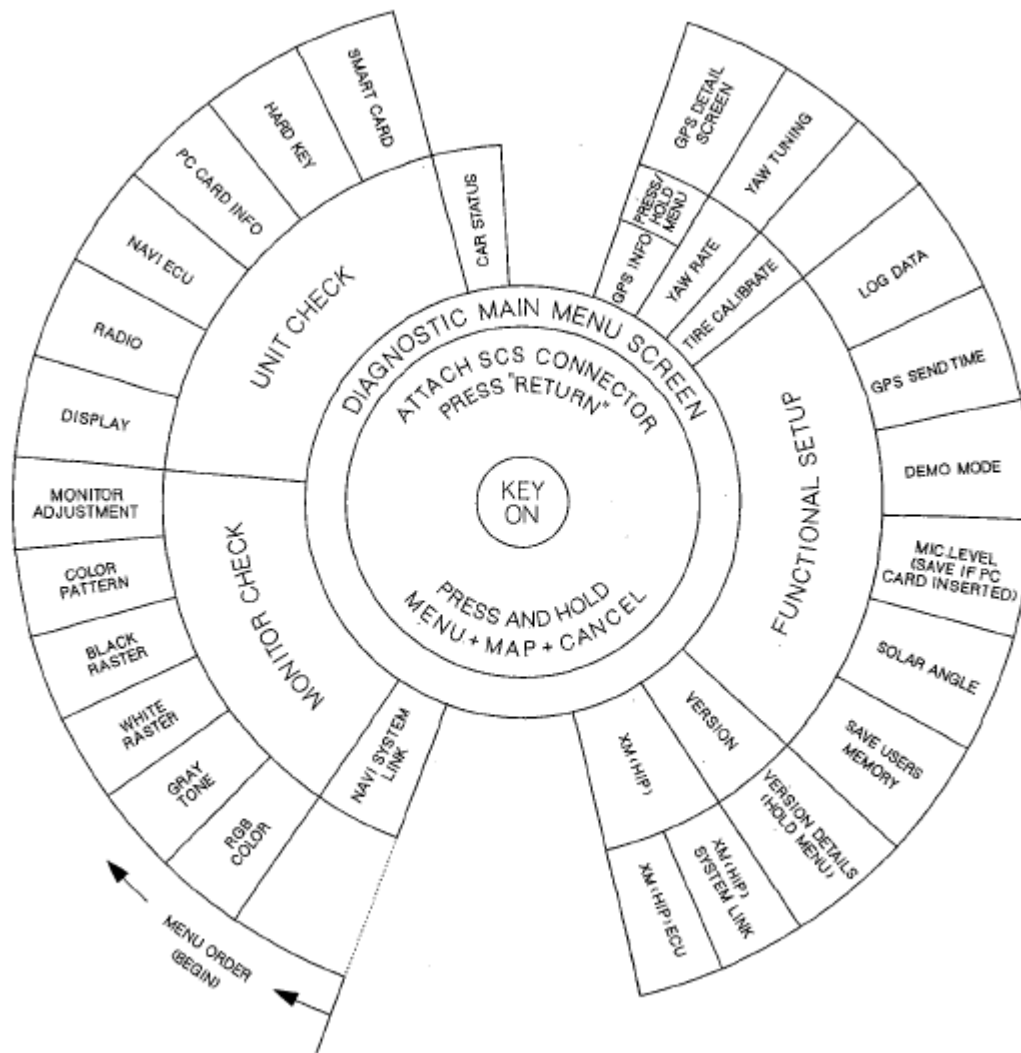
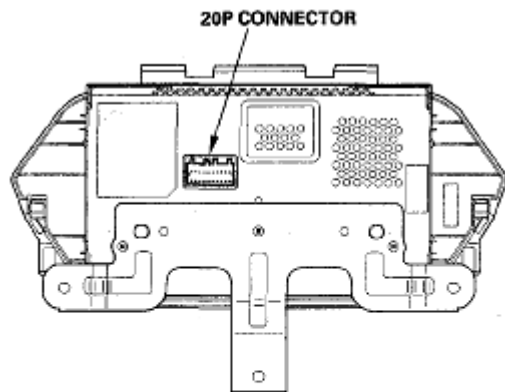


Fig. 16: Diagnostic System Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation display unit connector



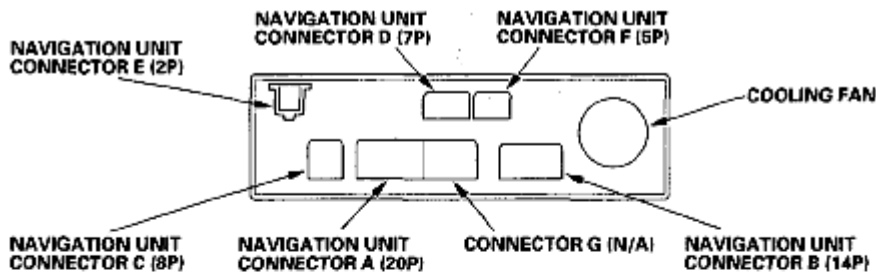
NAVIGATION DISPLAY UNIT 20P CONNECTOR

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 17: Identifying Navigation Display Unit 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation unit connector



NAVIGATION UNIT CONNECTOR A (20P)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

NAVIGATION UNIT CONNECTOR B (14P)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

NAVIGATION UNIT CONNECTOR C (8P)

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

NAVIGATION UNIT CONNECTOR D (7P)

1	2	3	4	5	6	7
---	---	---	---	---	---	---

NAVIGATION UNIT CONNECTOR E (2P)

1	2
---	---

NAVIGATION UNIT CONNECTOR F (5P)

1	2	3	4	5
---	---	---	---	---

Wire side of female terminals

INTERFACE DIAL 5P CONNECTOR

1	2	3	4	5
---	---	---	---	---

REARVIEW CAMERA 6P CONNECTOR

1	2	3	4	5	6
---	---	---	---	---	---

Terminal side of male terminals

Fig. 18: Identifying Navigation Unit Connector

2008 Acura MDX

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Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit Inputs and Outputs for Connector A (20P)



Wire side of female terminals

Fig. 19: Identifying Navigation Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit Connector A (20P)

NAVIGATION UNIT CONNECTOR A (20P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT	RSIG (Red signal)	Red color signal	0.2 V AC average in RGB color diagnostic mode	If open: Red color missing (see RGB Color diagnostic). If short to ground: Red color missing (see RGB Color diagnostic).
2	RED	GSIG (Green signal)	Green color signal	0.2 V AC average in RGB color diagnostic mode	If open: Green color missing (see RGB Color diagnostic). If short to ground: Green color missing (see RGB Color diagnostic).
3	BRN (1)	SHSIG (Shield signal)	Shield for No. 1, 2, 11, 12, 13 terminals	0 V	If open: No change to display. If short to ground: No change to display.
4	YEL	A/C-SI (Air conditioner serial in)	Communication signal for climate control unit	--	If open: HVAC cannot be controlled by the navigation system. If short to ground: HVAC cannot be controlled by the navigation system.
5	YEL	ILL (+) (Illumination positive)	Parking light on signal	Lights on: battery voltage, Lights off: 0 V	If open: When brightness=Auto, night mode for the display is inoperative when lights on. If short to ground: daytime mode regardless of the condition of a light switch.
9	BRN (1)	GA NET BUS SH (GA-NET bus shield)	Shield for display bus No. 10,20 terminals	0 V	If open: No change to display. If short to ground: No change to display.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

10	GRN	GA NET BUS + (GA-NET bus positive)	Date bus (+) GA-Net	0-5 V pulses average 2.5 V depends on bus traffic	If open: Navigation buttons do not work. If short to ground: Navigation buttons do not work.
(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.					

Navigation Unit Connector A (20P)

NAVIGATION UNIT CONNECTOR A (20P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
11	YEL	B SIG (Blue signal)	Blue color signal	0.2 V AC average in RGB color diagnostic mode	If open: Blue color missing (see RGB Color diagnostic). If short to ground: Blue color missing (see RGB Color diagnostic).
12	GRN	C SIG (Composite signal)	Composite video (vertical/horizontal) Synchronizing signal	0.2 V AC average in RGB color diagnostic mode	If open: Picture rolls horizontally, colors still visible. If short to ground: Picture rolls horizontally, colors still visible.
13	BLK	GND SIG (Ground signal)	Ground for color signal	0 V	If open: No change to display. If short to ground: No change to display.
14	RED	A/C-SO (Air conditioner serial out)	Communication signal for climate control unit	--	If open: HVAC cannot be controlled by the navigation system. If short to ground: HVAC cannot be controlled by the navigation system.
15	BLU	A/C-CLK (Air conditioner clock)	Check signal for climate control unit	--	If open: HVAC cannot be controlled by the navigation system. If short to ground: HVAC cannot be controlled by the navigation system.

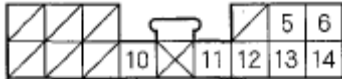
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2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

17	WHT	JOG BUS (Jog bus)	Interface dial operation signal	0-5 V pulses	If open: You cannot operate navigation system If short to ground: You cannot operate navigation system.
19	BRN (1)	JOG SH (Jog shield)	Shield for interface dial signal	--	--
20	RED	DISP BUS (-) (Display bus negative)	Date bus (-) GA-Net	0-5 V pulses 2.5 V average (depends on Bus traffic)	If open: Navigation buttons do not work. If short to ground: Hard buttons work OK.

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

Navigation Unit Inputs and Outputs for Connector B (14P)



Wire side of female terminals

Fig. 20: Identifying Navigation Unit Connector B (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit Connector B (14P)

NAVIGATION UNIT CONNECTOR B (14P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
5	PUR	RG L (+) (Route guidance voice left positive)	Left audio signal of voice guidance, and Voice Recognition (VR) prompts	Audio signal 0.004-0.04 V	If open: If voice activated, radio speakers buzz; if voice off, no effect. If short to ground: If voice activated, radio speakers buzz; if voice off, no effect.
6	PUR	HFL MIC OUT+ (HFL mic signal	Microphone output	4-5 V (TALK	If open: microphone signal shown as red in diagnostic screens: Navi System Link and Functional Setup Mic Level.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

		positive)	signal positive	button pressed)	If short to ground: microphone signal shown as red in diagnostic screens: Navi System Link and Functional Setup Mic Level.
10	PUR	NAVI REMOTE SW (Navigation remote switches)	Steering switch output	4-5 V (TALK button pressed) 2.5-3 V (BACK button pressed)	If open: Steering wheel TALK and BACK buttons do not work. If short to ground: Steering wheel TALK, and BACK buttons do not work.
11	BRN (1)	RGSH (Route guidance shield)	Shield for No. 5,12 terminals	0 V	If open: No effect on voice output. If short to ground: No effect on voice output.
12	LT BLU	RG GND (Route guidance ground)	Ground for voice guidance, and Voice Recognition (VR) prompts	0 V	If open: No effect on voice output. If short to ground: No effect on voice output.
13	BRN (1)	HFL MIC OUT SH (HFL mic signal shield)	Shield for No. 6, 14 terminals	0 V	If open: No effect on voice control. If short to ground: No effect on voice control.
14	LT BLU	HFL MIC OUT-- (HFL mic signal negative)	Ground for microphone signal	0 V	If open: microphone signal shown as red in diagnostics: Navi System Link and Functional Setup Mic Level. If short to ground: No effect on voice recognition.

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

Navigation Unit Inputs and Outputs for Connector C (8P)



Wire side of female terminals

Fig. 21: Identifying Navigation Unit Connector C (8P) Terminals
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2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Navigation Unit Connector C (8P)

NAVIGATION UNIT CONNECTOR C (8P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT	+B (+B Power source)	Continuous power source	Battery voltage	If open: Display picture goes out (display back light still on). NOTE: System will reboot to enter code screen. If short to ground: Blows fuse No. 5 (10 A) in the under-dash fuse/relay box.
2	PUR	ACC (Accessory)	Power source for accessories	Battery voltage at ACC (1)	If open: Display picture goes out (display back light still on). If short to ground: Blows fuse No. 32 (10 A) in the under-dash fuse/relay box.
4	BLK	GND (Ground) (G605)	Ground for navigation unit	0 V	If open: No effect on system. If short to ground: No effect on system.
5	BRN	BACK LT (Back light or reverse signal)	Reverse signal of select lever from "Multiplex Integrated Control Unit" (A/T) or backup light switch (M/T)	In reverse, battery voltage: Otherwise 0 V	If open: Navigation never sees reverse. Diagnostic screen Car Status, Back=0. If short to ground: Blows fuse No. 21 (7.5 A) in the driver's under-dash fuse/relay box.
6	BLU	VSP (Vehicle speed pulse)	Vehicle speed pulse signal from PCM	0-5 V pulses 2.5 V average (depends on Bus traffic)	If open: No vehicle speed pulses. Diagnostic screen Car Status, VSP Navi=0. If short to ground: No vehicle speed pulses. Diagnostic screen Car Status, VSP Navi=0.
7	GRY	DIAG+ (Diagnostic positive)	Service check signal for navigation system	5-6 V	If open: No effect on system. If short to ground: System goes into diagnostic mode at key ON (I) and (II).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

8	YEL	DIAG-- (Diagnostic negative)	Ground for service check signal	0 V	If open: The system will not go into diagnostic mode when using the SCS jumper. If short to ground: No effect on system.
---	-----	---------------------------------	---------------------------------	-----	---

Navigation Unit Inputs and Outputs for Connector D (7P)



Wire side of female terminals

Fig. 22: Identifying Navigation Unit Connector D (7P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit Connector D (7P)

NAVIGATION UNIT CONNECTOR D (7P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
D1	WHT	CAMERA VCC (VCC supply)	Power source for rearview camera	7V	If open: No rearview camera image. If short to ground: When put into reverse, the navigation screen goes black (backlight still operative). NOTE: If this wire is shorted to ground, the navigation unit can be permanently damaged.
D5	BLK	VIDEO (Video camera)	Video signal for rearview camera	0.3 V	If open: No rearview camera image. If short to ground: When put into reverse, the navigation screen goes black (backlight still operative). NOTE: If this wire is shorted to ground, the navigation unit can be permanently damaged.
D6	GRY (1)	CAMERA SH (Shield and ground for camera)	Shield for terminal No. 1 to No. 7	0 V	If open: No rearview camera image. If short to ground: No change to rearview camera image. NOTE: If this wire is shorted to ground, the navigation unit can be permanently damaged.
D7	RED	CAMERA ADPT (Adaptive camera)	Control signal for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image. NOTE: If this wire is shorted to ground, the navigation unit can be permanently damaged.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- (1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

Navigation Unit Inputs and Outputs for Connector E (2P)



Wire side of female terminals

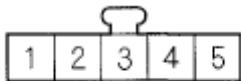
Fig. 23: Identifying Navigation Unit Connector E (2P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation unit connector E (2P)

NAVIGATION UNIT CONNECTOR E (2P) TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	--	GPS	GPS signal	5V	If open: GPS icon on screen is white, system links screen ANT shows NG. If short to body ground: Same as open.
2	--	GND GPS	Ground for GPS signal	0 V	If open: GPS icon on screen is white, system links screen ANT shows NG. If short to body ground: No effect on system.

Navigation Unit Inputs and Outputs for Connector F (5P)



Wire side of female terminals

Fig. 24: Identifying Navigation Unit Connector F (5P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit Connector F (5P) With AcuraLink

NAVIGATION UNIT CONNECTOR F (5P) TERMINAL REFERENCE - WITH ACURALINK

Terminal	Wire			Voltage	
----------	------	--	--	---------	--

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX**

Number	Color	Terminal Name	Description	(about)	Symptom
1	WHT	HFL COMM3 (HFL communication 3)	Communication signal for HFL	5 V DC	Solid red HFL icon in Navi System Link
2	RED	HFL COMM4 (HFL communication 4)	Communication signal for HFL	4.5 V DC	Solid red HFL icon in Navi System Link
3	GRN	HFL COMM1 (HFL communication 1)	Communication signal for HFL	5 V DC	HFL icon in Navi System Link changes between red and green
4	BLK	HFL COMM2 (HFL communication 2)	Communication signal for HFL	4.5 V DC	HFL icon in Navi System Link changes between red and green
5	BRN ⁽¹⁾	SH HFL (Shield HFL)	Shield for No. 1, 2, 3, 4 terminals	0 V	--

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

Navigation Unit Connector F (5P) Without AcuraLink**NAVIGATION UNIT CONNECTOR F (5P) TERMINAL REFERENCE - WITHOUT ACURALINK**

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	RED	HFL COMM3 (HFL communication 3)	Communication signal for HFL	--	Solid red HFL icon in Navi System Link
2	WHT	HFL COMM4 (HFL communication 4)	Communication signal for HFL	--	Solid red HFL icon in Navi System Link
3	GRN	HFL COMM1 (HFL communication 1)	Communication signal for HFL	--	HFL icon in Navi System Link changes between red and green
4	BLK	HFL COMM2 (HFL communication 2)	Communication signal for HFL	--	HFL icon in Navi System Link changes between red and green
5	BRN ⁽¹⁾	SH HFL (Shield HFL)	Shield for No. 1, 2, 3, 4 terminals	--	--

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

Navigation Display Unit Inputs and Outputs for 20P Connector

2008 Acura MDX

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Wire side of female terminals

Fig. 25: Identifying Navigation Display Unit Connector 20P Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Display Unit 20P Connector

NAVIGATION DISPLAY UNIT 20P CONNECTOR TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT	+B (+B power source)	Continuous power source	Battery voltage	If open: Screen completely off (no backlight visible). If short to ground: Blows fuse No. 7 (10 A) in the under-dash fuse/relay box.
2	PUR	ACC (Accessory)	Power source for accessory	Battery voltage at ACC (I)	If open: Display and buttons do not work. If short to ground: Blows fuse No. 32 (10 A) in the under-dash fuse/relay box.
5	GRN	GA NET BUS+ (GA-NET bus positive)	Data bus (+) GA-Net	0-5 V pulses average 2.5 V depends on bus traffic	If open: Navigation hard buttons do not work. If short to ground: Navigation hard buttons XM/ AcuraLink and RES do not work.
6	RED	SCTY (1) (Security positive)	Security signal	0 V	If open: If security system set, it will not trip when screen is removed. If short: If security system set, it will not trip when screen is removed.
8	WHT	R SIG (Red signal)	Red color signal	0.2 V AC average in RGB color diagnostic	If open: Red color missing (see RGB Color diagnostic). If short to ground: Red

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

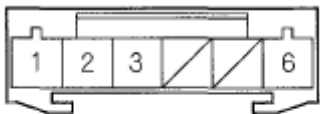
				mode	color missing (see RGB Color diagnostic).
9	RED	G SIG (Green signal)	Green color signal	0.2 V AC average in RGB color diagnostic mode	If open: Green color missing (see RGB Color diagnostic). If short to ground: Green color missing (see RGB Color diagnostic).
10	BLK	GND (Ground)	Ground for display unit	0 V	If open: No change to display. If short to ground: No change to display.
11	YEL	ILL(+) (Illumination positive)	Parking light on signal from dash and console light	Lights on: battery voltage, Lights off: 0 V	If open: When brightness Auto, night mode for the display is inoperative when lights on. If short to ground: Blows small light relay in under-hood fuse/relay box.
14	BRN	GA NET BUS SH (GA-NET bus negative)	Shield for display bus No. 5,16 terminals	0 V	If open: No change to display. If short to ground: No change to display.
15	RED	GA NET BUS-- (GA-NET bus negative)	Date bus (-) GA-Net	0-5 V pulses average 2.5 V depends on bus traffic	If open: Navigation hard buttons do not work. If short to ground: Navigation hard buttons work OK.
16	PNK ⁽¹⁾ LT GRN ⁽²⁾	SCTY (3,4) (Security negative)	Security signal	0 V	If open: If security system set, it will not trip when screen is removed. If short: If security system set, it will not trip when screen is removed.
17	BLK	GND SIG (Ground signal)	Ground for color signal	0 V	If open: No change to display. If short to ground: No change to display.
				0.2 V AC	If open: Blue color missing (see RGB

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

18	YEL	B SIG (Blue signal)	Blue color signal	average in RGB color diagnostic mode	Color diagnostic). If short to ground: Blue color missing (see RGB Color diagnostic).
19	GRN	C SIG (Composite signal)	Composite video (vertical/horizontal) synchronizing signal	0.2 V AC average in RGB color diagnostic mode	If open: Picture rolls horizontally, colors still visible. If short to ground: Picture rolls horizontally, colors still visible.
20	BRN ⁽³⁾	SIG SH (Signal shield)	Shield for No. 8, 9, 17, 18, 19 terminals	0 V	If open: No change to display. If short to ground: No change to display.
(1) With rear entertainment system (2) Without rear entertainment system (3) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.					

Rearview Camera Inputs and Outputs for 6P Connector



Terminal side of male terminals

Fig. 26: Identifying Rearview Camera Connector 6P Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rearview Camera 6P Connector

REARVIEW CAMERA 6P CONNECTOR TERMINAL REFERENCE

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	RED	CAMERA ADPT (Adaptive camera)	Control signal for rearview camera	0 V	If open: No change to rearview camera image. If short to ground: No change to rearview camera image.
	GRY	CAMERA SH	Shield for No. 5		If open: No rearview camera image.

2	(1)	(Shield and ground for camera)	terminal	0 V	If short to ground: No change to rearview camera image.
3	BLK	CAMERA VIDEO (Video camera)	Video signal for rearview camera	0.3 V	If open: No rearview camera image. If short to ground: When put into reverse, navigation screen goes black (display backlight still operative).
6	WHT	CAMERA VCC (VCC supply)	Power source for rearview camera	8 V	If open: No rearview camera image. If short to ground: When put into reverse, navigation screen goes black (display backlight still operative).
(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.					

CIRCUIT DIAGRAM

WITH ACURALINK

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

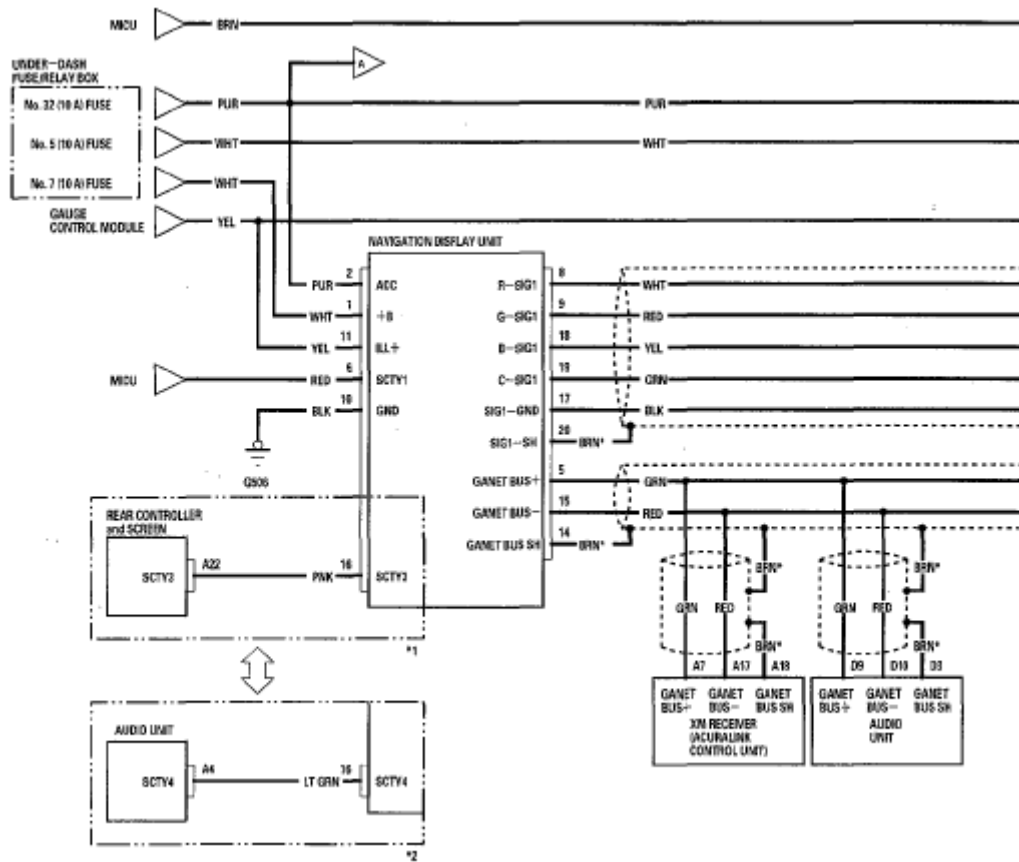


Fig. 27: Navigation System Circuit Diagram - With Acuralink (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

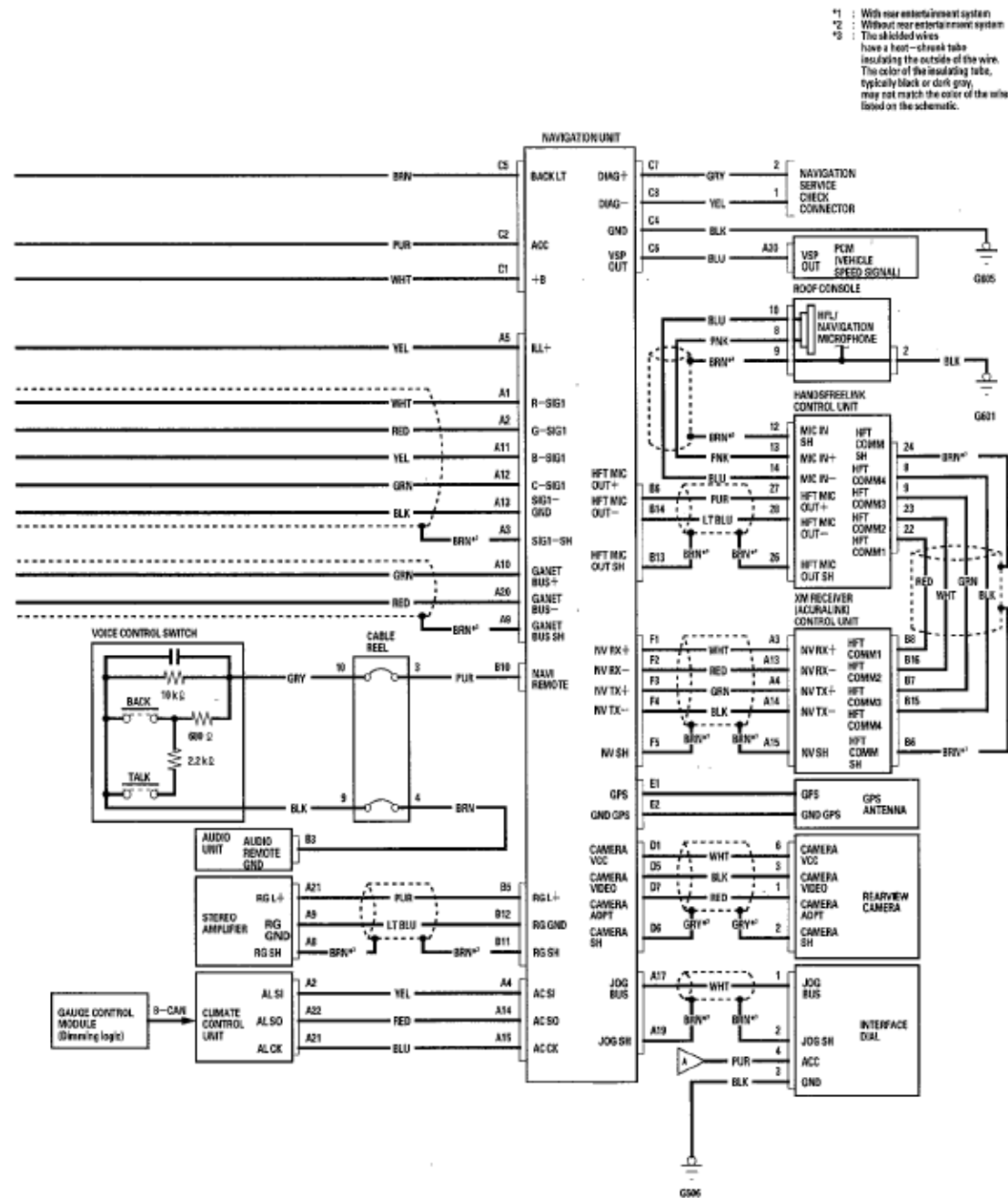


Fig. 28: Navigation System Circuit Diagram - With Acuralink (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WITHOUT ACURALINK

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

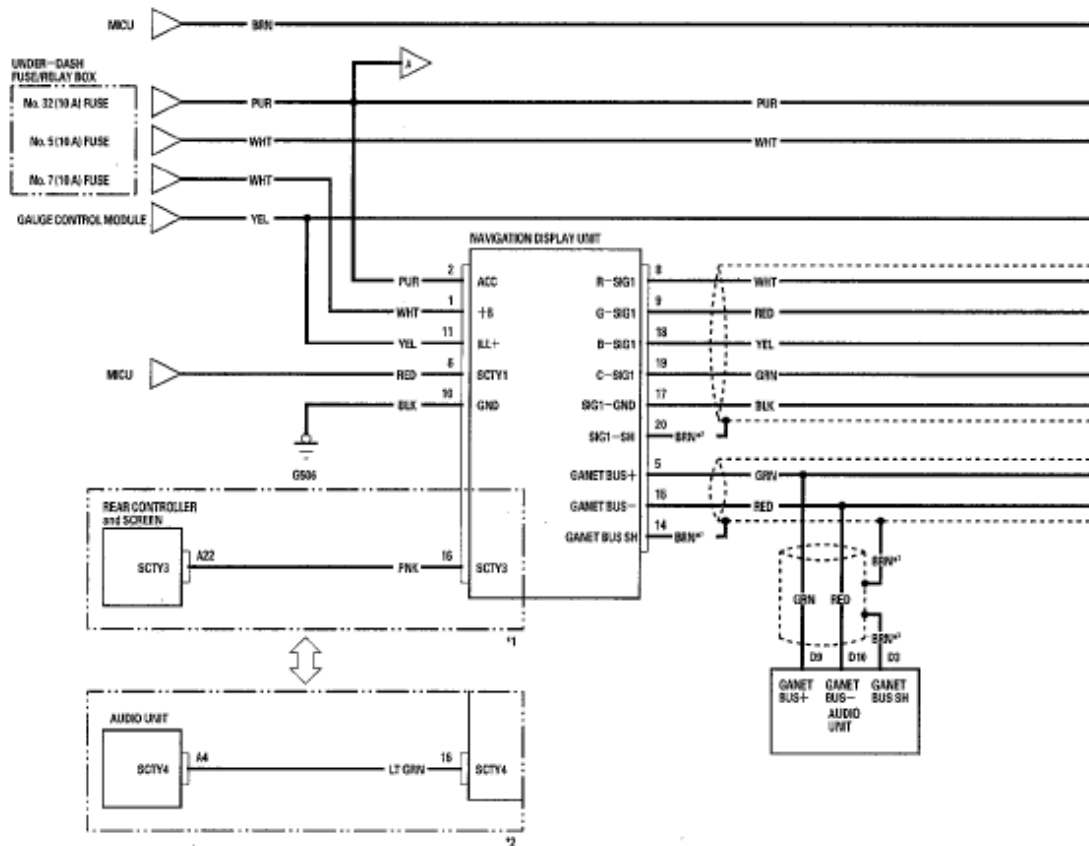


Fig. 29: Navigation System Circuit Diagram - Without Acuralink (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Before troubleshooting, make sure you have anti-theft code for the navigation system.
- Check any official Honda service website for more service information about the navigation system.
- For problems with the rearview camera, do the rearview camera does not come on or work properly troubleshooting.
- Always make sure that the correct DVD color and version are installed.
- Inspect the DVD for dirt or damage.

1. Check the No. 5 (10 A), No. 7 (10 A) fuse and No. 32 (10 A) fuse in the under-dash fuse relay box, and reinstall the fuses if they are OK.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the fuse and recheck.

2. Turn the ignition switch to ON (II).
3. Operate the radio and listen to the audio.

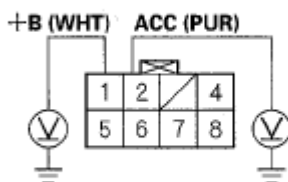
Can you hear the audio?

YES - Go to step 4.

NO - Check the ACC circuit.

4. Turn the ignition switch to ON (II).
5. Measure the voltage between body ground and navigation unit connector C (8P) No. 1 and No. 2 terminals individually.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Fig. 31: Identifying Voltage Between Body Ground And Navigation Unit Connector C (8P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

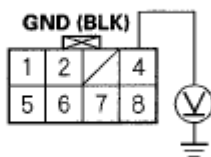
Is there battery voltage?

YES - Go to step 6.

NO - If the +B wire does not have voltage, repair open in the wire between the under-dash fuse relay box and the navigation unit. If the ACC wire does not have voltage, repair open in the wire between the under-dash fuse/relay box and the navigation unit.

6. Measure the voltage between navigation unit connector C (8P) No. 4 terminal and body ground.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Fig. 32: Identifying Voltage Between Navigation Unit Connector C (8P) Terminal 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES - Go to step 7.

NO - Repair open in the wire between the navigation unit and body ground (G605) (see **FLOOR WIRE HARNESS (RIGHT BRANCH)**).

7. Do the forced starting of the display (see **FORCED STARTING OF DISPLAY**).

Is the diagnosis menu of the picture diagnosis displayed?

YES - Go into the Diagnostic mode and use the Navi System Link diagnostic (see **NAVI SYSTEM LINK**) to check the links.

NO - Go to step 8.

8. Shield the display unit from the sun with your hand, and check that the display is back lit (only back light is ON.)

Can you see the back light?

YES - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**) and

retest. If the problem is still present, replace the navigation display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - Go to step 9.

9. Measure the voltage between body ground and navigation display unit 20P connector No. 1 and No. 2 terminals individually.

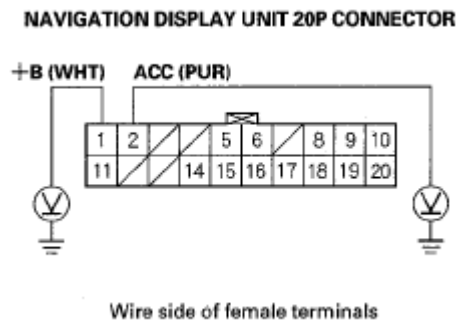


Fig. 33: Identifying Voltage Between Body Ground And Navigation Display Unit 20P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 10.

NO - If the +B wire does not have voltage, repair open in the wire between the under-dash fuse relay box and the navigation display unit 20P connector. If the ACC wire does not have voltage, repair open in the wire between the under-dash fuse/relay box and the navigation display unit 20P connector.

10. Measure the voltage between the navigation display 20P connector No. 10 terminal and body ground.

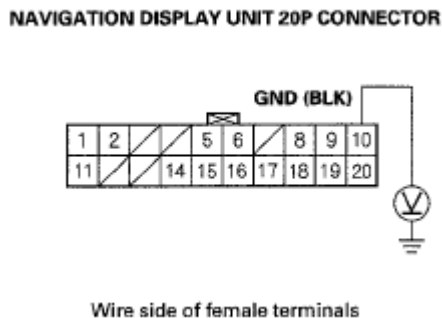


Fig. 34: Identifying Voltage Between Navigation Display 20P Connector Terminal 10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES - Replace the navigation display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - Repair open or poor connections between the navigation display and body ground (G506) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

Vehicle position icon constantly leaves road, moves erratically, or is very far from actual position

NOTE:

- This is not the same condition as when driving off-road (or on a fire or logging road). This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket or other objects that can block the GPS signal. Always do the Map matching (see **MAP MATCHING**) before proceeding with the troubleshooting.
- Always make sure that the correct DVD color and version are installed.
- Inspect the DVD for dirt or damage.
- Check any official Honda service website for more service information about the navigation system.

1. Check the GPS icon on the navigation picture.

Is the GPS icon white?

YES - Do the troubleshooting for GPS icon is white or not shown (see **GPS icon is white or not shown**).

NO - Go to step 2.

2. Go into the Diagnostic Menu, and use the Yaw Rate test (see **YAW RATE**) to check the yaw rate sensor.
3. Go into the Diagnostic Menu, and use the Car Status test (see **CAR STATUS**) to check the vehicle speed pulse.

Are the yaw rate sensor and vehicle speed pulse OK?

YES - The problem may be normal. Check to see if the problem occurs in the same place. If it does, the problem could be in the database. Go to step 4.

NO - If the problem is the yaw rate sensor, replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**). If the problem is the vehicle speed pulse, check for an open in the wire between the navigation unit and the PCM. If the wire is OK, troubleshoot the vehicle speed signal circuit.

4. Substitute a known-good navigation unit, and check to see if the problem occurs in the same place.

Does the problem occur in the same place?

YES - The problem is in the database. Report the problem according to the Navigation System Manual

under Reporting Errors.

NO - Replace the original navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Picture is missing a color or tone or is an odd color

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Check for aftermarket accessories that may interfere with the navigation system.
- Make sure that the correct DVD color and version are installed.
- Inspect the DVD for dirt or damage.
- Check any official Honda service website for more service information about the navigation system.
- Check the navigation screen settings for brightness, contrast, black level and the color screen for map color and menu color.
- For problems with the rearview camera, do the rearview camera does not come on or work properly troubleshooting.
- Before troubleshooting, make sure you have anti-theft code for the audio system and the navigation system.
- Check the vehicle battery condition first.

1. Go into the Diagnostic Menu, and use RGB Color test under Monitor Check (see **MONITOR CHECK**).

Are the red, green, and blue colored circles shown?

YES - The system is OK at this time.

NO - Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Disconnect navigation unit connector A (20P) and the navigation display unit 20P connector.
4. Check for loose terminals at navigation unit connector A (20P) and the navigation display unit 20P connector.

Are there loose terminals?

YES - Repair the terminal.

NO - Go to step 5.

5. Check for continuity between the appropriate terminals of navigation unit connector A (20P) and the navigation display unit 20P connector based on the missing color(s).

CONNECTOR TERMINAL REFERENCE

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Missing color	Navigation unit connector A (20P)	Navigation display unit 20P connector	Wire color
Blue	A11	18	YEL
Green	A2	9	RED
Red	A1	8	WHT

NAVIGATION UNIT CONNECTOR A (20P)

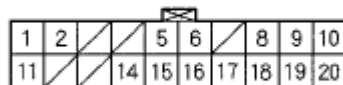


1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 35: Identifying Navigation Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION DISPLAY UNIT 20P CONNECTOR



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 36: Identifying Navigation Display Unit 20P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - There is an open in the circuit between the navigation display unit and the navigation unit. Check for poor connections or loose terminals at the navigation display unit and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

- Check for continuity between the appropriate terminals of navigation unit connector A (20P) and the navigation display unit 20P connector based on the missing color(s).

CONNECTOR TERMINAL REFERENCE

Missing color	Navigation unit connector A (12P)	Navigation display unit 20P connector
Blue	A11	10, 20

Green	A2	10, 20
Red	A1	10, 20

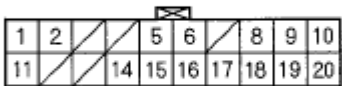
NAVIGATION UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 37: Identifying Navigation Unit Connector A (12P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION DISPLAY UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 38: Identifying Navigation Display Unit 20P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the circuit between the navigation display unit and the navigation unit. Replace the affected shielded harness.

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**). If the problem is still unresolved, replace the navigation display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

Picture has lines or rolls

Diagnostic Test: Monitor Check

- NOTE:
- Always make sure that the correct DVD color and version are installed.
 - Inspect the DVD for dirt or damage.
 - Check any official Honda service website for more service information

about the navigation system.

- **Always check the navigation screen settings for brightness, contrast, black level and the color screen for map color and menu color.**
- **Always check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have anti-theft code for the audio system and the navigation system.**
- **Check the vehicle battery condition first.**
- **Always compare the screen image to a known-good vehicle. If the screen looks the same, inform the client that it is characteristic of the system.**

1. Check for electronic aftermarket accessories (possibly hidden) mounted near the navigation display unit or the navigation unit.

Are there any electronic accessories?

YES - Disable the accessories, and recheck.

NO - Go to step 2.

2. Start up the navigation picture.

Is the picture scrolling horizontally (left to right or right to left)?

YES - Check for an open or short to ground in the C SIG wire from navigation unit connector A (20P) No. 12 terminal to navigation display unit 20P connector No. 19 terminal. Also check for a short to ground between navigation display unit 20P connector No. 19 terminal and No. 20 terminal.

NO - Go to step 3.

3. Go into the Diagnostic mode, and use RGB Color diagnostic under Monitor Check (see **MONITOR CHECK**).

Is the picture missing a red, green or blue color?

YES - Do troubleshooting for the picture is missing a color or tone or is an odd color (see **PICTURE IS MISSING A COLOR OR TONE OR IS AN ODD COLOR**).

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Substitute a known-good navigation display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**), and recheck.

Is the picture OK?

YES - Check for loose connections, then replace the original navigation display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - Check for loose connections and recheck. If a poor connection or loose terminal is found, replace the shielded harness. If no poor or loose terminals are found, substitute a known-good navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**) and recheck. If the problem is gone, replace the original navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Interface dial buttons do not work

NOTE:

- Always make sure that the correct DVD color and version are installed.
- Inspect the DVD for dirt or damage.
- Check the vehicle battery condition first.
- Confirm the correct DVD color and version disc is installed in the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**) as the wrong DVD or software version can cause a hardware malfunction.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft code for the audio system and the navigation system.
- After troubleshooting, enter the anti-theft codes for the audio system and the navigation system (if equipped).

1. Start the vehicle.
2. Go into the Diagnostic mode, and use Hard Key test under Unit Check (see **UNIT CHECK**).

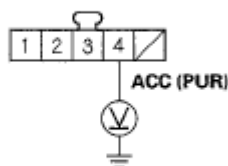
Does the interface dial and/or joystick work properly?

YES - The system is OK at this time.

NO - Go to step 3.

3. Measure the voltage between the interface dial 5P connector No. 4 terminal and body ground.

INTERFACE DIAL 5P CONNECTOR



Wire side of female terminals

Fig. 39: Identifying Voltage Between Interface Dial 5P Connector Terminal 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

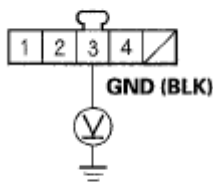
Is there battery voltage?

YES - Go to step 4.

NO - Repair open in the wire between the under-dash fuse/relay box and the interface dial.

4. Measure the voltage between interface dial 5P connector No. 3 terminal and body ground.

INTERFACE DIAL 5P CONNECTOR



Wire side of female terminals

Fig. 40: Identifying Voltage Between Interface Dial 5P Connector Terminal 3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES - Go to step 7.

NO - Repair open in the wire between the interface dial and body ground (G506) (see **DASHBOARD WIRE HARNESS (VIEW OF PASSENGER'S SIDE)**).

5. Turn the ignition switch to LOCK (0).
6. Disconnect the interface dial 5P connector and the navigation unit connector A (20P).
7. Check for continuity between navigation unit connector A (20P) No. 17 terminal and interface dial 5P connector No. 1 terminal.

NAVIGATION UNIT CONNECTOR A (20P)

Wire side of female terminals

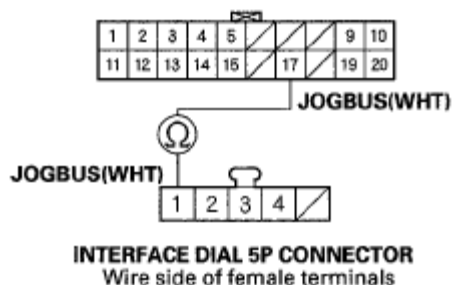


Fig. 41: Identifying Continuity Between Navigation Unit A (20P) And Interface Dial 5P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 8.

NO - There is an open in the circuit between the interface dial and the navigation unit. Replace the affected shielded harness.

8. Check for continuity between navigation unit connector A (20P) No. 17 and No. 19 terminals.

NAVIGATION UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 42: Identifying Continuity Between Navigation Unit Connector A (20P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short in the wire. Replace the affected shielded harness.

NO - Go to step 9.

9. Substitute a known-good interface dial (see **DISPLAY UNIT REMOVAL/INSTALLATION**), and recheck.

Is the system OK?

YES - Replace the original interface dial (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

GPS icon is white or not shown

Diagnostic Test: Navi System Link

NOTE:

- With good reception, the icon is normally green.
- Make sure the GPS antenna is plugged in.
- Check for any aftermarket accessories that may be interfering with the GPS signal.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- **Make sure the vehicle is parked outside and away from buildings.**
- **Refer to GPS INFORMATION (see) for real time satellite reception display.**
- **Check the vehicle battery condition first.**

1. Check for metallic window tint on the windshield and electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the navigation unit.

Is there metallic window tint or electronic accessories?

YES - Remove tint or the accessories and recheck.

NO - Go to step 2.

2. Turn the ignition switch to ON (II).
3. Go into the Diagnostic mode, and use the Navi System Link diagnostic (see NAVI SYSTEM LINK) to check the GPS antenna.

Is the GPS Ant icon red?

YES - Check for a kinked, crushed, or disconnected GPS antenna wire. If icon is still red, replace the GPS antenna.

NO - Check that nothing is blocking the GPS antenna located under the rear shelf and recheck. Substitute a known-good GPS antenna, and recheck.

- If the symptom is gone, replace the GPS antenna.
- If the symptom is still present, substitute a known-good navigation unit and recheck. If the symptom is gone, replace the original navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

Voice guidance cannot be heard, is broken up, or there is static

Diagnostic Test: Navi System Link

NOTE:

- **Make sure that the correct DVD color and version are installed.**
- **Inspect the DVD for dirt or damage.**
- **Check the navigation volume level (See Owner's manual).**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have anti-theft codes for the audio system and navigation system.**
- **After troubleshooting, enter the anti-theft codes for the audio system and navigation system.**
- **Check the vehicle battery condition first.**

1. Turn the ignition switch to ON (II).
2. Press the display unit SET-UP button.
3. Check the volume and voice feedback setting for the navigation system in set-up.

Is either set to OFF?

YES - Set the voice feedback to ON and select an audible level for the volume.

NO - Go to step 4.

4. Check the radio operation.

Can you hear the radio?

YES - Go to step 5.

NO - Troubleshoot audio system.

5. Go into the Diagnostic mode, and use the Navi System Link diagnostic (see **NAVI SYSTEM LINK**) to check the radio.

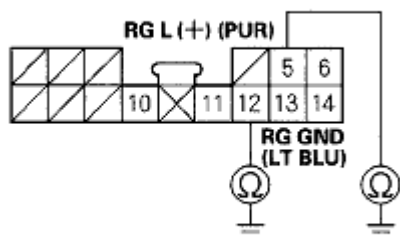
Is the Radio icon red?

YES - Troubleshoot the audio system.

NO - Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Disconnect navigation unit connector B (14P) and the stereo amplifier connector A (28P).
8. Check for continuity between body ground and navigation unit connector B (14P) No. 5 and No. 12 terminals individually.

NAVIGATION UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 43: Identifying Continuity Between Body Ground And Navigation Unit Connector B (14P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

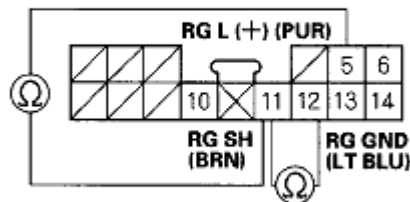
Is there continuity?

YES - Repair short to body ground in the wire between the navigation unit and stereo amplifier units.
Replace the affected shielded harness.

NO - Go to step 9.

9. Check for continuity between navigation unit connector B (14P) No. 11 terminal and No. 5 and No. 12 terminals individually.

NAVIGATION UNIT CONNECTOR B (14P)



Wire side of female terminals

Fig. 44: Identifying Continuity Between Navigation Unit Connector B (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

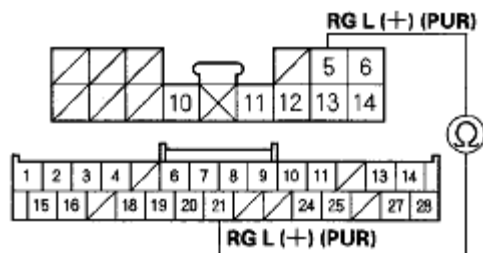
YES - Repair short to body ground in the wire between the navigation unit and stereo amplifier units.
Replace the affected shielded harness.

NO - Go to step 10.

10. Check for continuity between navigation unit connector B (14P) No. 5 terminal and the stereo amplifier unit connector A (28P) No. 21 terminal.

NAVIGATION UNIT CONNECTOR B (14P)

Wire side of female terminals



STEREO AMPLIFIER UNIT CONNECTOR A (28P)

Wire side of female terminals

Fig. 45: Identifying Continuity Between Navigation Unit B (14P) And Stereo Amplifier Unit Connector A (28P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - There is an open in the circuit between the navigation unit and stereo amplifier. Check for poor connections or loose terminals at the stereo amplifier and navigation unit. If a poor connection or loose terminal is found, replace the affected shielded harness.

11. Check for continuity between navigation unit connector B (14P) No. 12 terminal and the stereo amplifier unit connector A (28P) No. 9 terminal.

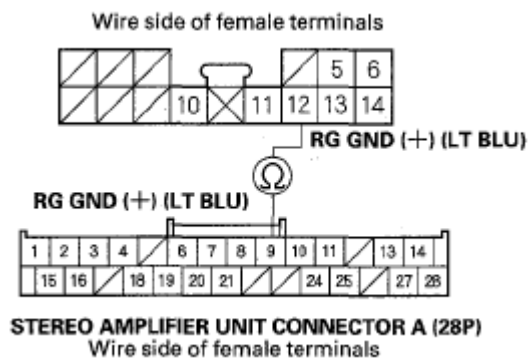


Fig. 46: Identifying Continuity Between Navigation Unit B (14P) And Stereo Amplifier Unit Connector A (28P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - There is an open in the circuit between the navigation unit and the stereo amplifier. Check for poor connections or loose terminals at the stereo amplifier and navigation unit. If a poor connection or loose terminal is found, replace the affected shielded harness.

12. Substitute a known-good stereo amplifier, and recheck.

Is the system OK?

YES - Replace the stereo amplifier.

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

Voice control does not work/respond

Diagnostic Test: Mic Level

NOTE:

- Make sure that the correct DVD color and version are installed.
- Check any official Honda service website for more service information about the navigation system.
- Before assuming that a voice complaint is hardware related, ensure that the voice control system is being operated correctly.
 - Make sure you are on the correct screen when trying to issue a voice command. For instance, the command Find the nearest Italian Restaurant only works on Map screen. (See the Navigation System manual for a complete list of allowed voice commands for the information being displayed).
 - Close the windows and sunroof.
 - Set the fan speed to low (1 or 2).
 - Adjust the air flow from the air conditioning vents so that they do not blow against the microphone on the ceiling.
 - Pause after pressing the TALK button then give a voice command clearly in a natural speaking voice. If the system cannot recognize your command, speak louder.
 - If the microphone picks up voices other than yours, the system may not interpret your voice commands correctly.
 - If you speak a command with something in your mouth, or your voice is too husky, the system may misunderstand your command.
- Check the connectors for poor connections or loose terminals.
- Check for a loose roof console microphone; if it's loose, tighten it.
- Before troubleshooting, make sure you have the anti-theft codes for the audio system and navigation system (if equipped).
- After troubleshooting, enter the anti-theft codes for the audio system.
- Determine if the problem only happens to one person, or everyone who uses the system.
- If the system only has a problem with one person's voice, this should be considered a system limitation.

1. Turn the ignition switch to ON (II).
2. Go into the Diagnostic Menu, and use the Mic Level test the under Functional Setup (see **FUNCTIONAL SETUP**) to check the operation of the TALK and BACK buttons.

Are the TALK and BACK buttons operational?

YES - Go to step 3.

NO - Check for an open or short to ground on navigation unit connector B (14P) No. 10 terminal.

3. Use the Mic Level diagnostic under Functional Setup (see **FUNCTIONAL SETUP**) to check the

operation of the microphone.

Is the microphone operational?

YES - Check the operation of the voice control system (see the Navigation System Manual).

NO - Check for a loose front map light (microphone) assembly. If OK, check for an open or short to ground on navigation unit connector B (14P) No. 6 and No. 14 terminals.

DVD screen error messages

Diagnostic Test: Car Status

NOTE:

- Confirm the correct DVD color and version disc is installed in the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).
- Refer to General Troubleshooting for a list of common DVD screen error messages and the probable causes (see ERROR MESSAGE TABLE).
- Go into the Diagnostic mode and use the Car Status diagnostic (see CAR STATUS) to check the status of the DVD lid.
- Inspect the navigation DVD for scratches or damage.
- The following troubleshooting is for the error messages shown on the error message table (see ERROR MESSAGE TABLE).

1. Check the DVD-ROM reading surface for scratches and finger prints.

Are there any scratches or finger prints on the DVD-ROM reading surface?

YES - Clean or replace the DVD-ROM (see DVD-ROM Replacement).

NO - If the problem occurs occasionally when the system is cold, this is normal. If the problem occurs frequently when driving, replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

Navigation cannot control HVAC by voice command

NOTE:

- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have anti-theft codes for the navigation system.
- After troubleshooting, enter the anti-theft codes for the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see VERSION).
- Make sure that the correct DVD color and version are installed.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- **Check on-line for service bulletins or other service information for the navigation system.**

1. Connect the HDS to the DLC. Check for B-CAN or F-CAN DTCs in the data list.

Are there any DTCs in the B-CAN or F-CAN systems?

YES - Troubleshoot and repair all CAN related DTCs, and then retest.

NO - Go to step 2.

2. Check the navigation system for normal operation.

Does the navigation system function normally in all other operations?

YES - Go to step 3.

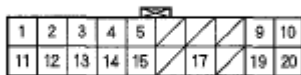
NO - Refer to the navigation symptom troubleshooting. Troubleshoot and repair any other problems, then retest.

3. Disconnect climate control unit connector A (40P) and navigation unit connector A (20P).
4. Check for continuity between climate control unit connector A (40P) and navigation unit connector A (20P) according to the table.

CONNECTOR TERMINAL REFERENCE

Climate control unit connector A (40P)	Navigation control unit connector A (20P)	Wire color
A2	A4	YEL
A22	A14	RED
A21	A15	BLU

NAVIGATION UNIT CONNECTOR A (20P)



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Fig. 47: Identifying Navigation Control Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

CLIMATE CONTROL UNIT CONNECTOR A (40P)



Wire side of female terminals

Fig. 48: Identifying Climate Control Unit Connector A (40P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity on all wires?

YES - Go to step 5.

NO - Repair open in the affected wire(s) between climate control unit connector A (40P) and navigation unit connector A (20P).

5. Check for continuity between each wire in the navigation unit connector A (20P) according to the table.

CONNECTOR TERMINAL REFERENCE

Navigation control unit connector A (20P)	Wire color
A4	YEL
A14	RED
A15	BLU

NAVIGATION UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 49: Identifying Navigation Control Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity to any other wire?

YES - Repair short in the affected wire(s) between climate control unit connector A (40P) and navigation unit connector A (20P).

NO - Go to step 6.

6. Check for continuity between navigation unit connector A (20P) and body ground according to the table.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

CONNECTOR TERMINAL REFERENCE

Navigation control unit connector A (20P)	Wire color
A4	YEL
A14	RED
A15	BLU

NAVIGATION UNIT CONNECTOR A (20P)



1	2	3	4	5				9	10
11	12	13	14	15		17		19	20

Wire side of female terminals

Fig. 50: Identifying Navigation Control Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity to ground?

YES - Repair short to ground in the affected wire(s).

NO - Go to step 7.

- Turn the ignition switch to ON (II).
- Measure the voltage between navigation unit connector A (20P) No. 4, No. 14, and No. 15 terminals and body ground.

CONNECTOR TERMINAL REFERENCE

Navigation control unit connector A (20P)	Wire color
A4	YEL
A14	RED
A15	BLU

NAVIGATION UNIT CONNECTOR A (20P)



1	2	3	4	5				9	10
11	12	13	14	15		17		19	20

Wire side of female terminals

Fig. 51: Identifying Navigation Control Unit Connector A (20P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.2 V to ground on any wire?

YES - Repair short to power on the affected wire(s).

NO - Go to step 9.

9. Substitute and a known-good climate control unit. Reconnect all connectors and retest.

Does the symptom go away?

YES - Replace the original climate control unit.

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

Display day/night mode does not work

NOTE:

- Turn the headlight on the check that the dash brightness setting is not set to high.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have anti-theft codes for the audio system and the navigation system (if equipped).
- After troubleshooting, enter the anti-theft codes for the audio system and the navigation system (if equipped).
- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see VERSION).
- Always make sure that the correct DVD color and version are installed.
- Check any official Honda service website for, more service information about the navigation system.

1. Adjust the A/C using voice commands.

Can you control the A/C by voice command?

YES - Go to step 2.

NO - Do navigation cannot control A/C by voice troubleshooting.

2. Turn the headlights on, and adjust the dash brightness up and down, then to the middle range.

Does the display change to day and night modes when turning the headlights on and off?

YES - The system is OK at this time.

NO - Go to step 3.

3. Cover the sunlight sensor on the dash, then turn the headlight on and off.

Does the navigation display dim and brighten normally?

YES - The system is OK at this time.

NO - Check the ILL+ circuit for an open or short to ground between the navigation display to the gauge control module. If OK, substitute known good units in this order and recheck the system:

- Navigation unit
- Climate control unit
- Gauge control unit

System locks up or freezes constantly

NOTE:

- Check the GPS and VSP signals in the GPS information check (see GPS INFORMATION) and car status (see CAR STATUS).
- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft codes for the navigation system.
- After troubleshooting, enter the anti-theft codes for the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see VERSION).
- Make sure that the correct DVD color and version are installed.
- Check any official Honda service website for more service information about the navigation system.
- Check the DVD for damage or scratches.

1. Start the engine, turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II).

Does the system reboot, lock up, or freeze?

YES - The system is OK at this time.

NO - Check the DVD for the correct color, software version, scratches or damage and the navigation unit for water damage. If OK, go into the Diagnostic mode and do all of the Unit Check diagnostics (see

UNIT CHECK). If all tests are OK, replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Vehicle icon wanders across the map when driving (does not follow a displayed road) or map vehicle ICON spins

NOTE:

- This is not the same condition as when driving off-road (or on a fire or logging road).
- This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket or other objects that can block the GPS signal. Always perform Map matching (see **MAP MATCHING**) before proceeding with the troubleshooting.
- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft codes for the navigation system.
- After troubleshooting, enter the anti-theft codes for the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see **VERSION**).
- Make sure that the correct DVD color and version are installed.
- Check any official Honda service website for more service information about the navigation system.
- Check the DVD for damage or scratches.

1. Check the GPS icon on the navigation picture.

Is the GPS icon white or missing?

YES - Do the troubleshooting for GPS icon is white or not shown (see **GPS icon is white or not shown**).

NO - Go to step 2.

2. Go into the Diagnostic mode and use the Yaw Rate diagnostic (see **YAW RATE**) to check the yaw rate sensor.

Is the yaw rate sensor OK?

YES - Go to step 3.

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

3. Go into the Diagnostic mode and use the Car Status diagnostic (see **CAR STATUS**) to check the vehicle speed pulse (VSP) and the BACK signals.

Are the vehicle speed pulse and the BACK signals OK?

YES - The problem may be a characteristic of the system. Check to see if the problem occurs in the same place in a known-good vehicle. If it does, the problem could be in the database. Go to step 4.

NO -

- If the problem is the vehicle speed pulse, troubleshoot the vehicle speed signal circuit. BLU wire for open or short. If OK, swap a known-good PCM. If the problem or symptom goes away, replace the original PCM.
 - If the BACK signal is indicated ON (I), when in any shift lever position other than reverse, troubleshoot the back-up light switch circuit or MICU.
4. Substitute a known-good navigation unit and check to see if the problem occurs in the same place.

Does the problem occur in the same place?

YES - The problem is in the database and should be considered a characteristic of the system. Report the problem according to the Navigation System Manual under Reporting Errors and look for improvements in future databases.

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Navigation system will not accept security code

NOTE:

- **The system will not operate without the 4-digit security (anti-theft) code. Follow the this procedure. (After 10 consecutive tries, you must cycle the key to continue trying)**
- **The Navigation System Diagnosis and Core Return Form is available online, under Job aids and can be printed out for recording this information. This information will help the Reman facility determine what caused the failure.**
- **Check for and resolve all CAN DTCs before troubleshooting the navigation system.**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, make sure you have the anti-theft codes for the navigation system.**
- **Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see **VERSION**).**
- **Make sure that the correct DVD color and version are installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Check the vehicle battery condition first.**

1. Go into the System diagnosis menu (see **START-UP PROCEDURE AND DIAGNOSTIC MENU**),

select Unit check, and then Navi ECU. A brief diagnostic will run for 20 seconds, and the serial number is then displayed.

Is the serial number displayed?

YES - Go to step 2.

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

2. Obtain the Serial Number (3 letters followed by 8 numbers) from the label on the underside of the navigation unit (not the display unit). Using the Serial Number, look up the navigation security code in the Interactive Network, (click: Service, Vehicle Information, Anti-Theft code Inquiry, and then select Navigation from the product dropdown box). Enter the serial number.

Is a 4-digit code displayed?

YES - Go to step 3.

NO - Call the Warranty Department, the telephone number is listed in the PDI/TQI bulletin, to obtain the code. Then go to step 4.

3. Check the obtained code work to bypass the code screen.

Does the code work?

YES - The system is OK at this time.

NO - Go to step 4.

4. Try entering four zeros (0000) in place for the code.

Do the four zeros work to bypass the code screen?

YES - Replace the control unit, and enter Security code is 0000 in the problem description field of the core return form.

NO - Replace the control unit, and enter Won't take security code (as proof, enclose the sticker that contains the Serial number and the Code) in the problem description field of the core return form.

Navigation display stays on with ignition switch OFF

NOTE:

- **Check for aftermarket accessories that may interfere with the navigation system.**
- **Check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, get the navigation system anti-theft codes.**

- After troubleshooting, re-enter the anti-theft code, and re-initialize the navigation system.
- The vehicle may have been used for a show event. Check for a short jumper harness in-line with the navigation unit connector C. If a jumper harness is present, remove it and return it to Tech Line.

1. Remove the key from the ignition.

Does the navigation screen stay on?

YES - Go to step 2.

NO - The system is OK at this time.

2. Check for a short to power on navigation unit connector C (8P) No. 2 terminal.

Is there a short?

YES - Troubleshoot the ACC circuit.

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

Navigation cannot control audio/disc/rear entertainment

Diagnostic Test: Navi System Link

NOTE:

- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft codes for the navigation system.
- After troubleshooting, enter the anti-theft codes for the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see VERSION).
- Make sure that the correct DVD color and version are installed.
- Check any official Honda service website for more service information about the navigation system.

1. Turn the ignition switch to ON (II).
2. Make sure the anti-theft code for the audio system is entered.
3. Go into the Diagnostic mode, and use the Navi System Link diagnostic (see NAVI SYSTEM LINK).

Is the Radio icon red?

YES - Do the troubleshooting for the voice guidance cannot be heard (see **GPS icon is white or not shown**).

NO - Go to step 4.

4. Substitute a known-good navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**), and recheck.

Can the navi control audio/disc?

YES - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO - Do the audio system troubleshooting.

Rearview camera image does not come on or work properly

NOTE:

- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft codes for the navigation system.
- After troubleshooting, enter the anti-theft codes for the navigation system.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see **VERSION**).
- Make sure that the correct DVD color and version are installed.
- Check any official Honda service website for more service information about the navigation system.
- Check the vehicle battery condition first.

1. Turn the ignition switch to ON (II), and start the engine.

Does the Navigation screen come on and show an image when the vehicle is started?

YES - Go to step 2.

NO - Go to troubleshooting for **NO PICTURE IS DISPLAYED** .

2. Go into the diagnostic menu and use the Navi System Link test (see **NAVI SYSTEM LINK**) to check the connection between the navigation unit and the rearview camera.

Is the R-camera link on the screen?

YES - Go to step 3.

NO - Go to step 12.

3. Confirm the system connection.

Is the R-camera link red on the screen?

YES - Go to step 4.

NO - Go to **CAR STATUS** and check the BACK-Reverse indication status .

4. Check the connections between navigation unit connector D (7P) and the rearview camera connector (6P).

Are the connections OK?

YES - Go to step 5.

NO - Reconnect the connectors.

5. Disconnect navigation unit connector D (7P) and rearview camera connector (6P).
6. Check for continuity between the navigation unit connector D (7P) and the rearview camera connector (6P) according to the table.

CONNECTOR TERMINAL REFERENCE

Navigation unit connector	Rearview camera	Wire color
D1	6	WHT
D5	3	BLK
D7	1	RED
D6	2	GRY

NAVIGATION UNIT CONNECTOR D (7P)



Wire side of female terminals

REARVIEW CAMERA CONNECTOR (6P)



Terminal side of male terminals

Fig. 52: Identifying Navigation Unit D (7P) And Rearview Camera Connector (6P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 7.

NO - Repair open in the wire between navigation unit connector D (7P) and rearview camera connector (6P).

7. Check for continuity between navigation unit connector D (7P) and body ground according to the table. Then check for continuity between the navigation unit connector D (7P) No. 6 terminal, rearview camera 6P connector No. 2 terminal and same terminals.

CONNECTOR TERMINAL REFERENCE

Navigation unit connector	Wire color
D1	WHT
D5	BLK
D7	RED

NAVIGATION UNIT CONNECTOR D (7P)



Wire side of female terminals

Fig. 53: Identifying Navigation Unit Connector D (7P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between navigation unit and the rearview camera, or replace the appropriate shielded harness.

NO - Go to step 8.

8. Turn the ignition switch to ON (II), and measure the voltage between navigation unit connector D (7P) and body ground according to the table.

CONNECTOR TERMINAL REFERENCE

Navigation unit connector	Wire color
D1	WHT
D5	BLK
D7	RED
D6	GRY

NAVIGATION UNIT CONNECTOR D (7P)



Wire side of female terminals

Fig. 54: Identifying Navigation Unit Connector D (7P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES - Repair short to power in the wire between navigation unit and the rearview camera, or replace the appropriate shielded harness.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Reconnect the rearview camera connector (6P).
11. Substitute and connect a known-good navigation unit and check the rearview camera image in reverse.

Is the rear view image OK?

YES - Replace the original navigation unit.

NO - Replace the rearview camera.

12. Press the Return in the upper light corner of the screen to return the main menu, then go to **VERSION**.
13. Check the model code that is displayed.

Is the correct navigation unit model code displayed for this vehicle?

YES - Go to step 14.

NO - The wrong navigation unit is installed. Replace the navigation unit with the correct part.

14. Remove the DVD disc from the navigation unit and check the label color of the DVD disc.

Is the DVD disc label white (or possibly gray for Canada)?

YES - Reinsert the DVD disc, and go to step 4.

NO - Replace the DVD disc with the correct color. See the Obtaining a Navigation DVD in the General

Troubleshooting Information (see **GENERAL TROUBLESHOOTING INFORMATION**).

Navigation cannot control XM radio

Diagnostic Test: Navi System Link

NOTE:

- **Make sure that the correct DVD color and version are installed.**
- **Check any official Honda service website for more service information about the navigation system.**
- **Check the vehicle battery condition first.**

1. Start the vehicle.
2. Make sure the anti-theft code for the audio system is entered.
3. Go into the Diagnostic mode, and use the Navi System Link diagnostic (see **NAVI SYSTEM LINK**).

Is the "XM" icon red?

YES - Do the troubleshooting for the voice guidance cannot be heard (see **GPS icon is white or not shown**).

NO - Go to step 3.

4. Substitute a known-good navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Can the navi control XM radio?

YES - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO - Do the audio system troubleshooting.

Navigation frequently asks for anti-theft code and needs GPS initialization

NOTE:

- **This is often caused by a loss of battery power or a poor ground.**
- **Make sure that the correct DVD color and version are installed.**
- **Check any official Honda service website for more service information about the navigation system.**

1. Turn the ignition switch to LOCK (0).
2. Disconnect navigation unit connector A (8P), and check for loose terminals.

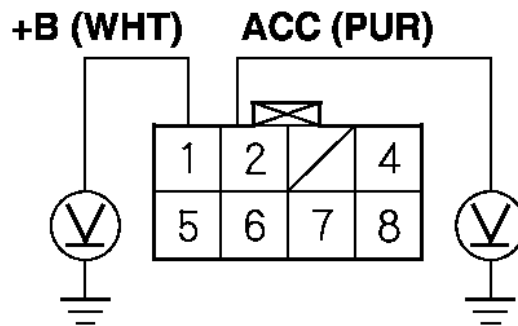
Are any of the replace the terminals loose?

YES - Repair or replace the loose terminal(s).

NO -Go to step 3.

3. Turn the ignition switch to ON (II).
4. Measure the voltage between body ground and navigation unit connector C (8P) terminals No. 1 and No. 2 individually.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Fig. 55: Measuring Voltage Between Body Ground And Navigation Unit Connector C (8P) Terminals No. 1 And No. 2 .

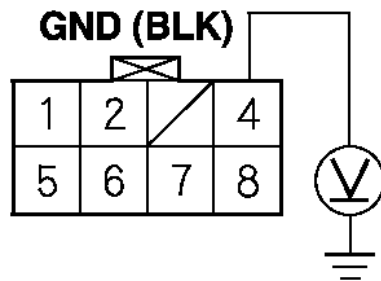
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 5.

NO -If the +B wire does not have voltage, repair open in the wire between the under-hood fuse/relay box and navigation unit connector C (8P). If the ACC wire does not have voltage, repair open in the wire between the driver's under-dash fuse/relay box and navigation unit connector C (8P).

5. Measure the voltage between navigation unit connector C (8P) terminal No. 4 and body ground.

NAVIGATION UNIT CONNECTOR C (8P)

Wire side of female terminals

Fig. 56: Measuring Voltage Between Navigation Unit Connector C (8P) Terminals No. 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.2 V or less?

YES -Replace the navigation unit(See NAVIGATION UNIT REMOVAL/INSTALLATION).

NO -Repair open or high resistance in the wire between navigation unit connector C (8P) and body ground (G605)(See CONNECTOR TO HARNESS INDEX .

Traffic information is not being shown on map screen

If your client complains that traffic is not being displayed, it could be because a traffic setting is not correct.

NOTE:

- Check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.
- Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use Version (see VERSION).
- Make sure that the correct DVD color and version are installed.

- Check any official Honda service website for more service information about the navigation system.
- Check the vehicle battery condition first.
- A marginal battery or poorly performing charging system may cause the XM/HIP unit to malfunction.
- The vehicle is equipped with an auto start feature that keeps the starter motor engaged, even when you release the ignition switch. Due to the ignition design, if a client releases the ignition switch before the engine starts, the XM/HIP unit may receive unusually low voltage. This may cause the XM/HIP to malfunction. When starting the vehicle, hold the ignition switch in the START (III) position until the motor starts.

1. Test the battery condition (see **BATTERY TEST**).

Is the battery in good condition ?

YES - Go to step 2.

NO - Troubleshooting the battery and/or charging system and recheck.

2. Park the vehicle outside where you have a clear view of the southern sky.
3. Turn the ignition switch to LOCK (0).
4. Start the engine by holding the ignition switch in the START (III) position until the engine starts to override the auto-start feature.
5. Check the real-time traffic display of a known-good vehicle to make sure that the XM NavTraffic is being broadcast in your area.

You may have to wait 5 minutes for the traffic display to refresh. Is real-time traffic shown on the map of the known-good vehicle ?

YES - Go to step 6.

NO - Call Acura Client Services at (800) 382-2238, and check to see if there are any traffic system outages or blackouts in your area.

NOTE: **Some cities feature incident icons only. A temporary lack of incident icons may give the impression that the system is not working properly.**

6. Make sure the client's XM NavTraffic account status is active. This account is separate from the regular XM radio subscription, and it has a separate fee. For the '07-08 MDX, real-time traffic is free for the first 3 months.

To check the XM NavTraffic account status:

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- Call XM Satellite Radio at (800) 852-9696.
- Make sure you have:
 - VIN
 - XM Radio ID (shown on channel 000)
- From the automated phone menu, select tech support.
- Inform the agent that you are working on an Acura vehicle, and ask them to check the XM NavTraffic account status. It is possible the client owns more than one vehicle capable of displaying real-time traffic. Have the agent confirm that the XM NavTraffic subscription applies to the vehicle VIN you are working on.

Is the XM NavTraffic account status active?

YES - Go to step 7.

NO - If the free trial period is expired, return the vehicle to the client, and inform them how to renew their XM NavTraffic subscription by calling XM Radio at (800) 852-9696.

- If the free trial period has not expired, call XM Radio at (800) 852-9696 and reactivate the account for the remainder of the free trial period, then request a rapid refresh. To do a rapid refresh:
 - Park the vehicle outside in a clear area with the engine running.
 - Turn the audio system on, and tune to an XM radio channel.
 - Wait 30 minutes
- If the vehicle now receives real-time traffic information, return the vehicle to the client .

7. Updating the AcuraLink unit software.

Are there any applicable product updates or service bulletins?

YES - Do the applicable product updates and service bulletins, then retest the vehicle. If real-time traffic does not work. Go to step 4.

NO - Go to step 8.

8. Verify that you are receiving a signal from XM:

- Park the vehicle outside with a clear view of the southern sky.
- Turn on the audio system, and tune to XM channels 000, 001, 174, or 247.

Can you tune XM channels 000, 001, 174, or 247?

YES - Go to step 9.

NO - Refer to the applicable service manual, troubleshoot the XM radio, and retest. if real-time traffic does not work, go to step 5.

9. Make sure the navigation map is set to either the 1/2, 1, 2, or 5 mile scale, if the scale is not set to one of these values, either rotate the interface dial knob, or use the zoom in/zoom out buttons to adjust the map to proper scale.

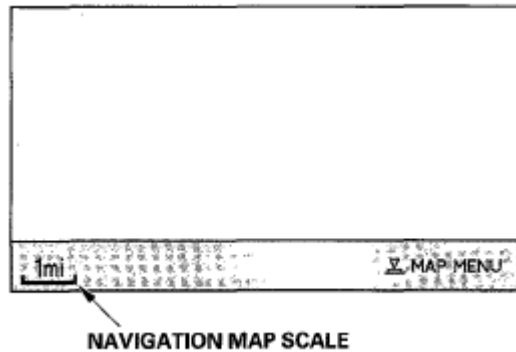


Fig. 57: Identifying Navigation Map Scale

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Do you see real-time traffic on the navigation display?

YES - Return the vehicle to the client, and explain the proper settings.

NO - Go to step 10.

10. Make sure the real-time traffic settings are correct.
- Press the **map/guide** button, then select the **map menu** by pressing in the selector button.
 - Select **Show Icon on Map** by turning the interface dial, then pressing in the selector button.
 - Select the **Traffic** icon from the **icon selection bar** at the bottom of the navigation display. The icon should turn **solid blue** when you select it. If it does not turn solid blue, go to step 7.
 - Select **icon options** by pushing the selector to the right.
 - From the **Select category for icon settings** menu, select the **Traffic** choice.
 - Select **traffic speeds** by pressing in the selector on the **Select Traffic info** screen. It should turn **solid blue**. Turn the interface dial to select **Traffic** icons, and press in the selector in again. Both **Traffic speeds** and **Traffic Icons** must be **solid blue**. Push the selector to the right (**DONE**) to complete the process.

Do you see real-time traffic on the navigation display?

YES - Return the vehicle to the client, and explain the proper settings.

NO - Go to step 11.

11. Do the diagnostic mode checks:
- Start the vehicle, and enter the navigation diagnostic mode by pressing and holding the **Menu**, **Map/Guide**, and **Cancel** buttons.

- Select **Navi System** from the **Navigation Diagnosis Items** menu, and verify that all the icons are green. If any links/icons are red, refer to the applicable service manual for repair information, then go to step 12.
- Return to the main **Navigation Diagnosis Items** menu and select **XM (HIP)** , then select **XM (HIP) System Link** , and verify that the links/icons are green. If any links/icons are red, refer to the applicable service manual for repair information, then go to step 12.

12. Confirm the Traffic Channel settings of the AcuraLink unit.

- Return to the **XM (HIP)** diagnostic menu.
- Select the **XM (HIP) ECU** choice.
- Select the **Traffic channel** choice.

NOTE: **Do not touch of select the *Data Reset* choice.**

- Confirm the settings:
 - SID = 255
 - APP ID = 8
- Adjust the setting(S) if necessary as any other setting will prevent real-time traffic from displaying. Press the **cancel** button twice to return to the **XM (HIP)** diagnostic menu Select the on-screen **Return** button to fully exit the diagnostic mode.
- Turn the vehicle off. Wait 20 seconds, and start the vehicle.
- Park the vehicle outside with a clear view of the southern sky, and verify you are receiving an XM radio signal (see step 8).

Do you see real-time traffic on the display?

YES - Return the vehicle to the client.

NO - Go to step 13.

13. Reset the AcuraLink unit:

- Make sure you have the anti-theft codes for the audio system and the navigation system.
- Turn the ignition switch to LOCK (0), then pull the back-up fuse from the underhood fuse/relay box. For underhood fuse/relay box location, refer to the applicable service manual. Wait 2 minutes, then re-install the fuse.
- Start the vehicle.
- Enter the anti-theft codes for the audio system and the navigation system.
- Let the navigation system boot, then select one of the traffic scales (1/2, 1, 2, 5 miles).
- Park the vehicle outside with a clear view of the southern sky, and verify you are receiving an XM radio signal (see step 8).

Do you see real-time traffic on the navigation display?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

YES - Return the vehicle to the client.

NO - Go to step 14.

14. Substitute a known-good AcuraLink control unit, and retest the vehicle.

Park the vehicle outside with a clear view of the southern sky, and verify you are receiving an XM radio signal (see step 8).

Do you see real-time traffic on the navigation display?

YES - Replace the original AcuraLink control unit. Register the new AcuraLink control unit with XM radio and Acura Client Services. Return the vehicle to the client.

NO - Substitute a known-good navigation control unit. If the problem goes away, replace the original navigation control unit.

The Honda Globe Screen appears every time the vehicle is started

NOTE: **The navigation DVD and the navigation unit are correct for the vehicle, but earlier and possibly later versions of the navigation software may have been installed. When this happens, the software may not be recognized by the navigation unit, and could cause the navigation unit to revert to a Honda model profile.**

1. Remove the navigation unit and verify that the parts number printed on the navigation unit label is the correct one for the year/model vehicle you are working on.

Is the correct navigation unit installed based on the parts number?

YES - Go to step 2.

NO - Replace the navigation unit with the correct unit for the year/model vehicle you are working on.

2. Reinstall the navigation unit.
3. Remove the navigation DVD.
4. Note the software version marked on the DVD label and verify if it is the correct version for the vehicle year/model you are working on by checking any official Honda service Web site for more service information about the navigation system and navigation software.

Is the software version marked on the DVD label the correct one for the vehicle year/model you are working on?

YES - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

NO - Go to step 5.

5. Obtain the correct version DVD (see **MAP MATCHING**) and install it.

Does the navigation system boot-up with the Acura Globe Screen?

YES - The problem is resolved, troubleshooting is complete.

NO - The system still shows Honda Globe Screen. Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Navigation unit will not eject or accept the navigation DVD

1. Check No. 5 (10 A) and No. 32 (10 A) fuses in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 2.

NO - Replace the blown fuse(s) and recheck.

2. Turn the ignition switch to ON (II).
3. Eject the DVD from the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

Does the navigation DVD eject?

YES - Go to step 4.

NO - Go to step 5.

4. Reinsert the navigation DVD into the navigation unit.

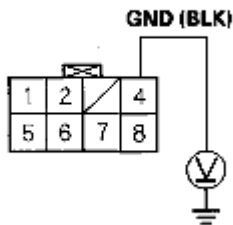
Does the navigation unit accept the navigation DVD?

YES - No problems at this time, the system is normal. Inspect for loose or poor connections at No. 1, No. 2 and No. 4 terminals of navigation unit connector C (8P).

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/INSTALLATION**).

5. Measure the voltage between navigation unit connector C (8P) No. 4 terminal and body ground.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Fig. 58: Identifying Voltage Between Navigation Unit Connector C (8P) Terminal 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

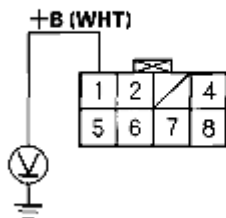
Is there less than 0.1 V?

YES - Go to step 6.

NO - Repair open or high resistance in the BLK wire between navigation unit connector C (8P) and body ground (G605).

6. Measure the voltage between navigation unit connector C (8P) No. 1 terminal and body ground.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Fig. 59: Identifying Voltage Between Navigation Unit Connector C (8P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the navigation unit (see [NAVIGATION UNIT REMOVAL/INSTALLATION](#)).

NO - Repair open in the WHT wire between navigation unit connector C (8P) terminal No. 1 and the No. 5 (10 A) fuse in the under-dash fuse/relay box.

SYSTEM DIAGNOSTIC MODE

START-UP PROCEDURE AND DIAGNOSTIC MENU

There are two ways to enter the diagnostic mode:

1. Connect the SCS connector (see **FORCED STARTING OF DISPLAY**) to the navigation service connector located in the trunk. Then turn the ignition switch to the ON (II). The display will go directly to the diagnostic menu screen shown below.

NOTE: When finished troubleshooting, make sure to remove the SCS connector.

2. Turn the ignition switch ON (II). Use the navigation display hard buttons as described below:

Make sure the battery is in good condition, then press and hold the three buttons (Menu, Map/ Guide, and Cancel), and keep them pressed for approximately 5 seconds. The display screen will go directly to the Select Diagnosis Items menu shown below.

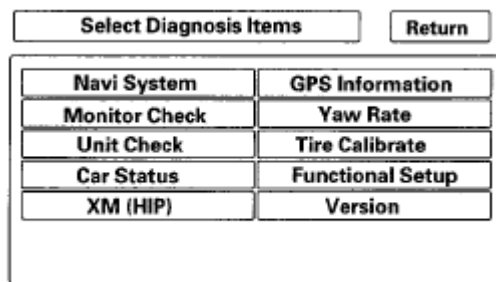


Fig. 60: Diagnosis Screen Display - System Diagnostic Items Menu
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. After the display changes to the Select Diagnosis Items menu, select the item you want to check and the diagnostic will start. To return to the previous screen, select Return.
 - Navi System (Link)
 - Monitor Check
 - Unit Check
 - Car Status
 - XM (HIP)
 - GPS Information
 - Yaw Rate
 - Tire Calibrate
 - Functional Setup
 - Version

FACTORY DIAGNOSTIC SCREEN "IN LINE DIAG"

NOTE: If the vehicle left the factory in the factory diagnostic mode, you will see this

screen every time you turn on the ignition.

When a navigation control unit is powered up for the first time at the factory or after replacement with a new or remanufactured navigation unit, the factory diagnosis screen (In Line Diag) shows up. Normally the factory done the steps necessary to verify proper operation and terminate the factory diagnostic. Until the proper confirmation sequence is done, the screen will show up every time the vehicle is started.

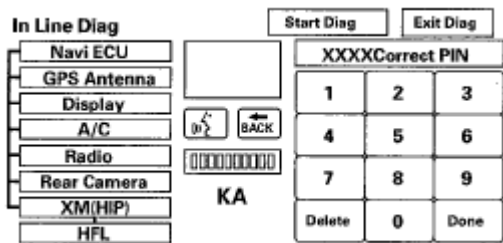


Fig. 61: Diagnosis Screen Display - In Line Diag
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Follow the steps below to prevent the screen from showing up in the future:

- Press and hold the buttons (Menu + Map/Guide + Cancel) for about 5 seconds (the Select Diagnosis items screen appears).
- Press and hold the Map/Guide button for 5-10 seconds (A screen with a Complete button, appears).
- Select Complete, then Return, and then turn the key off for 5 seconds. Do not disconnect the battery during this period as the unit is saving the setting to the SRAM memory. The In Line Diag should not appear again.
- Restart the vehicle, and confirm normal operation by completing the TQI of the Navigation System Service Bulletin.

NAVI SYSTEM LINK

- This diagnostic tests the cables connecting the navigation components. Ensure that the ignition switch is in the ON (II) position. When the diagnostic begins, you hear a bong sound. The system is in a Detecting mode, and is waiting for all items in white to be tested. This includes the navigation voice control (TALK/BACK) buttons, and microphone. Press the navigation TALK button on the steering wheel, and in a normal voice, say testing. The TALK indicator on the screen should turn green, and the voice level indicator should move to at least the 6th bar to pass. Next, press the navigation BACK button. The Back indicator should turn green.
- If all of the communication lines connecting the system components, and the navigation TALK/BACK buttons/microphone check out OK (all block diagram items green), then the OK indicator turns green.
- If there is a problem with the system, the faulty system component item turns red, and the screen will show NG in red. Use the troubleshooting index, and other diagnostic screens to help locate the problem.
- The indication on the screen may not change until you cycle the ignition switch. After repairing the affected cable or system, repeat this diagnostic.

NOTE:

- Green boxes and a green OK indicate that the communications lines (cables) are intact. This diagnostic does not necessarily imply that the individual components are functioning properly. For instance, the GPS antenna wire may be crushed, but still show as green. A road test, or other diagnostic may be necessary to find the problem.
- A green box and link to the AcuraLink control unit (XM receiver) does not mean that the unit is receiving traffic information. Always verify that the client's account status is active, and compare to a known-good vehicle to ensure that there isn't local coverage problem.
- Select Return to return to the Diagnosis Menu.

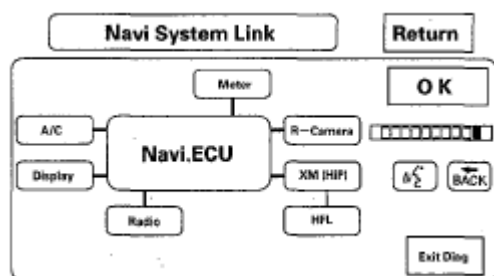
USA model

Fig. 62: Diagnosis Screen Display - Navi System Link (USA Model)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

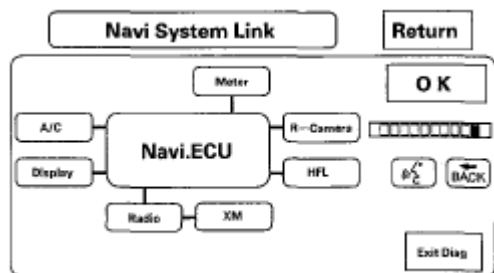
Canada model

Fig. 63: Diagnosis Screen Display - Navi System Link (Canada Model)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE:

- The mic level indicator must reach the 6th bar or greater to pass the test.
- If the XM link is red or flashing red, go to audio system symptom troubleshooting (see SELF-DIAGNOSTIC FUNCTION), or see XM (HIP) diagnostic screen.

Overview of display unit

- The illumination cancel signal is provided by the gauge via B-CAN to the HVAC unit, then to the navigation unit via the U-ART bus.
- The display unit communicates with the navigation unit over its own GA-Net bus. Information sent by the navigation unit to the display unit includes commands to control the LCD back light.
- The security system protects the navigation display unit by daisy-chaining the security signal through it, and then passing the signal to the audio unit.
- The illumination input from the gauge brightness control provides back lighting for the buttons surrounding the screen.

These screens allow you to troubleshoot the display unit. Select the item you want to troubleshoot, and follow the diagnostic instructions.

- RGB color
- Gray Tone
- White Raster
- Black Raster
- Color Pattern
- Monitor Adjustment

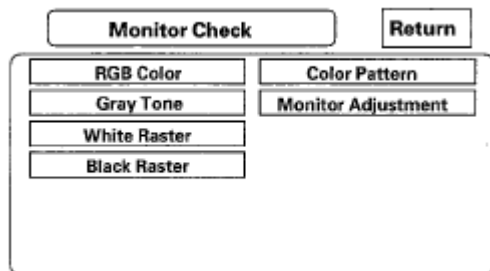


Fig. 64: Diagnosis Screen Display - Monitor Check
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RGB Color

This screen verifies that the display unit is receiving the video (R, G, B and Composite sync) signals properly. The three primary colors should all be shown without distortion. The combination of all three should produce a central white section. If any of the colors are missing, troubleshoot for the color signal (see **PICTURE IS MISSING A COLOR OR TONE OR IS AN ODD COLOR**). If the picture has lines in it or scrolls horizontally, or vertically, troubleshoot for a Composite sync problem (see **PICTURE HAS LINES OR ROLLS**).

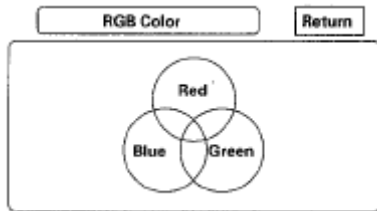


Fig. 65: Diagnosis Screen Display - RGB Color
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Gray Tone

This screen diagnoses problems with contrast. You should be able to see the changes from bar to bar across the scale. It is normal for the two bars on either side to appear the same.

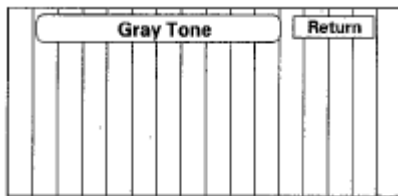


Fig. 66: Diagnosis Screen Display - Gray Tone
Courtesy of AMERICAN HONDA MOTOR CO., INC.

White Raster

This diagnostic screen checks for pixels that may be dead (off). The entire display must be white. If there are dead pixels, replace the navigation unit.



Fig. 67: Diagnosis Screen Display - White Raster
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Black Raster

This diagnostic screen checks for pixels that may be stuck on. The entire display must be black. If pixels are stuck on, replace the navigation unit.

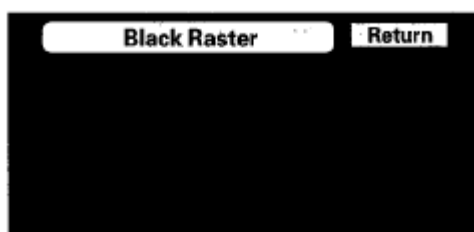
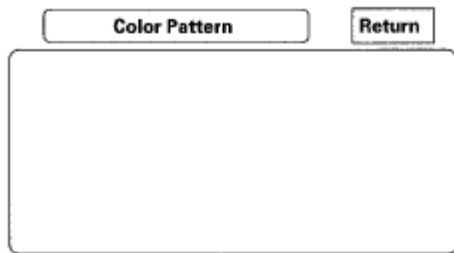


Fig. 68: Diagnosis Screen Display - Black Raster

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Color Pattern

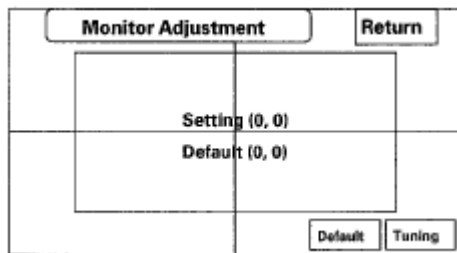
The chart below shows the colors being used for the map and menu screens. This is for factory use only. To check the color signal use the RGB Color diagnostic found under the Monitor Check.

**Fig. 69: Diagnosis Screen Display - Color Pattern**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Monitor Adjustment

This allows you to center the navigation display. Use the joystick to move the picture up/down or left/right. It is unlikely that you will ever need to adjust the monitor position. The Default button will reset the display position to factory specifications.

**Fig. 70: Diagnosis Screen Display - Monitor Adjustment**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Unit Check

To start the test, select the item you want to check starts.

- Display
- Radio
- Navi ECU
- PC Card Info
- Hard Key
- Smart Card

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

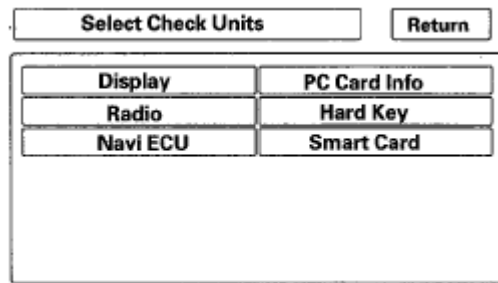


Fig. 71: Diagnosis Screen Display - Unit Check

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Display

This diagnostic does additional checks on the communication bus between the control unit and the display. In addition, the internal electronics functionality are confirmed.

- When the connection is NG, first check for loose terminals at the navigation unit and the display unit connections. Next check for an open or short in the communication line between the navigation unit and the display unit. If you find the line has an open or short, replace the affected shielded harness.
- If the ROM or RAM is NG, replace the display unit.
- The version represents the software version in the display.

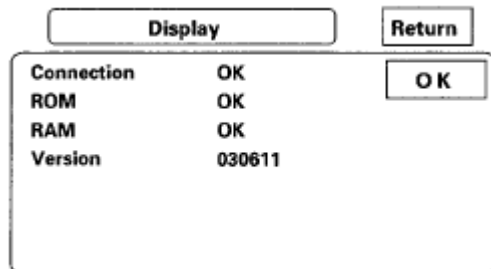


Fig. 72: Diagnosis Screen Display - Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Radio

If the NG is indicated, check for loose audio unit connector.

NOTE: If the XM link was displayed red, but the radio link was displayed green in the navigation system link, refer to audio system symptom troubleshooting.

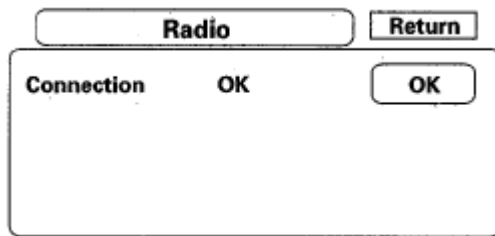


Fig. 73: Diagnosis Screen Display - Radio
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navi ECU

This screen looks for problems with the navigation unit. When you initiate this diagnosis, the navigation unit may delay up to a minute while the diagnosis runs.

NOTE: Do not try to end this diagnostic by pressing OK or Mem clear before it finishes, otherwise the system may reboot.

- If V-RAM or D-RAM is NG, then replace the navigation unit.
- If GPS indicates NG (ANT), then check the entire GPS antenna wire from the navigation unit to the antenna. If the wire is crushed or damaged, try a known good antenna. If this diagnostic reads OK, then order a new GPS antenna. If the diagnostic still reads NG (ANT), then replace the navigation unit.
- DVD ROM represents the database version on the DVD. You can find this information in either the Setup Screen Version, or in the Diagnostic Screen Version.
- Serial No. should be the same as the serial number found on the underside of the navigation unit. You need this number to obtain the security code from the Interactive Network (iN) system.
- The Mem Clr is for factory use and should not be used unless instructed by the factory.

Selecting this will clear the client's settings, personal information, GPS orbital data, and anything else stored in memory.

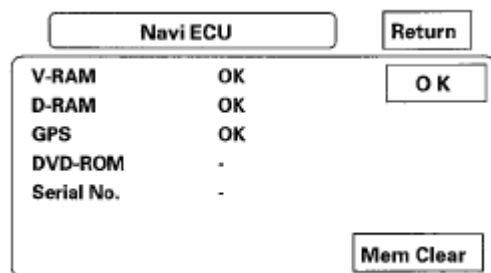


Fig. 74: Diagnosis Screen Display - Navi ECU
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

PC Card info.

There is no PC Card in the PC slot, and the screen should say, PC Card is not inserted.

NOTE: Do not insert any card or object into the slot.

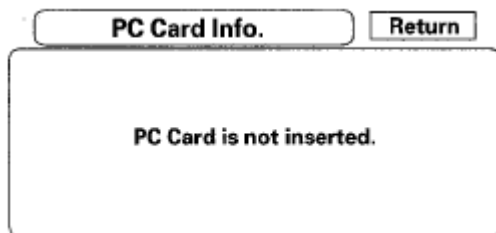


Fig. 75: Diagnosis Screen Display - PC Card Info.
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the factory provides a PC card and instructs you to insert a card, then the screen displays the Manufacturer, and Product Name as shown in the following screen.

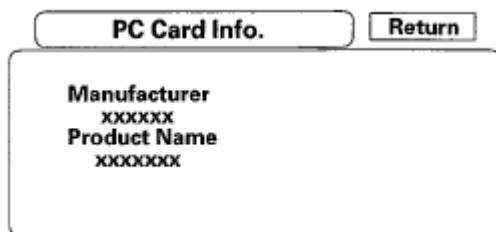


Fig. 76: Diagnosis Screen Display - PC Card Info.
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hard Key

This diagnostic tests the interface dial, and the buttons that surround it. For this model, the interface dial and buttons do not use the GA-Net bus for communications.

To complete the test, touch each button on the vehicle's control panel, and move the interface dial to each indicated position. As each function is tested, the corresponding button on the display should highlight. To exit, push in and hold the selector knob.

NOTE: You cannot use the onscreen return button to exit this function.

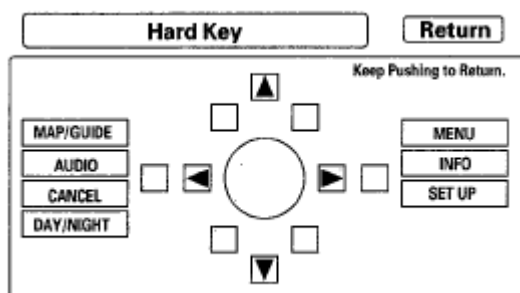
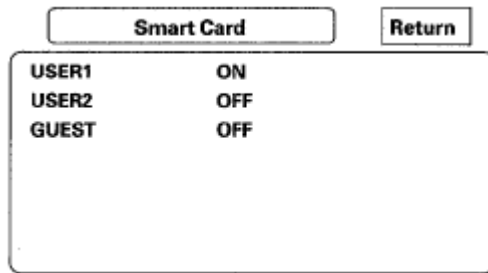


Fig. 77: Diagnosis Screen Display - Hard Key

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Smart Card

If the smart card is being used, you can check the card condition.

**Fig. 78: Diagnosis Screen Display - Smart Card**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Car Status

Use this screen to confirm that the navigation unit is properly receiving input signals. Signals equal to (0) are OFF, and signals equal to (1) are ON. If the value on the display does not match the actual vehicle status, then check the wire carrying the signal.

- VSP-Vehicle Speed Pulse from PCM (Pin 6 of C-connector)
 - a. OFF (0) when vehicle is not moving
 - b. ON (1) when vehicle is moving

The VSP comes from the PCM as a dedicated signal. Internally, the navigation unit compares the actual VP on the map against street data to adjust the pulse to speed scaling factor. As this scaling factor becomes more accurate, the Level gradually increases from 0 to 10 (see the Tire Calibrate diagnostic screen).

- BACK-Reverse indication from taillight relay (Pin 5 of C-connector)
 - a. OFF (0) when the shift lever is in any position other than reverse
 - b. ON (1) when the shift lever is in reverse

The Back signal is used by the navigation unit to allow the map screen to show the VP moving backwards when in reverse. This signal is needed because the Speed Pulse has no direction indication.

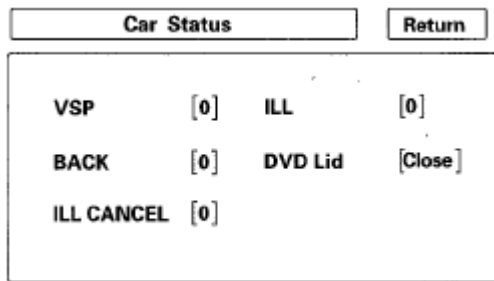


Fig. 79: Diagnosis Screen Display - Car Status

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- ILL CANCEL

This function is not applied to this model.

- ILL-Illumination Indication (Pin 5 of navigation unit A-connector)
 - OFF (0) when parking lights, or headlights are off
 - ON (1) when parking lights, or headlights are on

The navigation uses the signal to determine whether to put the navigation screen into the Day or Night brightness mode. (Setup screen 1)

- DVD Lid-senses if the DVD door is open
 - (Close) when the door is closed
 - (Open) when the door is open

The navigation unit has a micro switch to detect this. If open is indicated when the door is closed, replace the navigation unit.

GPS Information

This screen shows the current status of GPS reception. The circular diagram shows the current location of the GPS satellites (yellow numbers) as they would appear in the sky. The outer circle represents the horizon (0 degrees elevation). The middle and inner circles represents 30 and 60 degrees respectively. The very center of the diagram (90 degrees elevation) is directly overhead. Nearby obstructions, like tall buildings will block satellites in that direction. That is why it is necessary to be in an open area to effectively troubleshoot GPS reception issues. The satellite numbers shown on the diagram correspond to the PRN number in the GPS Details screen. There are always at least 24 active GPS satellites in orbit. Because satellites fail, and have to be removed from service, spares are always parked in orbit, ready to be activated. This is why the PRN (satellite ID number) can be greater than 24.

NOTE: To use this screen for troubleshooting, the vehicle should be outside away from buildings, tall trees, and high-tension wires for at least 10 minutes with the engine running.

- The Number of Satellites box shows the number of acquired satellites (maximum of 12). It should contain four or more icons. If not troubleshoot for GPS icon is white or not shown (see **GPS icon is white or not shown**).
- The Current Position shows latitude, longitude, and elevation (in feet). If there are less than four satellites, the elevation can be grossly inaccurate.
- The Date/Time field shows the current date, and also GMI time.

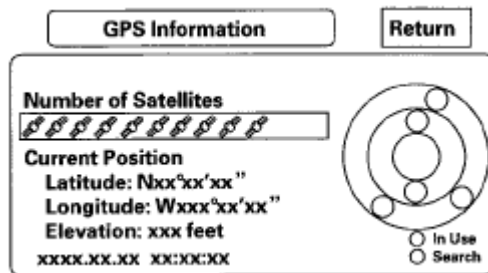


Fig. 80: Diagnosis Screen Display - GPS Information
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: Pressing the map guide button displays the satellite number on each circle.

GPS Detail

By pressing and holding the MENU button for 10 seconds, a GPS Detail screen appears. This screen displays real time incoming satellite positional data when the vehicle is outside in the open. The information shown on this screen is for factory use.

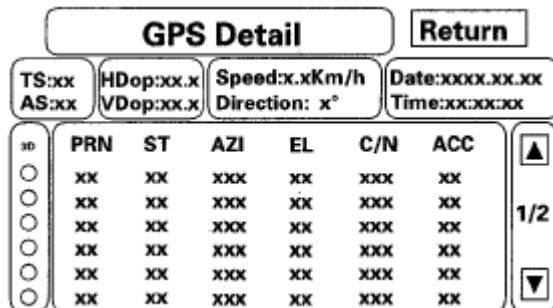


Fig. 81: Diagnosis Screen Display - GPS Detail
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The box TS/AS and H Dop/V Dop is for factory use.
- The Speed and Direction information is updated in real time when driving.
- The Date/Time Information is the same as in Setup screen 2 Adjust Time Zone/Clock.
- If the 3D icon is shown above the yellow dots, this implies that at least four satellites are available for map positioning, and the GPS indicator on the map screen will be green. See the Global Positioning System detailed explanation in the System Description.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

- If the row of data in the table below begins with a yellow dot, the AZI and EL fields can be used to locate each satellite on the circular GPS diagram (see prior screen).

NOTE: The data shown in the GPS Detail screen is an example only.

The table of values shown on the screen below has the following columns:

GPS DETAIL CHART

Column	Description	Problem indication
Active	Active satellites (Yellow Dot)	If 3D or 2D is missing when the vehicle is parked outside, do the GPS icon is white or not shown troubleshooting (see <u>GPS icon is white or not shown</u>).
PRN	The satellite ID number	
ST	The status: 0 = cannot view or searching, 2 = acquiring	If all 0, then, do the GPS icon is white or not shown troubleshooting (see <u>GPS icon is white or not shown</u>).
AZI	Azimuth, the angle (0-360) clockwise from north	
EL	Elevation from the horizon (90 deg is overhead)	
C/N	N/A	Healthy signal is 49-52, no signal: 27-33
ACC	N/A	
delta 1/2 or 2/2 delta	Shows view of all satellites in two screen views 1/2 or 2/2	

Yaw Rate

This diagnostic checks the yaw rate sensor in the control unit. This device detects when the vehicle turns, and repositions the vehicle position icon on the map screen. For more detailed information, see the yaw rate sensor theory of operation under System Description (see **OPERATION**).

- Sensor indicates the voltage output from the yaw rate sensor. It should indicate about 2.500 volts when stopped.
- Offset is the reference voltage or standard within the yaw rate sensor. It also should indicate about 2.500 volts when stopped.
- A sensor output voltage LOWER than the Offset voltage indicates that the vehicle is turning to the right.
- A sensor output voltage HIGHER than the Offset voltage indicates that the vehicle is turning to the left.
- The yaw rate offset, and sensor should both indicate about 2.500 volts when stopped. If either reads zero, or 5.000 volts, replace the navigation unit.
- The yaw rate offset and sensor should be within +/-0.01 V of each other when stopped. The sensor value should change relative to the offset as the car is turned while driving. If not, replace the navigation unit.

Example: Car stopped

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Normal

Offset	2.526 V
Sensor	2.516-2.536 V

Abnormal

Offset	2.526 V
Sensor	2.623 V

Example: Car turning

Normal

Offset	2.526 V
Sensor	2.678 V (left turn) 2.478 V (right turn)

Abnormal

Offset	2.526 V
Sensor	2.623 V (no change on turns)

- Sensitivity study represents the status of the internal tuning function. At initialization, this value starts at 6 and increases to # 10 as the internal correction values become more accurate.
- The settings CCW Cal Factor, CW Cal Factor, and Set are for factory use only. THIS SHOULD NEVER BE ADJUSTED.
- For detailed analysis of the yaw rate select tuning.

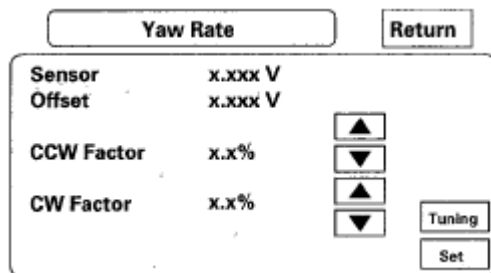


Fig. 82: Diagnosis Screen Display - Yaw Rate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Yaw Rate Tuning

This diagnostic allows you to graphically display problems with the yaw rate sensor.

- The ANG-Disp value accumulates any differences between the offset, and sensor voltages (see Yaw Rate diagnostic). When the sensor is functioning normally, the random changes in these two voltages generally cancels out, so the value is 0. However if one voltage is consistently higher than the other, then the ANG-Disp value accumulates the constant change.
- The Reset button temporarily clears the angular accumulation (ANG-Disp), and clears the display dots.
- Do not touch the CCW, CW, or Set buttons. These are used for factory setup only.

Two tests are explained below. For gross problems with the sensor, the stationary test usually confirms whether the sensor is defective. For yaw rate issues related to driving, do the road test described below.

1. Stationary test: If the VP icon spins in place and the ANG-Disp value slowly increases or decreases, the yaw rate sensor is defective. Replace the navigation control unit.
2. Road test: Drive the vehicle on a very straight road. Enter the diagnostic mode, select Yaw rate, and touch

the Tuning button. While driving down a straight road, the white dots should trace a straight line across the screen. However, if you are driving on a straight road, and you notice the dots constantly dropping down or heading up as you drive, the navigation control unit's yaw sensor is defective. You can touch Reset to clear ANG-Disp, and dotted lines.

If either test above fails, please enter Yaw rate sensor defective for the problem description, on the Navigation core return form.

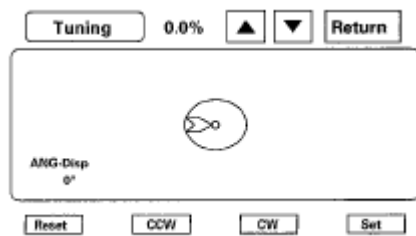


Fig. 83: Diagnosis Screen Display - Yaw Rate Tuning
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Tire Calibrate

As the vehicle moves, the navigation system receives speed pulses from the PCM. These pulses are converted using a conversion factor to a mph speed that moves the vehicle position (VP) on the map. The navigation system has an internal tuning function that generates and refines this factor based on actual driving. The Study indicates the status of the tuning. At navigation initialization, it begins at 0, and increases to 10 as the navigation system is used.

- The Auto Tuning is factory set to ON, and should remain on.
- The Study indicates the tuning status. If it is less than 10, the unit is still calibrating.
- The Tire-Cal. Tuning and Set should not be used. It is for factory use only.

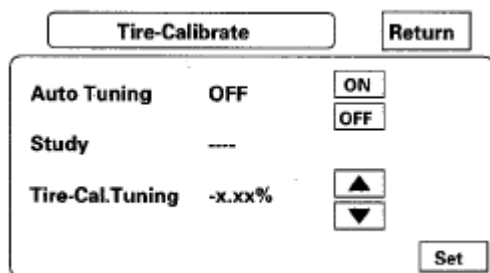


Fig. 84: Diagnosis Screen Display - Tire Calibrate
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Functional Setup

Select the item you want to check.

- Log Data

- GPS Send Time
- Demo Mode
- Mic Level
- Solar Angle
- Save Users Data

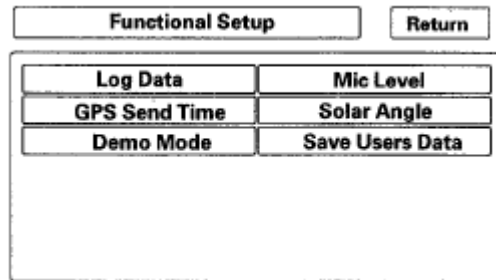


Fig. 85: Diagnosis Screen Display - Functional Setup
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Solar Angle

This screen graphically displays the sun's position as determined by GPS. The HVAC system uses the navigation systems sun's angle, along with the sunlight sensor to control the driver/passenger A/C airflow. The heat that the climate control unit removes varies, depending on the angle of the sun entering the vehicle. This screen is for factory use only, and should not be adjusted.

- The screen shows a circular diagram of the sky oriented in the direction that the vehicle is pointing. During daylight hours a red dot is shown, representing the direction and elevation of the sun. The outer circle represents the horizon (0 degrees elevation). The middle circle is 30 degrees, the center circle is 60 degrees, and the very center is directly overhead (90 degrees).
- The manual tuning button should always be OFF.
- The Angle is the angle that the sun (shown with red dot) is above the horizon.
- The vehicle value represents the angle, clockwise from North, to the direction that the vehicle position (VP) icon is pointing (always points straight up).
- The direction value is the angle, measured clockwise from the VP (straight up) to the sun's position.
- The reliability ranges from 1 to 3, and represents the accuracy of the Vehicle Position relative to the sun.

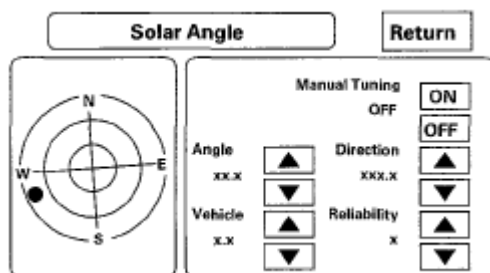


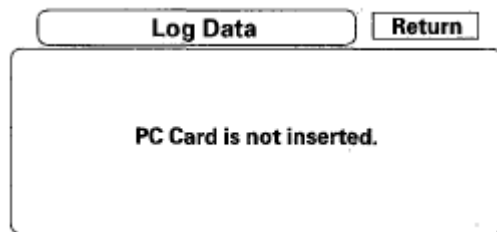
Fig. 86: Diagnosis Screen Display - Solar Angle

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Log Data

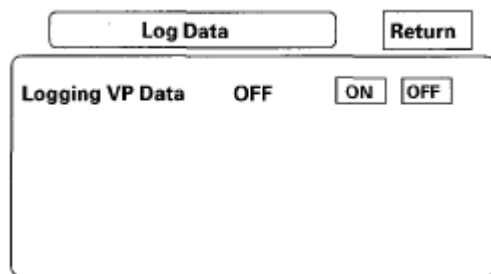
This screen allows the factory to select log data to troubleshoot navigation system issues.

- Normally there is no card in the PC Card Slot, and the PC slot door should always be closed. The screen should appear as shown.

**Fig. 87: Diagnosis Screen Display - Log Data**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- However, if the factory provides a PC card and instructs you to insert it into the card slot (label side up). If instructed by the factory, select Gyro. Sensor Logs ON. Follow the factory procedure for gathering test data, and properly ending the test.

**Fig. 88: Diagnosis Screen Display - Log Data**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Send GPS Time

This screen is for factory use only. It allows adjustment of the GPS time. This display updates in real time.

- GPS Time is the time as received from the GPS satellites. It is in Greenwich Mean Time (GMT).
- Date, Hour, Minute, and Set should not be used.

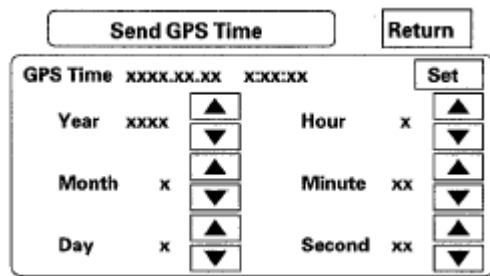


Fig. 89: Diagnosis Screen Display - Send GPS Time
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Demo Mode

This screen is for factory use only, and should always be set to OFF. Occasionally the DEMO setting is turned ON when vehicles are being used at Auto Shows or similar events. Turning this feature on, allows the navigation system to automatically follow a route to a destination when the vehicle is stationary. The Speed changes the speed of the demo mode.

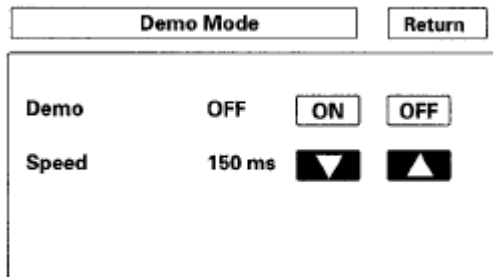


Fig. 90: Diagnosis Screen Display - Demo Mode
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mic Level

This diagnostic allows you to independently test the microphone and the NAVI TALK and BACK buttons. They are used to activate the voice control system. The microphone is located near the map light in the roof console. It is directional, and works best with the voice coming from the drivers seat.

- Press the TALK button on the steering wheel, and in a normal voice say testing. The TALK indicator on the screen should momentarily turn green, and the text Now Recording... should appear in yellow. If the TALK indicator on the screen does not briefly turn green, then check the wiring from the steering wheel TALK button to the navigation unit. If there is no Mic Level movement when you speak, then you should check the wires running from the microphone in the roof console to the HFL unit and the navigation unit. If the wires are OK, the microphone must be faulty; replace the roof console (see **HEADLINER REMOVAL/INSTALLATION**).
- Press the BACK button on the steering wheel. This should cause the BACK indicator on the screen to momentarily turn green. If it does not briefly turn to green, then check the wiring from the steering wheel BACK button to the navigation unit.

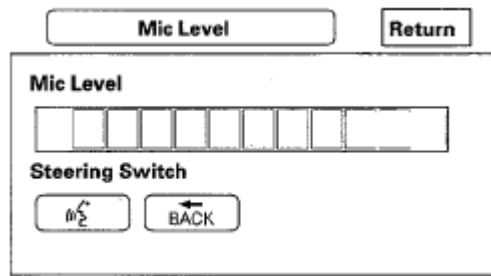


Fig. 91: Diagnosis Screen Display - Mic Level
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Version

This screen displays the current version information for the navigation system software. In addition, this screen allows the loading of updated software if requested by the factory, or instructed by a Service Bulletin. Software may be loaded from a CD or a PC card.

- Program Flash: Displays the version of the navi software in memory.
- Program Disc: If displayed, this value represents the version of the navi software on the navi DVD.

NOTE: The last two letters of the Program Flash or DVD fields indicate which DVD is installed in the unit. The letters KA imply that a United States DVD is installed. If the letters are KC, then a Canada DVD is installed. (See coverage discussion below.)

- IPL, APL, DBOOT, and System uCom, are all for factory use.
- Model: For this model, the field should begin with STX.
- Download: Do not touch, unless instructed by the factory.

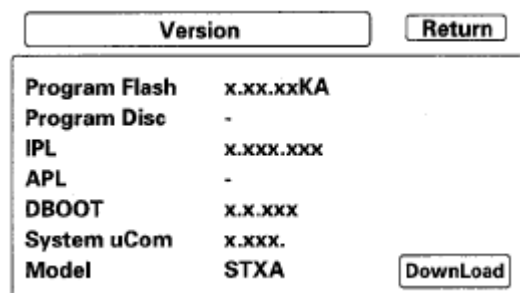


Fig. 92: Diagnosis Screen Display - Version
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

There are two navigation DVDs produced for this model.

- The white DVD labeled United States is for the US market and contains maps for the contiguous 48 US states, and some southern portions of Canada. Clients wanting additional northern coverage in Canada,

can purchase a Canada, DVD by contacting the DVD fulfillment desk.

- The gray DVD labeled Canada, is for the Canada market, and contains maps for all of Canada, plus some of the northern US states. If clients with this DVD require full US coverage (including states like Florida and Texas), they may purchase a United States DVD by contacting the DVD fulfillment desk.

XM (HIP)

These screens allow troubleshooting of XM or HIP (AcuraLink) problems. Select the item you want to troubleshoot, and follow the diagnostic instructions.

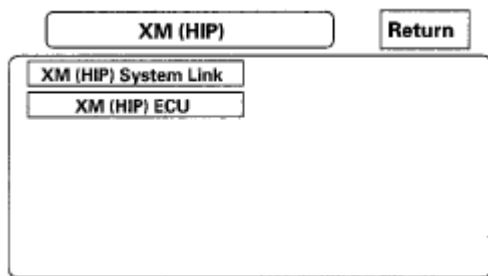


Fig. 93: Diagnosis Screen Display - XM (HIP)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM (HIP) System Link

This diagnostic tests the cables connecting the XM (HIP) components.

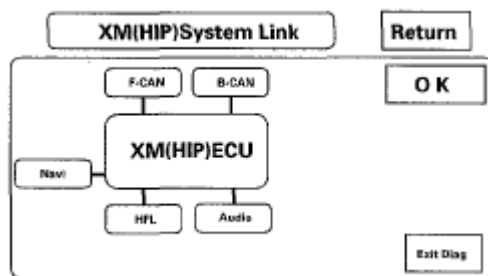


Fig. 94: Diagnosis Screen Display - XM (HIP) System Link
Courtesy of AMERICAN HONDA MOTOR CO., INC.

XM (HIP) ECU

Select the item you want to troubleshoot, and follow the diagnostic instructions.

NOTE: Only select DATA RESET when instructed. Selecting DATA RESET will clear the AcuraLink registration, and the AcuraLink service will reset to the factory default. If the vehicle was already registered for the AcuraLink service, it will have to be reactivated by calling Acura Client Services before all features will be available. The reactivation will cause the Feature Guide to start over at the

first message, which will result in the client getting repeated messages.

Select Telematics diagnosis item

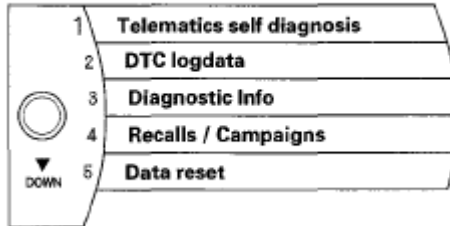


Fig. 95: Diagnosis Screen Display - Telematics Diagnosis Item
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Telematics Self-Diagnosis

This screen used to do self-diagnosis for the XM (HIP).

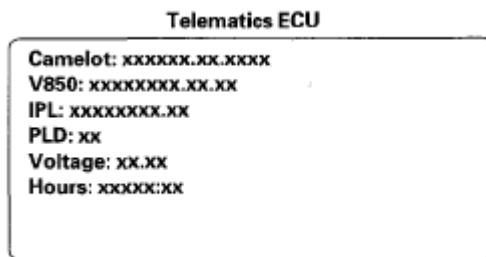


Fig. 96: Diagnosis Screen Display - Telematics ECU
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC Log Data

You can check the DTC log data in this screen.

Select the DTC logdata

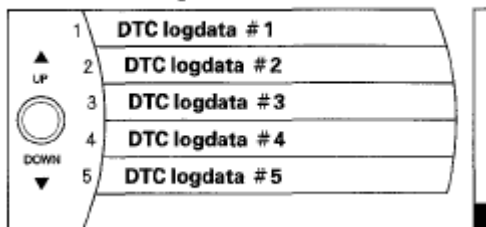


Fig. 97: Diagnosis Screen Display - DTC Log Data
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: When DTC B2200-B2249 is displayed. It is in engineering mode and is not for trouble diagnosis.

Save users Memory

When replacing the navigation unit, this function allows the dealer to transfer the client's personal data to the new navigation unit

This is similar to saving and entering the client's audio presets when replacing an audio core. The transferred information includes their Setup settings, and personal addresses. The dealer inserts a PC card (like the PC card in the HDS), and then selects the Save users Memory function. The two functions in this diagnostic screen are Export and Import saves the client's data to the PC card, and Import moves the PC card files to the new core.

See the FAQs below for information regarding PC cards, and the use of this function.

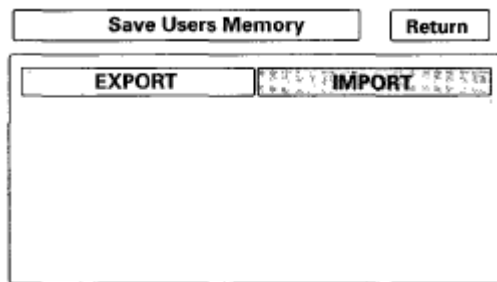


Fig. 98: Diagnosis Screen Display - Save Users Memory
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Export

Select this button to move the client's data from the original navigation unit to the PC card. Select YES on the Export User Data Confirmation screen. The process takes only a couple of seconds. The system stores two small files on the card.

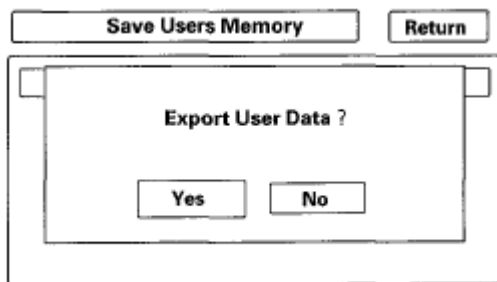


Fig. 99: Save Users Memory Screen Display - Export
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Import

After installing the client's original DVD in the new core, allow the system to boot up. Insert the PC card in the new core and enter the navigation diagnostic mode.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

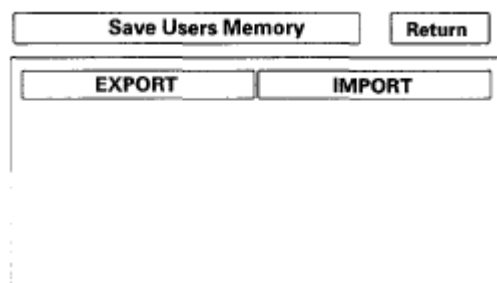


Fig. 100: Save Users Memory Screen Display - Import
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Select YES on the Import Confirmation screen.

Import moves the two files stored by the Export process from the PC card to the new navigation unit. When the transfer is finished (a few seconds) the system will automatically reboot. After the system reboots, remove the PC card from the PC slot.

If the Import button is grayed out, follow the troubleshooting in the FAQs below. The client's files can only be transferred to a new core if the Model and the Program Flash shown on the Version screen are the same. These files cannot be transferred from TSX to MDX, or from a MDX with version 1.07.00 to a MDX with version 1.32.00.

PC Card FAQs

PC CARD FAQs

Question	Answer
Where do we buy the flash memory or adaptors, and what do we ask for?	You needs a PCMCIA type II adaptor and a flash memory chip (see below for memory chip types). They can be purchased at a computer, or office supply store. The card will have the same size and shape as the PC card in the HDS. Adaptors that accept multiple flash types are not recommended.
What memory flash chips will work with what adaptors?	The flash memory devices that have been tested include Compact Flash (CF), and ATA style (like the card in the HDS). Other card types and flash memory chips may work, but have not been tested.
What capacity card do I need for this function?	A memory chip with capacity of 64 MB to 2 GB will work. The two files moved to the card during export are less than a Megabyte in size. An adaptor and flash memory can be obtained for less than 50 dollars.
Should the dealer have a dedicated card for the Export and Import navigation function?	Yes, treat the card as a dedicated special tool that should be used anytime a '07 or later vehicle needs the navi personal files transferred to a new ECU core.
What device can I use to maintain the card, and delete files	Any computer store sells USB style PC card readers that accept the card, and allow you to perform file maintenance on your card. Most laptops will also accept the card.
Can we move the client's data to different models (like	No, the files are model specific and will only load into a navi ECU with

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

moving TSX navi data to a MDX)?	the same part number.
Can we move the client's data to the same vehicle with a different software version? (Like moving version 4.51)	The client's files can only be transferred to a new core, if the Model and the Program Flash shown on the Version screen are the same. Files cannot be transferred from TSX to MDX (different model code), or '07 MDX to '08 MDX (different versions)
The Export button is grayed out. Why?	• A PC card with its media memory chip is not inserted properly. • Check the card's edge connector, and the pins inside the navigation unit (with a flashlight) for damage
The Import button is grayed out. Why is this?	• A PC card with it's media memory chip is not inserted • The model code of the files stored during export do not match the model code of the new navi ECU • The version of the files from the original navi ECU are not the same as the version in the new ECU
Will other files on the card like images or music files prevent the Export/Import function from working?	No, the system simply adds two small files that are recognized by the new core when performing the Import function. However, if the card is full, the Export function won't work correctly.
Do I have to delete the files on the card after each transfer of the client's data?	After the transfer of client data to the new core, the files remain on the card. Since this is confidential information, we recommend that you delete these files after each use. Please note that each time you export navi files of the same model and version, the files are overwritten. If you do not delete the files after use, over time the card will accumulate two files for each version of the 5 or so Acura navi models.
What format should be used if the card needs reformatting?	It is unlikely that the card will ever need formatting, however the FAT file system should be used
I can't enter the navi diagnostic mode to do the Export/Import function. How can I transfer the client's data?	Some internal navi ECU failures may make it impossible to use the Export/Import function.
	• The card may not be fully inserted into the slot. Eject the card, and inspect for warping or damage to the edge connector. Never use excessive force to insert a card. This can result in damage to the pins in the rear of the slot. • The card may not contain files that are recognized by the new core. Navi data can only be transferred between cores with the same Model code, and with the same navi Program flash version. • The flash memory chip type may not be accepted by the system. Only Compact Flash, and ATA cards have been tested. • The card's PCMCIA adaptor may be preventing a known good card from being recognize. Avoid multi slot type PCMCIA adaptors that

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

Why won't the Export or Import functions work? What do I check as part of troubleshooting?	accept several different flash memory types • The card may be full and as a result the files are stored, but without any data. Export and import appear to function, but move nothing. Delete unused files from the card. • There may not be any files on the card. If the card has a write protection switch, make sure it is turned off before attempting to use the Export function. • Although flash memory chips are reliable, occasionally they develop bad sectors or other formatting errors that prevents them from accepting files. The card should be reformatted using the FAT format. • The card may have been formatted using the format NTFS. Only the FAT format is accepted by the system. • Hard Disc Drive (HDD) cards may not work properly in the system and can overheat or quit functioning, particularly in a hot vehicle. They are not recommended. • Before doing the import function, ensure that the client's original DVD is loaded into the new core and working properly.
Are there any error messages to tell me what is wrong?	There are no error messages associated with the Import/Export feature. Follow the troubleshooting steps above.

Error Message Table

ERROR MESSAGE CHART

Screen Error Message	Solution
Navigation system is unable to acquire a proper GPS signal.	Make sure there is nothing on the dashboard blocking the GPS antenna. If not, move the vehicle to an open space away from tall buildings, trees, etc. Window tinting and after-market devices can affect the GPS reception.
Navigation unit door is open or No DVD disc installed. Please check system.	Make sure the navigation DVD is the correct color and is not scratched or damaged. Make sure it is installed with the label side up and the navigation unit door is snapped fully closed.
No DVD disc, please check system.	Check that the navigation DVD is installed with the label side up.
Display temp is too high. System will shut down until display cools down.	This message will appear briefly when the display temperature is too high, and then the display will turn off until the temperature cools down. The system will turn back on when the display cools down.
Outside temperature is low, system will take a while to start up.	The temperature is below -30°C and the navigation unit has difficulties reading the DVD. The system will start up when the temperature warms up.
DVD disc reading error (unformatted), please consult your dealer.	Check the DVD for the correct color and software version. Also check for deep scratches or other damage. Make sure you are using an official Honda navigation DVD (white in color). The system cannot read other mapping databases or video DVDs. If the problem persists, see your dealer. Check any

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Navigation System - MDX

	official Honda service website for more service information about the navigation system.
Route has not been completed. Please try again from a different location.	Routing to or from a place (new area) that is not in the database. Try planning a different route to or from a different location that is clearly displayed on the map (map matched).
No alternate route found. Original route will be guided.	No alternate route method was found. The original route method will be used.
This destination cannot be found in database.	The destination was not found in the database. Try another destination nearby, or select the destination with the joystick.

VOICE CONTROL SWITCH TEST

1. Remove the driver's airbag assembly (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Remove the 20P connector from the cable reel.

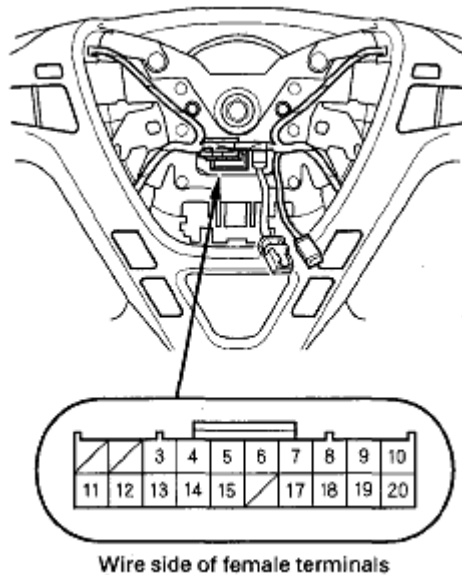


Fig. 101: Identifying Voice Control Switch Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between the No. 8 and No. 10 terminals in each switch position according to the table.

RESISTANCE CHART

Position	Resistance
No buttons pressed	About 10 kohms
Talk button pressed	About 2.2 kohms
Back button pressed	About 640 ohms

4. If the resistance is not as specified, replace the voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).
5. Use a diode tester between the terminals in each switch position according to the table.

Terminal	18		17
	○	⊕	○

Fig. 102: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If the diode test is not as specified, replace the voice control switch (see **STEERING WHEEL DISASSEMBLY/REASSEMBLY**).

FORCED STARTING OF DISPLAY

Special tools required

SCS Service Connector 07PAZ-0010100

1. Turn the ignition switch to LOCK (0).
2. Connect the SCS service connector (A) to the navigation service connector (B) located behind the navigation unit.

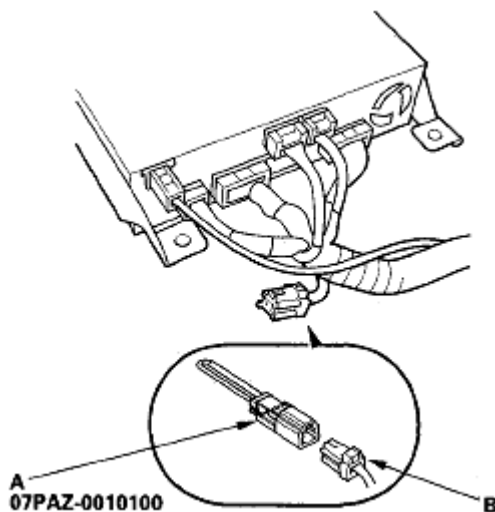


Fig. 103: Identifying SCS Service Connector And Navigation Service Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch to ON (II).
4. Check that the diagnosis menu for the picture diagnosis starts up, and then changes to the system link

menu.

NOTE: If the display fails to display the system link screen, refer to **NO PICTURE IS DISPLAYED** (see).

DVD-ROM REPLACEMENT

NOTE: Check any official Honda service website for more service information about the navigation system.

1. Turn the ignition switch to ON (II).
2. Push the open button (A) of the navigation unit located under the driver's seat.

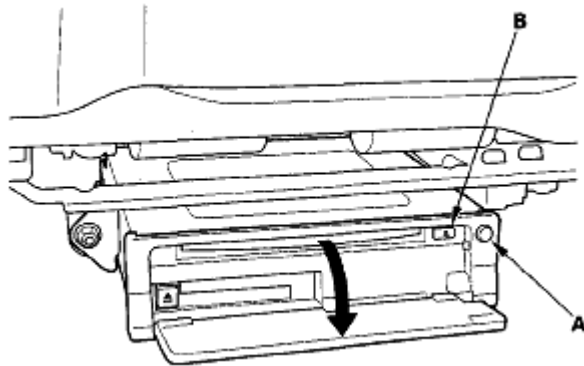


Fig. 104: Removing DVD-ROM

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Press the EJECT button (B).
4. Remove the DVD-ROM.
5. Insert the new DVD-ROM with the white label facing up.
6. Close the front cover. Do not turn the ignition switch to LOCK (0); watch the navigation screen until the data is downloaded to the navigation unit.
7. Do the Map Matching (see **MAP MATCHING**).

NOTE: After servicing, the front cover and PC card slot door must be closed. If you start up the navigation system with the front cover or PC card slot door open, the display will indicate an error message.

NAVIGATION UNIT REMOVAL/INSTALLATION

- NOTE:**
- Before you replace the navigation unit, back-up the client data using system diagnostic mode save users memory under the functional set up (see **SAVE USERS MEMORY**).

- If the navigation unit is replaced or disconnected, a Map Matching must be done (see MAP MATCHING).

1. Turn the ignition switch to ON (II).
2. Eject the DVD from the original navigation unit (see DVD-ROM Replacement). To avoid scratching or damaging the DVD, temporarily place the DVD in a jewel case.

NOTE: If the DVD will not eject, refer to symptom troubleshooting Navigation unit will not eject or accept the navigation DVD (see NAVIGATION UNIT WILL NOT EJECT OR ACCEPT THE NAVIGATION DVD).

3. Turn the ignition switch to LOCK (0).
4. Remove the Driver's seat (see FRONT SEAT ACTIVE HEAD RESTRAINT INSPECTION).
5. Remove the two mounting nuts (A) from the navigation unit (B).

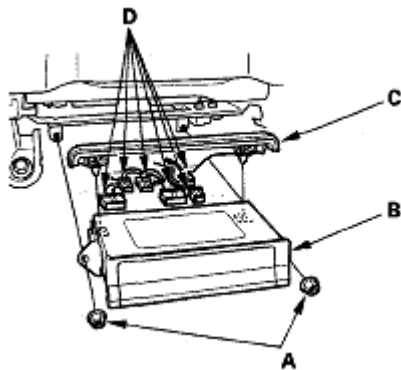


Fig. 105: Identifying Mounting Nuts, Navigation Unit, Cover And Navigation Unit Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the cover (C), then disconnect the navigation unit connectors (D).
7. Remove the bolts, and the brackets (A).

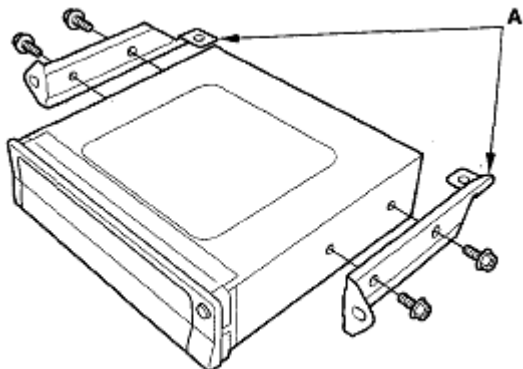


Fig. 106: Identifying Brackets

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the unit in the reverse order of removal.
9. Install in the reverse order of removal.
10. Turn the ignition switch to ON (II), then reinstall the client's original DVD, verifying that the DVD is free of scratches or smudges.
11. Check any official Honda service website for more service information about patches for the navigation system. Apply any prescribed patches to the new navigation unit.

NOTE: Simply transferring the DVD from the original navigation unit to the new navigation unit does not assure the correct software for the vehicle will be loaded into the new navigation unit. Doing the DVD transfer without doing software patches may cause the new navigation unit to appear to be malfunctioning.

12. Enter the new navigation anti-theft code.
13. Park the vehicle outside, and do the GPS initialization (see **GPS INITIALIZATION**).
14. Give the new navigation anti-theft code to the client.

GPS ANTENNA REMOVAL/INSTALLATION

1. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
2. Remove the display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).
3. Disconnect the GPS antenna connector (A), and remove the bolt (B).

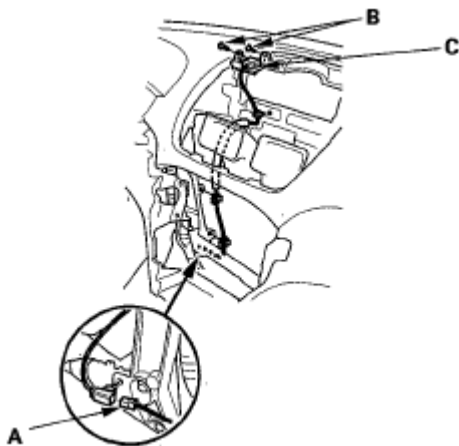


Fig. 107: Identifying GPS Antenna And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the GPS antenna (C).
5. Install the antenna in the reverse order of removal.

DISPLAY UNIT REMOVAL/INSTALLATION

1. Remove the dashboard upper visor (see [SPEAKER TEST/REPLACEMENT](#)).
2. Remove the two screws (A) and bolt (B), then remove the display unit (C).

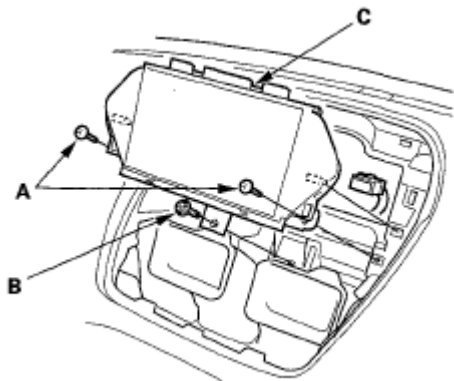


Fig. 108: Identifying Display Unit, Screws And Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the navigation display connector (D).
4. Install the unit in the reverse order of removal. Be careful not to drop the forward bolt behind the dashboard.

INTERFACE DIAL REMOVAL/INSTALLATION

1. Remove the audio unit (see [AUDIO UNIT REMOVAL/INSTALLATION](#)).
2. Remove the harness cover (A).

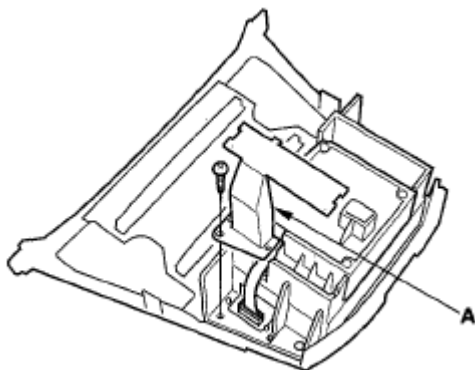


Fig. 109: Identifying Harness Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the interface dial connector (A), then remove the interface dial (B).

NOTE: If the hard buttons do not work, but the jog dial does, recheck the interface dial connector (A) connection.

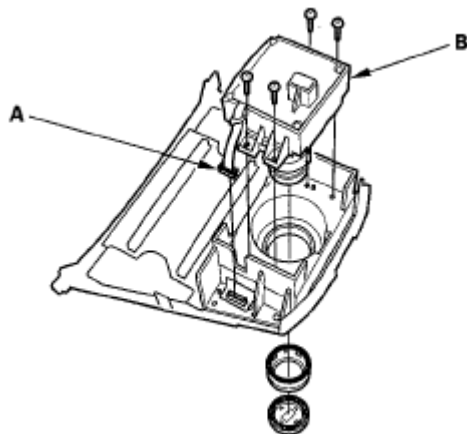


Fig. 110: Identifying Interface Dial Connector And Interface Dial
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the dial in reverse order of removal.

REARVIEW CAMERA REMOVAL/INSTALLATION

1. Remove the rear license trim (see **REAR LICENSE TRIM REPLACEMENT**) and tailgate lower trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Disconnect the connector (A), then remove the screws and the rearview camera (B).

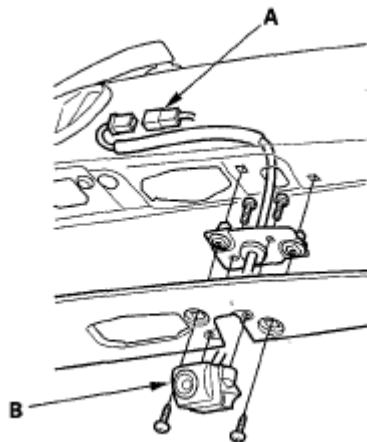


Fig. 111: Identifying Rearview Camera And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install in the reverse order of removal.

2007-09 ACCESSORIES AND EQUIPMENT

Openers - MDX

COMPONENT LOCATION INDEX

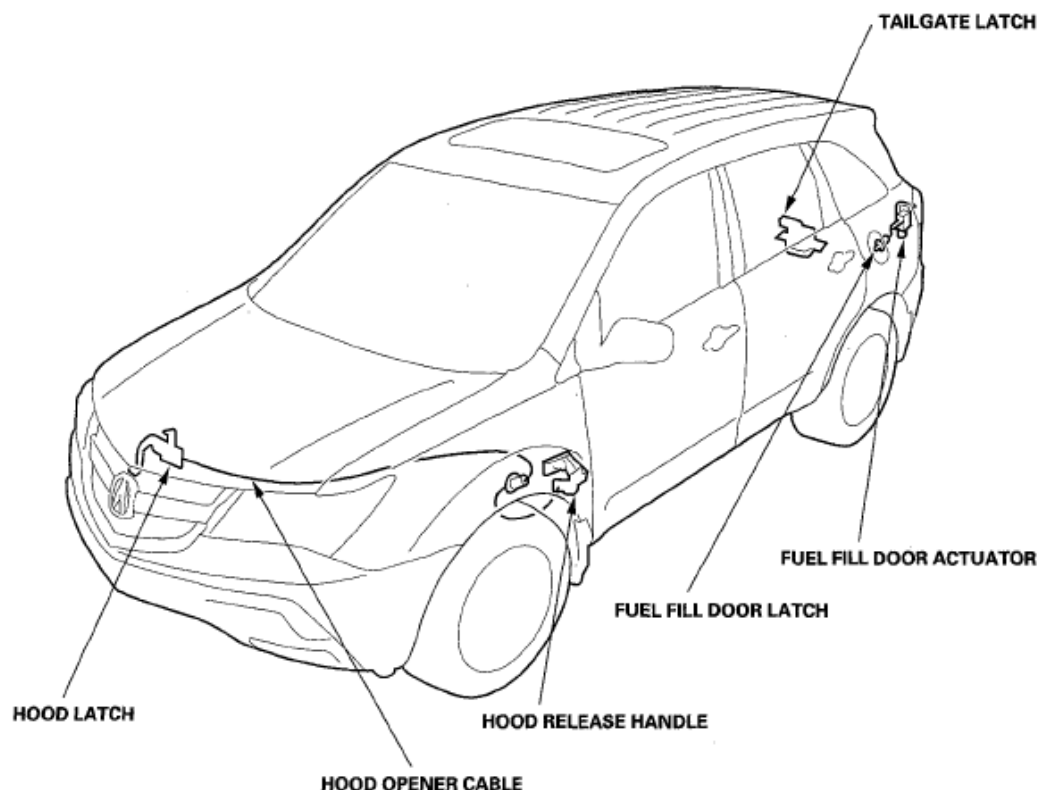


Fig. 1: Identifying Openers Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOOD OPENER CABLE REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body and its related parts.

1. Remove these items:

- Front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**)
- Front inner fender, left side as needed (see **FRONT INNER FENDER REPLACEMENT**)
- Driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**)
- Kick panel, driver's side (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**)

2. Disconnect the hood opener cable (A) from the hood latch (B) (see **HOOD LATCH**

REPLACEMENT).**Fastener Locations**

▷ : Clip, 6

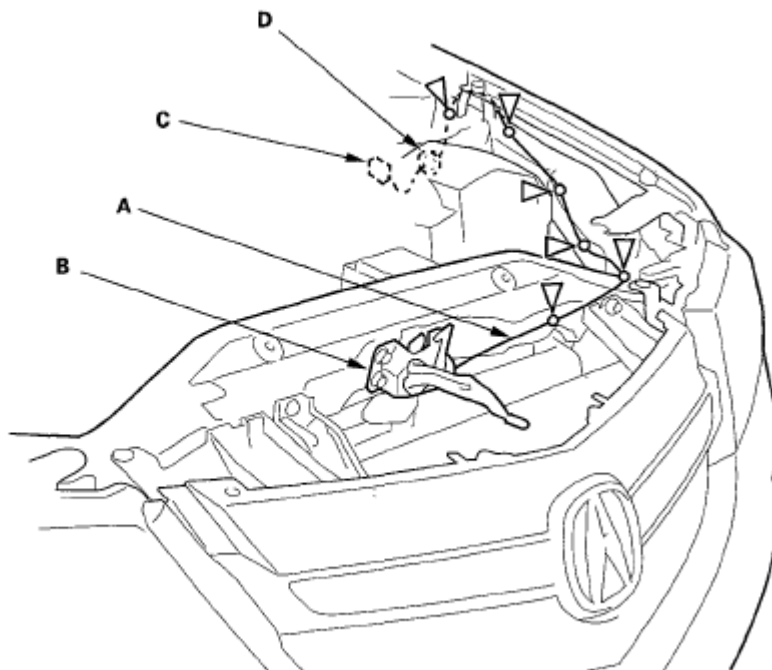


Fig. 2: Identifying Hood Release Handle, Grommet And Hood Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the hood release handle (C) (see **HOOD RELEASE HANDLE REPLACEMENT**), and disconnect the hood opener cable.
4. Using a clip remover, detach the clips, and remove the grommet (D) from the body, then remove the hood opener cable from the vehicle. Take care not to kink the cable.
5. Install the cable in the reverse order of removal.

NOTE: If the clips are damaged or stress-whitened, replace them with new ones.

HOOD LATCH REPLACEMENT

1. Remove the front bulkhead cover (see **FRONT BULKHEAD COVER REPLACEMENT**).
2. Disconnect the hood latch switch connector (A), then remove the connector clip from the body.

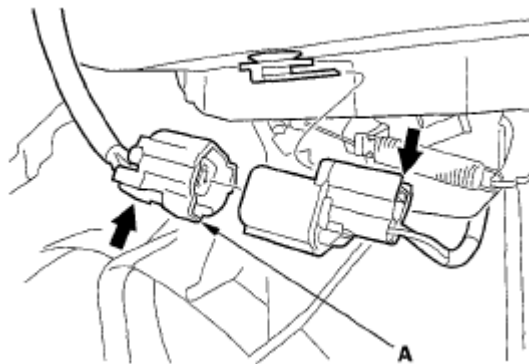


Fig. 3: Identifying Hood Latch Switch Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts, then remove the hood latch (A) from the body.

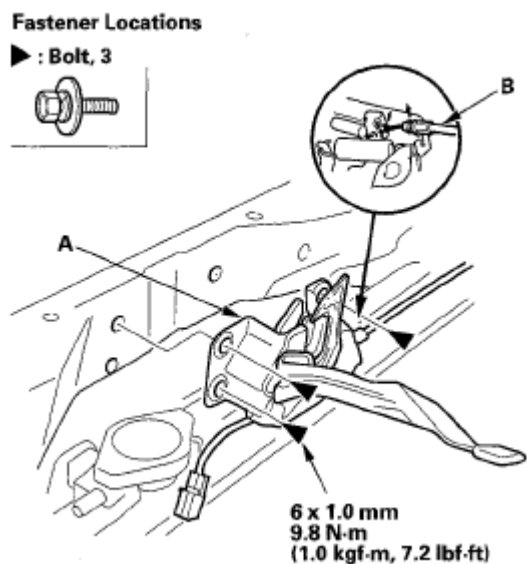


Fig. 4: Identifying Hood Latch And Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the hood opener cable (B) from the hood latch. Take care not to kink the cable.
5. Install the latch in the reverse order of removal, and note these items:
 - Apply multipurpose grease to the hood latch as indicated by the arrows.
 - Make sure the hood opener cable is connected properly and the hood latch switch connector is plugged in properly.
 - Make sure the cable actuates the latch before you close the hood.
 - Adjust the hood latch alignment (see step 4 on **HOOD ADJUSTMENT**).
 - Make sure the hood opens properly and locks securely.

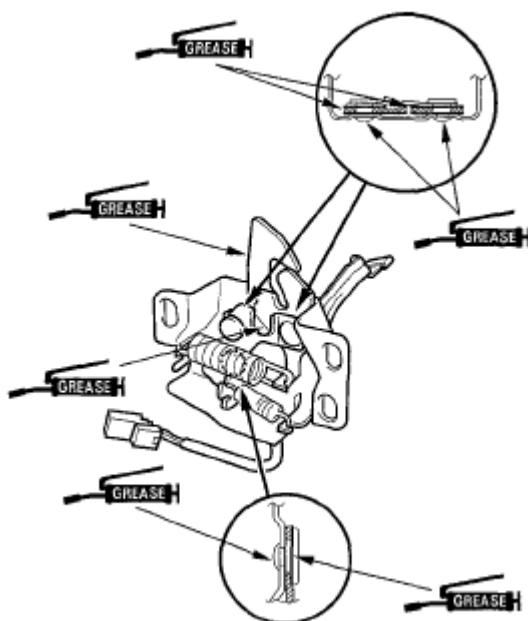


Fig. 5: Identifying Hood Latch Grease Area

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOOD RELEASE HANDLE REPLACEMENT

1. Remove the driver's kick panel (see [TRIM REMOVAL/INSTALLATION - DOOR AREAS](#)).
2. Remove the bolts, then remove the hood release handle (A).

Fastener Locations

► : Bolt, 2

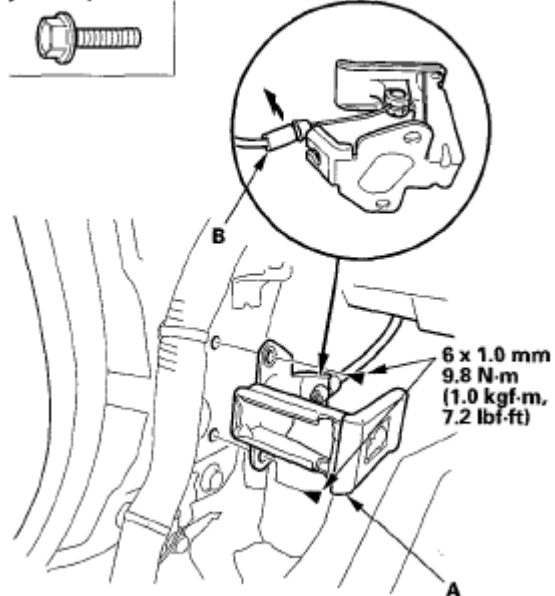


Fig. 6: Identifying Hood Release Handle And Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the hood opener cable (B) from the hood release handle. Take care not to kink the cable.
4. Install the hood release handle in the reverse order of removal, and note these items:
 - Make sure the hood opener cable is connected properly.
 - Make sure the hood opens properly.

FUEL FILL DOOR LATCH REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper.

1. Remove these items:
 - Left rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA)
 - Left rear fender cover (see REAR FENDER COVER REPLACEMENT)
2. From inside the vehicle, disconnect the actuator rod (A) from the fuel fill door latch (B).

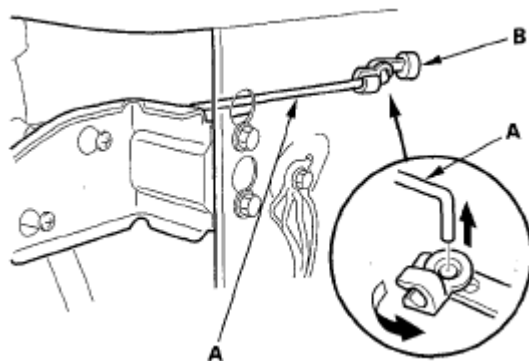


Fig. 7: Identifying Actuator Rod And Fuel Fill Door Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the fuel door latch (A).
 1. Turn the latch 45° counterclockwise.
 2. First pull out the end of the latch from the grommet (B).
 3. Remove the latch from the fuel fill door adapter (C).

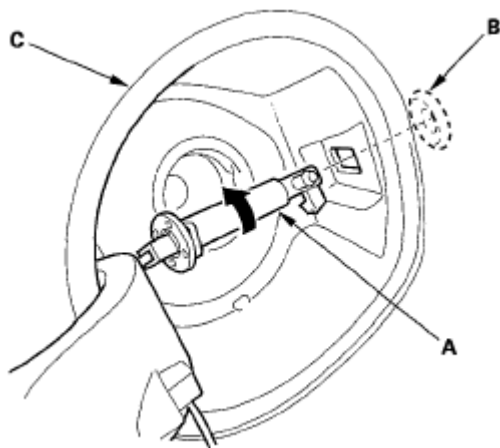


Fig. 8: Identifying Fuel Door Latch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If necessary, remove the grommet (A) by releasing the tabs (B) from inside the vehicle.

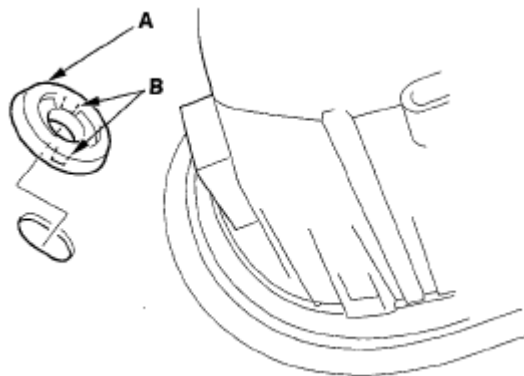


Fig. 9: Identifying Grommet And Tabs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the fuel door latch in the reverse order of removal, and note these items:
 - Install the grommet with the arrow mark on the grommet pointing up.
 - Make sure the fuel fill door opens properly and locks securely.

FUEL FILL DOOR ACTUATOR REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper.

1. Remove the left rear side trim panel (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
2. Disconnect the actuator rod (A) and the actuator connector (B).

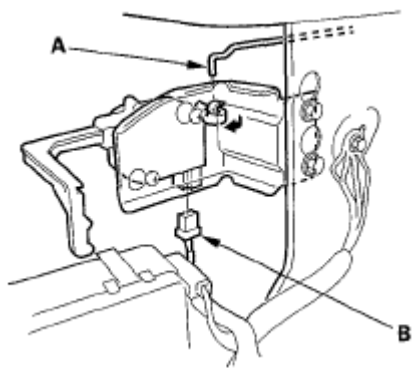


Fig. 10: Identifying Actuator Rod And Actuator Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Loosen the bolts, then remove the actuator (A) and the bracket (B) together by sliding it upward.

Fastener Locations

► : Bolt, 2



6 x 1.0 mm
 9.8 N·m
 (1.0 kgf·m, 7.2 lbf·ft)

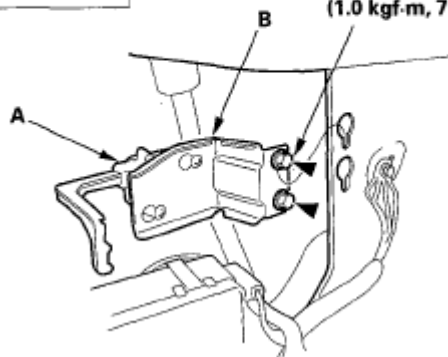


Fig. 11: Identifying Actuator, Bracket And Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the fuel door actuator in the reverse order of removal, and note these items:
 - Make sure the actuator connector is plugged in properly, and the rod is connected securely.
 - Make sure the fuel fill door opens properly and locks securely.

TAILGATE LATCH REPLACEMENT

WITHOUT POWER TAILGATE

- Put on gloves to protect your hands.
- If the tailgate latch can't be unlocked by using the keyless entry transmitter or the inside/outside tailgate switches, or by unlocking the driver's door lock, remove the maintenance lid (A) from the tailgate lower trim panel, then turn the emergency lever (B) clockwise as shown.

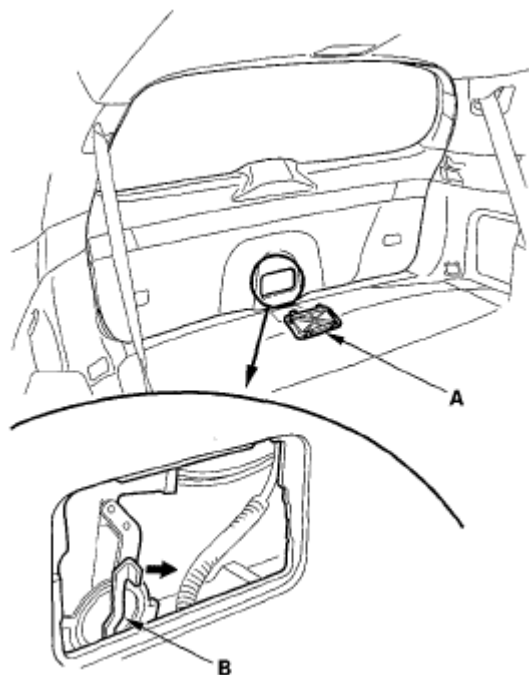


Fig. 12: Identifying Maintenance Lid And Emergency Lever
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the tailgate lower trim panel (see TRIM REMOVAL/INSTALLATION - TAILGATE AREA).
2. Disconnect the tailgate latch switch connector (A) and tailgate actuator connector (B).

Fastener Locations

► : Bolt, 2

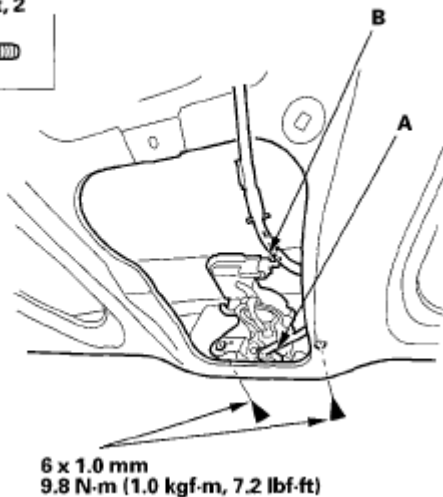


Fig. 13: Identifying Tailgate Latch Switch Connector And Tailgate Actuator Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the bolts.
4. Pull the tailgate latch (A) out, then remove it.

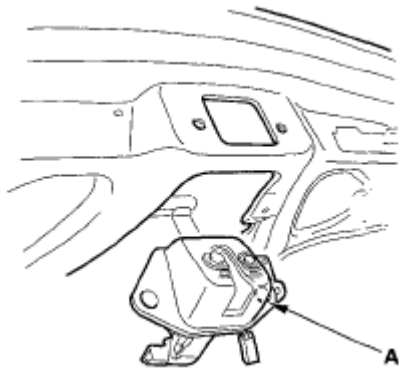


Fig. 14: Identifying Tailgate Latch

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the latch in the reverse order of removal, and note these items:
 - Make sure the connectors are plugged in properly.
 - Make sure the tailgate opens properly and looks securely. .

WITH POWER TAILGATE

- Put on gloves to protect your hands.
- If the tailgate latch can't be unlocked by using the keyless entry transmitter or the inside/outside tailgate switches, remove the maintenance lid (A) from the tailgate lower trim panel, then turn the emergency lever (B) clockwise as shown.

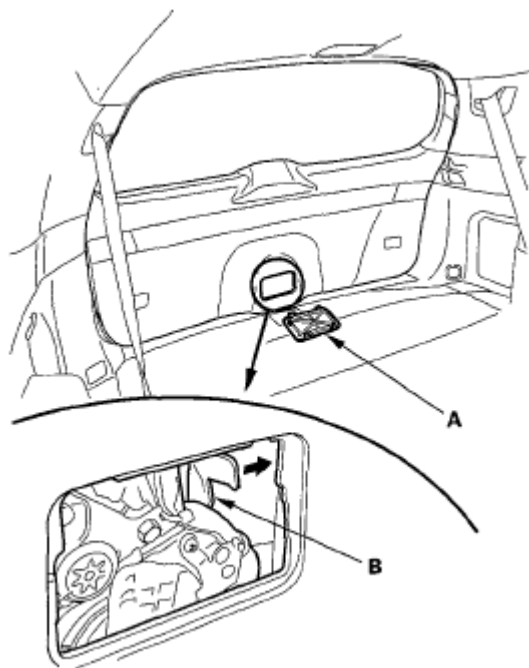


Fig. 15: Identifying Maintenance Lid And Emergency Lever
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

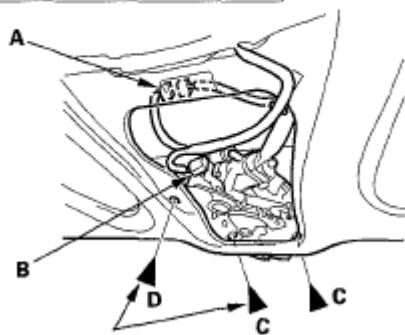
1. Do the battery terminal disconnection procedure (See **DISCONNECTION**)

NOTE: If you remove the tailgate latch while the negative battery cable is still connected, the vehicle goes into the failsafe mode.

2. Remove the tailgate lower trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
3. Disconnect the tailgate latch connector (A) and actuator connector (B).

Fastener Locations

C ▶ : Bolt, 2 D ▶ : Bolt, 1



6 x 1.0 mm
 9.8 N·m (1.0 kgf-m, 7.2 lbf-ft)

Fig. 16: Identifying Tailgate Latch Connector And Actuator Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the bolts (C, D).
5. Pull the tailgate latch (E) out, then remove it.

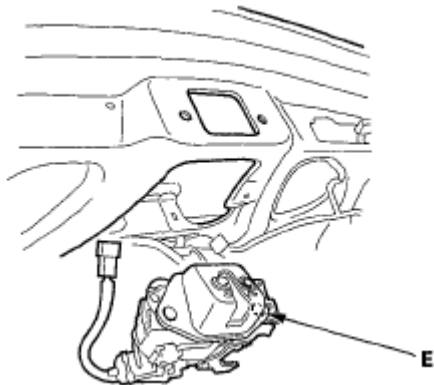


Fig. 17: Identifying Tailgate Latch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the latch in the reverse order of removal, and note these items:
 - Make sure the connectors are plugged in properly.
 - Do the battery terminal reconnection procedure (See **RECONNECTION**
 - Check for any DTCs that may have been set during repairs, and clear them.
 - Make sure the tailgate opens properly and locks securely.

2007-09 ENGINE PERFORMANCE

PCV System - MDX

COMPONENT LOCATION INDEX

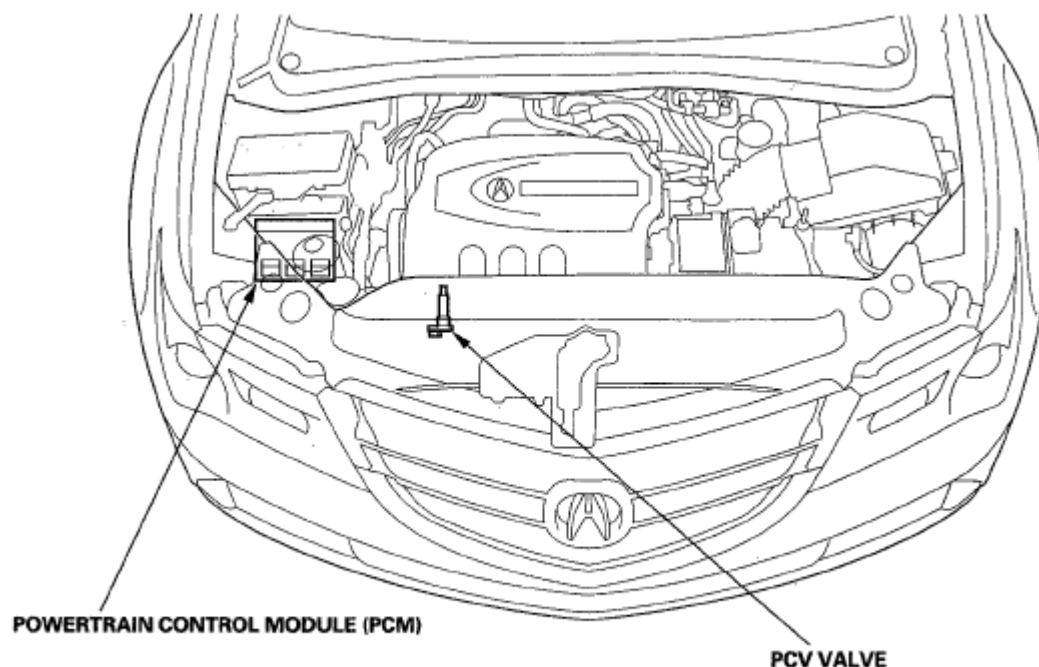


Fig. 1: Identifying PCV System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P2279: INTAKE AIR SYSTEM LEAK

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If DTC P0443 is stored at the same time as DTC P2279, troubleshoot DTC P0443 first, then recheck for DTC P2279.

1. Check for vacuum leaks at these parts:

- PCV valve
- PCV hose
- Purge (PCS) line
- Throttle body

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PCV System - MDX

- Intake manifold
- Brake booster hose

Are the parts OK?

YES - Go to step 2.

NO - Repair or replace any damaged parts, then go to step 4.

2. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 1 minute.
3. Monitor the OBD STATUS for DTC P2279 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Check the camshaft timing (see **TIMING BELT INSTALLATION**), then go to step 4.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates NOT COMPLETED, go to step 2 and recheck.

4. Reset the PCM with the HDS.
5. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
6. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 1 minute.
7. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2279 indicated?

YES - Check for vacuum leaks at the PCV valve, the PCV hose, the purge (PCS) line, the throttle body, the intake manifold, and the brake booster hose, then go to step 1.

NO - Go to step 8.

8. Monitor the OBD STATUS for DTC P2279 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 7, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

PCV VALVE INSPECTION

1. Remove the engine cover (see step 1 on **REMOVAL**).
2. Check the PCV valve (A), hoses (B), and connections for leaks or restrictions.

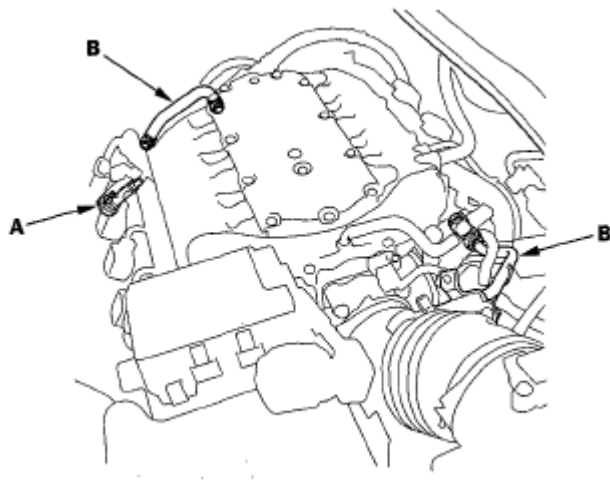


Fig. 2: Identifying PCV Valve And Hoses

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. At idle, listen to the PCV valve (A) with a stethoscope as you lightly pinch the PCV hose (B) with your fingers or pliers several times. Each time the hose is pinched, the valve should click.

If there is no clicking sound, check the PCV valve grommet (C) for cracks or damage. If the grommet is OK, replace the PCV valve (see **PCV VALVE INSPECTION**) and recheck.

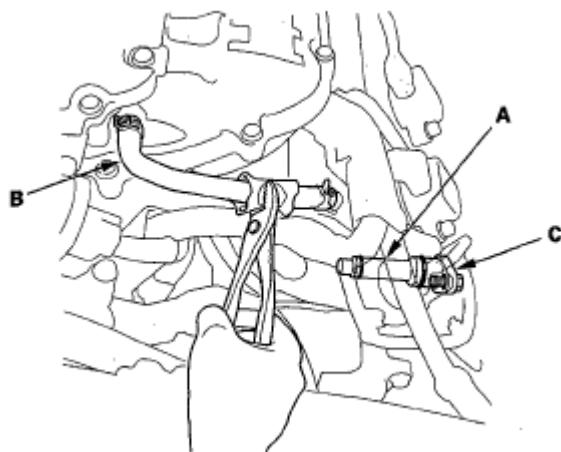


Fig. 3: Pinching PCV Hose With Pliers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PCV VALVE REPLACEMENT

1. Remove the engine cover (see step 1 on **REMOVAL**).

2. Remove the bolt (A).

NOTE: Take care not to spill oil on the hot exhaust manifold.

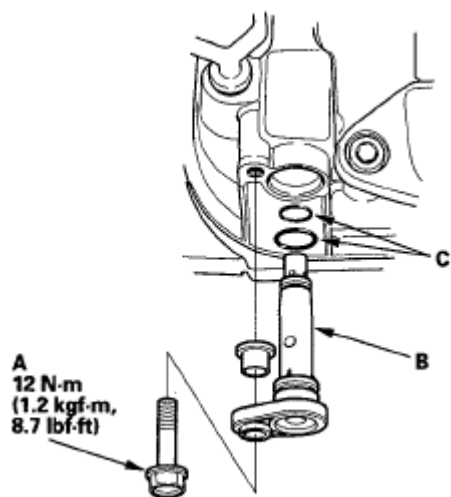


Fig. 4: Identifying PCV Valve And Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the PCV valve (B).
4. Install the parts in the reverse order of removal.

NOTE:

- When installing a new PCV valve, make sure the O-rings (C) are in place.
- When installing a used PCV valve, use new O-rings (C).

2007-09 ENGINE PERFORMANCE

PGM-FI System - MDX

COMPONENT LOCATION INDEX

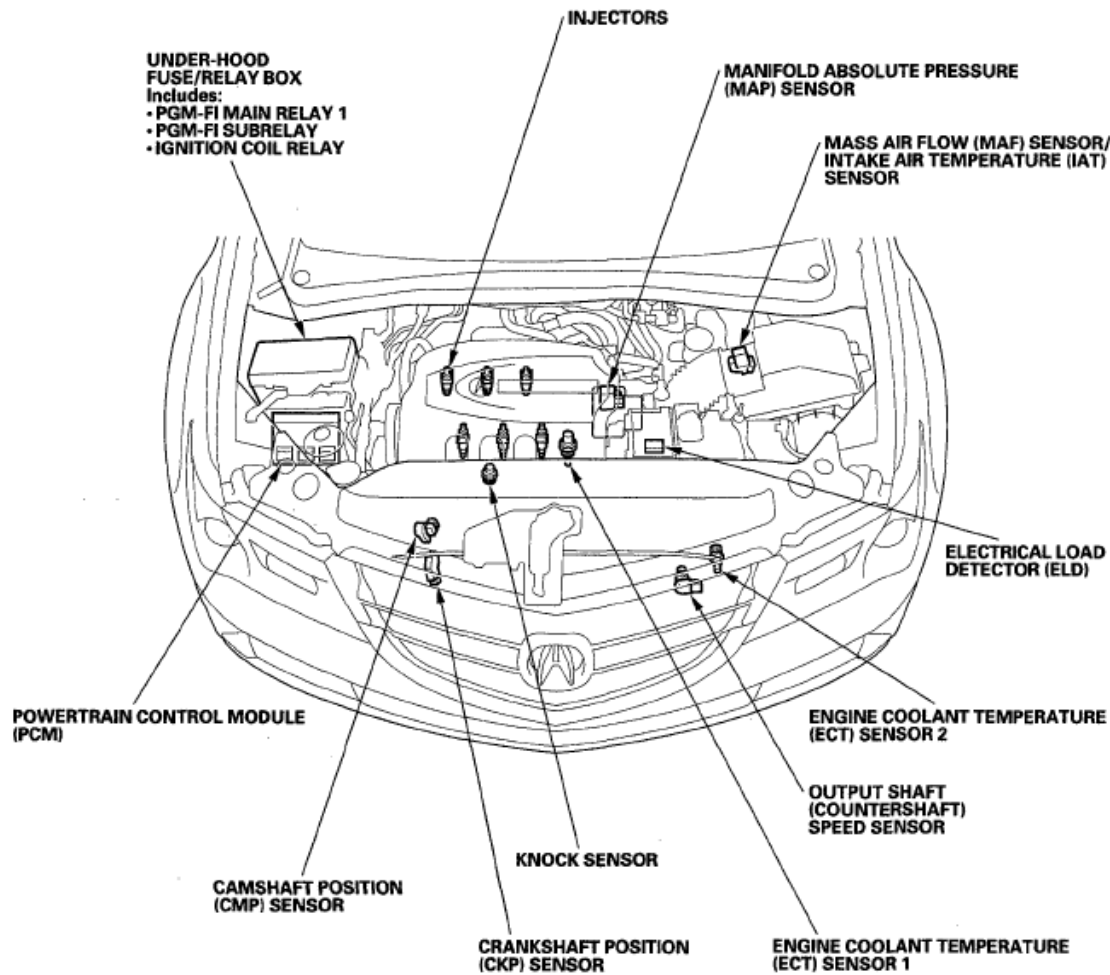


Fig. 1: Identifying PGM-FI System Component Location (1 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

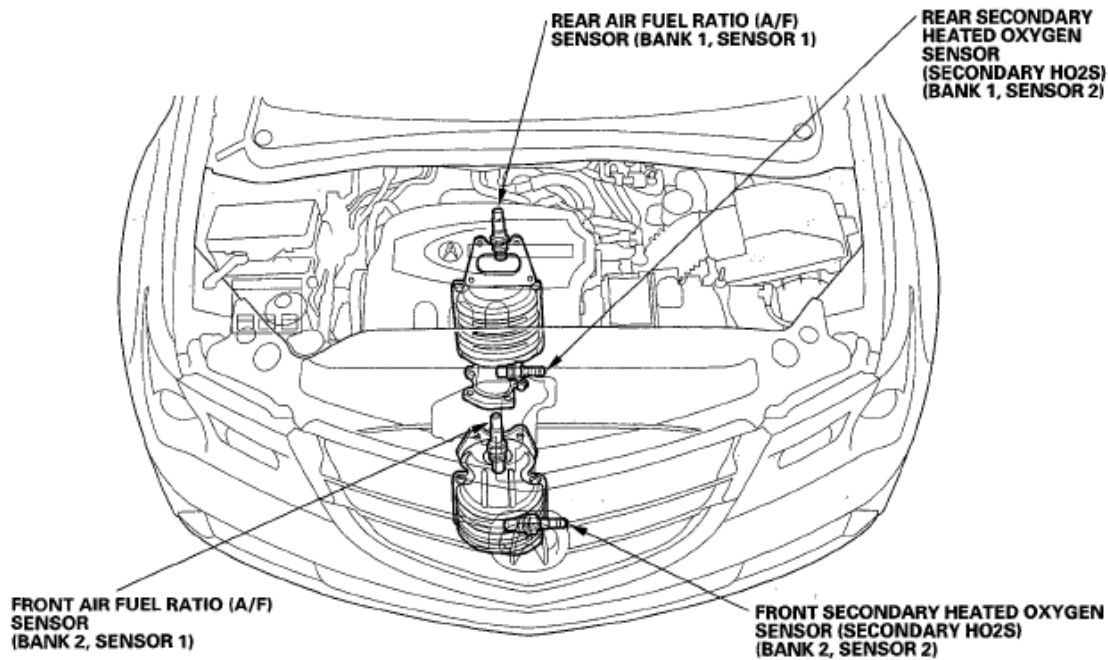


Fig. 2: Identifying PGM-FI System Component Location (2 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

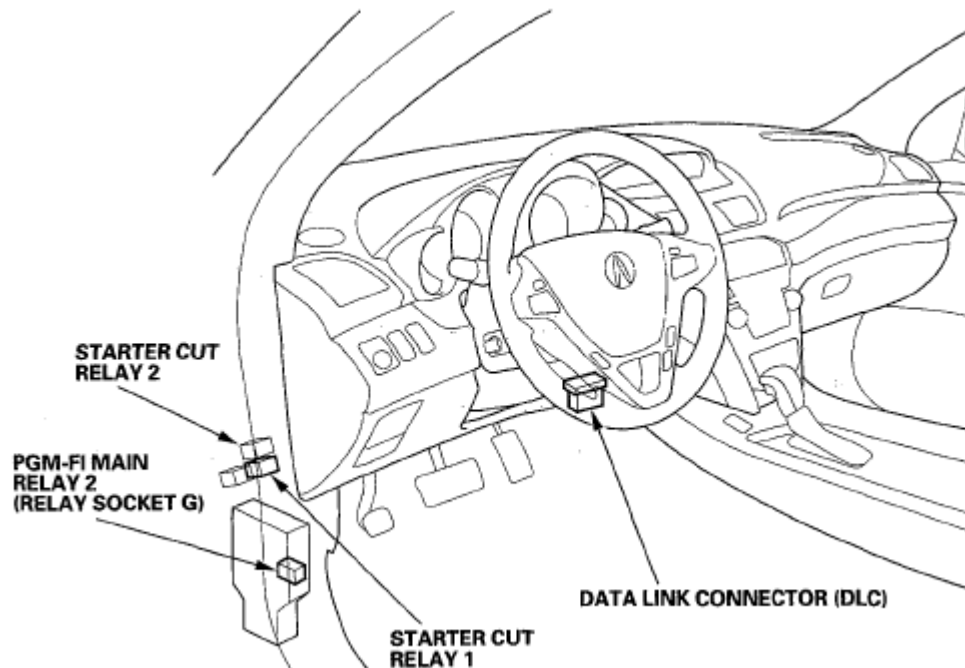


Fig. 3: Identifying PGM-FI System Component Location (3 Of 3)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P0101: MAF SENSOR RANGE/PERFORMANCE PROBLEM**NOTE:**

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If DTC P1128, P1129, P2228, and/or P2229 are stored at the same time as DTC P0101, troubleshoot those DTCs first, then recheck for DTC P0101.

1. Check for poor connections or damage to these parts:

- PCV valve
- PCV hose
- EVAP canister purge valve
- Throttle body
- Intake manifold
- Brake booster
- Brake booster hose
- Air intake duct

Are the parts OK?

YES - Go to step 2.

NO - Repair or replace the damaged parts, then go to step 15.

2. Check for damage or looseness at the air duct in the air cleaner.

Is it OK?

YES - Go to step 3.

NO - Reconnect or replace the air duct in the air cleaner, then go to step 15.

3. Check for a dirty air cleaner element.

Is it dirty?

YES - Replace the air cleaner element (see AIR CLEANER ELEMENT INSPECTION/REPLACEMENT), then go to step 15.

NO - Go to step 4.

4. Turn the ignition switch OFF.

5. Turn the ignition switch ON (II).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

6. Check the MAF SENSOR in the DATA LIST with the HDS.

Is there about 0.2 gm/s or 0.5 V?

YES - Go to step 7.

NO - Go to step 13.

7. Start the engine.
8. Vary the engine speed between 2,000 rpm and 3,000 rpm.
9. Check the MAF SENSOR in the DATA LIST with the HDS.

Does the reading change?

YES - Go to step 10.

NO - Go to step 13.

10. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
11. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - MAP SENSOR
 - MAF SENSOR
12. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 13.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM. If the screen indicates NOT COMPLETED, go to step [11](#) and recheck.

13. Turn the ignition switch OFF.
14. Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- MAP SENSOR
- MAF SENSOR

19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0101 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM, then go to step 1.

NO - Go to step 20.

20. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 19, go to the indicated DTCs troubleshooting.

NO -If the screen indicates FAILED, check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 18.

DTC P0102: MAF SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II), and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

Is about 0 gm/s, or 0.1 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/I AT sensor and the PCM.

3. Check the No. 18 ACG (10 A) fuse in the under-dash fuse/relay box.

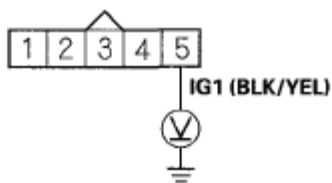
Is the fuse OK?

YES - Go to step 4.

NO - Repair short in the wire between the MAF sensor and the No. 18 ACG (10 A) fuse. Also replace the No. 18 ACG (10 A) fuse, then go to step 20.

4. Turn the ignition switch OFF.
5. Disconnect the MAF sensor/IAT sensor 5P connector.
6. Turn the ignition switch ON (II).
7. Measure voltage between MAF sensor/IAT sensor 5P connector terminal No. 5 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 4: Identifying Voltage Between MAF Sensor 5P Connector Terminal 5 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

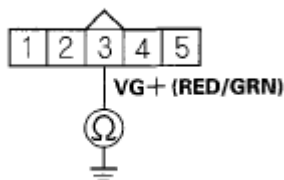
Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between the No. 18 ACG (10 A) fuse and the MAF sensor, then go to step 20.

8. Turn the ignition switch OFF.
9. Measure resistance between MAF sensor/IAT sensor 5P connector terminal No. 3 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 5: Identifying Resistance Between MAF Sensor 5P Connector Terminal 3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 190-210 kohms?

YES - Go to step 14.

NO - Go to step 10.

10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (49P).
12. Check for continuity between PCM connector terminal A20 and body ground.

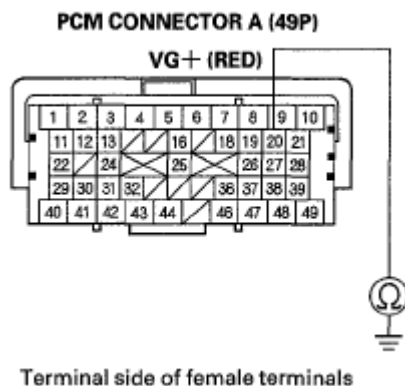


Fig. 6: Identifying Continuity Between PCM Connector Terminal A20 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A20) and the MAF sensor, then go to step 21.

NO - Go to step 13.

13. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 3 and PCM connector terminal A20.

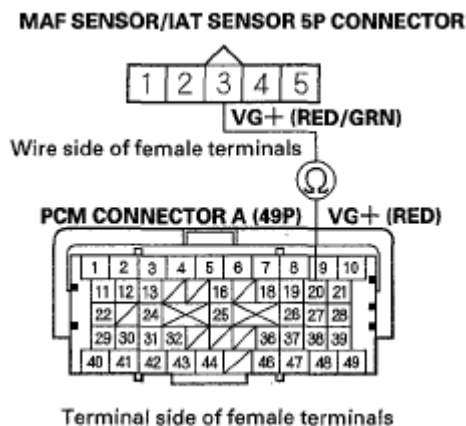


Fig. 7: Identifying Continuity Between MAF Sensor 5P Connector Terminal 3 And PCM Connector Terminal (A20)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Is there continuity?

YES - Go to step 26.

NO - Repair open in the wire between the PCM (A20) and the MAF sensor, then go to step 21.

14. Substitute a known-good MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Clear the DTC with the HDS.
18. Start the engine. Hold the engine speed at 2,000 rpm without load (in Park or neutral).
19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0102 indicated?

YES - Go to step 26.

NO - Replace the original MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**), then go to step 20.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Turn the ignition switch ON (II).
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0102 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0102 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If

the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0103: MAF SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II), and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

Is about 202 gm/s, or 4.89 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM.

3. Turn the ignition switch OFF.
4. Jump the SCS line with the HDS.
5. Disconnect the MAF sensor/IAT sensor 5P connector.
6. Disconnect PCM connector A (49P).
7. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 4 and PCM connector terminal A9.

MAF SENSOR/IAT SENSOR 5P CONNECTOR

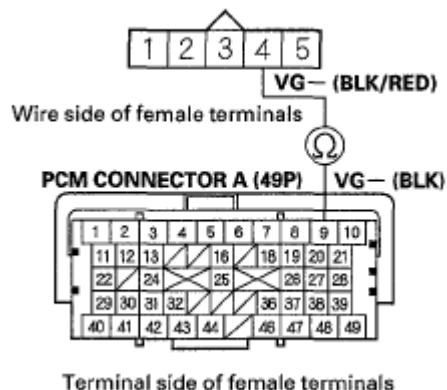


Fig. 8: Identifying Continuity Between MAF Sensor 5P Connector Terminal 4 And PCM Connector Terminal A9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

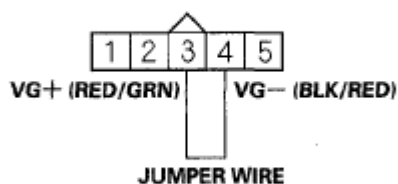
Is there continuity?

YES - Go to step 8.

NO - Repair open in the wire between the PCM (A9) and the MAF sensor, then go to step 15.

8. Reconnect PCM connector A (49P).
9. Connect MAF sensor/IAT sensor 5P connector terminals No. 3 and No. 4 with a jumper wire.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 9: Identifying MAF Sensor/IAT Sensor 5P Connector Terminals 3 And 4 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Turn the ignition switch ON (II).
11. Clear the DTC with the HDS.
12. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0103 indicated?

YES - Go to step 20.

NO - Go to step 13.

13. Turn the ignition switch OFF.
14. Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Reset the PCM with the HDS.
18. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0103 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM, then go to step 1.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0103 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0107: MAP SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 3 kPa (1.0 in.Hg, 26 mmHg), or 0.23 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAP sensor 3P connector.
5. Turn the ignition switch ON (II).
6. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 3 kPa (1.0 in.Hg, 26 mmHg), or 0.23 V or less indicated?

YES - Go to step 12.

NO - Go to step 7.

7. Measure voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

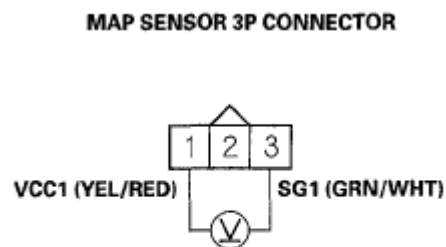


Fig. 10: Identifying Voltage Between MAP Sensor 3P Connector Terminals 1 And 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 16.

NO - Go to step 8.

8. Turn the ignition switch OFF.
9. Jump the SCS line with the HDS.
10. Disconnect PCM connector B (49P).
11. Check for continuity between PCM connector terminal B36 and MAP sensor 3P connector terminal No. 1.

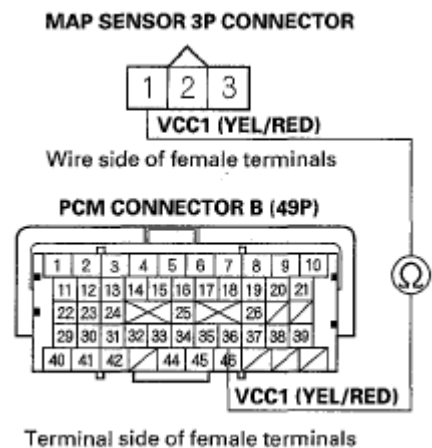


Fig. 11: Identifying Continuity Between PCM Connector Terminal B36 And MAP Sensor 3P Connector Terminal 1
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

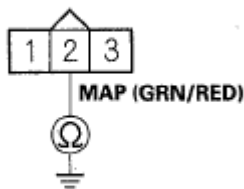
Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the PCM (B36) and the MAP sensor, then go to step 18.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector B (49P).
15. Check for continuity between MAP sensor 3P connector terminal No. 2 and body ground.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 12: Identifying Continuity Between MAP Sensor 3P Connector Terminal 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B35) and the MAP sensor, then go to step 18.

NO - Go to step 23.

16. Turn the ignition switch OFF.
17. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
22. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0107 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

23. Reconnect all connectors.

24. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0107 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0108: MAP SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

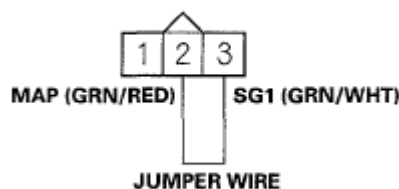
Is about 160 kPa (47.1 in.Hg, 1,197 mmHg), or 4.49 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAP sensor 3P connector.
5. Connect MAP sensor 3P connector terminals No. 2 and No. 3 with a jumper wire.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 13: Identifying MAP Sensor 3P Connector Terminals 2 And 3 With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

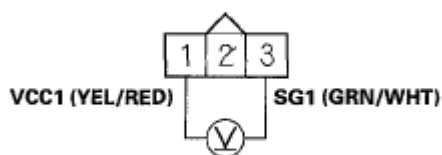
6. Turn the ignition switch ON (II).
7. Check the MAP SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (47.1 in.Hg, 1,197 mmHg), or 4.49 V or more indicated?

YES - Go to step 8.

NO - Go to step 18.

8. Remove the jumper wire from the MAP sensor 3P connector.
9. Measure voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

MAP SENSOR 3P CONNECTOR

Wire side of female terminals

Fig. 14: Identifying Voltage Between MAP Sensor 3P Connector Terminals 1 And 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 14.

NO - Go to step 10.

10. Turn the ignition switch OFF.
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (49P).
13. Check for continuity between PCM connector terminal B34 and MAP sensor 3P connector terminal No. 3.

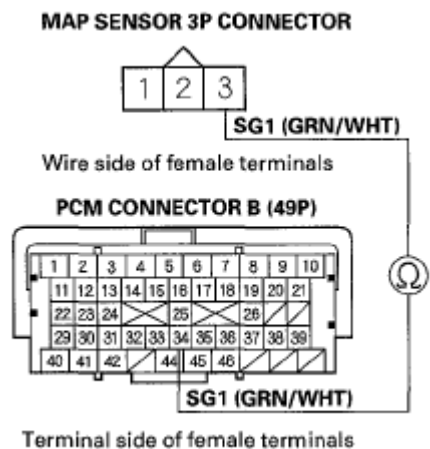


Fig. 15: Identifying Continuity Between PCM Connector Terminal B34 And MAP Sensor 3P Connector Terminal 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the PCM (B34) and the MAP sensor, then go to step 20.

14. Turn the ignition switch OFF.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector B (49P).
17. Check for continuity between PCM connector terminal B35 and MAP sensor 3P connector terminal No. 2.

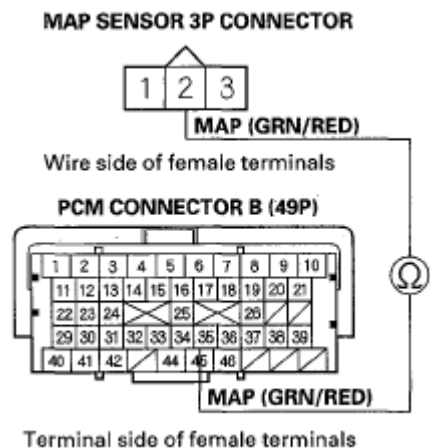


Fig. 16: Identifying Continuity Between PCM Connector Terminal B35 And MAP Sensor 3P Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 25.

NO - Repair open in the wire between the PCM (B35) and the MAP sensor, then go to step 20.

18. Turn the ignition switch OFF.
19. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
20. Reconnect all connectors.
21. Turn the ignition switch ON (II).
22. Reset the PCM with the HDS.
23. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0108 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

25. Reconnect all connectors.
26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0108 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0111: IAT SENSOR CIRCUIT RANGE/ PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Check for poor connections or loose terminals at ECT sensor 1/2 and the MAF sensor/IAT sensor.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Are the connections and terminals OK?

YES - Go to step 2.

NO - Repair the connections or terminals, then go to step 15.

2. Remove the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
3. Allow the IAT sensor to cool to ambient temperature.
4. Note the ambient temperature.
5. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install the sensor onto the air cleaner.
6. Turn the ignition switch ON (II).
7. Note the value of the IAT SENSOR quickly in the DATA LIST with the HDS.
8. Compare the value of the IAT SENSOR to the ambient temperature.

Does the value of the IAT SENSOR differ 5.4°F (3°C) or more?

YES - Go to step 13.

NO - Go to step 9.

9. Disconnect the MAF sensor/IAT sensor from the 5P connector.
10. Using a heat gun, blow hot air on the MAF sensor/ IAT sensor for a few seconds. Do not apply the heat longer than a few seconds or you will damage the sensor.
11. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install the sensor onto the air cleaner.
12. Check the IAT SENSOR in the DATA LIST with the HDS.

Does the IAT SENSOR change 58°F (32°C) or more?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the PCM.

NO - Go to step 13.

13. Turn the ignition switch OFF.
14. Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0111 indicated?

YES - Check for poor connections or loose terminals at the IAT sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0112: IAT SENSOR CIRCUIT LOW VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Check the IAT SENSOR in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Turn the ignition switch ON (II).
6. Check the IAT SENSOR in the DATA LIST with the HDS.

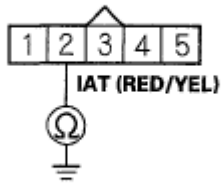
Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector C (49P).
10. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 2 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 17: Identifying Continuity Between MAF Sensor 5P Connector Terminal 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the IAT sensor and the PCM (C24), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch OFF.
12. Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0112 indicated?

YES - Check for poor connections or loose terminals at the IAT sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0112 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0113: IAT SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check the IAT SENSOR in the DATA LIST with the HDS.

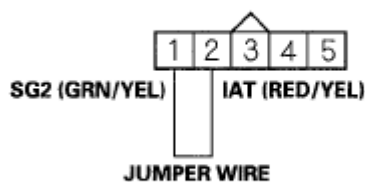
Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Connect MAF sensor/IAT sensor 5P connector terminals No. 1 and No. 2 with a jumper wire.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 18: Identifying MAF Sensor/IAT Sensor 5P Connector Terminals 1 And 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch ON (II).
7. Check the IAT SENSOR in the DATA LIST with the HDS.

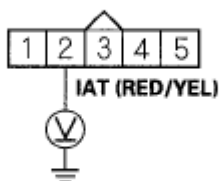
Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 8.

NO - Go to step 20.

8. Turn the ignition switch OFF.
9. Remove the jumper wire from the MAF sensor/IAT sensor 5P connector.
10. Turn the ignition switch ON (II).
11. Measure voltage between MAF sensor/IAT sensor 5P connector terminal No. 2 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Fig. 19: Identifying Voltage Between MAF Sensor 5P Connector Terminal 2 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (49P).
15. Check for continuity between PCM connector terminal C16 and MAF sensor/IAT sensor 5P connector terminal No. 1.

MAF SENSOR/IAT SENSOR 5P CONNECTOR

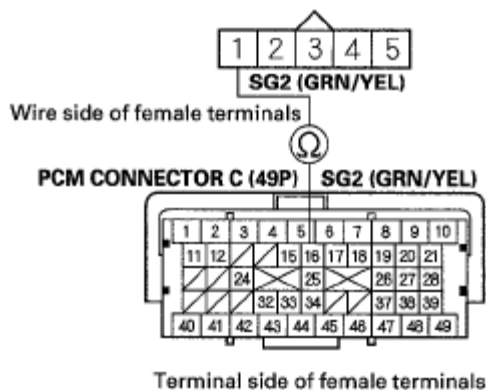


Fig. 20: Identifying Continuity Between PCM Connector Terminal C16 And MAF Sensor Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (C16) and the MAF sensor/IAT sensor, then go to step 22.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector C (49P).
19. Check for continuity between PCM connector terminal C24 and MAF sensor/IAT sensor 5P connector terminal No. 2.

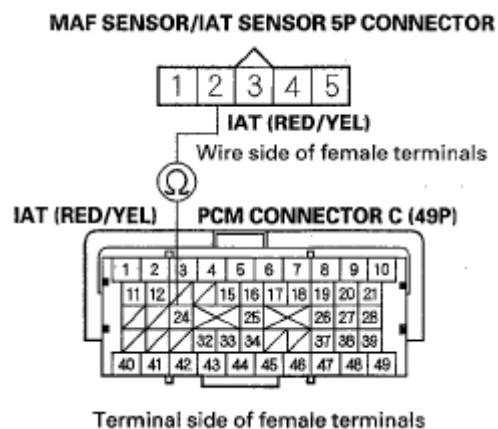


Fig. 21: Identifying Continuity Between PCM Connector Terminal C24 And MAF Sensor Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (C24) and the MAF sensor/IAT sensor, then go to step 22.

20. Turn the ignition switch OFF.
21. Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**).
22. Reconnect all connectors.
23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0113 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0113 indicated?

YES - Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0116: ECT SENSOR 1 RANGE/ PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 176°F (80°C) or more, or 0.78 V or less indicated?

YES - Go to step 6.

NO - Go to step 3.

3. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Does ECT SENSOR 1 change 18°F (10°C) or more?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the PCM.

NO - Go to step 11.

6. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
7. Turn the ignition switch OFF.
8. Open the hood, and let the engine cool for 3 hours.
9. Turn the ignition switch ON (II).
10. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Does ECT SENSOR 1 change 18°F (10°C) or more?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the PCM.

NO - Go to step 11.

11. Turn the ignition switch OFF.
12. Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**).
13. Turn the ignition switch ON (II).
14. Reset the PCM with the HDS.
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0116 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to .

DTC P0117: ECT SENSOR 1 CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ECT sensor 1 2P connector.
5. Turn the ignition switch ON (II).
6. Check ECT SENSOR 1 in the DATA LIST with the HDS.

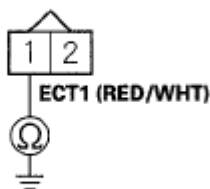
Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector C (49P).
10. Check for continuity between ECT sensor 1 2P connector terminal No. 1 and body ground.

ECT SENSOR 1 2P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying Continuity Between ECT Sensor 1 2P Connector Terminal No 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between ECT sensor 1 and the PCM (C32), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch OFF.
12. Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**).
13. Reconnect all connectors.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0117 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0117 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0118: ECT SENSOR 1 CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the PCM.

3. Turn the ignition switch OFF.

4. Disconnect the ECT sensor 1 2P connector.
5. Connect ECT sensor 1 2P connector terminals No. 1 and No. 2 with a jumper wire.

ECT SENSOR 1 2P CONNECTOR

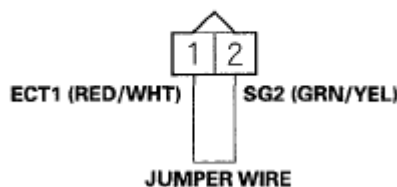


Fig. 23: Identifying ECT Sensor 1 2P Connector Terminals 1 And 2 With Jumper Wire
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch ON (II).
7. Check ECT SENSOR 1 in the DATA LIST with the HDS.

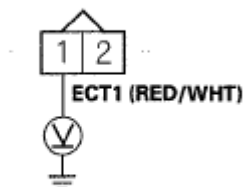
Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 8.

NO - Go to step 20.

8. Turn the ignition switch OFF.
9. Remove the jumper wire.
10. Turn the ignition switch ON (II).
11. Measure voltage between ECT sensor 1 2P connector terminal No. 1 and body ground.

ECT SENSOR 1 2P CONNECTOR



Wire side of female terminals

Fig. 24: Identifying Voltage Between ECT Sensor 1 2P Connector Terminal 1 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector C (49P).
15. Check for continuity between PCM connector terminal C16 and ECT sensor 1 2P connector terminal No. 2.

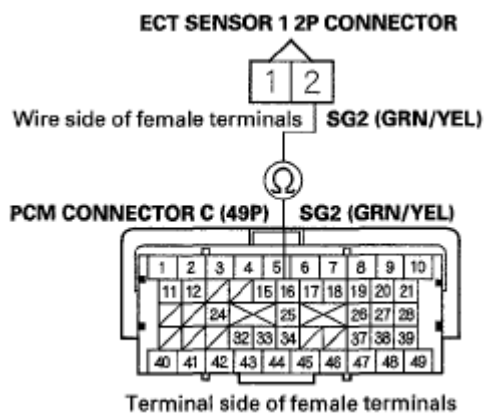


Fig. 25: Continuity Between PCM Connector Terminal C16 And ECT Sensor Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (C16) and ECT sensor 1, then go to step 22.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector C (49P).
19. Check for continuity between PCM connector terminal C32 and ECT sensor 1 2P connector terminal No. 1.

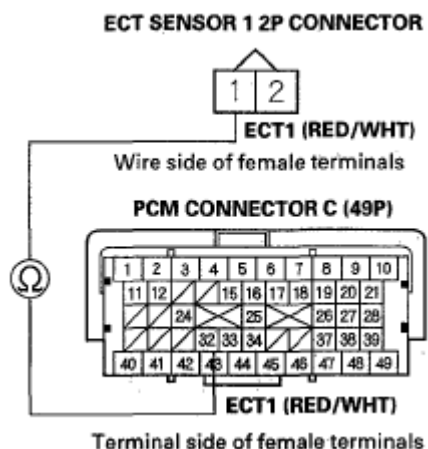


Fig. 26: Identifying Continuity Between PCM Connector Terminal C32 And ECT Sensor Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (C32) and ECT sensor 1, then go to step 22.

20. Turn the ignition switch OFF.
21. Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**).
22. Reconnect all connectors.
23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0118 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0118 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1 and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0125: ECT SENSOR 1 MALFUNCTION/SLOW RESPONSE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Start the engine, and let it idle for 5 minutes or more.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 10°F (-12°C) or less, or 4.45 V or more indicated?

YES - Go to step 9.

NO - Go to step 3.

3. Allow the engine to cool to 104°F (40°C) or less.
4. Note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
5. Start the engine, and let it idle.
6. Let the engine idle until ECT SENSOR 1 goes up 49°F (27°C) or more from the recorded temperature.
7. Note the value of ECT SENSOR 2 in the DATA LIST with the HDS.
8. Compare ECT SENSOR 2 and the recorded temperature.

Did ECT SENSOR 2 change 17°F (9.5°C) or more?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM.

NO - Check the thermostat (see **FAN MOTOR TEST**). If the thermostat is OK, go to step 9. If the thermostat is faulty, replace it (see **THERMOSTAT REPLACEMENT**), then go to step 11.

9. Turn the ignition switch OFF.
10. Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**).
11. Turn the ignition switch ON (II).
12. Reset the PCM with the HDS.
13. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
14. Allow the engine to cool to ambient temperature.

15. Start the engine, and let it idle for 20 minutes.
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0125 indicated?

YES - Check for poor connections or loose terminals at the ECT sensor 2 and the PCM, then go to step 1.

NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P0125 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ECT sensor 2 and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 14.

DTC P0128: COOLING SYSTEM MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the blower switch OFF.
4. Check the FAN CTRL in the DATA LIST with the HDS.

Is it OFF?

YES - Go to step 5.

NO - Wait until the FAN CTRL is off, then go to step 5.

5. Check the radiator fan operation.

Does the radiator fan keep running?

YES - Check the radiator fan circuit (see **CIRCUIT DIAGRAM**), and the radiator fan relay (see **POWER RELAY TEST**). If the circuits and the relay are OK, go to step 19.

NO - Go to step 6.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

6. Let the engine cool until the coolant temperature is 104°F (40°C) or less.
7. Note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
8. Start the engine, and let it idle.
9. Let the engine idle until ECT SENSOR 1 goes up 49°F (27°C) or more from the recorded temperature.
10. Check ECT SENSOR 2 in the DATA LIST with the HDS.
11. Compare the value of recorded ECT SENSOR 2 and the present value of ECT SENSOR 2.

Did the temperature rise 17°F (9.5°C) or more?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM.

NO - Test the thermostat (see **FAN MOTOR TEST**), then go to step 12.

12. Turn the ignition switch ON (II).
13. Reset the PCM with the HDS.
14. Let the engine cool until the coolant temperature is between 21°F (-6°C) and 104°F (40°C).
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Test-drive at a steady speed between 15-75 mph (24-120 km/h) for 10 minutes.
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0128 indicated?

YES - Check the cooling system, then go to step 1.

NO - Go to step 18.

18. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 17, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check the cooling system, then go to step 1. If the screen indicates NOT COMPLETED, go to step 14.

19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Let the engine cool until the coolant temperature is between 21°F (-6°C) and 104°F (40°C).
21. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
22. Test-drive at a steady speed between 15-75 mph (24-120 km/h) for 10 minutes.

23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0128 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 20. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

DTC P0133: REAR A/F SENSOR (BANK 1, SENSOR 1) RESPONSE MALFUNCTION/SLOW RESPONSE; DTC P0153: FRONT A/F SENSOR (BANK 2, SENSOR 1) RESPONSE MALFUNCTION/SLOW RESPONSE

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If DTC P0139 and/or P0159* is stored at the same time as DTC P0133 and/or P0153*, troubleshoot DTC P0139 and/or P0159* first, then recheck for DTC P0133 and/ or P0153*.
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed between 26-81 mph (41-130 km/h)

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

5. Monitor the OBD STATUS for DTC P0133 and/or P0153* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.
7. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed between 26-81 mph (41-130 km/h)
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0133 and/or P0153 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0133 and/or P0153* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 13, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

DTC P0134: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER SYSTEM MALFUNCTION; DTC

P0154: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER SYSTEM MALFUNCTION**NOTE:**

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If DTC P2251 and/or P2254* is stored at the same time as DTC P0134 and/or P0154*, troubleshoot DTC P2251 and/or P2254* first, then recheck for P0134 and/or P0154*.
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle 1 minute.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0134 and/or P0154 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/ relay box (PGM-FI subrelay) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 4 and PCM connector terminal B13 (B14)*.

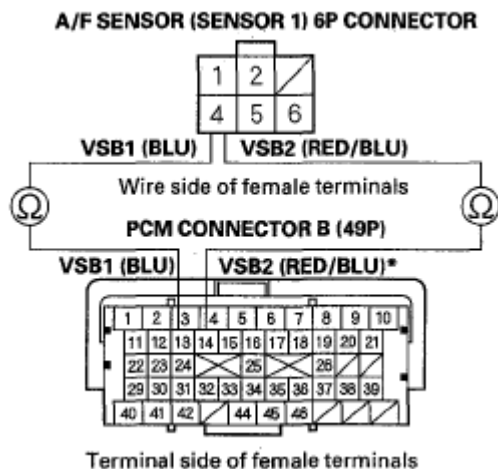


Fig. 27: Identifying Continuity Between A/F Sensor Connector Terminal 4 And PCM Connector

Terminal B13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

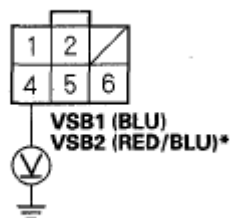
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the PCM (B13 (B14)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect PCM connector B (49P).
11. Start the engine, then let it idle for 1 minute.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR



Wire side of female terminals

Fig. 28: Identifying Voltage Between A/F Sensor 6P Connector Terminal 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0134 and/or P0154 Indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P0134 and/or P0154* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Start the engine, then let it idle 1 minute.
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0134 and/or P0154 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1.

NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P0134 and/or P0154* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 24, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 23. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0135: REAR A/F SENSOR (BANK 1, SENSOR 1) HEATER CIRCUIT MALFUNCTION; DTC P0155: FRONT A/F SENSOR (BANK 2, SENSOR 1) HEATER CIRCUIT MALFUNCTION

NOTE:

- Before you troubleshoot, record all freeze data and any on-board

snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0135 and/or P0155 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/ relay box (PGM-FI subrelay), and the PCM.

5. Turn the ignition switch OFF.
6. Check these fuses:
 - No. 11 A/F sensor (AFHT+) (15 A) fuse in the under-hood fuse/relay box
 - No. 3 R/B 1 (30 A) fuse in the main under-hood fuse box.
 - No. 7 +B FAN TIMER (7.5 A) fuse in the under-hood fuse/relay box

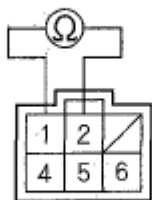
Are any of the above fuses blown?

YES - Repair short in the wire between the A/F sensors, the under-hood fuse/relay box (PGM-FI subrelay), then replace the blown fuse(s), and go to step 23.

NO - Go to step 7.

7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. At the sensor side, measure resistance between A/F sensor (Sensor T) 6P connector terminals No. 1 and No. 2.

A/F SENSOR (SENSOR 1) 6P CONNECTOR



Terminal side of male terminals

Fig. 29: Identifying Resistance Between A/F Sensor 6P Connector Terminals 1 And 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 2.5-3.2 ohms at room temperature?

YES - Go to step 9.

NO - Go to step 21.

9. At the sensor side, check for continuity between each terminal at the A/F sensor (Sensor 1) 6P connector and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR

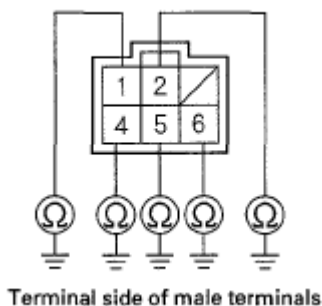


Fig. 30: Identifying Continuity Between Terminal A/F Sensor 6P Connector And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Go to step 10.

10. At the sensor side, check for continuity between A/F sensor (Sensor 1) 6P connector terminals No. 1 and No. 4, No. 1 and No. 5, No. 1 and No. 6 individually.

A/F SENSOR (SENSOR 1) 6P CONNECTOR

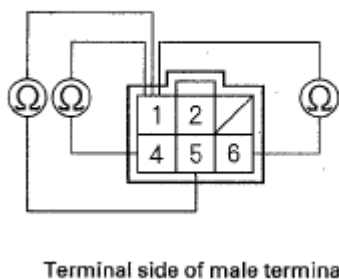


Fig. 31: Identifying Continuity Between A/F Sensor 6P Connector Terminals 1 And 4
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 21.

NO - Go to step 11.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector C (49P).
13. Check for continuity between PCM connector terminal C6 (C8)* and body ground.

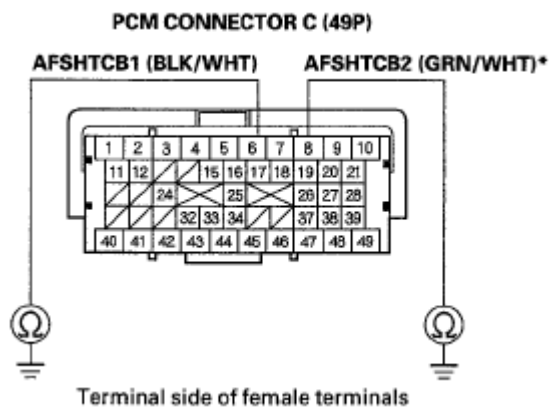


Fig. 32: Identifying Continuity Between PCM Connector Terminal C6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C6 (C8)*) and the A/F sensor (Sensor 1), then go to step 22.

NO - Go to step 14.

14. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 2 and PCM connector terminal C6 (C8)*.

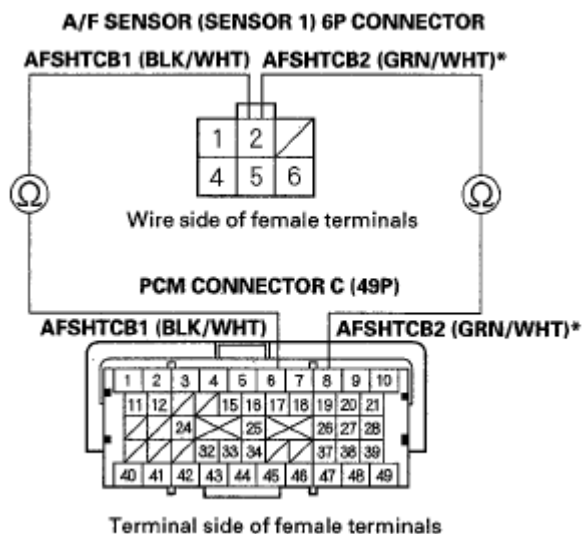


Fig. 33: Identifying Continuity Between A/F Sensor Connector Terminal 2 And PCM Connector Terminal C6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the PCM (C6 (C8)*) and the A/F sensor (Sensor 1), then go to step 22.

15. Disconnect the under-hood fuse/relay box 9P connector.
16. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 1 and under-hood fuse/relay box 9P connector No. 9.

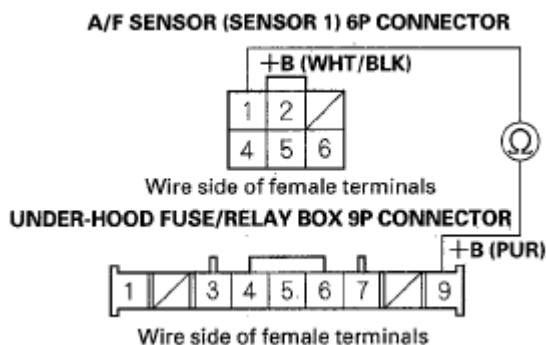


Fig. 34: Identifying Continuity Between A/F Sensor Connector Terminal 1 And Under-Hood Fuse Connector 9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Repair open in the wire between the A/F sensor (Sensor 1) and the under-hood fuse/relay box, then go to step 22.

17. Disconnect PCM connector A (49P).
18. Disconnect the under-hood fuse/relay box 14P connector.
19. Check for continuity between under-hood fuse/ relay box 14P connector terminal No. 13 and PCM connector terminal A40.

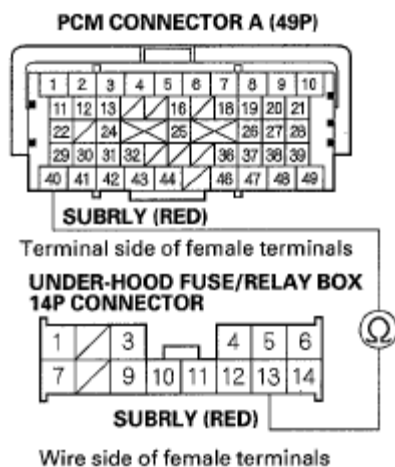


Fig. 35: Identifying Continuity Between Under-Hood Fuse Connector Terminal 13 And PCM Connector Terminal A40

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire between the PCM (A40) and the under-hood fuse/relay box, then go to step 22.

20. Test the PGM-FI subrelay in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

Is the PGM-FI subrelay OK?

YES - Go to step 28.

NO - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 22.

21. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
22. Reconnect all connectors.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0135 and/or P0155 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay) and the PCM, then go to step 1.

NO - Go to step 27.

27. Monitor the OBD STATUS for DTC P0135 and/or P0155* in the DTCs MENU with the HDS.

Does the screen Indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 26, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

28. Reconnect all connectors.
29. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
30. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0135 and/or P0155 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 31.

31. Monitor the OBD STATUS for DTC P0135 and/or P0155* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 30, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor

(Sensor 1), the under-hood fuse/relay box (PGM-FI subrelay) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0137: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT LOW VOLTAGE; DTC P0157: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT LOW VOLTAGE

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
4. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.05 V or less?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM.

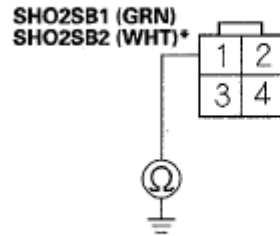
5. Turn the ignition switch OFF.
6. Disconnect the secondary HO2S (Sensor 2) 4P connector.
7. Turn the ignition switch ON (II).
8. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 0.05 V or less?

YES - Go to step 9.

NO - Go to step 13.

9. Turn the ignition switch OFF.
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector B (49P).
12. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 1 and body ground.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Wire side of female terminals

Fig. 36: Identifying Continuity Between Secondary HO2S Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B25 (B16)*) and the secondary HO2S (Sensor 2), then go to step 15.

NO - Go to step 23.

13. Turn the ignition switch OFF.
14. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Reset the PCM with the HDS.
18. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
19. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
20. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Engine speed at 1,500-3,000 rpm
 - Drive 1 minute or more

21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0137 and/or P0157 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for DTC P0137 and/or P0157* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

NO - If the screen indicates **FAILED**, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1. If the screen indicates **EXECUTING**, keep driving until a result comes on. If the screen indicates **OUT OF CONDITION**, go to step 19.

23. Reconnect all connectors.
24. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
25. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
26. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Engine speed at 1,500-3,000 rpm
 - Drive 1 minute or more
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0137 and/or P0157 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 25. If the PCM was substituted, go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for DTC P0137 and/or P0157* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 27, go to the indicated DTCs troubleshooting.

NO - If the screen indicates **FAILED**, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 25. If the PCM was substituted, go to step 1. If the screen indicates **EXECUTING**, keep driving until a result comes on. If the screen indicates **OUT OF CONDITION**, go to step 25.

DTC P0138: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT HIGH VOLTAGE; DTC P0158: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT HIGH VOLTAGE

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

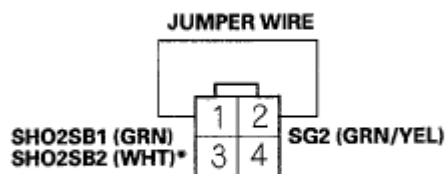
1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
4. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 1.27 V or more?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM.

5. Turn the ignition switch OFF.
6. Disconnect the secondary HO2S (Sensor 2) 4P connector.
7. Connect secondary HO2S (Sensor 2) 4P connector terminals No. 1 and No. 2 with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

Wire side of female terminals

Fig. 37: Identifying Secondary HO2S Connector Terminals 1 And 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the ignition switch ON (II).
9. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 1.27 V or more?

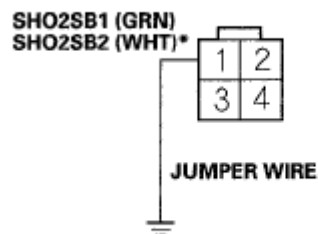
YES - Go to step 10.

NO - Go to step 19.

10. Turn the ignition switch OFF.

11. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
12. Connect secondary HO2S (Sensor 2) 4P connector terminal No. 1 to body ground with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Wire side of female terminals

Fig. 38: Identifying Secondary HO2S Connector Terminal 1 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

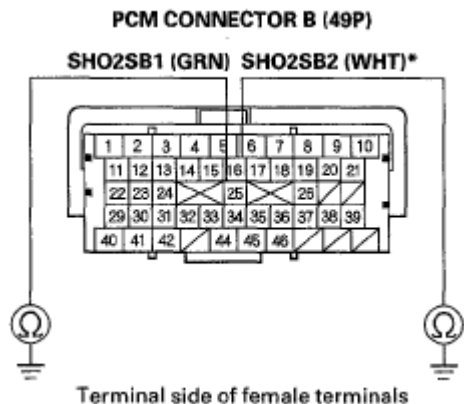
13. Turn the ignition switch ON (II).
14. Check the HO2S S2 in the DATA LIST with the HDS.

Does the voltage stay at 1.27 V or more?

YES - Go to step 15.

NO - Repair open in the wire between the PCM (C16) and the secondary HO2S (Sensor 2), then go to step 21.

15. Turn the ignition switch OFF.
16. Jump the SCS line with the HDS.
17. Disconnect PCM connector B (49P).
18. Check for continuity between PCM connector terminal B25 (B16)* and body ground.



Terminal side of female terminals

Fig. 39: Identifying Continuity Between PCM Connector Terminal B25 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Is there continuity?

YES - Go to step 29.

NO - Repair open in the wire between the PCM (B25 (B16) *) and the secondary HO2S (Sensor 2), then go to step 21.

19. Turn the ignition switch OFF.
20. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
21. Reconnect all connectors.
22. Turn the ignition switch ON (II).
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
26. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Engine speed at 1,500-3,000 rpm
 - Drive 1 minute or more
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0138 and/or P0158 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1.

NO - Go to step 28.

28. Monitor the OBD STATUS for DTC P0138 and/or P0158* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 27, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 25.

29. Reconnect all connectors.
30. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
31. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

32. Test-drive under these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
- Transmission in D position
- Engine speed at 1,500-3,000 rpm
- Drive 1 minute or more

33. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0138 and/or P0158 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 32. If the PCM was substituted, go to step 1.

NO - Go to step 34.

34. Monitor the OBD STATUS for DTC P0138 and/or P0158* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 33, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 31. If the PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 31.

DTC P0139: REAR SECONDARY HO2S (BANK 1, SENSOR 2) SLOW RESPONSE; DTC P0159: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) SLOW RESPONSE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
4. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- Vehicle speed between 35-55 mph (56-88 km/h)
 - Drive 5 minutes or more
5. Monitor the OBD STATUS for DTC P0139 and/or P0159* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.
7. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Start the engine, then let it idle without load (in Park or neutral) until the radiator fan comes on.
12. Test-drive under these conditions:
- Engine coolant temperature above 176°F (80°C)
 - Transmission in D position
 - Vehicle speed between 35-55 mph (56-88 km/h)
 - Drive 5 minutes or more
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0139 and/or P0159 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P0139 and/or P0159* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 13, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11.

**DTC P0141: REAR SECONDARY HO2S (BANK 1, SENSOR 2) HEATER CIRCUIT MALFUNCTION;
DTC P0161: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) HEATER CIRCUIT
MALFUNCTION****NOTE:**

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0141 and/or P0161 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2), the under-hood fuse/relay box (PGM-FI subrelay) and the PCM.

5. Turn the ignition switch OFF.
6. Check these fuses:
 - No. 11 A/F sensor (AFHT+) (15 A) fuse in the under-hood fuse/relay box
 - No. 3 R/B 1 (30 A) fuse in the main under-hood fuse box.
 - No. 7 +B FAN TIMER (7.5 A) fuse in the under-hood fuse/relay box

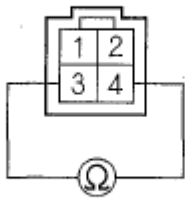
Are any of the fuses blown?

YES - Repair short in the wire between the A/F sensors, the under-hood fuse/relay box (PGM-FI subrelay) and the fuse, then go to step 21.

NO - Go to step 7.

7. Disconnect the secondary HO2S (Sensor 2) 4P connector.
8. At the secondary HO2S (Sensor 2) side, measure resistance between secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

Fig. 40: Identifying Resistance Between Secondary HO2S Connector Terminals 3 And 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

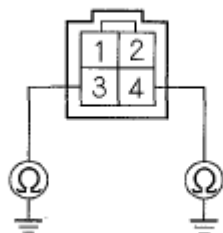
Is there 5.4-6.6 ohms at room temperature?

YES - Go to step 9.

NO - Go to step 20.

9. At the secondary HO2S (sensor 2) side, check for continuity between body ground and secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4 individually.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

Fig. 41: Identifying Continuity Between Body Ground And Secondary HO2S Connector Terminals 3 And 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Go to step 10.

10. Jump the SCS line with the HDS.
11. Disconnect PCM connector C (49P).
12. Check for continuity between PCM connector terminal C5 (C7)* and body ground.

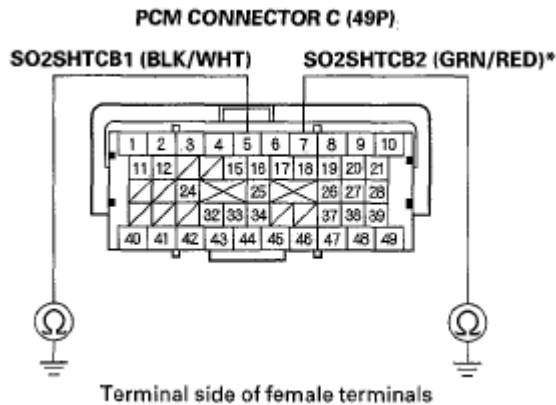


Fig. 42: Identifying Continuity Between PCM Connector Terminal C5 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (C5 (C7)*) and the secondary HO2S (Sensor 2), then go to step 21.

NO - Go to step 13.

13. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 3 and PCM connector terminal C5 (C7)*

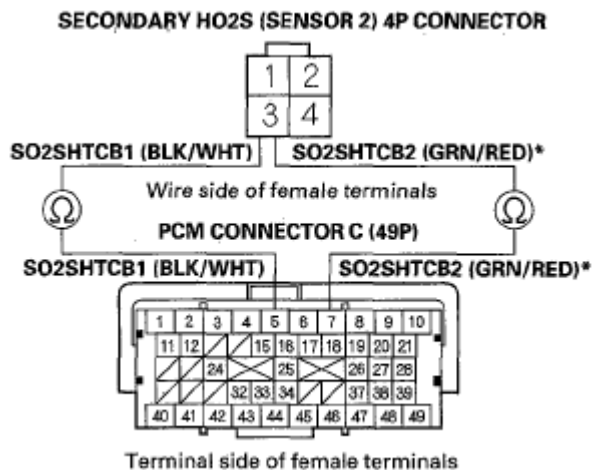


Fig. 43: Identifying Continuity Between Secondary HO2S Connector Terminal 3 And PCM Connector Terminal C5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the PCM (C5 (C7)*) and the secondary HO2S (Sensor 2), then go to step 21.

14. Disconnect the under-hood fuse/relay box 9P connector.
15. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 4 and under-hood fuse/relay box 9P connector No. 9.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR

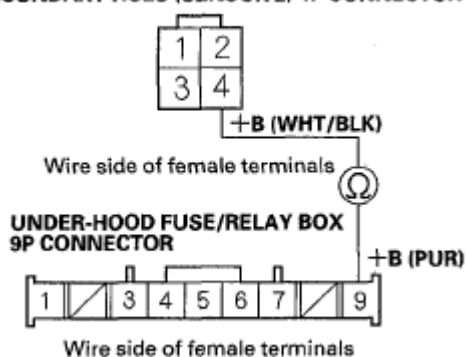


Fig. 44: Identifying Continuity Between Secondary HO2S Connector Terminal 4 And Under-Hood Fuse Connector 9

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the secondary HO2S (Sensor 2) and the under-hood fuse/relay box, then go to step 21.

16. Disconnect PCM connector A (49P).
17. Disconnect the under-hood fuse/relay box 14P connector.
18. Check for continuity between under-hood fuse/ relay box 14P connector terminal No. 13 and PCM connector terminal A40.

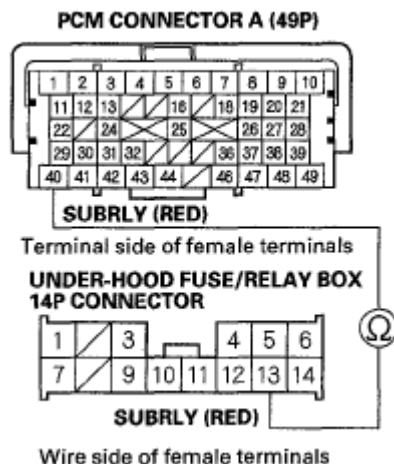


Fig. 45: Identifying Continuity Between Under-Hood Fuse Connector Terminal 13 And PCM Connector Terminal A40

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the PCM (A40) and the under-hood fuse/relay box, then go to step 21.

19. Test the PGM-FI subrelay in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

Is the PGM-FI subrelay OK?

YES - Go to step 27.

NO - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 21.

20. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
21. Reconnect all connectors.
22. Turn the ignition switch ON (II).
23. Reset the PCM with the HDS.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0141 and/or P0161 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM, then go to step 1.

NO - Go to step 26.

26. Monitor the OBD STATUS for DTC P0141 and/or P0161* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 25, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0141 and/or P0161 indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P0141 and/or P0161* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 29, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2), the under-hood fuse/relay box (PGM-FI subrelay), and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0171: REAR BANK (BANK 1) FUEL SYSTEM TOO LEAN; DTC P0172: REAR BANK (BANK 1) FUEL SYSTEM TOO RICH; DTC P0174: FRONT BANK (BANK 2) FUEL SYSTEM TOO LEAN; DTC P0175: FRONT BANK (BANK 2) FUEL SYSTEM TOO RICH

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see

GENERAL TROUBLESHOOTING INFORMATION).

- If some of the DTCs listed below are stored at the same time as DTC P0171, P0172, P0174, and/or P0175, troubleshoot those DTCs first, then recheck for P0171, P0172, P0174, and/or P0175.

P0101, P0102, P0103: Mass air flow (MAF) sensor

P0107, P0108, P1128, P1129: Manifold absolute pressure (MAP) sensor

P0133, P0153, P1172, P1174, P2195, P2197, P2237, P2238, P2240, P2241, P2243, P2245, P2247, P2249, P2251, P2252, P2254, P2255, P2A00, P2A03: Air fuel ratio (A/F) sensor (Sensor 1)

P0134, P0135, P0154, P0155: Air fuel ratio (A/F) sensor (Sensor 1) heater

P0137, P0138, P0139, P0157, P0158, P0159, P2270, P2271, P2272, P2273: Secondary HO2S (Sensor 2)

P0141, P0161: Secondary HO2S (Sensor 2) heater

P2646, P2647, P2648, P2649: VTEC system

P0401, P0404, P0406, P2413: Exhaust gas recirculation (EGR) system

P2279: Intake air leakage

1. Check the fuel pressure (see **FUEL PRESSURE TEST**).

Is the fuel pressure OK?

YES - Go to step 2.

NO -

- If the pressure is too high, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 7.
- If the pressure is too low, check the fuel pump, the fuel feed pipe and the fuel filter. If they are OK, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 7.

2. Check for vacuum leaks at these parts:

- PCV valve
- PCV hose
- EVAP canister purge valve
- Throttle body

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- Intake manifold
- Brake booster
- Brake booster hose
- Air intake duct

Are the parts OK?

YES - Go to step 3.

NO - Repair or replace parts with leaks, then go to step 7.

3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
 - Transmission in Park or neutral
 - All electrical loads off
5. Monitor the ENGINE SPEED in the DATA LIST with the HDS, and hold the engine speed at 2,500 rpm. Once the engine speed is met, hold the accelerator pedal steady for more than 10 seconds.

Did the engine speed vary more than 100 rpm from 2,500 rpm?

YES - Repeat step 5.

NO - Go to step 6.

6. While holding the engine speed at 2,500 rpm, check the MAF SENSOR in the DATA LIST with the HDS.

Is there about 9.8- 11.9 gm/s?

YES - Check the engine valve clearances and adjust if necessary (see **VALVE CLEARANCE ADJUSTMENT**). If the valve clearances are OK, replace the injectors (see **INJECTOR REPLACEMENT**), then go to step 7.

NO - Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**), then go to step 7.

7. Turn the ignition switch ON (II).
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
10. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

11. Test-drive under these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
- Transmission in D position
- Drive at a steady speed between 15-75 mph (24-120 km/h) for 15 minutes.

NOTE: DTC P0171, P0172, P0174, and/or P0175 may take up to 80 minutes of test driving to set. Using the HDS, monitor the long term fuel trim (LT FUEL TRIM) or the air fuel feed back average (AF FB AVE). If the long term fuel trim/air fuel feed back average stays within 0.84-1.18, there is no problem at this time.

12. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0171, P0172, P0174, or P0175 indicated?

YES - Go to step 1 and recheck.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0300: RANDOM MISFIRE AND ANY COMBINATION OF THE FOLLOWING: DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED

Special Tools Required

- Pressure gauge adapter 07NAJ-P07010A
- A/T low pressure gauge w/panel 07406-0070301
- A/T pressure hose 07406-0020201
- A/T pressure hose, 2,210 mm 07MAJ-PY4011A
- A/T pressure adapter 07MAJ-PY40120
- Oil pressure hose 07ZAJ-S5AA200

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If the misfire is frequent enough to trigger detection of increased emissions during two consecutive driving cycles, the MIL will come on, and DTC P0300 (and some combination of P0301 through P0306) will be stored.
- If the misfire is frequent enough to damage the catalyst, the MIL will blink

whenever the misfire occurs, and DTC P0300 (and some combination of P0301 through P0306) will be stored. When the misfire stops, the MIL will remain on.

- Troubleshoot the following DTCs first, if any of them were stored along with the random misfire DTC(s) (Because parts can sometimes fail without setting DTC's you should also do a physical inspection of the below systems.):

P0101, P0102, P0103: Mass air flow (MAF)

P0107, P0108, P1128, P1129: Manifold absolute pressure (MAP) sensor

P0171, P0172, P0174, P0175: Fuel system

P0335, P0339, P0385, P0389: Crankshaft position (CKP) sensor A/B

P0506, P0507: Idle control system

P0340, P0344: Camshaft position (CMP) sensor

P2646, P2647, P2648, P2649: VTEC system

P0401, P0404, P0406, P2413: Exhaust gas recirculation (EGR) system

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (in Park or neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 9.

NO - If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, let it idle until a result comes on. If the screen indicates OUT OF CONDITION, wait for several minutes, then recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 9.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Go to step 6.

6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - ECT SENSOR 1
 - APP SENSOR
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 9.

NO - If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6 and recheck.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Turn the ignition switch OFF.
10. Check the fuel quality.

Is the quality good?

YES - Go to step 11.

NO - Drain the tank, and fill it with a known-good fuel, then go to step 24.

11. Inspect the spark plugs (see **SPARK PLUG INSPECTION**). If the spark plugs are fouled or worn, replace them.
12. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- CLV (calculated load value)
- ECT SENSOR 1
- APP SENSOR

13. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 14.

NO - Go to step 24.

14. Check the fuel pressure (see **FUEL PRESSURE TEST**).

Is the fuel pressure OK?

YES - Go to step 15.

NO -

- If the pressure is too high, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 24.
- If the pressure is too low, check the fuel pump, the fuel feed lines, and the fuel filter. If they are OK, replace the fuel pressure regulator (see **FUEL PRESSURE REGULATOR REPLACEMENT**), then go to step 24.

15. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.

16. Check for these conditions:

- Engine coolant temperature (ECT SENSOR 1) above 176°F (80°C)
- Transmission in Park or neutral
- All electrical loads off

17. Monitor the ENGINE SPEED in the DATA LIST with the HDS, and hold the engine speed at 2,500 rpm. Once the engine speed is met, hold the accelerator pedal steady for more than 10 seconds.

Did the engine speed vary more than 100 rpm from 2,500 rpm?

YES - Repeat step 17.

NO - Go to step 18.

18. While holding the engine speed at 2,500 rpm, check the MAF SENSOR in the DATA LIST with the HDS.

Is there about 9.8-11.9 gm/s?

YES - Go to step 19.

NO - Replace the MAF sensor/IAT sensor (see MAF SENSOR/IAT SENSOR REPLACEMENT), then go to step 24.

19. Turn the ignition switch OFF.
20. Remove the rocker arm oil pressure switch (A), and install the special tools as shown, then install the rocker arm oil pressure switch in the pressure gauge adapter (B).

NOTE: Install the parts in the reverse order of removal with a new O-ring.

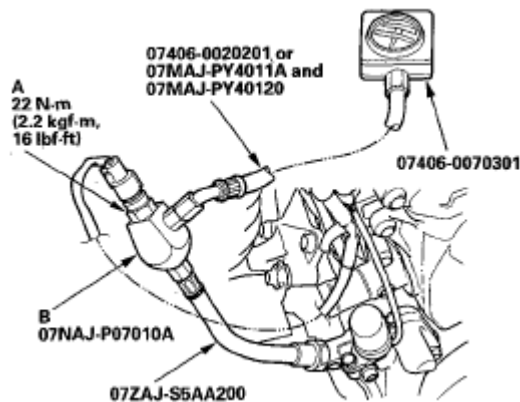


Fig. 46: Identifying Rocker Arm Oil Pressure Switch And Pressure Gauge Adapter With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Reconnect the rocker arm oil pressure switch 2P connector.
22. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
23. Check the oil pressure at engine speeds of 1,000 and 2,000 rpm. Keep the measuring time as short as possible (less than 1 minute) because the engine is running without load.

Is the oil pressure below 49 kPa (0.5 kgf/cm² , 7 psi)?

YES - Remove the oil pressure gauge, and reinstall the rocker arm oil pressure switch, then go to step 24.

NO - Inspect the VTEC system (see VTEC ROCKER ARM TEST), then go to step 24.

24. Turn the ignition switch ON (II).
25. Reset the PCM with the HDS.
26. Clear the CKP pattern with the HDS.
27. Do the PCM idle learn procedure (see PCM IDLE LEARN PROCEDURE).

28. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
29. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
- ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - ECT SENSOR 1
 - APP SENSOR
30. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0300 and any combination of DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

YES - Check for poor connections or loose terminals at the ignition coil, the injector, and the PCM, then go to **DTC P0301, P0302, P0303, P0304, P0305, or P0306** troubleshooting.

NO - Go to step 27.

31. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 30, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connection or loose terminals at the ignitions coil, the injector, and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 29.

DTC P0301: NO. 1 CYLINDER MISFIRE DETECTED; DTC P0302: NO. 2 CYLINDER MISFIRE DETECTED; DTC P0303: NO. 3 CYLINDER MISFIRE DETECTED; DTC P0304: NO. 4 CYLINDER MISFIRE DETECTED; DTC P0305: NO. 5 CYLINDER MISFIRE DETECTED; DTC P0306: NO. 6 CYLINDER MISFIRE DETECTED

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load for 2 minutes (in Park or neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

with the HDS.

Does the screen indicate FAILED?

YES - Go to step 9.

NO - If the screen indicates PASSED, go to step 5. If the screen indicates EXECUTING, keep idling until a result comes on. If the screen indicates OUT OF CONDITION, wait for several minutes, and recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 9.

NO - Go to step 6.

6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - APP SENSOR
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 9.

NO - If the screen indicates PASSED, go to step 8. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6.

8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time. Check the fuel and ignition system circuit connectors for loose wires or poor connections.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

9. Turn the ignition switch OFF.
10. Exchange the ignition coil from the problem cylinder with one from another cylinder.
11. Reconnect all connectors.
12. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - APP SENSOR

13. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 14.

NO - Intermittent failure due to poor contact at the ignition coil contactor (no misfire at this time). Make sure that the ignition coil connectors are secure.

14. Determine which cylinder had the misfire.

Does the misfire occur in the cylinder where the ignition coil was moved?

YES - Replace the faulty ignition coil (see **IGNITION COIL REMOVAL/INSTALLATION**), then go to step 53.

NO - Go to step 15.

15. Turn the ignition switch OFF.
16. Exchange the spark plug from the problem cylinder with the one from another cylinder.
17. Reconnect all connectors.
18. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - APP SENSOR

19. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6

MISFIRE show misfire counts?

YES - Go to step 20.

NO - Intermittent failure due to spark plug fouling (no misfire at this time).

20. Determine which cylinder had the misfire.

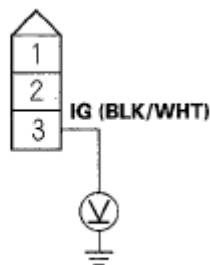
Does the misfire occur in the cylinder where the spark plug was moved?

YES - Replace the faulty spark plug, then go to step 53.

NO - Go to step 21.

21. Turn the ignition switch OFF.
22. Disconnect the ignition coil 3P connector from the problem cylinder.
23. Turn the ignition switch ON (II).
24. Measure voltage between ignition coil 3P connector terminal No. 3 and body ground.

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

Fig. 47: Identifying Voltage Between Ignition Coil 3P Connector Terminal 3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

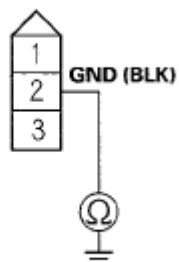
Is there battery voltage?

YES - Go to step 25.

NO - Repair open in the wire between the ignition coil and the under-hood fuse/relay box, then go to step 53.

25. Turn the ignition switch OFF.
26. Check for continuity between ignition coil 3P connector terminal No. 2 and body ground.

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

Fig. 48: Identifying Continuity Between Ignition Coil 3P Connector Terminal 2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the ignition coil, G101, then go to step 53.

27. Jump the SCS line with the HDS.
28. Disconnect PCM connector B (49P).
29. Check for continuity between body ground and the appropriate PCM connector terminal (see table).

PCM TERMINAL AND WIRE COLOR REFERENCE

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	B29	YEL/GRN
No. 2	P0302	B30	BLU/RED
No. 3	P0303	B22	WHT/BLU
No. 4	P0304	B23	BRN
No. 5	P0305	B11	BLK/RED
No. 6	P0306	B12	BRN/WHT

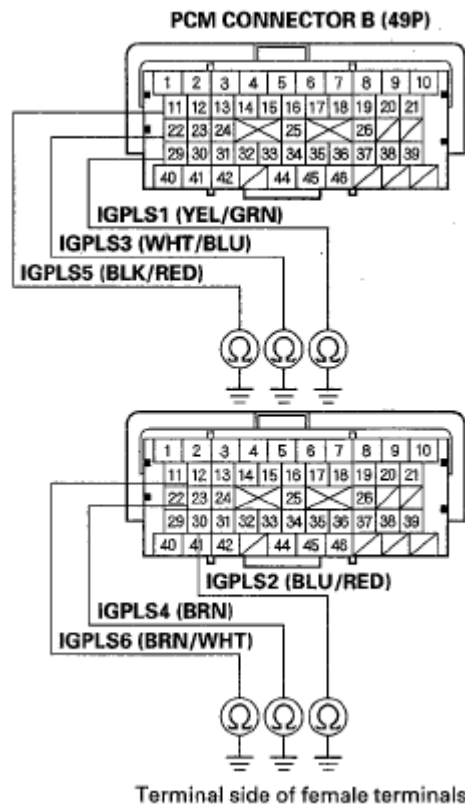


Fig. 49: Identifying Continuity Between Body Ground And PCM Connector Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM and the ignition coil, then go to step 53.

NO - Go to step 30.

30. Check for continuity between appropriate ignition coil 3P connector terminal No. 1 and the appropriate PCM connector terminal of the problem cylinder (see table).

PCM TERMINAL AND WIRE COLOR REFERENCE

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	B29	YEL/GRN
No. 2	P0302	B30	BLU/RED
No. 3	P0303	B22	WHT/BLU
No. 4	P0304	B23	BRN
No. 5	P0305	B11	BLK/RED
No. 6	P0306	B12	BRN/WHT

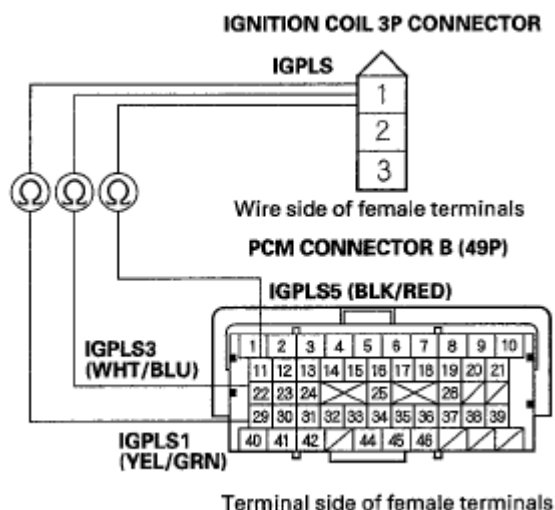


Fig. 50: Identifying Continuity Between Ignition Coil 3P Connector Terminal 1 And PCM Connector Terminal 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

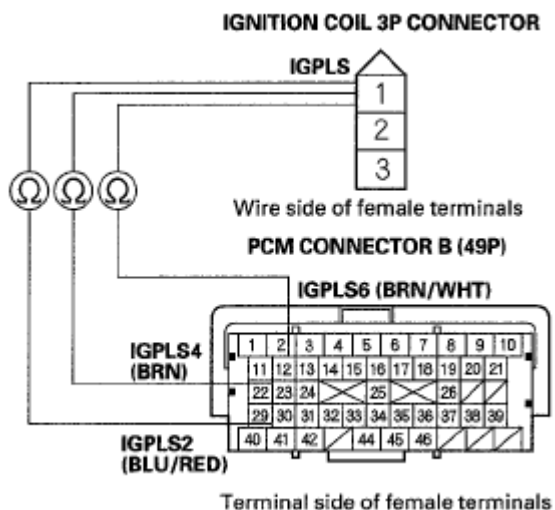


Fig. 51: Identifying Continuity Between Ignition Coil 3P Connector Terminal 1 And PCM Connector Terminal 12

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 31.

NO - Repair open in the wire between the PCM and the ignition coil, then go to step 53.

31. Remove the intake manifold (see **REMOVAL**).
32. Turn the ignition switch ON (II).

33. Measure voltage between body ground and the appropriate PCM connector terminal (see table).

PCM TERMINAL AND WIRE COLOR REFERENCE

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

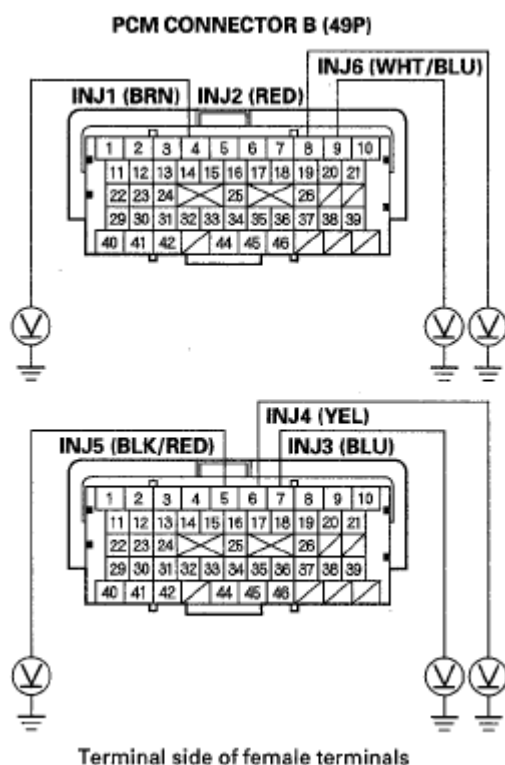


Fig. 52: Identifying Voltage Between Body Ground And PCM Connector Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 41.

NO - Go to step 34.

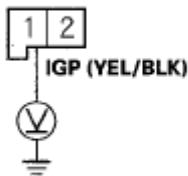
34. Turn the ignition switch OFF.
35. Disconnect the injector 2P connector from the problem cylinder.
36. Turn the ignition switch ON (II).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

37. Measure voltage between injector 2P connector terminal No. 1 and body ground.

INJECTOR 2P CONNECTOR



Wire side of female terminals

Fig. 53: Identifying Voltage Between Injector 2P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 38.

NO - Repair open in the wire between the injector and under-hood fuse/relay box (PGM-FI main relay 1), then go to step 51.

38. Turn the ignition switch OFF.
39. Check for continuity between body ground and the appropriate PCM connector terminal (see table).

PCM TERMINAL AND WIRE COLOR REFERENCE

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

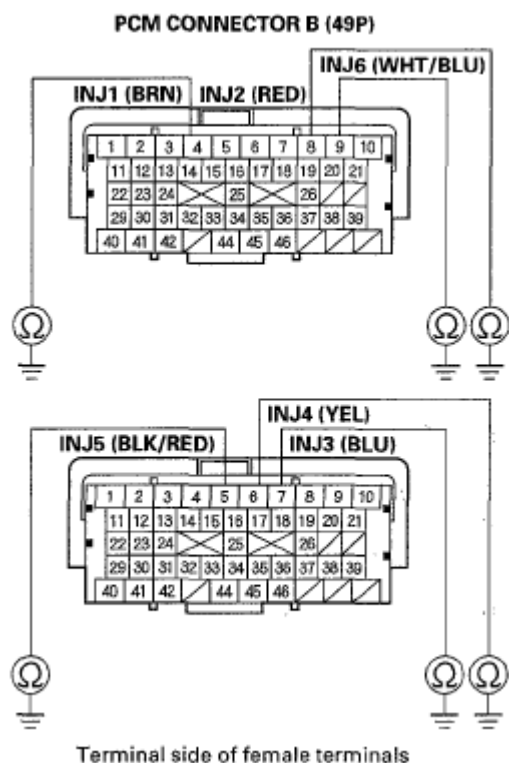


Fig. 54: Identifying Continuity Between Body Ground And PCM Connector Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM and the injector, then go to step 53.

NO - Go to step 40.

40. Check for continuity between appropriate injector 2P connector terminal No. 2 and the appropriate PCM connector terminal of the problem cylinder (see table).

PCM TERMINAL AND WIRE COLOR REFERENCE

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	B4	BRN
No. 2	P0302	B8	RED
No. 3	P0303	B7	BLU
No. 4	P0304	B6	YEL
No. 5	P0305	B5	BLK/RED
No. 6	P0306	B9	WHT/BLU

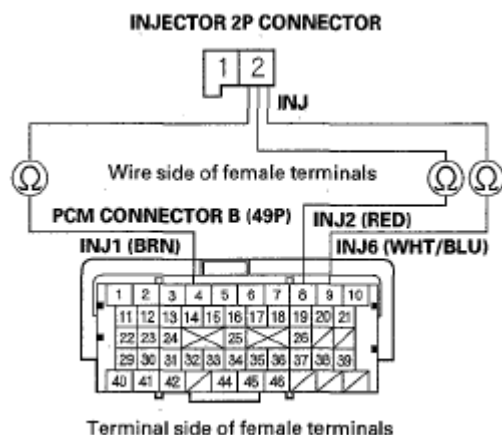


Fig. 55: Identifying Continuity Between Injector 2P Connector Terminal 2 And PCM Connector Terminal 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

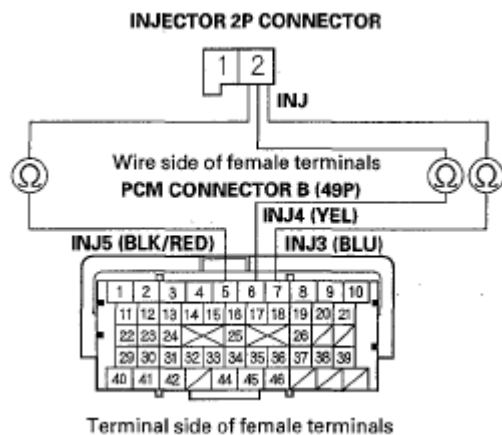


Fig. 56: Identifying Continuity Between Injector 2P Connector Terminal 2 And PCM Connector Terminal 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

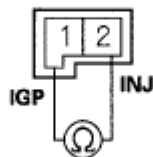
Is there continuity?

YES - Check for poor connections or loose terminals at the injector and under-hood fuse/relay box (PGM-FI main relay 1), then go to step 41.

NO - Repair open in the wire between the PCM and the injector, then go to step 53.

41. Measure resistance between injector 2P connector terminals No. 1 and No. 2.

INJECTOR 2P CONNECTOR



Terminal side of male terminals

Fig. 57: Identifying Resistance Between Injector 2P Connector Terminals 1 And 2
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 10-13 ohms?

YES - Go to step 42.

NO - Replace the injector (see **INJECTOR REPLACEMENT**), then go to step 53.

42. Exchange the injector from the problem cylinder with the one from another cylinder. Also check the injector fuel inlet screen for debris, and clean if needed.
43. Reconnect all connectors, and install the intake manifold (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
44. Turn the ignition switch ON (II).
45. Clear the DTCs with the HDS.
46. Start the engine, and let it idle without load (in Park or neutral) for 2 minutes.
47. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - APP SENSOR
48. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE in the DATA LIST for 10 minutes with the HDS.

Does CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, CYL4 MISFIRE, CYL5 MISFIRE, and/or CYL6 MISFIRE show misfire counts?

YES - Go to step 49.

NO - Intermittent failure due to poor contact in the injector connector (no misfire at this time). Check for poor connections or loose terminals at the injector.

49. Determine which cylinder had the misfire.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Does the misfire occur in the cylinder where the injector was moved?

YES - Replace the faulty injector (see **INJECTOR REPLACEMENT**), then go to step 53.

NO - Go to step 50.

50. Turn the ignition switch OFF.

51. Do an engine compression and a cylinder leakdown test (see **ENGINE COMPRESSION INSPECTION**).

Did the engine pass both tests?

YES - Go to step 52.

NO - Repair the engine, then go to step 53.

52. Do the VTEC rocker arm test (see **VTEC ROCKER ARM TEST**).

Did the engine pass the test?

YES - Go to step 61.

NO - Repair the VTEC rocker arm, then go to step 53.

53. Reconnect all connectors.

54. Reset the PCM with the HDS.

55. Clear the CKP pattern with the HDS.

56. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

57. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

58. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:

- ENGINE SPEED
- VSS
- REL TP SENSOR
- CLV (calculated load value)
- APP SENSOR

59. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

YES - Check for poor connections or loose terminals at the ignition coil, the injector, and the PCM, then go to **P0301, P0302, P0303, P0304, or P0305** .

NO - Go to step 60.

60. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 59, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ignition coil, the injector, and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 58.

61. Reconnect all connectors.
62. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**),
63. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
- ENGINE SPEED
 - VSS
 - REL TP SENSOR
 - CLV (calculated load value)
 - APP SENSOR
64. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0301, P0302, P0303, P0304, P0305, or P0306 indicated?

YES - Check for poor connections or loose terminals at the ignition coil, the injector, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 63. If the PCM was substituted, go to step 1.

NO - Go to step 65.

65. Monitor the OBD STATUS for DTC P0301, P0302, P0303, P0304, P0305, or P0306 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**), If any other Temporary DTCs or DTCs were indicated in step 64, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ignition coil, the injector, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 63. If the PCM was substituted, go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 63.

DTC P0325: KNOCK SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

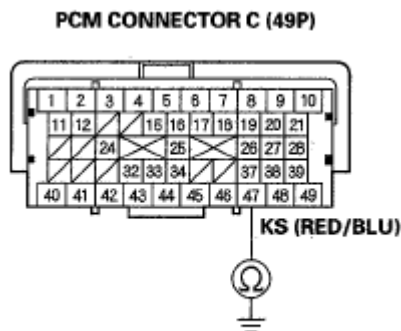
1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Hold the engine speed at 3,000-4,000 rpm for at least 10 seconds.
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0325 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the knock sensor and the PCM.

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Disconnect the knock sensor subharness 1P connector.
9. Disconnect PCM connector C (49P).
10. Check for continuity between PCM connector terminal C47 and body ground.



Terminal side of female terminals

Fig. 58: Identifying Continuity Between PCM Connector Terminal C47 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

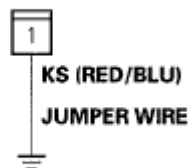
Is there continuity?

YES - Repair short in the wire between the PCM (C47) and the knock sensor subharness, then go to step 19.

NO - Go to step 11.

11. Connect the knock sensor subharness 1P connector terminal to body ground with a jumper wire.

KNOCK SENSOR SUBHARNESS 1P CONNECTOR

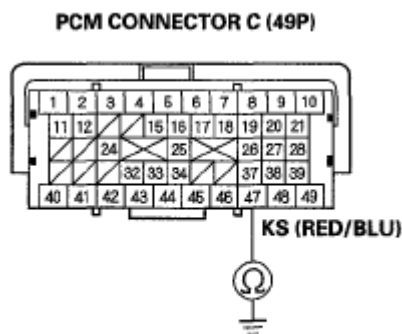


Wire side of female terminals

Fig. 59: Identifying Knock Sensor Subharness 1P Connector Terminal To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between PCM connector terminal C47 and body ground.



Terminal side of female terminals

Fig. 60: Identifying Continuity Between PCM Connector Terminal C47 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

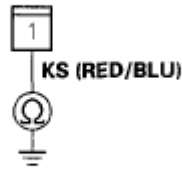
Is Mere continuity?

YES - Go to step 13.

NO - Repair open in the wire between the PCM (C47) and the knock sensor subharness, then go to step 19.

13. Remove the intake manifold (see **REMOVAL**), and the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
14. Disconnect the knock sensor 1P connector.
15. Check for continuity between the knock sensor subharness 1P connector terminal and body ground.

KNOCK SENSOR SUBHARNESS 1P CONNECTOR



Wire side of female terminals

Fig. 61: Identifying Continuity Between Knock Sensor Subharness 1P Connector Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the knock sensor subharness, then go to step 18.

NO - Go to step 16.

16. Check for an open in the knock sensor subharness.

Is the harness OK?

YES - Go to step 17.

NO - Repair open in the knock sensor subharness, then go to step 19.

17. Replace the knock sensor (see **KNOCK SENSOR REPLACEMENT**).
18. Install the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**), and the intake manifold (see **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
19. Reconnect all connectors.
20. Turn the ignition switch ON (II).
21. Reset the PCM with the HDS.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Hold the engine speed at 3,000-4,000 rpm for at least 10 seconds.
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0325 indicated?

YES - Go to step 26.

NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 24, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the knock sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
28. Hold the engine speed at 3,000-4,000 rpm for at least 10 seconds.
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0325 indicated?

YES - Check for poor connections or loose terminals at the ignition coil, the injector, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 28. If the PCM was substituted, go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 29, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the ignition coil, the injector, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 28. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 28.

DTC P0335: CKP SENSOR A NO SIGNAL; DTC P0385: CKP SENSOR B NO SIGNAL

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to CKP sensor B.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.

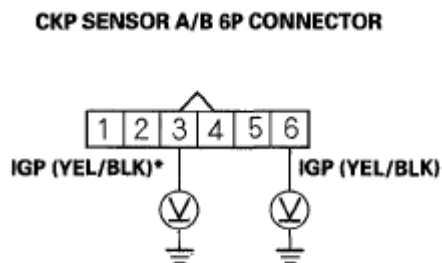
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0335 and/or P0385 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at CKP sensor A/B and the PCM.

5. Turn the ignition switch OFF.
6. Disconnect CKP sensor A/B 6P connector (see **CKP SENSOR REPLACEMENT**).
7. Turn the ignition switch ON (II).
8. Measure voltage between CKP sensor A/B 6P connector terminal No. 6 (No. 3)* and body ground.



Wire side of female terminals

Fig. 62: Identifying Voltage Between CKP Sensor A/B 6P Connector Terminal 6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire between CKP sensor A/B and the under-hood fuse/relay box (PGM-FI main relay 1), then go to step 18.

9. Measure voltage between CKP sensor A/B 6P connector terminal No. 5 (No. 2)* and body ground.

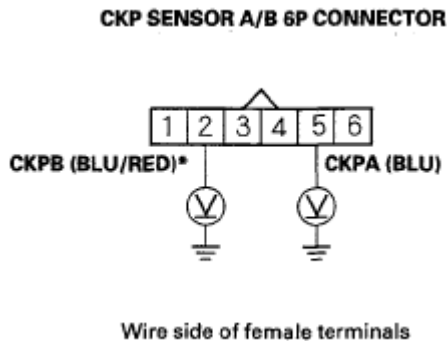


Fig. 63: Identifying Voltage Between CKP Sensor A/B 6P Connector Terminal 5 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Measure voltage between CKP sensor A/B 6P connector terminals No. 4 (No. 1)* and No. 6 (No. 3)*.

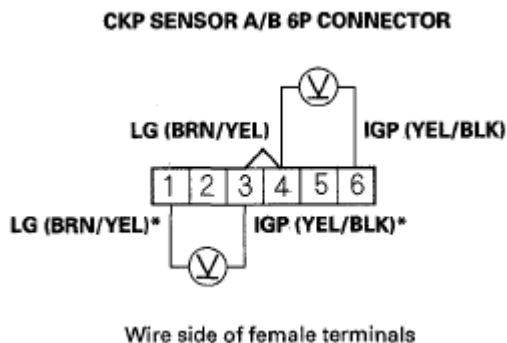


Fig. 64: Identifying Voltage Between CKP Sensor A/B 6P Connector Terminals 4 And 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Repair open in the wire between CKP sensor A/B and G101, then go to step 18.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Check for continuity between PCM connector terminal B45 (B44)* and CKP sensor A/B 6P connector No. 5 (No. 2)*.

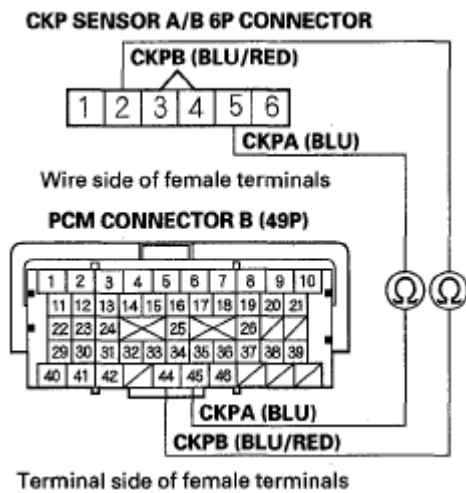


Fig. 65: Identifying Continuity Between PCM Connector Terminal B45 And CKP Sensor A/B 6P Connector 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the PCM (B45 (B44)*) and CKP sensor A/B, then go to step 18.

15. Check for continuity between PCM connector terminal B45 (B44)* and body ground.

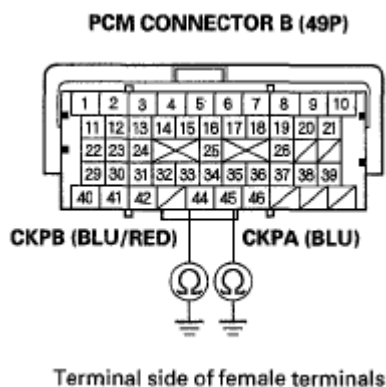


Fig. 66: Identifying Continuity Between PCM Connector Terminal B45 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B45 (B44) *) and CKP sensor A/B, then go to step 18.

NO - Go to step 25.

16. Turn the ignition switch OFF.
17. Replace CKP sensor A/B (see **CKP SENSOR REPLACEMENT**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Clear the CKP pattern with the HDS.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0335 and/or P0385 indicated?*

YES - Check for poor connections or loose terminals at CKP sensor A/B and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to .

25. Reconnect all connectors.
26. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
27. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0335 and/or P0385 indicated?*

YES - Check for poor connections or loose terminals at CKP sensor A/B and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0339: CKP SENSOR A INTERMITTENT INTERRUPTION; DTC P0389: CKP SENSOR B INTERMITTENT INTERRUPTION

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to CKP sensor B.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle for 10 minutes in the range of these recorded freeze data parameters:

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- ENGINE SPEED
- VSS

4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0339 and/or P0389 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at CKP sensor A/B and the PCM.

5. Check for poor or loose connections at these connectors and terminals:

- CKP sensor A/B
- PCM
- Engine ground
- Body ground

Are the connections OK?

YES - Go to step 6.

NO - Reconnect the connectors or terminals, then go to step 9.

6. Check for damage to the CKP sensor A/B pulse plate on the timing belt drive pulley (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).

Is there damage?

YES - Replace the CKP sensor A/B pulse plate/ timing belt drive pulley (see **TIMING BELT DRIVE PULLEY REPLACEMENT**), then go to step 9.

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Replace CKP sensor A/B (see **CKP SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).
10. Reset the PCM with the HDS.
11. Clear the CKP pattern with the HDS.
12. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
13. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
14. Test-drive the vehicle for 10 minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED

- VSS

15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0339 and/or P0389 indicated?*

YES - Check for poor connections or loose terminals at CKP sensor A/B and the PCM, then go to step 1.

NO - Troubleshooting is complete; If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0340: CMP SENSOR NO SIGNAL

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS.

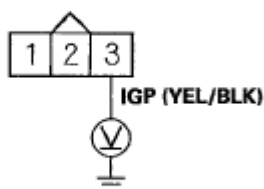
Is DTC P0340 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the PCM.

5. Turn the ignition switch OFF.
6. Disconnect the CMP sensor 3P connector.
7. Turn the ignition switch ON (II).
8. Measure voltage between CMP sensor 3P connector terminal No. 3 and body ground.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 67: Identifying Voltage Between CMP Sensor 3P Connector Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

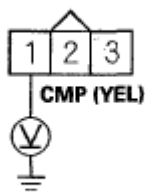
Is there battery voltage?

YES - Go to step 9.

NO - Repair open in the wire between the CMP sensor and under-hood fuse/relay box (PGM-FI main relay 1), then go to step 18.

9. Measure voltage between CMP sensor 3P connector terminal No. 1 and body ground.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 68: Identifying Voltage Between CMP Sensor 3P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

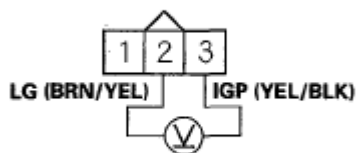
Is there about 5 V?

YES - Go to step 10.

NO - Go to step 11.

10. Measure voltage between CMP sensor 3P connector terminals No. 2 and No. 3.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

Fig. 69: Identifying Voltage Between CMP Sensor 3P Connector Terminals 2 And 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Repair open in the wire between the CMP sensor and G101, then go to step 18.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Check for continuity between PCM connector terminal B46 and CMP sensor 3P connector terminal No. 1.

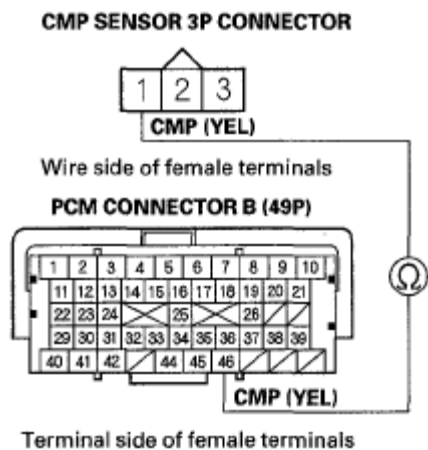


Fig. 70: Identifying Continuity Between PCM Connector Terminal B46 And CMP Sensor 3P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the PCM (B46) and the CMP sensor, then go to step 18.

15. Check for continuity between CMP sensor 3P connector terminal No. 1 and body ground.

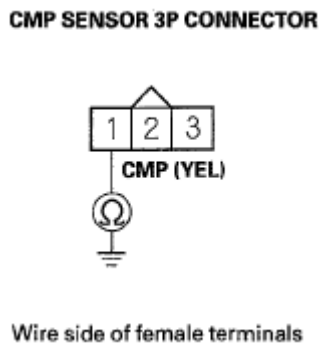


Fig. 71: Identifying Continuity Between CMP Sensor 3P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B46) and the CMP sensor, then go to step 18.

NO - Go to step 26.

16. Turn the ignition switch OFF.
17. Replace the CMP sensor (see **CMP SENSOR REPLACEMENT**).
18. Reconnect all connectors.
19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Clear the CKP pattern with the HDS.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
24. Start the engine.
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0340 indicated?

YES - Check for poor connections or loose terminals at the CMP sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

26. Reconnect all connectors.
27. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0340 indicated?

YES - Check for poor connections or loose terminals at the CMP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle for 10 minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0344 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the PCM.

5. Check for poor or loose connections at these connectors and terminals:
 - CMP sensor
 - PCM
 - Engine ground
 - Body ground

Are the connections OK?

YES - Go to step 6.

NO - Reconnect or repair the connectors or terminals, then go to step 9.

6. Check for damage to the CMP sensor pulse projection on the front camshaft pulley (see **CMP SENSOR REPLACEMENT**).

Is there damage?

YES - Replace the front camshaft pulley (see **CRANKSHAFT PULLEY REMOVAL AND INSTALLATION**), then go to step 9.

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Replace the CMP sensor (see **CMP SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).

10. Reset the PCM with the HDS.
11. Clear the CKP pattern with the HDS.
12. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
13. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).
14. Test-drive the vehicle for 10 minutes in the range of these recorded freeze data parameters:
 - ENGINE SPEED
 - VSS
15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0344 indicated?

YES - Check for poor connections or loose terminals at the CMP sensor and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P050A: COLD START IDLE AIR CONTROL SYSTEM PERFORMANCE PROBLEM

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs other than P050A indicated?

YES - Go to the indicated DTCs troubleshooting.

NO - Go to step 3.

3. Check for poor connections or blockage at the intake air duct.

Is it OK?

YES - Go to step 4.

NO - Reconnect or repair the intake air duct, then go to step 19.

4. Check for damage at the air cleaner housing.

Is it OK?

YES - Go to step 5.

NO - Replace the air cleaner housing (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 19.

5. Check for dirt or debris in the air cleaner element.

Is it dirty?

YES - Replace the air cleaner element or remove the debris (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**), then go to step 19.

NO - Go to step 6.

6. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.
9. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 10.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, let the engine idle until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6 and recheck.

10. Do the ETCS TEST in the INSPECTION MENU with the HDS.

Is the THROTTLE ACTUATOR CONTROL VALVE normal?

YES - Go to step 11.

NO - Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 19.

11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
12. While holding the engine speed at 2,500 rpm, check the MAF SENSOR in the DATA LIST with the HDS.

Is there about 9.6- 12.9 gm/s?

YES - Go to step 13.

NO - Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**),

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

then go to step 19.

13. Turn the ignition switch OFF.
14. Allow the engine to cool to ambient temperature.
15. Note the ambient temperature.
16. Turn the ignition switch ON (II).
17. Note the value of IAT SENSOR quickly in the DATA LIST with the HDS.
18. Compare the value of the IAT SENSOR and the ambient temperature.

Does the value of the IAT SENSOR differ 5.4°F (3°C) or more?

YES - Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**), then go to step 19.

NO - Check for dirt, carbon, or damage in the throttle bore. If there is dirt or carbon, clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 19. If there is damage in the throttle bore, replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 19.

19. Turn the ignition switch ON (II).
20. Reset the PCM with the HDS.
21. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P050A indicated?

YES - Check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the PCM, then go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the PCM, then go to step 1. If the screen indicates EXECUTING, let the engine idle until a result comes on. if the screen indicates OUT OF CONDITION, go to step 22.

DTC P050B: COLD START IGNITION TIMING PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs other than P050B indicated?

YES - Go to the indicated DTCs troubleshooting.

NO - Go to step 3.

3. Check for poor connections or blockage at the intake air duct.

Is it OK?

YES - Go to step 4.

NO - Reconnect or repair the intake air duct, then go to step 25.

4. Check for damage at the air cleaner housing.

Is it OK?

YES - Go to step 5.

NO - Replace the air cleaner housing (see AIR CLEANER REMOVAL/INSTALLATION), then go to step 25.

5. Check for dirt or debris in the air cleaner element.

Is it dirty?

YES - Replace the air cleaner element or remove the debris (see AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT), then go to step 25.

NO - Go to step 6.

6. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.
9. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

YES - Go to step 10.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. If the screen indicates EXECUTING, let the engine idle until a result comes on. If the screen indicates OUT OF CONDITION, go to step 6 and recheck.

10. Inspect the ignition timing (see **IGNITION TIMING INSPECTION**).

Is the ignition timing OK?

YES - Go to step 12.

NO - Go to step 11.

11. Check for damage at CKP sensor A/B (see **CKP SENSOR REPLACEMENT**) and the timing belt drive pulley (see **TIMING BELT DRIVE PULLEY REPLACEMENT**).

Is CKP sensor A/B and/or the CKP sensor pulser plate damaged?

YES - Replace the CKP sensor (see **CKP SENSOR REPLACEMENT**) and/or the timing belt drive pulley (see **TIMING BELT DRIVE PULLEY REPLACEMENT**), then go to step 6.

NO - Go to step 30.

12. Do the ETCS TEST in the INSPECTION MENU with the HDS.

Is the THROTTLE ACTUATOR CONTROL VALVE normal?

YES - Go to step 13.

NO - Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**), then go to step 25.

13. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
14. While holding the engine speed at 2,500 rpm, check the MAF SENSOR in the DATA LIST with the HDS.

Is there about 9.6-12.9 gm/s?

YES - Go to step 15.

NO - Replace the MAF sensor/IAT sensor (see **MAF SENSOR/IAT SENSOR REPLACEMENT**), then go to step 25.

15. Turn the ignition switch OFF.

16. Drain the coolant (see **COOLANT CHECK**).
17. Remove ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), and ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
18. Allow the sensors to cool to ambient temperature.
19. Note the ambient temperature.
20. Connect ECT sensor 1 to its 2P connector, and ECT sensor 2 to its 2P connector, but do not install them on the engine.
21. Turn the ignition switch ON (II).
22. Note the value of ECT SENSOR 1 and ECT SENSOR 2 quickly in the DATA LIST with the HDS.
23. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

Does either sensor differ more than 5.4°F (3°C) from the ambient temperature?

YES - Replace the sensor that differed more than 5.4°F (3°C) from the ambient temperature, then go to step 24.

NO - Check and repair any problems with the following items, then go to step 25.

- Engine compression and cylinder leakdown
- VTEC system
- Engine oil
- A/C system
- Power steering

24. Refill the engine coolant (see **COOLANT CHECK**).
25. Turn the ignition switch ON (II).
26. Reset the PCM with the HDS.
27. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
28. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P050B indicated?

YES - Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the PCM, then go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 28, go to the indicated DTCs troubleshooting.

NO - If the screen indicates **FAILED**, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the PCM, then go to step 1. If the screen indicates **EXECUTING**, keep driving until a result comes on. If the screen indicates **OUT OF CONDITION**, go to step 27.

31. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
32. Let the engine cool until the value of ECT SENSOR 1 is 122°F (50°C) or less.
33. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
34. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P050B indicated?

YES - Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 32. If the PCM was substituted, go to step 1.

NO - Go to step 35.

35. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 34, go to the indicated DTCs troubleshooting.

NO - If the screen indicates **FAILED**, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 32. If the PCM was substituted, go to step 1. If the screen indicates **EXECUTING**, keep driving until a result comes on. If the screen indicates **OUT OF CONDITION**, go to step 32.

DTC P0562: CHARGING SYSTEM LOW VOLTAGE

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If any high current load accessories are installed, this DTC can be set.
- If DTC P16BB and/or P16BC is stored at the same time as DTC P0562, troubleshoot DTC P16BB and/or P16BC first, then recheck for DTC P0562.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
 - A/C on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
5. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0562 indicated?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the main under-hood fuse box, and check the battery performance (see **BATTERY TEST**).

7. Turn the ignition switch ON (II).
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
10. Start the engine.
11. Check under these conditions:
 - A/C on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
12. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0562 indicated?

YES - Check for poor connections or loose terminals at the alternator and the main under-hood fuse box, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0563: PCM POWER SOURCE CIRCUIT UNEXPECTED VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch OFF.
4. Wait 10 seconds.
5. Turn the ignition switch ON (II).
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0563 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals under-hood fuse/relay box (PGM-FI main relay 1) and the No. 8 IGP (15 A) fuse in the under-hood fuse/relay box and the PCM.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Measure voltage between PCM connector terminal A6 and body ground.

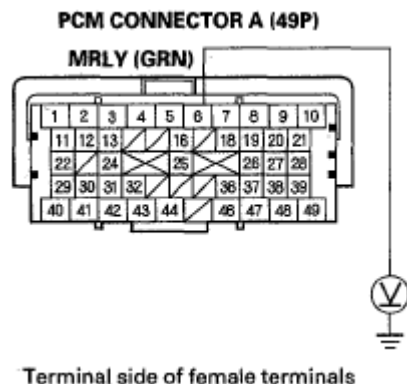


Fig. 72: Identifying Voltage Between PCM Connector Terminal A6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 13.

NO - Go to step 11.

11. Disconnect the under-hood fuse/relay box 14P connector.
12. Check for continuity between PCM connector terminal A6 and body ground.

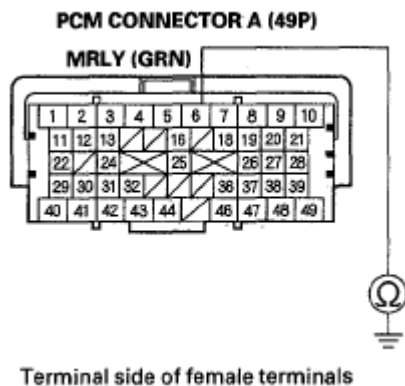


Fig. 73: Identifying Continuity Between PCM Connector Terminal A6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A6) and under-hood fuse/relay box (PGM-FI main relay 1), then go to step 19.

NO - Go to step 18.

13. Reconnect PCM connector A (49P).
14. Disconnect PCM connector B (49P).
15. Measure voltage between PCM connector terminal B3 and body ground.

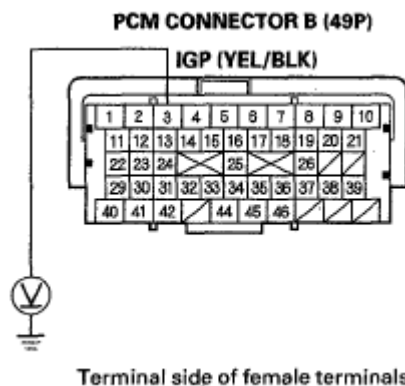


Fig. 74: Identifying Voltage Between PCM Connector Terminal B3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Go to step 18.

16. Disconnect the under-hood fuse/relay box 9P connector.
17. Measure voltage between PCM connector terminal B3 and body ground.

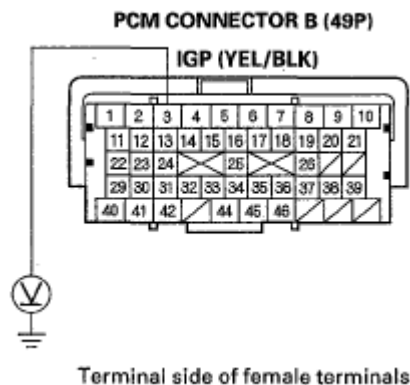


Fig. 75: Identifying Voltage Between PCM Connector Terminal B3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the PCM (B3) and under-hood fuse/relay box (PGM-FI main relay 1), then go to step 19.

NO - Go to step 18.

18. Test PGM-FI main relay 1 in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

Is PGM-FI main relay 1 OK?

YES - Go to step 26.

NO - Replace relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**), then go to step 19.

19. Reconnect all connectors.
20. Turn the ignition switch ON (II).
21. Reset the PCM with the HDS.
22. Turn the ignition switch OFF.
23. Wait 10 seconds.
24. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0563 indicated?

YES - Check for poor connections or loose terminals at under-hood fuse/relay box (PGM-FI main relay 1) and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

26. Reconnect all connectors.
27. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
28. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0563 indicated?

YES - Check for poor connections or loose terminals at under-hood fuse/relay box (PGM-FI main relay 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0602: PCM PROGRAMMING ERROR

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **This DTC is indicated when a PCM update is not completed.**
- **Do not turn the ignition switch OFF while updating the PCM. If you turn the ignition switch OFF before completion, the PCM can be damaged.**

1. Do the PCM update procedure (see **PCM UPDATE**).
2. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0602 indicated?

YES - Replace the original PCM (see **PCM REPLACEMENT**).

NO - Update is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P060A: PCM (A/T SYSTEM) INTERNAL CONTROL MODULE MALFUNCTION

NOTE:

Before you troubleshoot, record all freeze data and any on-board snapshot, and

review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P060A indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P060A indicated?

YES - If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete; If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0615: STARTER CUT RELAY STRLD CIRCUIT MALFUNCTION

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0615 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM.

5. Turn the ignition switch OFF

6. Check the STRLD (7.5 A) fuse in the auxiliary under-dash fuse holder 2.

Is the fuse OK?

YES - Go to step 7.

NO - Replace the STRLD (7.5 A) fuse in the auxiliary under-dash fuse holder 2, then go to step 12.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connector A (49P).
9. Remove starter cut relay 1 (A) from auxiliary under-dash relay box A.

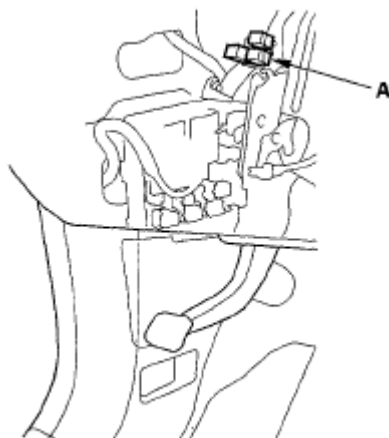
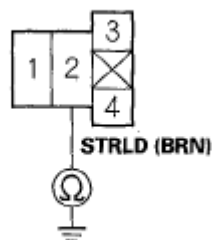


Fig. 76: Identifying Starter Cut Relay

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Connect starter cut relay 1 4P connector terminal No. 2 to body ground with a jumper wire.

STARTER CUT RELAY 1 4P CONNECTOR



Terminal side of female terminals

Fig. 77: Identifying Starter Cut Relay 4P Connector Terminal 2 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between PCM connector terminal A28 and body ground.

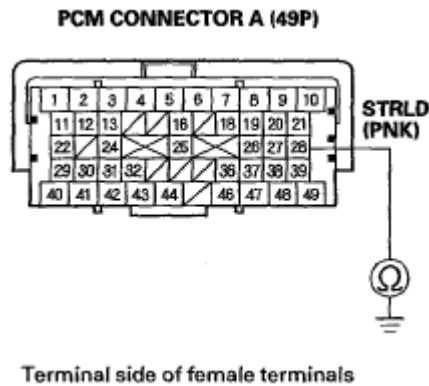


Fig. 78: Identifying Continuity Between PCM Connector Terminal A28 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 17.

NO - Repair open in the wire between the PCM (A28) and starter cut relay 1, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Reset the PCM with the HDS.
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

17. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0615 indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1 and the PCM, then go to step 1. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go

to the indicated DTCs troubleshooting.

DTC P062F: PCM INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P062F indicated?

YES - If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0630: VIN NOT PROGRAMMED OR MISMATCH

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- This DTC is stored only when the PCM does not have the VIN information of the vehicle. Use the HDS to input the missing VIN information.

1. Turn the ignition switch ON (II).
2. Check the VIN with the HDS.

Does the HDS show the vehicle's VIN?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

YES - Go to step 5.

NO - Go to step 3.

3. Input the VIN to the PCM with the HDS.

Does the screen show COMPLETE?

YES - Go to step 5.

NO - Go to step 4.

4. Check for DTCs with the HDS.

Is DTC P062F indicated?

YES - Do the troubleshooting for P062F (see **DTC P062F: PCM Internal Control Module Keep Alive Memory (KAM) Error**).

NO - Go to step 9.

5. Clear the DTC with the HDS.
6. Turn the ignition switch OFF.
7. Turn the ignition switch ON (II), and wait 5 seconds.
8. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0603 indicated?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
10. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0630 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P0685: PCM POWER CONTROL CIRCUIT/ INTERNAL CIRCUIT MALFUNCTION

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If the problem doesn't return after you clear the DTC, or if this DTC is stored intermittently, check for loose terminals at the IGP line connectors before replacing the PCM.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, then let it idle for 30 seconds.
4. Turn the ignition switch OFF.
5. Start the engine, then let it idle for 30 seconds.
6. Turn the ignition switch OFF.
7. Turn the ignition switch ON (II).
8. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0685 indicated?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time.

9. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
10. Start the engine, then let it idle for 30 seconds.
11. Turn the ignition switch OFF.
12. Start the engine, then let it idle for 30 seconds.
13. Turn the ignition switch OFF.
14. Turn the ignition switch ON (II).
15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0685 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then go to step 10. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1109: BARO SENSOR CIRCUIT OUT OF RANGE HIGH

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Reset the PCM with the HDS.
2. Start the engine.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1109 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

4. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1109 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1116: ECT SENSOR 1 RANGE/ PERFORMANCE PROBLEM

- NOTE:**
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
 - If DTC P0111 is stored at the same time as DTC P1116, troubleshoot DTC P0111 first, then recheck for DTC P1116.

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

Are the connections and terminals OK?

YES - Go to step 2.

NO - Repair the connectors or terminals, then go to step 27.

2. Turn the ignition switch ON (II).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

3. Check for Temporary DTCs or DTCs with the HDS.

Are DTC P1116 and P2183 indicated at the same time?

YES - Go to step 15.

NO - Go to step 4.

4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 129°F (54°C) or less, or 1.54 V or more indicated?

YES - Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), then go to step 28.

NO - Go to step 6.

6. Turn the ignition switch OFF.
7. Drain the coolant (see **COOLANT CHECK**).
8. Remove ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**).
9. Allow ECT sensor 1 to cool to ambient temperature.
10. Note the ambient temperature.
11. Connect ECT sensor 1 to its 2P connector, but do not install it on the engine.
12. Turn the ignition switch ON (II).
13. Note the value of ECT SENSOR 1 quickly in the DATA LIST with the HDS.
14. Compare the value of ECT SENSOR 1 and the ambient temperature.

Does the value of ECT SENSOR 1 differ 5.4°F (3°C) or more?

YES - Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), then go to step 27.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM.

15. Start the engine, and let it idle for 10 minutes.
16. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 118°F (48°C) or less, or 1.75 V or more indicated?

YES - Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), then go to step 27.

NO - Go to step 17.

17. Let the engine idle for 10 minutes.

18. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 131°F (55°C) or less, or 1.50 V or more indicated?

YES - Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**), then go to step 27.

NO - Go to step 19.

19. Turn the ignition switch OFF.
20. Drain the coolant (see **COOLANT CHECK**).
21. Remove ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), and ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
22. Allow the sensors to cool to ambient temperature.
23. Note the ambient temperature.
24. Connect ECT sensor 1 to its 2P connector, and ECT sensor 2 to its 2P connector, but do not install them on the engine.
25. Note the value of ECT SENSOR 1 and ECT SENSOR 2 quickly in the DATA LIST with the HDS.
26. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

Does one of the sensors differ more than 5.4°F (3°C) from the ambient temperature?

YES - Replace the sensor that differed more than 5.4°F (3°C) from the ambient temperature, then go to step 27.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM, then reconnect all connectors, and refill the cooling system (see **COOLANT CHECK**).

27. Refill the engine coolant (see **COOLANT CHECK**).
28. Turn the ignition switch ON (II).
29. Reset the PCM with the HDS.
30. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
31. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P0116 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Inspect the air cleaner element (see AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT).

Is it OK?

YES - Go to step 2.

NO - Clean or replace the air cleaner element (see AIR CLEANER REMOVAL/INSTALLATION).

2. Turn the ignition switch ON (II).
3. Check the MAP SENSOR in the DATA LIST with the HDS.

Is there less than 54.1 kPa (16.0 in.Hg, 406 mmHg) or 1.61 V held for more than 5 seconds?

YES - Go to step 8.

NO - Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
6. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Engine speed between 1,200-5,500 rpm
 - Transmission in D position
 - Vehicle speed accelerated from 16-31 mph (25-50 km/h) under half throttle
7. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 8.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

8. Turn the ignition switch OFF.
9. Replace the MAP sensor (see MAP SENSOR REPLACEMENT).
10. Turn the ignition switch ON (II).
11. Reset the PCM with the HDS.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

12. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
13. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
14. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Engine speed between 1,200-5,500 rpm
 - Transmission in D position
 - Vehicle speed accelerated from 16-31 mph (25-50 km/h) under half throttle
15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1128 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1.

NO - Go to step 16.

16. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 15, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 14.

DTC P1129: MAP SENSOR SIGNAL HIGHER THAN EXPECTED

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Check for vacuum leaks at these parts:
 - PCV valve
 - PCV hose
 - EVAP canister purge valve
 - Throttle body
 - Intake manifold
 - Brake booster
 - Brake booster hose

Are there any vacuum leaks?

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

YES - Repair or replace the part(s) with vacuum leaks, then go to step 9.

NO - Go to step 2.

2. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
3. Check the MAP SENSOR in the DATA LIST with the HDS.

Is there more than 36.9 kPa (11.0 in.Hg, 277 mmHg) or 1.14 V held for more than 5 seconds?

YES - Go to step 7.

NO - Go to step 4.

4. Clear the DTC with the HDS.
5. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Engine speed between 1,400-6,500 rpm
 - Transmission in D position
 - Drive at a steady speed between 55-75 mph (88-120 km/h) for 10 seconds.
 - During the drive, decelerate (with the throttle fully closed) for 2 seconds.
6. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 7.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the PCM. If the screen indicates NOT COMPLETED, go to step 5 and recheck.

7. Turn the ignition switch OFF.
8. Replace the MAP sensor (see **MAP SENSOR REPLACEMENT**).
9. Turn the ignition switch ON (II).
10. Reset the PCM with the HDS.
11. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
12. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Engine speed between 1,400-6,500 rpm
 - Transmission in D position

- Drive at a steady speed between 55-75 mph (88-120 km/h) for 10 seconds.
- During the drive, decelerate (with the throttle fully closed) for 2 seconds.

14. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1129 indicated?

YES - Check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1.

NO - Go to step 15.

15. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 14, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 13.

DTC P1172: REAR A/F SENSOR (BANK 1, SENSOR 1) CIRCUIT OUT OF RANGE HIGH; DTC P1174: FRONT A/F SENSOR (BANK 2, SENSOR 1) CIRCUIT OUT OF RANGE HIGH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Monitor the OBD STATUS for P1172 and/or P1174* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 5.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

5. Turn the ignition switch OFF.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

6. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
7. Turn the ignition switch ON (II).
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
10. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
11. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1172 and/or P1174 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P1172 and/or P1174* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 11, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates EXECUTING or OUT OF CONDITION, keep idling until a result comes on.

DTC P1297: ELD CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check the ELD in the DATA LIST with the HDS.

Is 72 A or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.

5. Turn the ignition switch ON (II).
6. Check the ELD in the DATA LIST with the HDS.

Is 72 A or more indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Check for continuity between PCM connector terminal A10 and body ground.

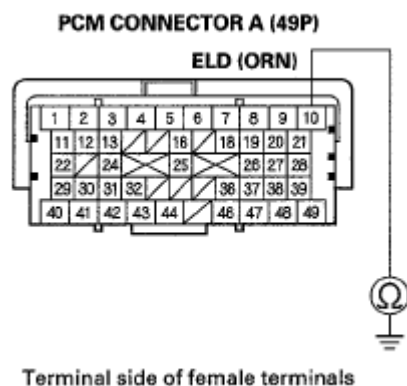


Fig. 79: Identifying Continuity Between PCM Connector Terminal A10 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A10) and the ELD, then go to step 13.

NO - Go to step 20.

11. Turn the ignition switch OFF.
12. Replace the leftside engine compartment wire harness (see **LEFT ENGINE COMPARTMENT WIRE HARNESS**).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Start the engine.
18. Turn on the headlights.

19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1297 indicated?

YES - Check for poor connections or loose terminals at the ELD unit and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
22. Start the engine.
23. Turn on the headlights.
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1297 indicated?

YES - Check for poor connections or loose terminals at the ELD unit and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 22. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1298: ELD CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch ON (II).
2. Check the ELD in the DATA LIST with the HDS.

Is 0.2 A or less indicated?

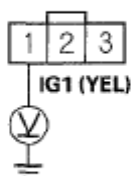
YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ELD 3P connector.

5. Turn the ignition switch ON (II).
6. Measure voltage between ELD 3P connector terminal No. 1 and body ground.

ELD 3P CONNECTOR



Wire side of female terminals

Fig. 80: Identifying Voltage Between ELD 3P Connector Terminal 1 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire between the No. 18 IG ACG (10 A) fuse in the under-dash fuse/relay box and the ELD, then go to step 13.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Check for continuity between PCM connector terminal A10 and ELD 3P connector terminal No. 3.

ELD 3P CONNECTOR

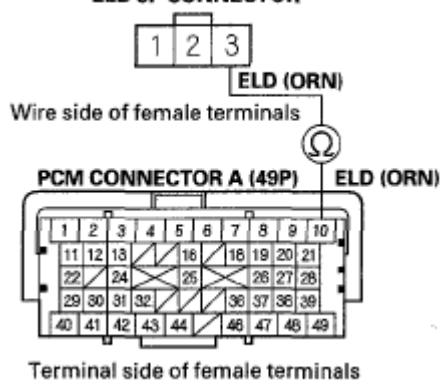


Fig. 81: Identifying Continuity Between PCM Connector Terminal A10 And ELD 3P Connector Terminal 3
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

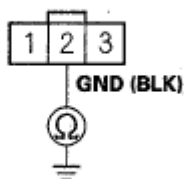
Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the PCM (A10) and the ELD, then go to step 13.

11. Check for continuity between ELD 3P connector terminal No. 2 and body ground.

ELD 3P CONNECTOR



Wire side of female terminals

Fig. 82: Identifying Continuity Between ELD 3P Connector Terminal 2 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the ELD and G302, then go to step 13.

12. Replace the left side engine compartment wire harness (see **LEFT ENGINE COMPARTMENT WIRE HARNESS**).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1298 indicated?

YES - Go to step 18.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

18. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
19. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1298 indicated?

YES - Check for poor connections or loose terminals at the ELD unit and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P1549: CHARGING SYSTEM HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **If a high voltage battery (24 V, etc.) is connected to the vehicle, this DTC can be stored.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
 - A/C switch off
 - Headlights off
 - Rear window defogger off
5. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1549 indicated?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the main under-hood fuse box.

7. Turn the ignition switch ON (II).
8. Reset the PCM with the HDS.
9. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
10. Start the engine.
11. Check under these conditions:
 - A/C switch off
 - Headlights off
 - Rear window defogger off

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

12. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P1549 indicated?

YES - Check for poor connections or loose terminals at the alternator and the main under-hood fuse box, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P16BB: ALTERNATOR B TERMINAL CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check under these conditions:
 - A/C switch on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
5. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
6. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BB indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator and the main under-hood fuse box, and check the battery performance (see BATTERY TEST).

7. Check for poor connections or loose terminals at the alternator and the main under-hood fuse box (+B line).

Are the connections and terminals OK?

YES - Go to step 8.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Repair the connectors or terminals, then go to step 9.

8. Check for an open in the wire between the alternator and main under-hood fuse box at the starter subharness.

is the harness OK?

YES - Replace the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**), then go to step 9.

NO - Repair open in the wire between the alternator and the main under-hood fuse box, then go to step 9.

9. Turn the ignition switch ON (II).
10. Reset the PCM with the HDS.
11. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
12. Start the engine.
13. Check under these conditions:
 - A/C switch on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
14. Hold the engine speed at 2,000 rpm (in Park or neutral) for 1 minute.
15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BB indicated?

YES - Check for poor connections or loose terminals at the alternator and the main under-hood fuse box, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P16BC: ALTERNATOR FR TERMINAL CIRCUIT/ IGP CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Check for poor connections or loose terminals at the alternator 4P connector.

Are the connections and terminals OK?

YES - Go to step 2.

NO - Repair the connector or terminals, then go to step 18.

2. Check the alternator mounting surface for corrosion.

Is the mounting surface corroded?

YES - Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION**). Clean all mounting surfaces, reinstall the alternator, then go to step 18.

NO - Go to step 3.

3. Turn the ignition switch ON (II).
4. Clear the DTC with the HDS.
5. Start the engine.
6. Check under these conditions:
 - A/C on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
7. Hold the engine speed 2,000 rpm (in Park or neutral) for 1 minute.
8. Check for Temporary DTCs or DTCs with the HDS.

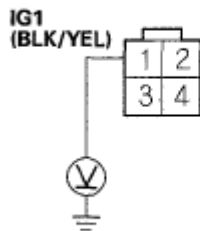
Is DTC P16BC indicated?

YES - Go to step 9.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the alternator.

9. Turn the ignition switch OFF.
10. Disconnect the alternator 4P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between alternator 4P connector terminal No. 1 and body ground.

ALTERNATOR 4P CONNECTOR



Wire side of female terminals

Fig. 83: Identifying Voltage Between Alternator 4P Connector Terminal 1 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

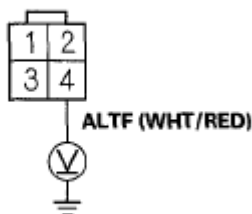
Is there battery voltage?

YES - Go to step 13.

NO - Repair open in the wire between the alternator (IG1 line) and the No. 18 ACG (10 A) fuse in the under-dash fuse/relay box, then go to step 18.

13. Measure voltage between alternator 4P connector terminal No. 4 and body ground.

ALTERNATOR 4P CONNECTOR



Wire side of female terminals

Fig. 84: Identifying Voltage Between Alternator 4P Connector Terminal 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 5 V?

YES - Replace the alternator (see ALTERNATOR REMOVAL AND INSTALLATION), then go to step 18.

NO - Go to step 14.

14. Turn the ignition switch OFF.
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector B (44P).

17. Check for continuity between alternator 4P connector terminal No. 4 and PCM connector terminal C44.

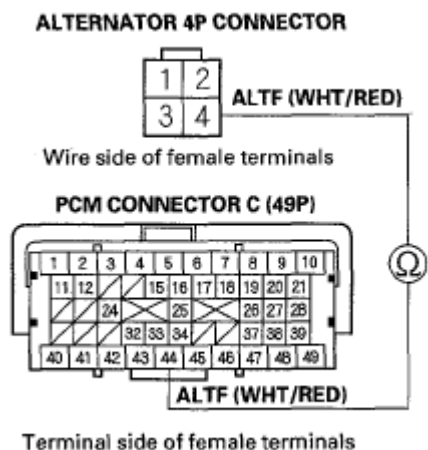


Fig. 85: Identifying Continuity Between Alternator 4P Connector Terminal 4 And PCM Connector Terminal C44

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (C44) and the alternator, then go to step 18.

18. Turn the ignition switch OFF.
19. Reconnect all connectors.
20. Turn the ignition switch ON (II).
21. Reset the PCM with the HDS.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Start the engine.
24. Check under these conditions:
 - A/C on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
25. Hold the engine speed 2,000 rpm (in Park or neutral) for 1 minute.
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BC indicated?

YES - Check for poor connections or loose terminals at the alternator and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Start the engine.
30. Check under these conditions:
 - A/C on
 - Temperature control at maximum cool
 - Blower fan at maximum speed
 - Rear window defogger on
 - Headlights on high beam
31. Hold the engine speed 2,000 rpm (in Park or neutral) for 1 minute.
32. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BC indicated?

YES - Check for poor connections or loose terminals at the alternator and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 29. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P16BD: STARTER CUT RELAY 2 MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS and wait 5 seconds.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BD indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 2 and the PCM.

4. Turn the ignition switch OFF.
5. Replace starter relay 2.
6. Turn the ignition switch ON (II).
7. Reset the PCM with the HDS.
8. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
9. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BD indicated?

YES - Check for poor connections or loose terminals at starter cut relay 2 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P16BE: STARTER CUT RELAY 1 MALFUNCTION

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS and wait 5 seconds.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BE indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1 and the PCM.

4. Turn the ignition switch OFF.
5. Replace starter relay 1 (ST CUT).
6. Turn the ignition switch ON (II).
7. Reset the PCM with the HDS.
8. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
9. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BE indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the

indicated DTCs troubleshooting.

DTC P16BF: STARTER CUT RELAY STRLY CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS and wait 5 seconds.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BF indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM.

4. Turn the ignition switch OFF.
5. Jump the SCS line with the HDS.
6. Remove starter cut relay 1 and starter cut relay 2.
7. Disconnect PCM connector A (49P).
8. Check for continuity between PCM connector terminal A3 and body ground.

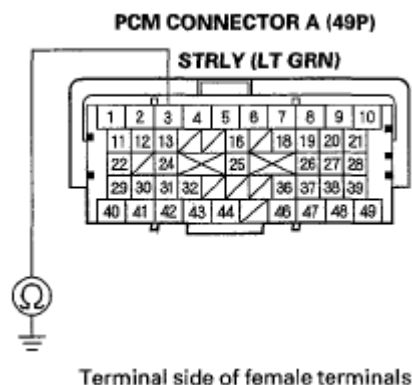


Fig. 86: Identifying Continuity Between PCM Connector Terminal A3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A3) and starter cut relay 1 or starter cut relay 2, then go to step 9.

NO - Go to step 14.

9. Reconnect all connectors.
10. Turn the ignition switch ON (II).
11. Reset the PCM with the HDS.
12. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BF indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

14. Reconnect all connectors.
15. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P16BF indicated?

YES - Check for poor connections or loose terminals at starter cut relay 1, starter cut relay 2, and the PCM, then go to step 1. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2183: ECT SENSOR 2 RANGE/ PERFORMANCE PROBLEM

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If DTC P0111 is stored at the same time as DTC P2183, troubleshoot DTC P0111 first, then recheck for DTC P2183.

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

Are the connections and terminals OK?

YES - Go to step 2.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Repair the connectors or terminals, then go to step 27.

2. Turn the ignition switch ON (II).
3. Check for Temporary DTCs or DTCs with the HDS.

Are DTC P1116 and P2183 indicated at the same time?

YES - Go to step 15.

NO - Go to step 4.

4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 131°F (55°C) or less, or 1.50 V or more indicated?

YES - Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**), then go to step 27.

NO - Go to step 6.

6. Turn the ignition switch OFF.
7. Drain the coolant (see **COOLANT CHECK**).
8. Remove ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
9. Allow ECT sensor 2 to cool to ambient temperature.
10. Note the ambient temperature.
11. Connect ECT sensor 2 to its 2P connector, but do not install it on the engine.
12. Turn the ignition switch ON (II).
13. Note the value of ECT SENSOR 2 quickly in the DATA LIST with the HDS.
14. Compare the value of ECT SENSOR 2 and the ambient temperature.

Does ECT SENSOR 2 differ 5.4°F (3°C) or more?

YES - Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**), then go to step 27.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM.

15. Start the engine, and let it idle for 10 minutes.
16. Check ECT SENSOR 1 in the DATA LIST with the HDS.

Is about 118°F (48°C) or less, or 1.75 V or more indicated?

YES - Replace ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), then go to step 27.

NO - Go to step 17.

17. Let the engine idle for 10 minutes.
18. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 131°F (55°C) or less, or 1.50 V or more indicated?

YES - Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**), then go to step 27.

NO - Go to step 19.

19. Turn the ignition switch OFF.
20. Drain the coolant (see **COOLANT CHECK**).
21. Remove ECT sensor 1 (see **ECT SENSOR 1 REPLACEMENT**), and ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
22. Allow the sensors to cool to ambient temperature.
23. Note the ambient temperature.
24. Connect ECT sensor 1 to its 2P connector, and ECT sensor 2 to its 2P connector, but do not install them on the engine.
25. Note the value of ECT SENSOR 1 and ECT SENSOR 2 quickly in the DATA LIST with the HDS.
26. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

Does one of the sensor differ more than 5.4°F (3°C) from the ambient temperature?

YES - Replace the sensor that differed more than 5.4°F (3°C) from the ambient temperature, then go to step 27.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM, then reconnect all connectors, and refill the cooling system (see **COOLANT CHECK**).

27. Turn the ignition switch ON (II).
28. Reset the PCM with the HDS.
29. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
30. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2183 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2184: ECT SENSOR 2 CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the PCM.

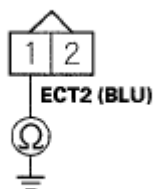
3. Turn the ignition switch OFF.
4. Disconnect the ECT sensor 2 2P connector.
5. Turn the ignition switch ON (II).
6. Check ECT SENSOR 2 in the DATA LIST with the HDS.

Is about 356°F (180°C) or more, or 0.08 V or less indicated?

YES - Go to step 7.

NO - Go to step 11.

7. Turn the ignition switch OFF.
8. Jump the SCS line with the HDS.
9. Disconnect PCM connector A (49P).
10. Check for continuity between ECT sensor 2 2P connector terminal No. 1 and body ground.

ECT SENSOR 2 2P CONNECTOR

Wire side of female terminals

Fig. 87: Identifying Continuity Between ECT Sensor 2P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between ECT sensor 2 and the PCM (A21), then go to step 13.

NO - Go to step 18.

11. Turn the ignition switch OFF.
12. Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
13. Reconnect all connectors.
14. Turn the ignition switch ON (II).
15. Reset the PCM with the HDS.
16. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
17. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2184 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2184 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2185: ECT SENSOR 2 CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

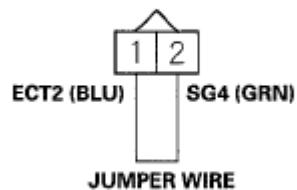
Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the PCM.

3. Turn the ignition switch OFF.
4. Disconnect the ECT sensor 2 2P connector.
5. Connect ECT sensor 2 2P connector terminals No. 1 and No. 2 with a jumper wire.

ECT SENSOR 2 2P CONNECTOR



Wire side of female terminals

Fig. 88: Identifying ECT Sensor 2P Connector Terminals 1 And 2 With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the ignition switch ON (II).
7. Check ECT SENSOR 2 in the DATA LIST with the HDS.

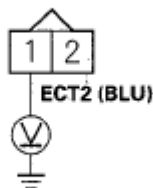
Is about -40°F (-40°C) or less, or 4.92 V or more indicated?

YES - Go to step 8.

NO - Go to step 20.

8. Turn the ignition switch OFF.
9. Remove the jumper wire from the ECT sensor 2 2P connector.
10. Turn the ignition switch ON (II).
11. Measure voltage between ECT sensor 2 2P connector terminal No. 1 and body ground.

ECT SENSOR 2 2P CONNECTOR



Wire side of female terminals

Fig. 89: Identifying Voltage Between ECT Sensor 2P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

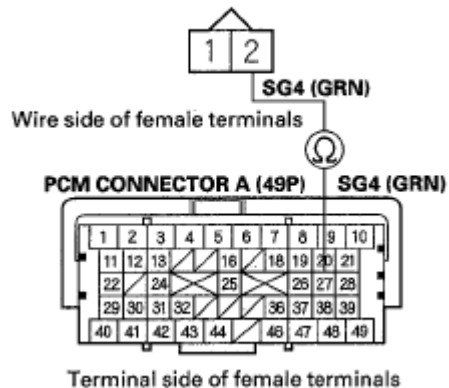
Is there about 5 V?

YES - Go to step 12.

NO - Go to step 16.

12. Turn the ignition switch OFF.
13. Jump the SCS line with the HDS.
14. Disconnect PCM connector A (49P).
15. Check for continuity between PCM connector terminal A27 and ECT sensor 2 2P connector terminal No. 2.

ECT SENSOR 2 2P CONNECTOR



Terminal side of female terminals

Fig. 90: Identifying Continuity Between PCM Connector Terminal A27 And ECT Sensor 2P Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (A27) and ECT sensor 2, then go to step 22.

16. Turn the ignition switch OFF.
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector A (49P).
19. Check for continuity between PCM connector terminal A21 and ECT sensor 2 2P connector terminal No. 1.

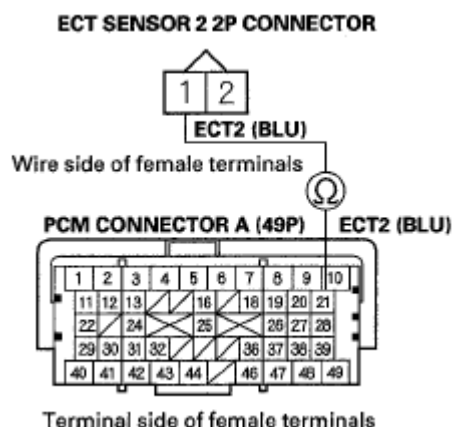


Fig. 91: Identifying Continuity Between PCM Connector Terminal A21 And ECT Sensor 2P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 27.

NO - Repair open in the wire between the PCM (A21) and ECT sensor 2, then go to step 22.

20. Turn the ignition switch OFF.
21. Replace ECT sensor 2 (see **ECT SENSOR 2 REPLACEMENT**).
22. Reconnect all connectors.
23. Turn the ignition switch ON (II).
24. Reset the PCM with the HDS.
25. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
26. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2185 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2185 indicated?

YES - Check for poor connections or loose terminals at ECT sensor 2 and the PCM. If the PCM was updated/substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PGM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2195: REAR A/F SENSOR (BANK 1, SENSOR 1) SIGNAL STUCK LEAN; DTC P2197: FRONT A/F SENSOR (BANK 2, SENSOR 1) SIGNAL STUCK LEAN

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).
- If the vehicle was out of fuel and the engine stalled before this DTC was stored, refuel, and clear the DTC with the HDS.
- If DTC P2101, P2118, P2135, P2138, P2176, or a combination of P2122 and P2127, P2122 and P2138 or P2127 and P2138 is stored at the same time as DTC P2195 (P2197)*, troubleshoot those DTCs first, then recheck for DTC P2195 (P2197)*.

1. Check the installation of the A/F sensor (Sensor 1).

Is the A/F sensor loose or disconnected from the exhaust pipe?

YES - Go to step 6.

NO - Go to step 2.

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Start the engine, then let it idle.
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2195 and/or P2197 indicated?*

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 13.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If any other Temporary DTCs or DTCs are indicated, go to .

6. Turn the ignition switch OFF.
7. Reinstall the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2195 and/or P2197 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 12.

12. Monitor the OBD STATUS for DTC P2195 and/or P2197* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 11, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

13. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
14. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
15. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2195 and/or P2197 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 14. If the PCM was substituted, go to step 1.

NO - Go to step 16.

16. Monitor the OBD STATUS for DTC P2195 and/or P2197* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 15, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2227: BARO SENSOR RANGE/ PERFORMANCE PROBLEM

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- If DTC P0107, P0108, P1128, and/or P1129 are stored at the same time as DTC P2227, troubleshoot those DTCs first, then recheck for DTC P2227.

1. Turn the ignition switch ON (II), and wait 2 seconds.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 101 kPa (29.9 in.Hg, 760 mmHg), or about 2.9 V at sea level indicated?

YES - Go to step 3.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Throttle position between 17 degrees and 33 degrees for 3 seconds
6. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Intermittent failure, the system is OK at this time.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - If the screen indicates FAILED, go to step 7. If the screen indicates NOT COMPLETED, go to step 5.

7. Check the condition of the air cleaner element.

Is the air cleaner element OK?

YES - Go to step 8.

NO - Replace the air cleaner element (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**).

8. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Throttle position between 17 degrees and 33 degrees for 3 seconds
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2227 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 11. If the PCM was substituted, go to step 1.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM IDLE LEARN PROCEDURE**). If any other Temporary DTCs or DTCs were indicated in step 13, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then go to step 11. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 11.

DTC P2228: BARO SENSOR CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 43 kPa (12.7 in.Hg, 323 mmHg), or 1.31 V or less indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time.

3. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2228 indicated?

YES - Check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see SUBSTITUTING THE PCM), then recheck. If the PCM was substituted in step 3, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see PCM REPLACEMENT). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2229: BARO SENSOR CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

Is about 160 kPa (47.2 in.Hg, 1,200 mmHg), or 4.49 V, or more indicated?

YES - Go to step 3.

NO - Intermittent failure, the system is OK at this time.

3. Update the PCM if it does not have the latest software (see PCM UPDATE), or substitute a known-good PCM (see SUBSTITUTING THE PCM).
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2229 indicated?

YES - Check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted in step 3, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2237: REAR A/F SENSOR (BANK 1, SENSOR 1) IP CIRCUIT HIGH VOLTAGE; DTC P2240: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2237 and/or P2240 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 5 to and PCM connector terminal B31 (B32)*.

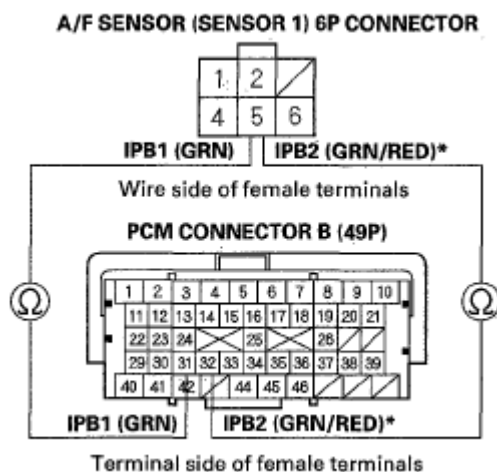


Fig. 92: Identifying Continuity Between A/F Sensor Connector Terminal 5 And PCM Connector Terminal B31

Courtesy of AMERICAN HONDA MOTOR CO., INC.

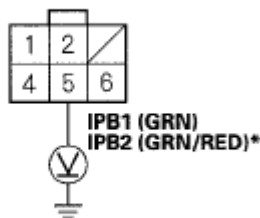
Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the PCM (B31 (B32)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 5 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR



Wire side of female terminals

Fig. 93: Identifying Voltage Between A/F Sensor 6P Connector Terminal 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Go to step 13.

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2237 and/or P2240 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2237 and/or P2240* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2237 and/or P2240 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2237 and/or P2240* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2238: REAR A/F SENSOR (BANK 1, SENSOR DIP CIRCUIT LOW VOLTAGE; DTC P2241: FRONT A/F SENSOR (BANK 2, SENSOR 1) IP CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2238 and/or P2241 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between PCM connector terminal B31 (B32)* and body ground.

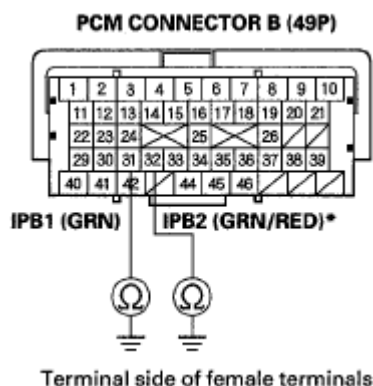


Fig. 94: Identifying Continuity Between PCM Connector Terminal B31 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B31 (B32)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 5 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR

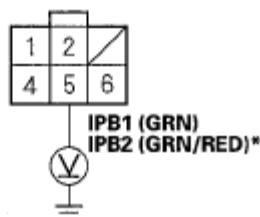


Fig. 95: Identifying Voltage Between A/F Sensor 6P Connector Terminal 5 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2238 and/or P2241 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2238 and/or P2241* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1, If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2238 and/or P2241 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2238 and/or P2241* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2243: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE; DTC P2247: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2243 and/or P2247 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 8P connector terminal No. 6 and PCM connector terminal B15 (B24)*.

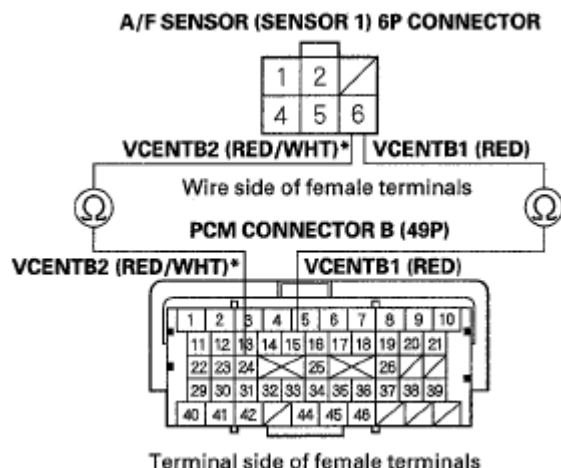


Fig. 96: Identifying Continuity Between A/F Sensor Connector Terminal 6 And PCM Connector Terminal B15

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the PCM (B15 (B24)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 6 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR

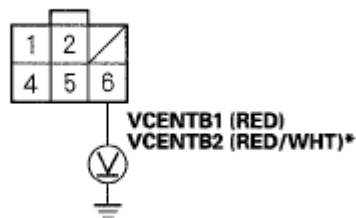


Fig. 97: Identifying Voltage Between A/F Sensor Connector Terminal 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Go to step 13.

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2243 and/or P2247 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2243 and/or P2247* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2243 and/or P2247 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2243 and/or P2247* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2245: REAR A/F SENSOR (BANK 1, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE; DTC P2249: FRONT A/F SENSOR (BANK 2, SENSOR 1) VCENT CIRCUIT LOW VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2245 and/or P2249 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between PCM connector terminal B15(B24)* and body ground.

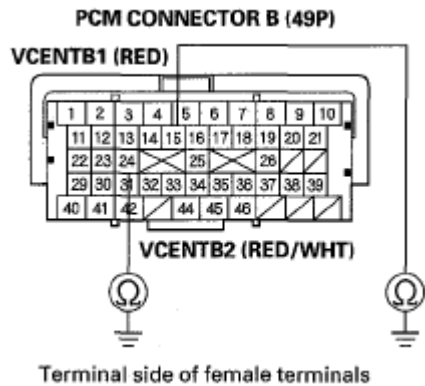


Fig. 98: Identifying Continuity Between PCM Connector Terminal B15 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

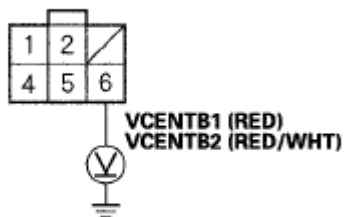
Is there continuity?

YES - Repair short in the wire between the PCM (B15 (B24)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 6 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR



Wire side of female terminals

Fig. 99: Identifying Voltage Between A/F Sensor Connector Terminal 6 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2245 and/or P2249 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2245 and/or P2249* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2245 and/or P2249 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2245 and/or P2249* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the

original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2251: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT HIGH VOLTAGE; DTC P2254: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT HIGH VOLTAGE

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **If DTC P2251 and/or P2254* is stored at the same time as DTC P0134 and/or P0154*, troubleshoot DTC P2251 and/or P2254* first, then recheck for P0134 and/or P0154*.**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2251 and/or P2254 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between A/F sensor (Sensor 1) 6P connector terminal No. 4 and PCM connector terminal B13(B14)*.

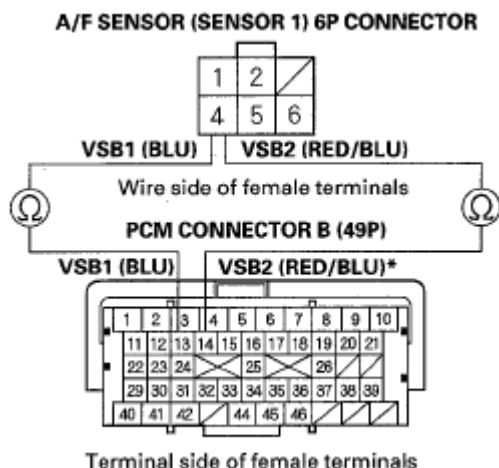


Fig. 100: Identifying Continuity Between A/F Sensor Connector Terminal 4 And PCM Connector Terminal B13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the PCM (B13 (B14)*) and the A/F sensor (Sensor 1), then go to step 14.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR

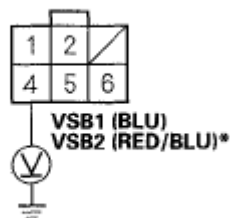


Fig. 101: Identifying Voltage Between A/F Sensor Connector Terminal 4 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO - Go to step 13.

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2251 and/or P2254 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2251 and/or P2254* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

If DTC P2251 and/or P2254 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2251 and/or P2254* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2252: REAR A/F SENSOR (BANK 1, SENSOR 1) VS CIRCUIT LOW VOLTAGE; DTC P2255: FRONT A/F SENSOR (BANK 2, SENSOR 1) VS CIRCUIT LOW VOLTAGE

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2252 and/or P2255 indicated?*

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM.

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 6P connector.
8. Disconnect PCM connector B (49P).
9. Check for continuity between PCM connector terminal B13(B14)* and body ground.

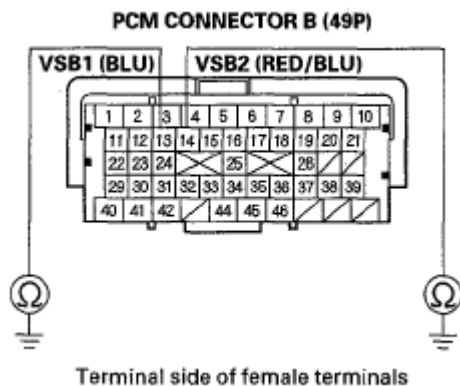


Fig. 102: Identifying Continuity Between PCM Connector Terminal B13 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

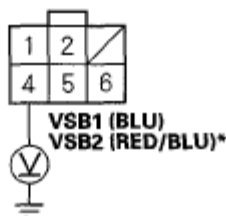
Is there continuity?

YES - Repair short in the wire between the PCM (B13 (B14)*) and the A/F sensor (Sensor 1), then go to step 14.

NO - Go to step 10.

10. Reconnect PCM connector B (49P).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle 2 minutes.
12. Measure voltage between A/F sensor (Sensor 1) 6P connector terminal No. 4 and body ground.

A/F SENSOR (SENSOR 1) 6P CONNECTOR



Wire side of female terminals

Fig. 103: Identifying Voltage Between A/F Sensor Connector Terminal 4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 0.2 V or less?

YES - Go to step 20.

NO - Go to step 13.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

13. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).
14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2252 and/or P2255 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 19.

19. Monitor the OBD STATUS for DTC P2252 and/or P2255* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 18, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

20. Turn the ignition switch OFF.
21. Reconnect all connectors.
22. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
23. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2252 and/or P2255 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 24.

24. Monitor the OBD STATUS for DTC P2252 and/or P2255* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace, the

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 23, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

**DTC P2270: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN;
DTC P2271: REAR SECONDARY HO2S (BANK 1, SENSOR 2) CIRCUIT SIGNAL STUCK RICH;
DTC P2272: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT SIGNAL STUCK LEAN;
DTC P2273: FRONT SECONDARY HO2S (BANK 2, SENSOR 2) CIRCUIT SIGNAL STUCK RICH**

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Information marked with an asterisk (*) applies to the front bank (Bank 2).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Vehicle speed between 35-55 mph (56-88 km/h)
 - Drive 1 minute or more
5. Monitor the OBD STATUS for DTC P2270, P2271, P2272*, and/or P2273* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM. If the screen indicates EXECUTING, keep driving until a result comes on. (f the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.
7. Replace the secondary HO2S (Sensor 2) (see **SECONDARY HO2S REPLACEMENT**).
8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

11. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Vehicle speed between 35-55 mph (56-88 km/h)
 - Drive 1 minute or more
13. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2270, P2271, P2272, and/or P2273* indicated?*

YES - Check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1.

NO - Go to step 14.

14. Monitor the OBD STATUS for DTC P2270, P2271, P2272*, and/or P2273* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 13, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the secondary HO2S (Sensor 2) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 12.

DTC P2610: PCM INTERNAL POWER OFF TIMER PERFORMANCE PROBLEM

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2610 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

4. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2610 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC P2A00: REAR A/F SENSOR (BANK 1, SENSOR 1) RANGE/PERFORMANCE PROBLEM; DTC P2A03: FRONT A/F SENSOR (BANK 2, SENSOR 1) RANGE/PERFORMANCE PROBLEM

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **Information marked with an asterisk (*) applies to the front bank (Bank 2).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Vehicle speed between 25-55 mph (40-88 km/h) for 5 minutes.
 - Drive at a steady speed between 55-75 mph (88-120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for at least 6 seconds.
5. Monitor the OBD STATUS for DTC P2A00 and/or P2A03* in the DTCs MENU with the HDS.

Does the screen indicate FAILED?

YES - Go to step 6.

NO - If the screen indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM. If it is EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch OFF.
7. Replace the A/F sensor (Sensor 1) (see **A/F SENSOR REPLACEMENT**).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

8. Turn the ignition switch ON (II).
9. Reset the PCM with the HDS.
10. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
11. Test-drive under these conditions:
 - Engine coolant temperature (ECT SENSOR 1) above 158°F (70°C)
 - Transmission in D position
 - Vehicle speed between 25-55 mph (40- 88 km/h) for 5 minutes.
 - Drive at a steady speed between 55-75 mph (88-120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for at least 6 seconds.
12. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2A00 and/or P2A03 indicated?*

YES - Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1.

NO - Go to step 13.

13. Monitor the OBD STATUS for DTC P2A00 and/or P2A03* in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 12, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the PCM, then go to step 1. If the screen indicates EXECUTING, keep driving until a result comes on. If the screen indicates OUT OF CONDITION, go to step 11.

DTC U0028: F-CAN MALFUNCTION (BUS-OFF (PCM))

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0028 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
5. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0028 indicated?

YES - If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC U0114: F-CAN MALFUNCTION (PCM-SH-AWD CONTROL UNIT)

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**
- **If DTC U0028 is stored at the same time as DTC U0114, troubleshoot DTC U0028 first, then recheck for DTC U0114.**

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC U0114 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module, the SH-AWD control unit, and the PCM.

4. Check for DTCs in the DTCs MENU with the HDS.

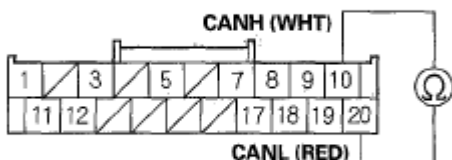
Is SH-AWD system DTC 41 indicated?

YES - Go to step 5.

NO - Go to step 8.

5. Turn the ignition switch OFF.
6. Disconnect the SH-AWD control unit 20P connector.
7. Check for continuity between SH-AWD control unit 20P connector terminals No. 10 and No. 20*.

SH-AWD CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 104: Identifying Continuity Between SH-AWD Control Unit 20P Connector Terminals 10 And 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**), then go to step 15 and recheck. If DTC U0114 is not indicated, replace the original SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**), then go to step 15.

NO - Repair open in the wire between the SH-AWD control unit (No. 10 (No. 20)*) and the PCM (A48 (A49)*), then go to step 15.

*: CANL line

8. Check for a poor connections at the SH-AWD control unit 20P connector and 8P connector.

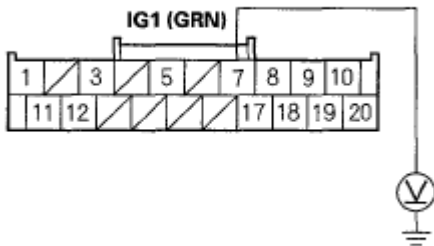
Are the connections OK?

YES - Go to step 9.

NO - Repair the connections, then go to step 15.

9. Turn the ignition switch OFF.
10. Disconnect the SH-AWD control unit 20P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between SH-AWD control unit 20P connector terminal No. 7 and body ground.

SH-AWD CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 105: Identifying Voltage Between SH-AWD Control Unit 20P Connector Terminal 7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

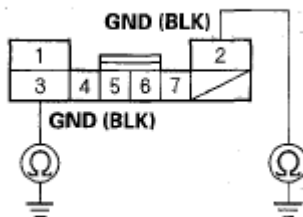
Is there battery voltage?

YES - Go to step 13.

NO - Check the No. 20 SVTM-4, ARC, ODS (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair open in the wire between the No. 20 STVM-4, ARC, ODS (7.5 A) fuse and the SH-AWD control unit, then go to step 15.

13. Turn the ignition switch OFF.
14. Check for continuity between SH-AWD control unit 20P connector terminals No. 9 and body ground, and between SH-AWD control unit 8P connector terminal No. 2 and No. 3 and body ground individually.

SH-AWD CONTROL UNIT 8P CONNECTOR

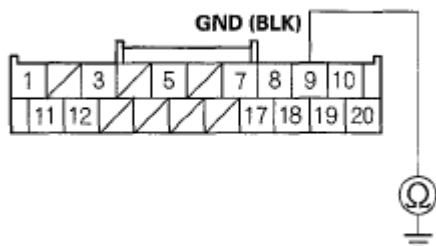


Wire side of female terminals

Fig. 106: Identifying Continuity Between SH-AWD Control Unit 8P Connector Terminal 2 And 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 107: Identifying Continuity Between SH-AWD Control Unit 20P Connector Terminals 9 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**), then go to step 15 and recheck. If DTC U0114 is not indicated, replace the original SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**), then go to step 15.

NO - Repair open in the wire between the SH-AWD control unit and body ground (G603), then go to step 15.

15. Reconnect all connectors.
16. Turn the ignition switch ON (II).
17. Reset the PCM with the HDS.
18. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
19. Check for Temporary DTCs or DTCs in the DTCs MENU with the HDS.

Is DTC U0114 indicated?

YES - Check for poor connections or loose terminals at the gauge control module, the SH-AWD control unit, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs indicated, go to the indicated DTCs troubleshooting.

DTC U0122: F-CAN MALFUNCTION (PCM-VSA MODULATOR-CONTROL UNIT)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Check for Temporary DTCs or DTCs with the HDS.

Are DTC U0028 and U0122 indicated at the same time?

YES - Go to troubleshooting for DTC U0028.

NO - Go to step 3.

3. Clear the DTC with the HDS.
4. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0122 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module, the VSA modulator-control unit, and the PCM.

5. Check for communication to the VSA system with the HDS.

Does the HDS communicate with the VSA modulator-control unit?

YES - Go to step 6.

NO - Go to the **DLC circuit troubleshooting** .

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Disconnect the VSA modulator-control unit 46P connector.
9. Disconnect PCM connector A (44P).
10. Check for continuity between PCM connector terminal A48 and VSA modulator-control unit 46P connector terminal No. 39.

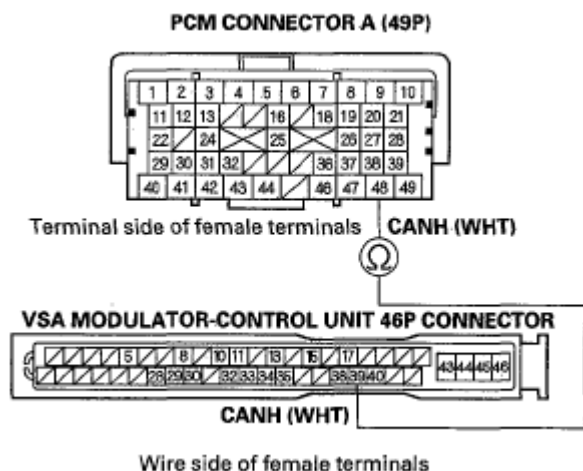


Fig. 108: Identifying Continuity Between PCM Connector Terminal A48 And VSA Modulator-

Control Unit Connector Terminal 39

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Go to step 11.**NO** - Repair open in the wire between the PCM (A48) and the VSA modulator-control unit, then go to step 12.

11. Check for continuity between PCM connector terminal A49 and VSA modulator-control unit 46P connector terminal No. 38.

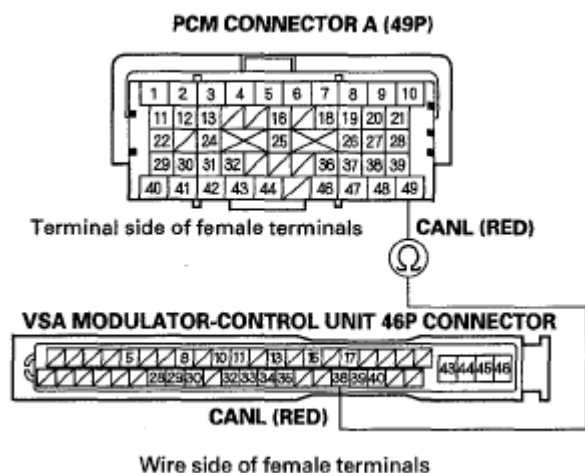


Fig. 109: Identifying Continuity Between PCM Connector Terminal A49 And VSA Modulator-Control Unit Connector Terminal 38

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), then go to step 12 and recheck. If DTC U0122 is not indicated, replace the original VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**), then go to step 12.

NO - Repair open in the wire between the PCM (A49) and the VSA modulator-control unit, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch ON (II).
14. Reset the PCM with the HDS.
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0122 indicated?

YES - Check for poor connections or loose terminals at the gauge control module, the VSA modulator unit, and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC U0155: F-CAN MALFUNCTION (PCM-GAUGE CONTROL MODULE)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0155 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the PCM.

4. Check for body electrical DTCs in the DTCs MENU with the HDS.

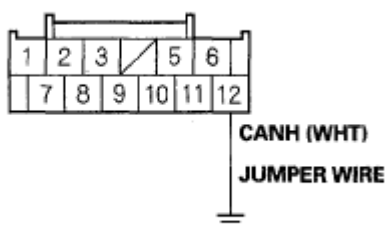
Is DTC B1168, B1169, and/or B1178 indicated?

YES - Go to step 5.

NO - Do the gauge control module input test (see GAUGE CONTROL MODULE INPUT TEST).

5. Turn the ignition switch OFF.
6. Jump the SCS line with the HDS.
7. Remove the gauge control module (see GAUGE CONTROL MODULE REPLACEMENT).
8. Disconnect gauge control module connector A (12P).
9. Disconnect PCM connector A (49P).
10. Connect gauge control module connector terminal A12 to body ground with a jumper wire.

GAUGE CONTROL MODULE CONNECTOR A (12P)



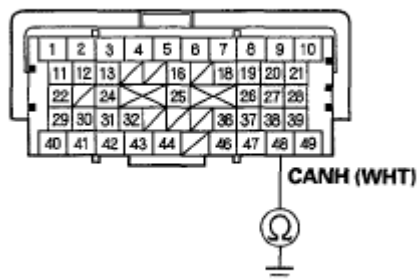
Wire side of female terminals

Fig. 110: Identifying Gauge Control Module Connector Terminal A12 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between PCM connector terminal A48 and body ground.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 111: Identifying Continuity Between PCM Connector Terminal A48 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire between the PCM (A48) and the gauge control module, then go to step 14.

12. Connect gauge control module connector terminal A6 to body ground with a jumper wire.

GAUGE CONTROL MODULE CONNECTOR A (12P)

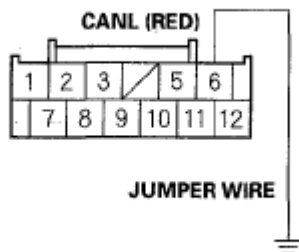


Fig. 112: Identifying Gauge Control Module Connector Terminal A6 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between PCM connector terminal A49 and body ground.

PCM CONNECTOR A (49P)

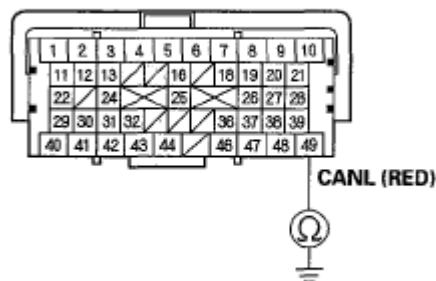


Fig. 113: Identifying Continuity Between PCM Connector Terminal A49 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step Hand recheck. If DTC U0155 is not indicated, replace the original gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), then go to step 14.

NO - Repair open in the wire between the PCM (A49) and the gauge control module, then go to step 14.

14. Reconnect all connectors.
15. Turn the ignition switch ON (II).
16. Reset the PCM with the HDS.
17. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
18. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0155 indicated?

YES - Check for poor connections or loose terminals at the gauge control module and the PCM, then go to step 1.

NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

DTC U0300: PGM-FI SYSTEM AND A/T SYSTEM PROGRAM VERSION MISMATCH

NOTE:

- **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**
- **Do not turn the ignition switch OFF while updating the PCM. If you turn the ignition switch OFF before completion, the PCM will be damaged.**

1. Do the PCM update procedure {PGM-FI system} (see PCM UPDATE).
2. Do the PCM update procedure (A/T system) (see SUBSTITUTE THE PCM).
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0300 indicated?

YES - Replace the original PCM (see PCM REPLACEMENT).

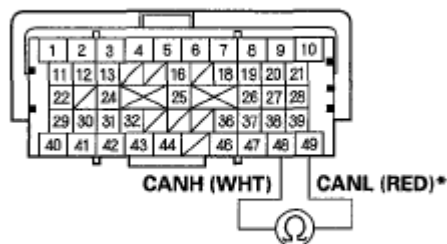
NO - Troubleshooting is complete. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTCs troubleshooting.

F-CAN CIRCUIT TROUBLESHOOTING (PART 1)

NOTE: Information marked with an asterisk (*) applies to the CANL line.

1. Turn the ignition switch OFF.
2. Jump the SCS line with the HDS.
3. Disconnect PCM connector A (49P), then disconnect the HDS.
4. Measure resistance between PCM connector terminals A48 and A49.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 114: Identifying Resistance Between PCM Connector Terminals A48 And A49*
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 333-408 ohms?

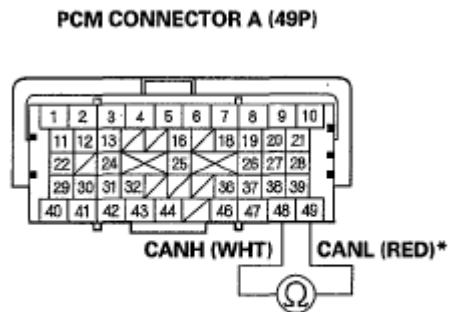
YES - Go to **F-CAN CIRCUIT TROUBLESHOOTING (PART 2)**

NO - Go to step 5.

5. Disconnect gauge control module connector A (12P) (see **GAUGE CONTROL MODULE REPLACEMENT**).
6. Disconnect the VSA modulator-control unit 46P connector (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).
7. Disconnect SRS unit connector A (28P) (see **SRS UNIT REPLACEMENT**).
8. Disconnect the TPMS unit 20P connector (see **TPMS CONTROL UNIT REPLACEMENT**).
9. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).
10. Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
11. Disconnect the SH-AWD control unit 20P connector (see **SH-AWD CONTROL UNIT REPLACEMENT**).
12. With active damper system: Disconnect the active damper control unit 14P connector (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).
13. With AcuraLink: Disconnect AcuraLink control unit (XM receiver) connector A (20P) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).
14. Check for continuity between PCM connector terminals A48 and A49*.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX



Terminal side of female terminals

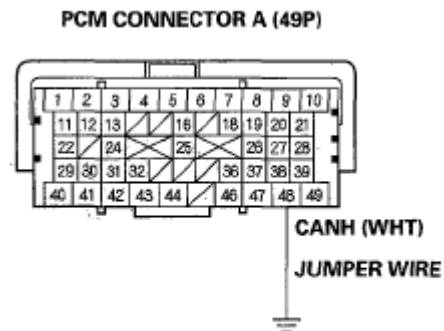
Fig. 115: Identifying Continuity Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wires between PCM connector terminals A48 and A49*.

NO - Go to step 15.

15. Connect PCM connector terminal A48 to body ground with a jumper wire.



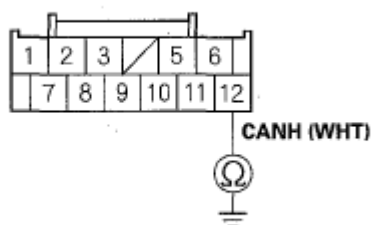
Terminal side of female terminals

Fig. 116: Identifying PCM Connector Terminal A48 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between gauge control module connector terminal A12 and body ground.

GAUGE CONTROL MODULE CONNECTOR A (12P)

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 117: Identifying Continuity Between Gauge Control Module Connector Terminal A12 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

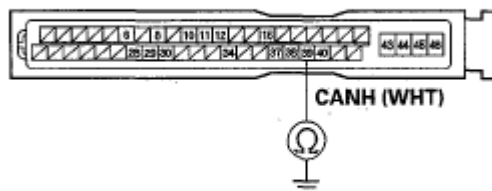
Is there continuity?

YES - Go to step 17.

NO - Repair open in the wire between the PCM (A48) and the gauge control module.

17. Check for continuity between VSA modulator-control unit 46P connector terminal No. 39 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 118: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 39 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

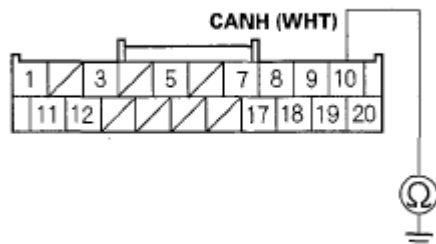
Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the PCM (A48) and the VSA modulator-control unit.

18. Check for continuity between SH-AWD control unit 20P connector terminal No. 10 and body ground.

SH-AWD CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 119: Identifying Continuity Between SH-AWD Control Unit 20P Connector Terminal 10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

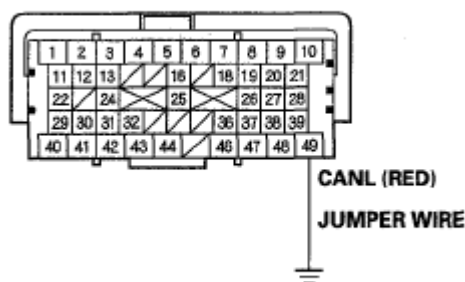
Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the PCM (A48) and the SH-AWD control unit.

19. Remove the jumper wire from PCM connector A (49P).
20. Connect PCM connector terminal A49 to body ground with a jumper wire.

PCM CONNECTOR A (49P)



Terminal side of female terminals

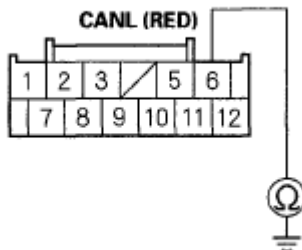
Fig. 120: Identifying PCM Connector Terminal A49 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Check for continuity between gauge control module connector terminal A6 and body ground.

GAUGE CONTROL MODULE CONNECTOR A (12P) CANL (RED)

GAUGE CONTROL MODULE CONNECTOR A (12P)



Wire side of female terminals

Fig. 121: Identifying Continuity Between Gauge Control Module Connector Terminal A6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

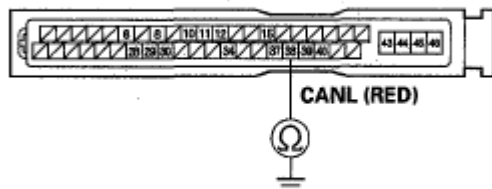
Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the PCM (A49) and the gauge control module.

22. Check for continuity between VSA modulator-control unit 46P connector terminal No. 38 and body ground.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR



Wire side of female terminals

Fig. 122: Identifying Continuity Between VSA Modulator-Control Unit 46P Connector Terminal 38 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

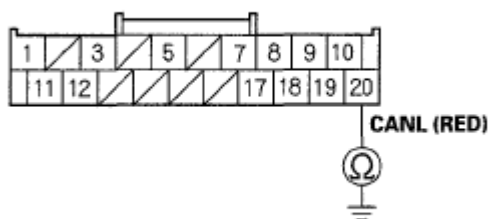
Is there continuity?

YES - Go to step 23.

NO - Repair open in the wire between the PCM (A49) and the VSA modulator-control unit.

23. Check for continuity between SH-AWD control unit 20P connector terminal No. 20 and body ground.

SH-AWD CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 123: Identifying Continuity Between SH-AWD Control Unit 20P Connector Terminal 20 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

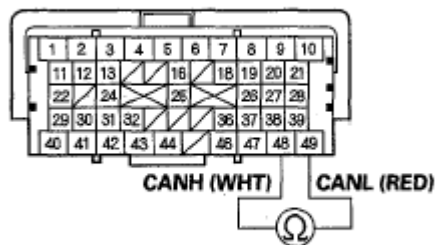
Is there continuity?

YES - Go to step 24.

NO - Repair open in the wire between the PCM (A49) and the SH-AWD control unit.

24. Reconnect the gauge control module 12P connector.
25. Measure resistance between PCM connector terminals A48 and A49.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 124: Identifying Resistance Between PCM Connector Terminals A48 And A49

Courtesy of AMERICAN HONDA MOTOR CO., INC.

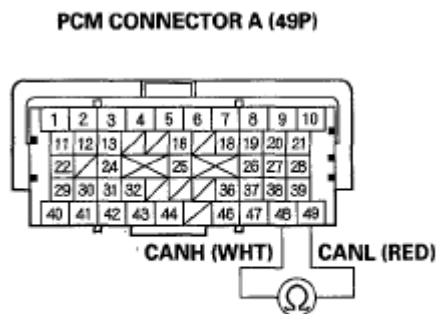
Is there about 2.34-2.86 kohms?

YES - Go to step 26.

NO - Substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**). If the HDS identifies the vehicle, replace the original gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

26. Disconnect gauge control module connector A (12P).

27. Reconnect the VSA modulator-control unit 46P connector.
28. Measure resistance between PCM connector terminals A48 and A49.



Terminal side of female terminals

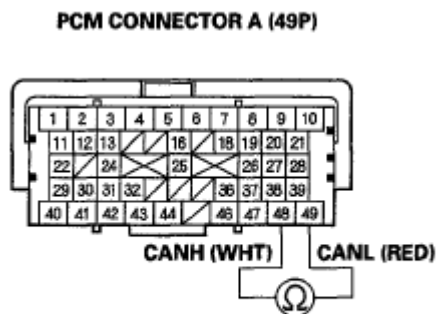
Fig. 125: Identifying Resistance Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.34-2.86 kohms?

YES - Go to step 29.

NO - Substitute a known-good VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**). If the HDS identifies the vehicle, replace the original VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

29. Disconnect the VSA modulator-control unit 46P connector.
30. Reconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
31. Measure resistance between PCM connector terminals A48 and A49.



Terminal side of female terminals

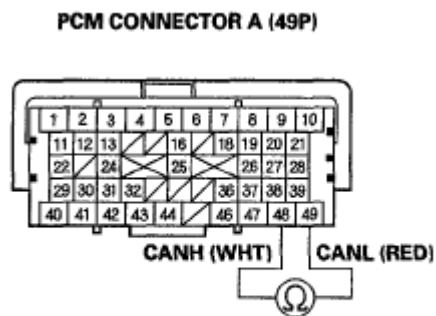
Fig. 126: Identifying Resistance Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.34-2.86 kohms?

YES - Go to step 32.

NO - Substitute a known-good yaw rate-lateral/ longitudinal acceleration sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**). If the HDS identifies the vehicle, replace the original yaw rate-lateral/longitudinal acceleration sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

32. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
33. Reconnect the steering angle sensor 5P connector.
34. Measure resistance between PCM connector terminals A48 and A49.



Terminal side of female terminals

Fig. 127: Identifying Resistance Between PCM Connector Terminals A48 And A49
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.34-2.86 kohms?

YES - Go to step 35.

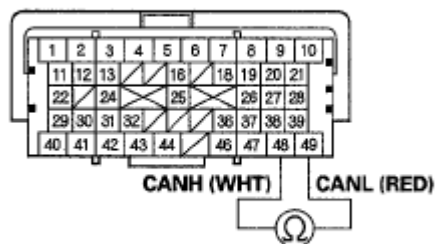
NO - Substitute a known-good steering angle sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**). If the HDS identifies the vehicle, replace the original steering angle sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

35. Disconnect the steering angle sensor 5P connector.
36. Reconnect SRS unit connector A (28P).
37. Measure resistance between PCM connector terminals A48 and A49.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 128: Identifying Resistance Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

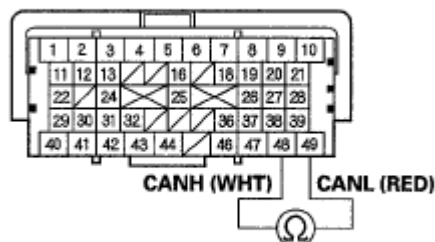
Is there about 2.34-2.86 kohms?

YES - Go to step 38.

NO - Substitute a known-good SRS unit (see SRS UNIT REPLACEMENT). If the HDS identifies the vehicle, replace the original SRS unit (see SRS UNIT REPLACEMENT).

38. Disconnect SRS unit connector A (28P).
39. Reconnect the TPMS control unit 20P connector.
40. Measure resistance between PCM connector terminals A48 and A49.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 129: Identifying Resistance Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.34-2.86 kohms?

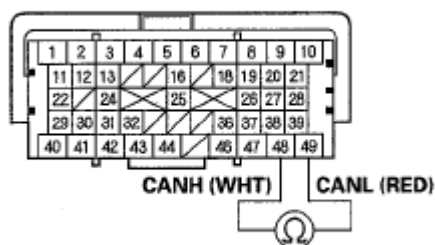
YES -

- With active damper system: Go to step 41.
- Without active damper system: Go to step 44.

NO - Substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**). If the HDS identifies the vehicle, replace the original TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

41. Disconnect the TPMS control unit 20P connector.
42. Reconnect the active damper control unit 14P connector.
43. Measure resistance between PCM connector terminals A48 and A49.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 130: Identifying Resistance Between PCM Connector Terminals A48 And A49
Courtesy of AMERICAN HONDA MOTOR CO., INC.

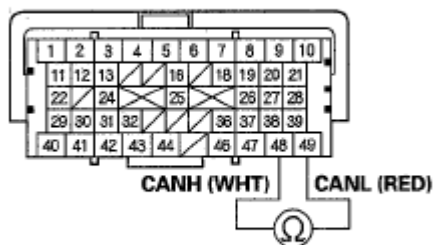
Is there about 2.34-2.86 kohms?

YES - Go to step 44.

NO - Substitute a known-good active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**). If the HDS identifies the vehicle, replace the original active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).

44. Disconnect the TPMS control unit 20P connector or the active damper control unit 14P connector.
45. Reconnect SH-AWD control unit 20P connector.
46. Measure resistance between PGM connector terminals A48 and A49.

PCM CONNECTOR A (49P)



Terminal side of female terminals

Fig. 131: Identifying Resistance Between PGM Connector Terminals A48 And A49
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

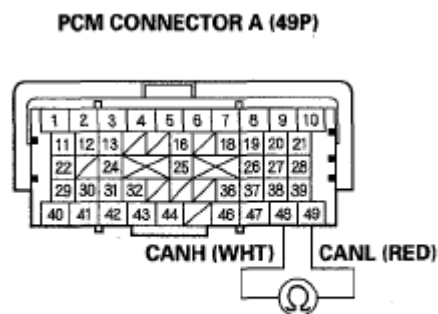
Is there about 2.34-2.86 kohms?

YES -

- With: AcuraLink: Go to step 47.
- Without: AcuraLink: Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**). If the HDS identifies the vehicle, replace the original SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**).

47. Disconnect the SH-AWD control unit 20P connector.
48. Reconnect AcuraLink control unit (XM receiver) connector A (20P).
49. Measure resistance between PCM connector terminals A48 and A49.



Terminal side of female terminals

Fig. 132: Identifying Resistance Between PCM Connector Terminals A48 And A49
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there about 2.34-2.86 kohms?

YES - Update the PCM if it does not have the latest software (see), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Substitute a known-good AcuraLink control unit (XM receiver) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**). If the HDS identifies the vehicle, replace the original AcuraLink control unit (XM receiver) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).

F-CAN CIRCUIT TROUBLESHOOTING (PART 2)

1. Disconnect gauge control module connector A (12P) (see **GAUGE CONTROL MODULE REPLACEMENT**).
2. Disconnect the VSA modulator-control unit 25P connector (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).
3. Disconnect SRS unit connector A (28P) (see **SRS UNIT REPLACEMENT**).
4. Disconnect TPMS control unit connector A (20P) (see **TPMS CONTROL UNIT REPLACEMENT**).
5. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).
6. Disconnect the steering angle sensor 5P connector (see **STEERING ANGLE SENSOR REPLACEMENT**).
7. Disconnect SH-AWD control unit connector A (20P) (see **SH-AWD CONTROL UNIT REPLACEMENT**).
8. With active damper system: Disconnect the active damper control unit 14P connector (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).
9. With AcuraLink: Disconnect AcuraLink control unit (XM receiver) connector A (20P) (see **ACURALINK CONTROL UNIT (XM RECEIVER) REMOVAL/INSTALLATION**).
10. Check for continuity between PCM connector terminal A48 and body ground.

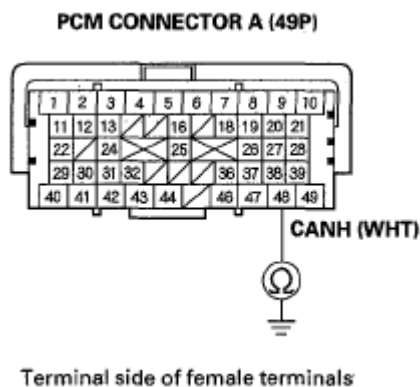


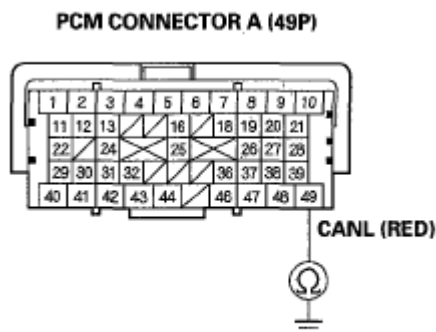
Fig. 133: Identifying Continuity Between PCM Connector Terminal A48 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal A48 and the gauge control module, the VSA modulator-control unit, the SRS unit, the TPMS control unit, the yaw rate-lateral/ longitudinal acceleration sensor, the steering angle sensor, the SH-AWD control unit, the active damper control unit (with active damper system), the AcuraLink control unit (XM receiver (with AcuraLink)), or the DLC.

NO - Go to step 11.

11. Check for continuity between PCM connector terminal A49 and body ground.



Terminal side of female terminals

Fig. 134: Identifying Continuity Between PCM Connector Terminal A49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between PCM connector terminal A49 and the gauge control module, the VSA modulator-control unit, the SRS unit, the TPMS control unit, the yaw rate-lateral/ longitudinal acceleration sensor, the steering angle sensor, the SH-AWD control unit, the active damper control unit (with active damper system), the AcuraLink control unit (XM receiver (with AcuraLink)), or the DLC.

NO - Go to step 12.

12. Reconnect all connectors.
13. Connect the HDS to the DLC (see **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).
14. Disconnect gauge control module connector A (12P).
15. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

NO - Go to step 16.

16. Turn the ignition switch OFF.
17. Reconnect gauge control module connector A (12P).
18. Disconnect the VSA modulator-control unit 46P connector.
19. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the VSA modulator-control unit (see **VSA MODULATOR-CONTROL UNIT REMOVAL AND INSTALLATION**).

NO - Go to step 20.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

20. Turn the ignition switch OFF.
21. Reconnect the VSA modulator-control unit 46P connector.
22. Disconnect SRS unit connector A (28P).
23. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the SRS unit (see **SRS UNIT REPLACEMENT**).

NO - Go to step 24.

24. Turn the ignition switch OFF.
25. Reconnect SRS unit connector A (28P).
26. Disconnect TPMS control unit connector A (20P).
27. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO - Go to step 28.

28. Turn the ignition switch OFF.
29. Reconnect TPMS control unit connector A (28P).
30. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
31. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT**).

NO - Go to step 32.

32. Turn the ignition switch OFF.
33. Reconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
34. Disconnect the steering angle sensor 5P connector.
35. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the steering angle sensor (see **STEERING ANGLE SENSOR REPLACEMENT**).

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

NO -

- With active damper system: Go to step 36.
- Without active damper system: Go to step 40.

36. Turn the ignition switch OFF.
37. Reconnect the steering angle sensor 5P connector.
38. Disconnect the active damper control unit 14P connector.
39. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the active damper control unit (see **ACTIVE DAMPER CONTROL UNIT REPLACEMENT**).

NO - Go to step 40.

40. Turn the ignition switch OFF.
41. Reconnect the steering angle sensor 5P connector or the active damper control unit 14P connector.
42. Disconnect SH-AWD control unit connector A (20P)
43. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**).

NO -

- With: AcuraLink: Go to step 44.
- Without: AcuraLink: Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

44. Turn the ignition switch OFF.
45. Reconnect the SH-AWD control unit 20P connector.
46. Disconnect AcuraLink control unit (XM receiver) connector A (20P).
47. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Replace the AcuraLink control unit (XM receiver).

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with

a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

MIL CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II).
2. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**).

Does the MIL indicator flash?

YES - Go to step 3.

NO - Substitute a known-good gauge control module, and recheck. If the MIL circuit is OK, replace the original gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**).

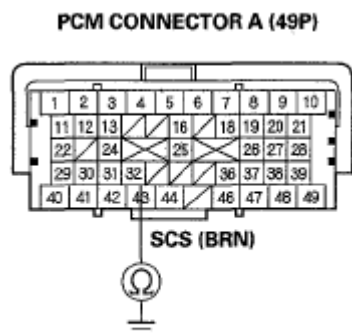
3. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
4. Check the SCS in the DATA LIST with the HDS.

Is a short indicated?

YES - Go to step 5.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

5. Turn the ignition switch OFF.
6. Disconnect PCM connector A (49P), then disconnect the HDS.
7. Check for continuity between PCM connector terminal A32 and body ground.



Terminal side of female terminals

Fig. 135: Identifying Continuity Between PCM Connector Terminal A32 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (A32) and the SRS unit, the DLC.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

DLC CIRCUIT TROUBLESHOOTING

NOTE: **Make sure the HDS and the DLC cable of the HDS is normal.**

1. Turn the ignition switch OFF.
2. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).

NOTE: **Make sure the HDS is properly connected to the DLC.**

3. Turn the ignition switch ON (II), and read the HDS.

Does the HDS identify the vehicle?

YES - Go to step 4.

NO - Go to step 25.

4. Check for Temporary DTCs or DTCs in the PGM-FI system with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES - Go to the indicated DTCs troubleshooting.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Turn the ignition switch ON (II), and watch the SRS indicator.

Does the SRS indicator stay on?

YES - Go to the SRS system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

NO - Go to step 7.

7. Turn the ignition switch OFF.
8. Turn the ignition switch ON (II), and watch the VSA indicator.

Does the VSA indicator stay on?

YES - Go to the VSA system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Turn the ignition switch ON (II), and watch the immobilizer indicator.

Does the immobilizer indicator stay on or flash?

YES - Go to the immobilizer system's troubleshooting (see **SYMPTOM TROUBLESHOOTING INFORMATION**).

NO - Go to step 11.

11. Turn the ignition switch OFF.
12. Turn the ignition switch ON (II), and watch the SH-AWD indicator.

Does the SH-AWD indicator stay on?

YES - Go to the SH-AWD system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

NO - Go to step 13.

13. Turn the ignition switch OFF.
14. Turn the ignition switch ON (II), and watch the multi-information display.

Does the TPMS indicator stay on?

YES - Go to the TPMS system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

NO -

- With active damper system: Go to step 15.
- Without active damper system: Go to step 17.

15. Turn the ignition switch OFF.
16. Turn the ignition switch ON (II), and watch the active damper system indicator.

Does the active damper system indicator stay on?

YES - Go to the active damper system's general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

NO - Go to step 17.

17. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**) to make sure the gauge is known-good. If the function test is OK, go to step 18.
18. Check for B-CAN system DTCs without the HDS (see **WITHOUT HDS (USE ONLY IF THE HDS IS UNAVAILABLE)**).

Are any B-CAN DTCs indicated?

YES - Go to the indicated DTCs troubleshooting.

NO - Go to step 19.

19. Turn the ignition switch OFF.
20. Disconnect the HDS from the DLC.
21. Check for continuity between DLC terminal No. 7 and body ground.

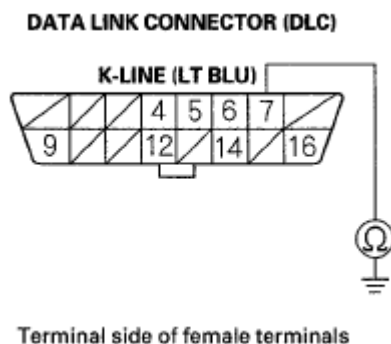


Fig. 136: Identifying Continuity Between DLC Terminal 7 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 5 ohms or less?

YES - Go to step 22.

NO - Go to step 23.

22. Continue to check for continuity between DLC terminal No. 7 and body ground, while disconnecting these parts, one at a time:
 - SRS unit connector A (28P)
 - VSA modulator-control unit 46P connector
 - Immobilizer-keyless control unit 7P connector
 - Audio unit 17P connector
 - SH-AWD control unit 20P connector
 - Active damper control unit 14P connector

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

- TPMS control unit 20P connector
- MICU connector P (30P)

Does continuity go away when one of the above components is disconnected?

YES - Replace the part that caused an open when it was disconnected.

NO - Repair short in the wire between the DLC (K-line) and the SRS unit, the VSA modulator-control unit, the immobilizer-keyless control unit, the audio unit, the SH-AWD control unit, the active damper control unit, or the TPMS control unit, or the MICU.

23. Connect DLC terminal No. 7 to body ground with a jumper wire.

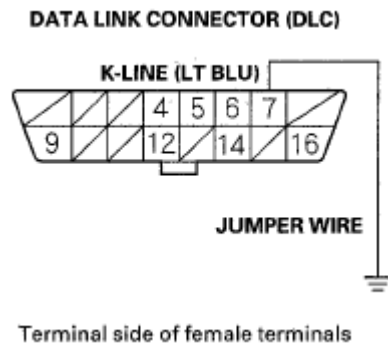


Fig. 137: Identifying DLC Terminal 7 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Check for continuity between body ground and these connector terminals:

CONNECTOR TERMINALS CHART

Connector	Terminal
SRS unit A(28P)	No. 24 (LT BLU)
VSA modulator-control unit 46P	No. 15 (LT BLU)
Immobilizer-keyless control unit 7P	No. 5 (LT BLU)
Audio unit 17P	No. 6 (LT BLU)
SH-AWD control unit 20P	No. 5 (LT BLU)
Active damper control unit 14P	No. 3 (LT BLU)
TPMS control unit 20P	No. 7 (LT BLU)
MICU 30P	No. 6 (LT BLU)

Is there continuity between the DLC terminal and each of the terminals in the chart?

YES - Replace the unit that does not communicate with the HDS.

NO - Repair open in the wire between the DLC (K-line) and the appropriate connector.

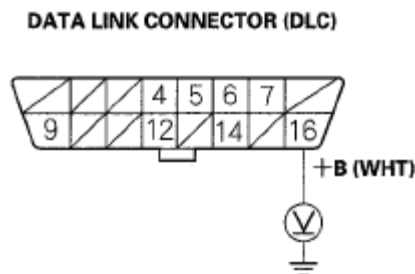
25. Do the gauge self-diagnostic function (see **SELF-DIAGNOSTIC FUNCTION**) to make sure the gauge is known-good. If the function test is OK, go to step 22.
26. Check for B-CAN system DTCs without the HDS (see **WITHOUT HDS (USE ONLY IF THE HDS IS UNAVAILABLE)**).

Is DTC B1168, B1169, and/or B1178 indicated?

YES - Go to step 39.

NO - Go to step 27.

27. Turn the ignition switch OFF;
28. Disconnect the HDS from the DLC.
29. Measure voltage between DLC terminal No. 16 and body ground.



Terminal side of female terminals

Fig. 138: Identifying Voltage Between DLC Terminal 16 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

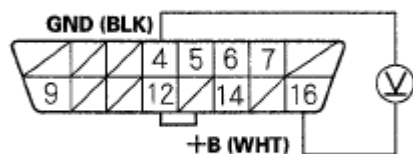
Is there battery voltage?

YES - Go to step 30.

NO - Repair open in the wire between DLC terminal No. 16 and the No. 7 BACK UP (10 A) fuse in the under-dash fuse/relay box.

30. Measure voltage between DLC terminals No. 4 and No. 16.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Fig. 139: Identifying Voltage Between DLC Terminals 4 And 16
Courtesy of AMERICAN HONDA MOTOR CO., INC.

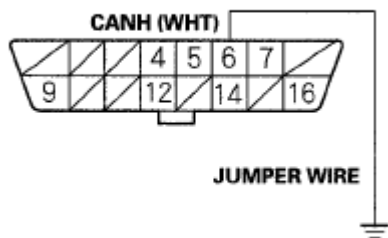
Is there battery voltage?

YES - Go to step 31.

NO - Repair open in the wire between DLC terminal No. 4 and G503.

31. Connect the HDS to the DLC (see **GENERAL TROUBLESHOOTING INFORMATION**).
32. Jump the SCS line with the HDS.
33. Disconnect PCM connector A (49P).
34. Disconnect the HDS from the DLC.
35. Connect DLC terminal No. 6 to body ground with a jumper wire.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Fig. 140: Identifying DLC Terminal 6 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Check for continuity between PCM connector terminal A48 and body ground.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

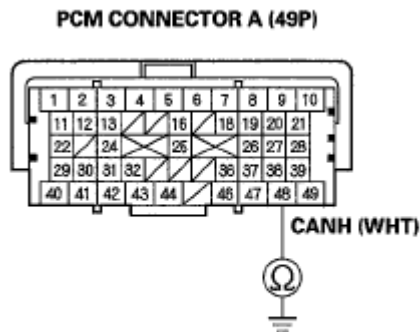


Fig. 141: Identifying Continuity Between PCM Connector Terminal A48 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 37.

NO - Repair open in the wire between the PCM (A48) and DLC terminal No. 6.

37. Disconnect the jumper wire from DLC terminal No. 6, then connect DLC terminal No. 14 to body ground with a jumper wire.

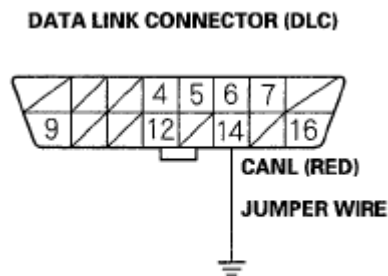
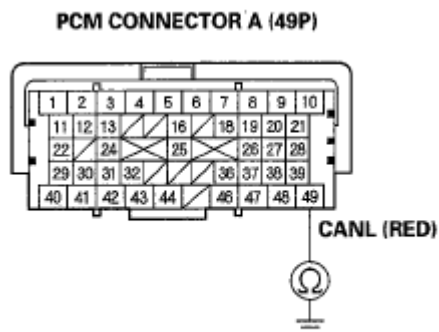


Fig. 142: Identifying DLC Terminal 14 To Body Ground With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Check for continuity between PCM connector terminal A49 and body ground.



Terminal side of female terminals

Fig. 143: Identifying Continuity Between PCM Connector Terminal A49 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the PCM (A49) and DLC terminal No. 14.

39. Try to start the engine.

Does the engine start and idle smoothly?

YES - Go to F-CAN circuit troubleshooting (see **F-CAN Circuit Troubleshooting (Part 1)**).

NO - Go to step 40.

40. Turn the ignition switch OFF.

41. Check the No. 3 IG1 MAIN (50 A) fuse in the main under-hood fuse box.

Is the fuse OK?

YES - Repair open in the wire between the No. 3 IG1 MAIN (50 A) fuse and the ignition switch. If the wire is OK, go to step 42.

NO - Repair short in the wire between the No. 3 IG1 MAIN (50 A) fuse and the main under-hood fuse box. Also replace the No. 3 IG1 MAIN (50 A) fuse.

42. Inspect the No. 8 IGP (15 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

YES - Go to step 48.

NO - Go to step 43.

43. Remove the blown No. 8 IGP (15 A) fuse from the under-hood fuse/relay box.
44. Jump the SCS line with the HDS.
45. Disconnect PCM connector B (49P).
46. Check for continuity between PCM connector terminal B3 and body ground.

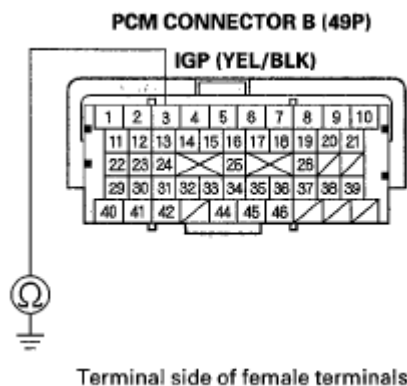


Fig. 144: Identifying Continuity Between PCM Connector Terminal B3 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 47.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**). Also replace the No. 8 IGP (15 A) fuse in the under-hood fuse/relay box.

47. Disconnect each of the components or connectors below, one at a time, and check for continuity between PCM connector terminal B3 and body ground.
 - PGM-FI main relay 2
 - Each injector 2P connector
 - Camshaft position (CMP) sensor 3P connector
 - Crankshaft position (CKP) sensor 6P connector
 - Under-hood fuse/relay box 9P connector

Does continuity go away when one of the above components is disconnected?

YES - Replace the component that made the short to body ground go away when disconnected. Also replace the No. 8 IGP (15 A) fuse.

NO - Repair short in the wire between the PCM (B3) and the PGM-FI main relay 2, the injector, the CKP

sensor, or the under-hood fuse/relay box. Also replace the No. 8 IGP (15 A) fuse in the under-hood fuse/relay box.

48. Inspect the No. 19 FUEL PUMP (20 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES - Go to step 55.

NO - Go to step 49.

49. Remove the blown No. 19 FUEL PUMP (20 A) fuse in the under-dash fuse/relay box.
50. Jump the SCS line with the HDS.
51. Disconnect PCM connector B (49P).
52. Check for continuity between PCM connector terminal B42 and body ground.

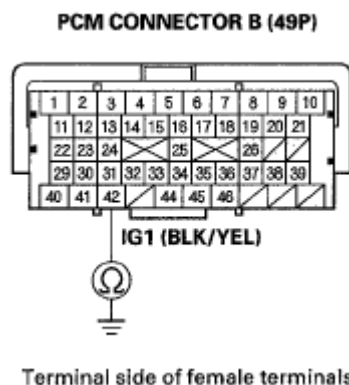


Fig. 145: Identifying Continuity Between PCM Connector Terminal B42 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 53.

NO - Replace the No. 19 FUEL PUMP (20 A) fuse in the under-dash fuse/relay box, and update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

53. Disconnect the dashboard wire harness 39P connector from socket X on the under-dash fuse/relay box (A) (see **UNDER-DASH FUSE/RELAY BOX**).

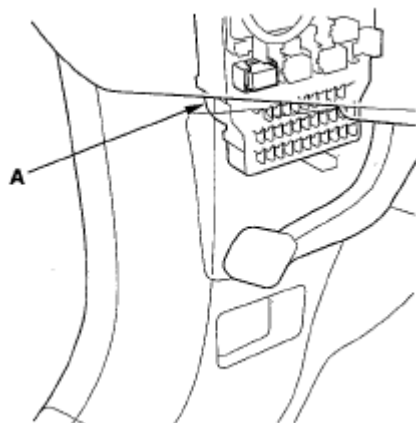


Fig. 146: Identifying Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Check for continuity between PCM connector terminal B42 and body ground.

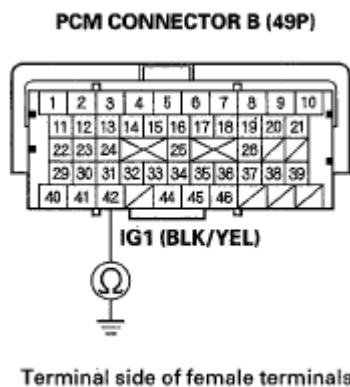


Fig. 147: Identifying Continuity Between PCM Connector Terminal B42 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the under-dash fuse/relay box and the PCM (B42), or between the under-dash fuse/relay box and the immobilizer control unit. Also replace the No. 19 FUEL PUMP (20 A) fuse in the under-dash fuse/relay box.

NO - Replace the under-dash fuse/relay box.

55. Jump the SCS line with the HDS.
56. Disconnect PCM connectors A (49P) and B (49P).
57. Turn the ignition switch ON (II).
58. Measure voltage between PCM connector terminal B42 and body ground.

2008 Acura MDX

2007-09 ENGINE PERFORMANCE PGM-FI System - MDX

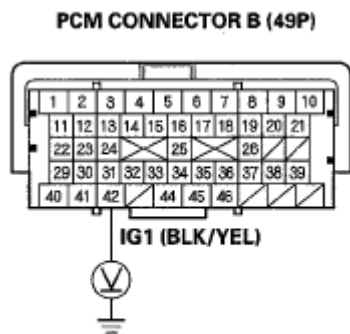


Fig. 148: Identifying Voltage Between PCM Connector Terminal B42 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 59.

NO - Repair open in the wire between the No. 19 FUEL PUMP (20 A) fuse and the PCM (B42).

59. Measure voltage between PCM connector terminal A6 and body ground.

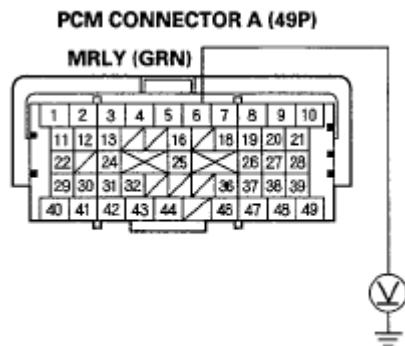


Fig. 149: Identifying Voltage Between PCM Connector Terminal A6 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 63.

NO - Go to step 60.

60. Turn the ignition switch OFF.

61. Disconnect the under-hood fuse/relay box 14P connector.

62. Check for continuity between PCM connector terminal A6 and under-hood fuse/relay box 14P connector

terminal No. 5.

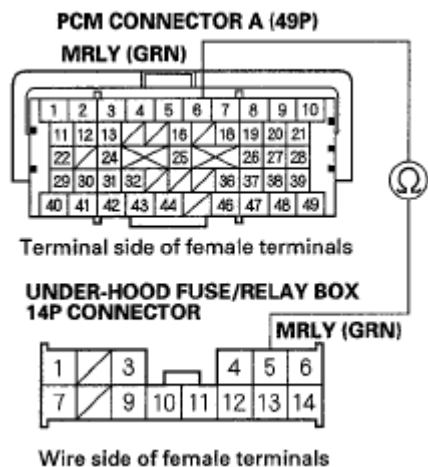


Fig. 150: Identifying Continuity Between PCM Connector Terminal A6 And Under-Hood Fuse 14P Connector Terminal 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -

- Replace the under-hood fuse/relay box.
- Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

NO - Repair open in the wire between the PCM (A6) and the under-hood fuse/relay box.

63. Turn the ignition switch OFF.
64. Disconnect the under-hood fuse/relay box 9P connector.
65. Check for continuity between PCM connector terminal B3 and under-hood fuse/relay box 9P connector terminal No. 1.

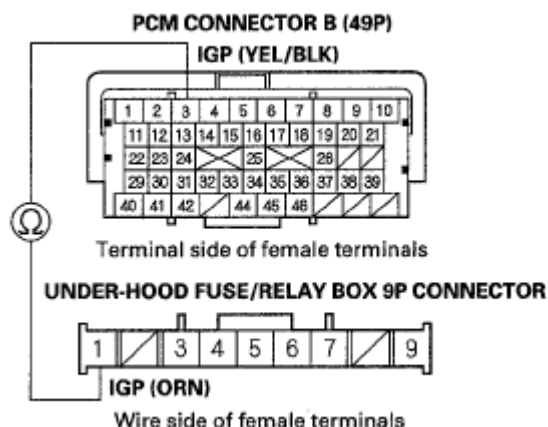


Fig. 151: Identifying Continuity Between PCM Connector Terminal B3 And Under-Hood Fuse 9P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 66.

NO - Repair open in the wire between the PCM (B3) and the under-hood fuse/relay box.

66. Test PGM-FI main relay 1 in the under-hood fuse/ relay box (see **POWER RELAY TEST**).

Is PGM-FI main relay 1 OK?

YES - Go to step 67.

NO - Replace the relay control module (under-hood fuse/relay box) (see **REMOVAL AND INSTALLATION**).

67. Disconnect PCM connector C (49P).
68. Check for continuity between body ground and PCM connector terminals B1, B40, B41, C1, and C41 individually.

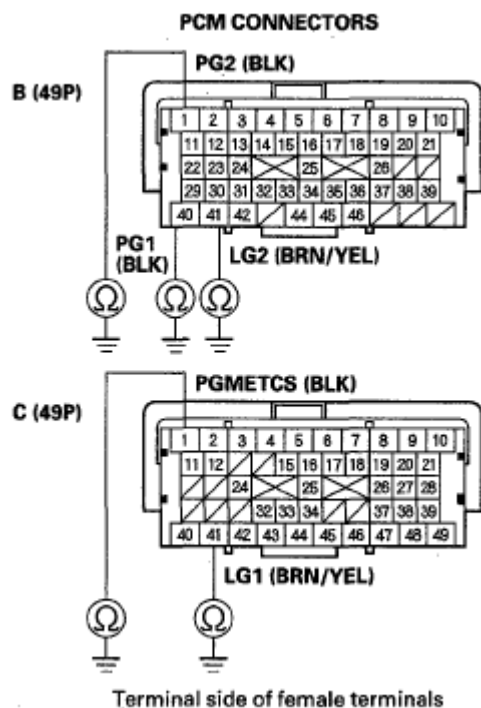


Fig. 152: Identifying Continuity Between Body Ground And PCM Connector Terminals B1 And C41

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 69.

NO - Repair open in the wire between the PCM (B1, B40, B41, C1, C41) and G101.

69. Check for continuity between PCM connector terminal B36 and body ground.

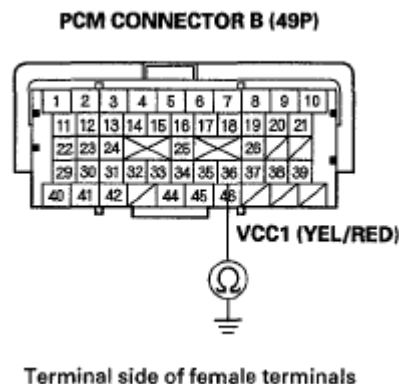


Fig. 153: Identifying Continuity Between PCM Connector Terminal B36 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 70.

NO - Go to step 71.

70. Continue to check for continuity between PCM connector terminal B36 and body ground, while disconnecting these parts, one at a time:

- MAP sensor 3P connector
- Output shaft (countershaft) speed sensor 3P connector

Does continuity go away when one of the above components is disconnected?

YES - Replace the part that caused an open when it was disconnected.

NO - Repair short in the wire between the PCM (B36) and the MAP sensor, or the output shaft (countershaft) speed sensor.

71. Check for continuity between PCM connector terminal C12 and body ground.

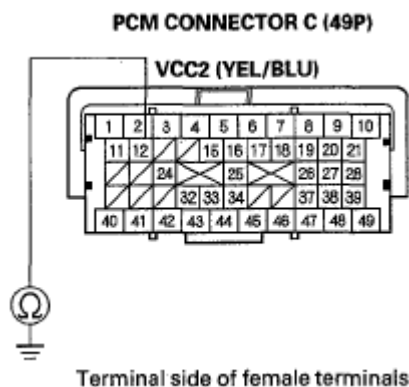


Fig. 154: Identifying Continuity Between PCM Connector Terminal C12 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 72.

NO - Go to step 73.

72. Continue to check for continuity between PCM connector terminal C12 and body ground, while disconnecting these parts, one at a time:

- EGR valve 6P connector
- Input shaft (mainshaft) speed sensor 3P connector

Does continuity go away when one of the above components is disconnected?

YES - Replace the part that caused an open when it was disconnected.

NO - Repair short in the wire between the PCM (C12) and the EGR valve or the input shaft (mainshaft) speed sensor.

73. Check for continuity between PCM connector terminal A24 and body ground.

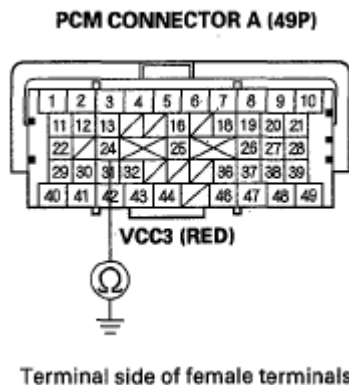


Fig. 155: Identifying Continuity Between PCM Connector Terminal A24 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 74.

NO - Go to step 75.

74. Continue to check for continuity between PCM connector terminal A24 and body ground, while disconnecting the APP sensor 6P connector.

Is there continuity?

YES - Repair short in the wire between the PCM (A24) and APP sensor A.

NO - Replace the accelerator pedal module (see **ACCELERATOR PEDAL MODULE REMOVAL/INSTALLATION**).

75. Check for continuity between PCM connector terminal A25 and body ground.

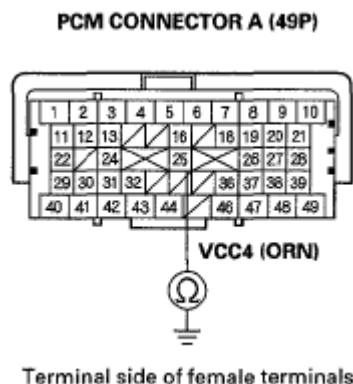


Fig. 156: Identifying Continuity Between PCM Connector Terminal A25 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 76.

NO - Go to step 77.

76. Continue to check for continuity between PCM connector terminal A25 and body ground, while disconnecting these connectors one at a time.

- APP sensor 6P connector
- FTP sensor 3P connector

Does continuity go away when one of the above components is disconnected?

YES - Replace the part that caused an open when it was disconnected.

NO - Repair short in the wire between the PCM (A25) and APP sensor B or the FTP sensor.

77. Check for continuity between PCM connector terminal B18 and body ground.

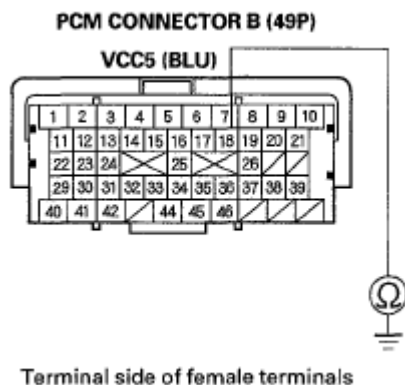


Fig. 157: Identifying Continuity Between PCM Connector Terminal B18 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 78.

NO - Go to step 79.

78. Continue to check for continuity between PCM connector terminal B18 and body ground, while disconnecting the throttle body 6P connector.

Is there continuity?

YES - Repair short in the wire between the PCM (B18) and the throttle body.

NO - Replace the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).

79. Check for continuity between PCM connector terminal C11 and body ground.

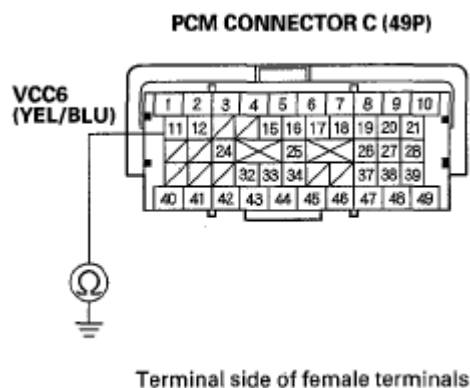


Fig. 158: Identifying Continuity Between PCM Connector Terminal C11 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 80.

NO - Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see **PCM REPLACEMENT**).

80. Continue to check for continuity between PCM connector terminal C11 and body ground, while disconnecting the IMT actuator.

Is there continuity?

YES - Repair short in the wire between the PCM (C11) and the IMT actuator.

NO - Replace the IMT actuator (see **IMT ACTUATOR REPLACEMENT**).

INJECTOR REPLACEMENT

1. Relieve the fuel pressure (see **FUEL PRESSURE RELIEVING**).
2. Remove the intake manifold (see **REMOVAL**).
3. Disconnect the connectors from the injectors (A).

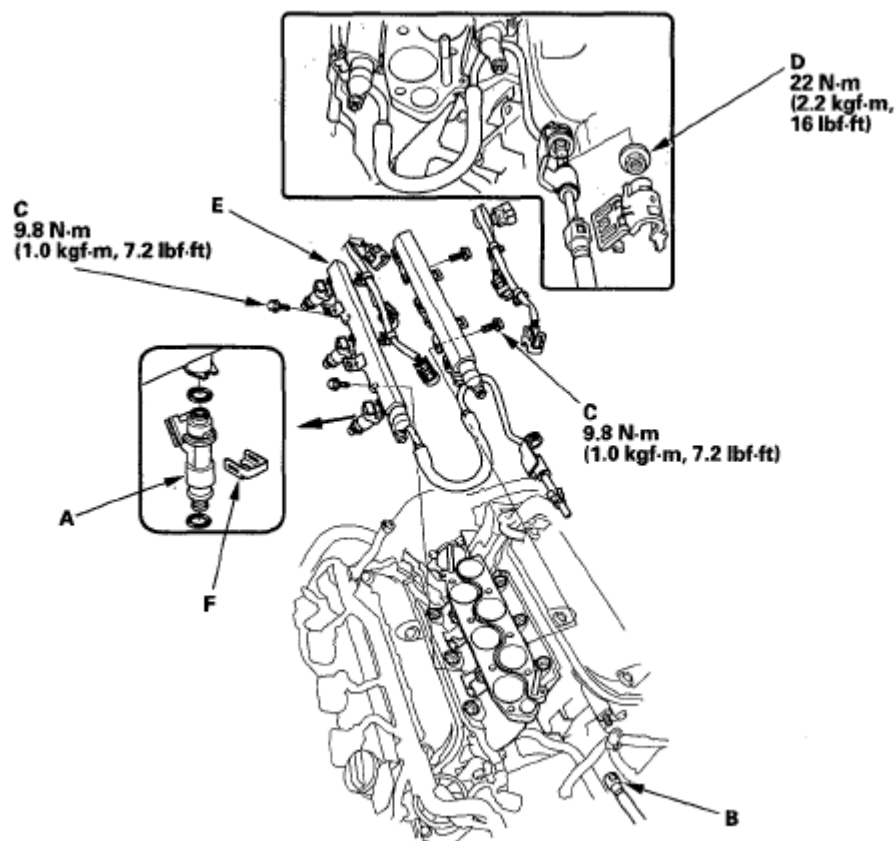


Fig. 159: Identifying Injectors And Fuel Rail Mounting Bolts And Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the quick-connect fitting (B).
5. Remove the fuel rail mounting bolts (C) and nut (D) from the fuel rails (E).
6. Remove the injector clips (F) from the fuel rail.
7. Remove the injectors from the rails.
8. Coat the new O-ring (A) with clean engine oil, and insert the injectors (B) into the fuel rails (C).

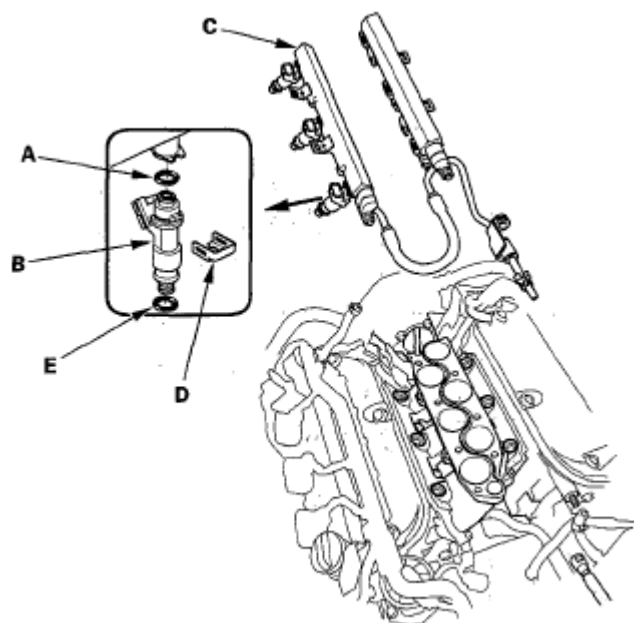


Fig. 160: Identifying Injectors To Fuel Rails And O-Ring With Clean Engine Oil
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the injector clips (D).
10. Coat the new injector O-ring (E) with clean engine oil.
11. Install the injectors in the injector base.
12. Install the fuel rail mounting bolts and nut.
13. Install the injector connectors.
14. Connect the quick-connect fitting (see **FUEL LINE/QUICK-CONNECT FITTING PRECAUTIONS**).
15. Turn the ignition switch ON (II), but do not operate the starter. After the fuel pump runs for about 2 seconds, the fuel pressure in the fuel line rises. Repeat this two or three times, then check for fuel leakage.
16. Install the intake manifold.

MAP SENSOR REPLACEMENT

1. Remove the engine cover (see step 1 **INTAKE MANIFOLD REMOVAL AND INSTALLATION**).
2. Disconnect the MAP sensor connector (A).

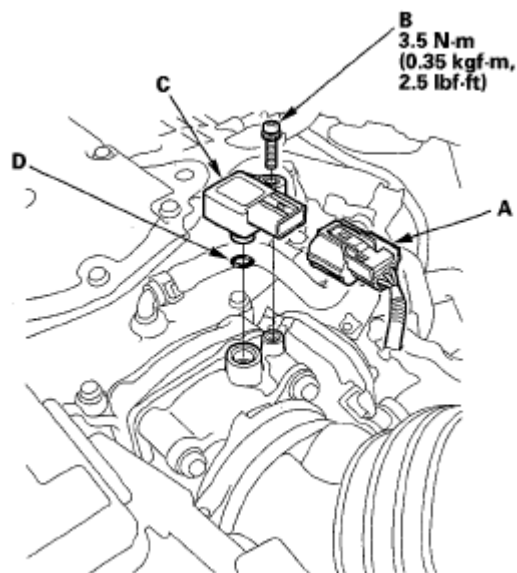


Fig. 161: Identifying MAP Sensor Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the screw (B).
4. Remove the MAP sensor (C).
5. Install the parts in the reverse order of removal with a new O-ring (D).

MAF SENSOR/IAT SENSOR REPLACEMENT

1. Disconnect the MAF sensor/IAT sensor connector (A).

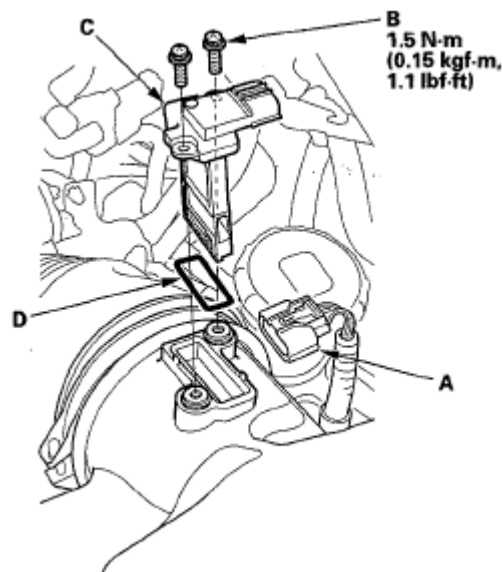


Fig. 162: Identifying MAF Sensor/IAT Sensor Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screw (B).
3. Remove the MAF sensor/IAT sensor (G).
4. Install the parts in the reverse order of removal with a new gasket (D).

ECT SENSOR 1 REPLACEMENT

1. Drain the engine coolant (see COOLANT REPLACEMENT).
2. Remove the engine cover (see step 1 REMOVAL).
3. Remove the main under-hood fuse/relay box.
4. Disconnect the ECT sensor 1 connector (A).

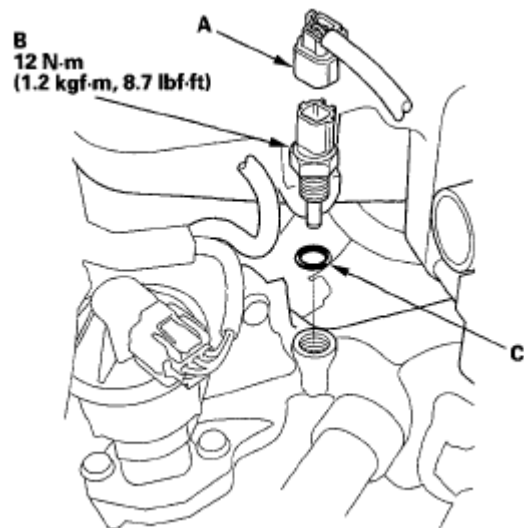


Fig. 163: Identifying ECT Sensor 1 Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove ECT sensor 1 (B).
6. Install the parts in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see COOLANT REPLACEMENT).

ECT SENSOR 2 REPLACEMENT

1. Drain the engine coolant (see COOLANT REPLACEMENT).
2. Remove the splash shield.
3. Disconnect the ECT sensor 2 connector (A).

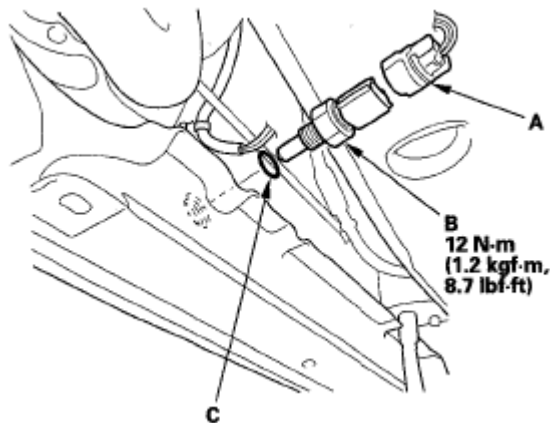


Fig. 164: Identifying ECT Sensor 2 Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove ECT sensor 2 (B).
5. Install the parts in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see **COOLANT REPLACEMENT**).

A/F SENSOR REPLACEMENT

Special Tools Required

O2 sensor socket wrench, Snap-on YA8875 or SWR2, or equivalent, commercially available

FRONT BANK (BANK 2)

1. Disconnect the front A/F sensor connector (A), then remove the A/F sensor (B).

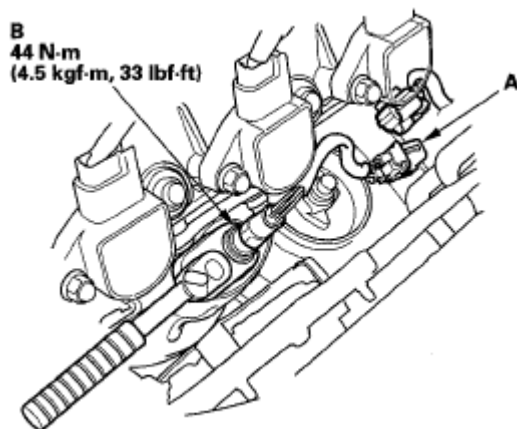


Fig. 165: Identifying Front A/F Sensor Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

REAR BANK (BANK 1)

1. Disconnect the rear A/F sensor connector (A), then remove the rear A/F sensor (B).

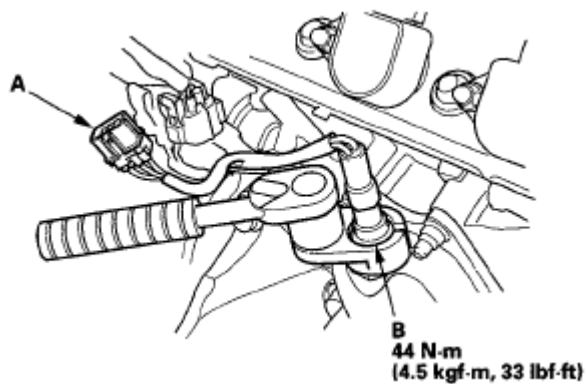


Fig. 166: Identifying Rear A/F Sensor Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

SECONDARY HO2S REPLACEMENT**Special Tools Required**

O2 sensor socket wrench. Snap-on YA8875 or SWR2, or equivalent, commercially available

FRONT BANK (BANK 2)

1. Disconnect the front secondary HO2S 4P connector (A), then remove the front secondary HO2S (B).

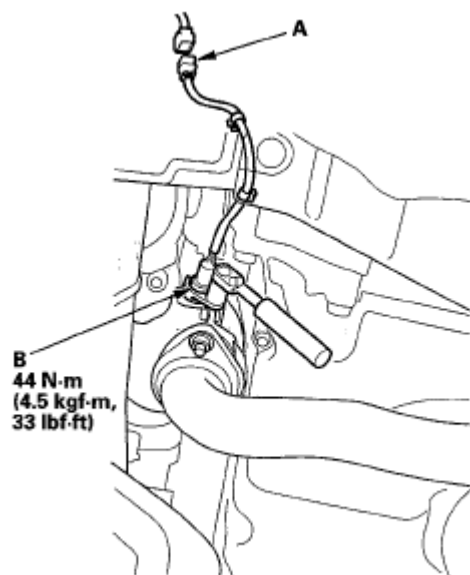


Fig. 167: Identifying Front Secondary HO2S 4P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

REAR BANK(BANK 1)

1. Disconnect the rear secondary HO2S 4P connector (A), then remove the rear secondary HO2S (B).

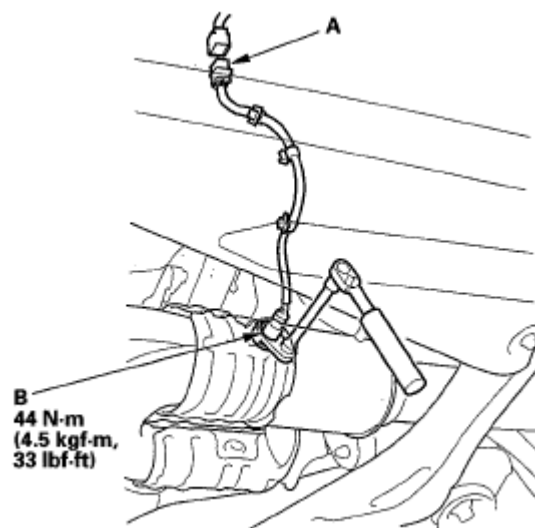


Fig. 168: Identifying Rear Secondary HO2S 4P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal.

CMP SENSOR REPLACEMENT

1. Remove the timing belt (see **TIMING BELT REMOVAL**).
2. Remove the front camshaft pulley (CMP sensor pulse plate) (A).

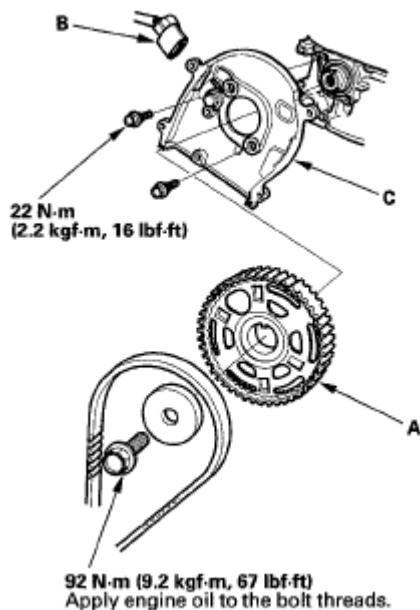


Fig. 169: Identifying Front Camshaft Pulley (CMP Sensor Pulse Plate) With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the CMP sensor connector (B), then remove the back cover (C).
4. Remove the CMP sensor (A) from the back cover.

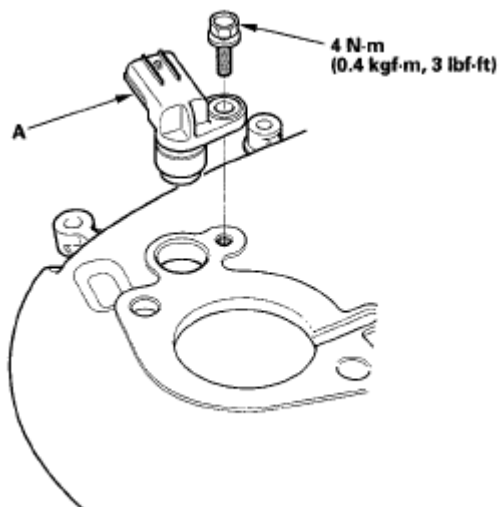


Fig. 170: Identifying CMP Sensor From Back Cover With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the parts in the reverse order of removal. Install the timing belt (see **TIMING BELT INSTALLATION**).
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

CKP SENSOR REPLACEMENT

1. Move the auto-tensioner to remove tension from the drive belt, then remove the belt (see **DRIVE BELT INSPECTION**).
2. Remove the crankshaft pulley (see **CRANKSHAFT PULLEY REMOVAL AND INSTALLATION**).
3. Remove the upper and lower front covers from the engine (see **TIMING BELT INSPECTION**).
4. Remove the CKP sensor (A) from the oil pump.

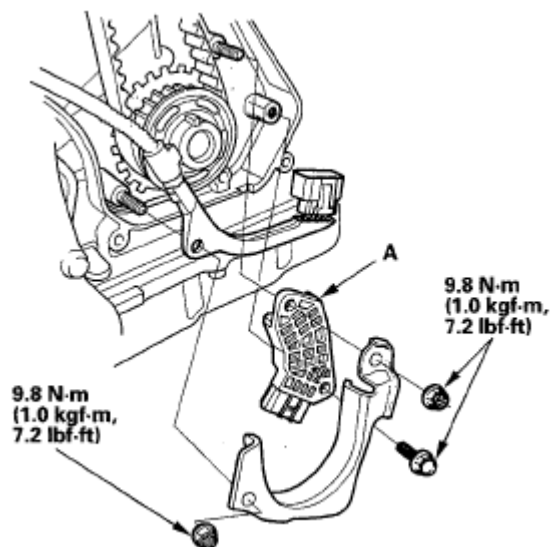


Fig. 171: Identifying CKP Sensor From Oil Pump With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the parts in the reverse order of removal.
6. Do the CKP pattern clear/CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

KNOCK SENSOR REPLACEMENT

1. Remove the intake manifold (see **REMOVAL**).
2. Remove the injector rails and the injector base (see **INJECTOR BASE REMOVAL AND INSTALLATION**).
3. Disconnect the knock sensor 1P connector (A), then remove the knock sensor (B).

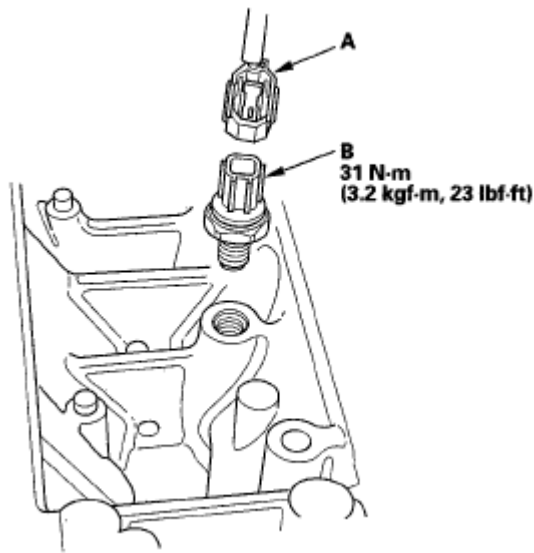


Fig. 172: Identifying Knock Sensor 1P Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the parts in the reverse order of removal.

PCM UPDATE

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE:

- Use this procedure when you need to update the PCM during troubleshooting procedures.
- Make sure the HDS is loaded with the latest software version.
- Before you update the PCM, make sure the battery in the vehicle is fully charged and connect a jumper battery (not a battery charger) to maintain system voltage.
- Never turn the ignition switch to LOCK (0) or ACC (I) during the update. If there is a problem with the update, leave the ignition switch ON (II).
- To prevent PCM damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do a PCM update whenever the PCM is substituted or replaced.

- You cannot update a PCM with a program it already has. It will only accept a new program.
 - High temperature in the engine compartment might cause the PCM to become too hot to run the update. If the engine has been running before this procedure, open the hood and cool the engine compartment.
 - If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) position when you disconnect the HIM from the data link connector (DLC). This prevents damage to the PCM.
1. Turn the ignition switch to ON (II), but do not start the engine.
 2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

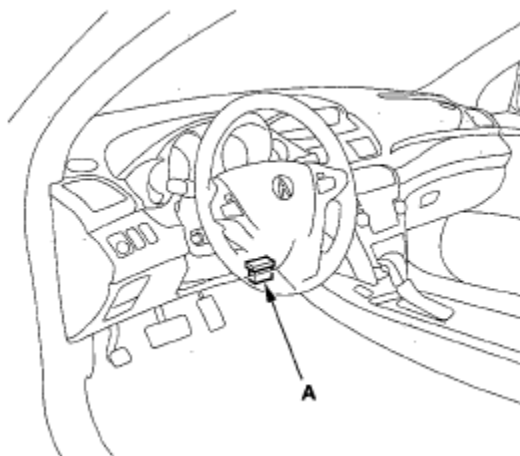


Fig. 173: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting(see DLC CIRCUIT TROUBLESHOOTING). If you are returning from the DLC circuit troubleshooting, skip steps 4 and 5 and clean the throttle body after updating the PCM.
4. USA, Canada models: Select the INSPECTION MENU with the HDS.
5. USA, Canada models: Select the ETCS TEST, then select the TP POSITION CHECK, and follow the HDS screen prompts.

NOTE: USA, Canada models: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS (USA, Canada models), then select the update mode, and follow the screen prompts to update the PCM.

7. If the software in the PCM is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the PCM is not the latest, follow the instructions on the screen. If prompted to choose the PGM-FI system or the A/T system, make sure you update both.

NOTE: If the PCM update system requires you to cool the PCM, follow the instructions on screen. If you run into a problem during the update procedure (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.), follow these steps to minimize the chance of damaging the PCM:

- Leave the ignition switch in ON (II) position.
 - Connect a jumper battery (do not connect a battery charger).
 - Shut down the HDS.
 - Disconnect the HDS from the DLC.
 - Reboot the HDS.
 - Reconnect the HDS to the DLC, and try the update procedure again.
8. USA, Canada models: If the TP POSITION CHECK failed in step 6, clean the throttle body(see THROTTLE BODY CLEANING .
 9. Do the PCM idle learn procedure.(see PCM IDLE LEARN PROCEDURE
 10. Do the CKP learn procedure.

PCM REPLACEMENT

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA600 and an iN workstation with HDS and CM update software

NOTE:

- Make sure the HDS is loaded with the latest software version.
- If you are replacing the PCM after substituting a known-good PCM, reinstall the original PCM, then do this procedure.
- USA, Canada models: During the procedure, if any READ DATA, WRITE DATA, or other data Checks fail, note the failure, then continue.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

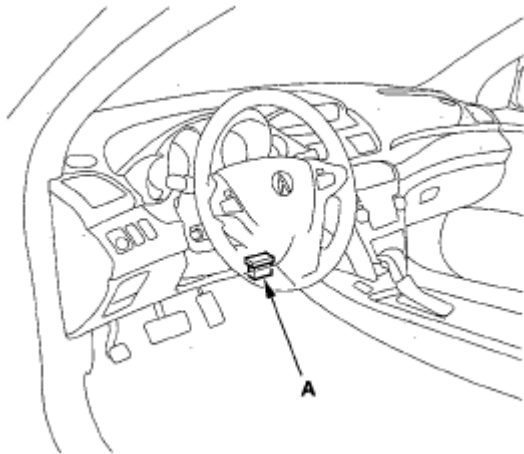


Fig. 174: Connecting HDS To DLC

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the PCM and other vehicle systems. If it doesn't, go to the **DLC circuit troubleshooting** (see). If you are returning from DLC circuit troubleshooting, skip steps 4 through 9, 18 through 23, and 26 through 28, and do this after replacing the PCM;
 - USA, Canada models: Replace the engine oil (see **ENGINE OIL REPLACEMENT**) and the engine oil filter (see **ENGINE OIL FILTER REPLACEMENT**).
 - USA, Canada models: Replace the ATF (see **ATF REPLACEMENT**).
 - USA, Canada models: Clean the throttle body (see **THROTTLE BODY CLEANING**).
4. USA, Canada models: Select the PGM-FI system with the HDS.
5. USA, Canada models: Select the INSPECTION MENU with the HDS.
6. USA, Canada models: Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

NOTE: **USA, Canada models: If the TP POSITION CHECK indicates FAILED, continue with this procedure.**

7. USA, Canada models: Select the REPLACE PCM MENU, then select READ DATA and follow the screen prompts.

NOTE:

- **USA, Canada models: Doing this step copies (READS) the engine oil life data from the original PCM so you can later download (WRITES) it into the new PCM.**
- **USA, Canada models: If READ DATA indicates FAILED, continue with this procedure.**

8. USA, Canada models: Select the A/T system with the HDS.
9. USA, Canada models: Select the REPLACE TCM/ PCM MENU, then select READ DATA and follow

the screen prompts.

NOTE:

- **USA, Canada models:** Doing this step copies (READS) the ATF life data from the original PCM so you can later download (WRITES) it into the new PCM.
- **USA, Canada models:** If READ DATA indicates FAILED, continue with this procedure.

10. Turn the ignition switch OFF.
11. Jump the SCS line with the HDS.
12. Remove the bracket (D), then free the A/C discharge line (E) from the clip (F) and remove the A/C suction line mounting bracket bolt (G).

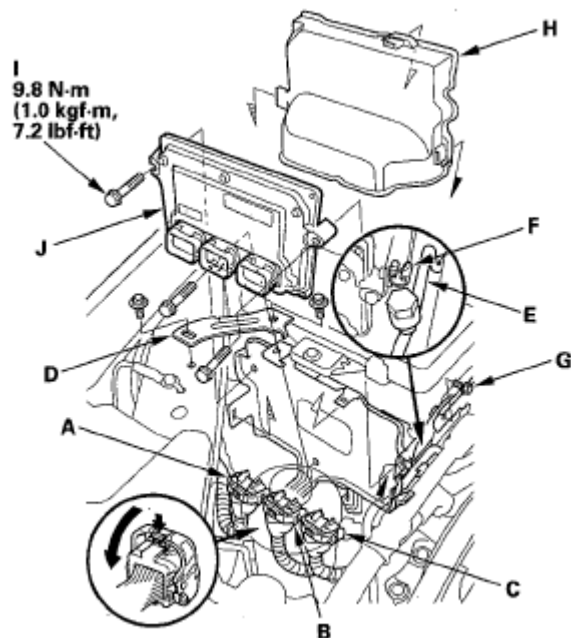


Fig. 175: Identifying Bracket And A/C Suction Line Mounting Bracket Bolt With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the cover (H), then disconnect the PCM connectors A, B, and C.

NOTE:

PCM connectors A, B, and C have symbols (A=[], B=delta, C=o) embossed on them for identification.

14. Remove the bolts (I), then remove the PCM (J).
15. Install the parts in the reverse order of removal.
16. Turn the ignition switch ON (II).
17. **USA, Canada models:** Manually input the VIN to the PCM with the HDS.

NOTE: **USA, Canada models: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the PCM; ignore it, and continue this procedure.**

18. USA, Canada models: If the READ DATA (engine oil life) failed in step 7, go to step 21. Otherwise, go to step 19.
19. USA, Canada models: Select the PGM-FI system with the HDS.
20. USA, Canada models: Select the REPLACE PCM MENU, then select WRITE DATA and follow the screen prompts.

NOTE: **USA, Canada models: If the WRITE DATA indicates FAILED, continue with this procedure.**

21. USA, Canada models: If the READ DATA (ATF life) failed in step 9, go to step 24. Otherwise go to step 22.
22. USA, Canada models: Select the A/T SYSTEM with the HDS.
23. USA, Canada models: Select the REPLACE TCM/ PCM MENU, then select WRITE DATA and follow the screen prompts.

NOTE: **USA, Canada models: If the WRITE DATA indicates FAILED, continue with this procedure.**

24. Select IMMOBI system with the HDS.
25. Enter the immobilizer code with the PCM replacement procedure in the HDS; it allows you to start the engine.
26. USA, Canada models: If the TP POSITION CHECK failed in step 6 clean the throttle body (see **THROTTLE BODY CLEANING**), then go to step 27.
27. USA, Canada models: If the READ DATA failed in step 7 or the WRITE DATA failed in step 20, replace the engine oil (see **ENGINE OIL REPLACEMENT**) and engine oil filter (see **ENGINE OIL FILTER REPLACEMENT**), then go to step 28.
28. USA, Canada models: If the READ DATA failed in step 9 or the WRITE DATA failed in step 21, replace the ATF (see **ATF REPLACEMENT**), then go to step 29.
29. Select PGM-FI system and reset the PCM with the HDS.
30. Update the PCM if it does not have the latest software (see **PCM UPDATE**).
31. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
32. Do the CKP pattern learn procedure (see **CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN**).

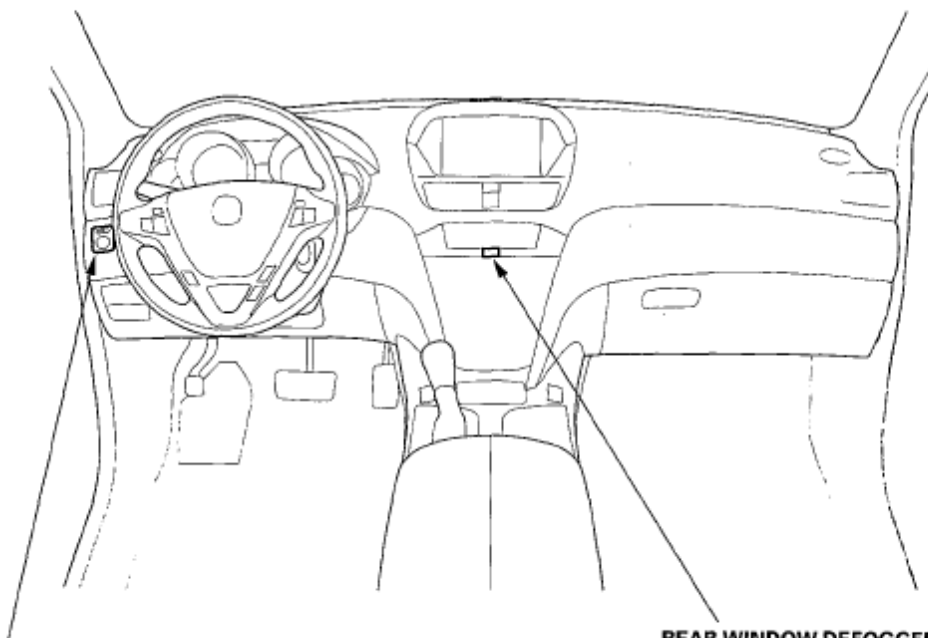
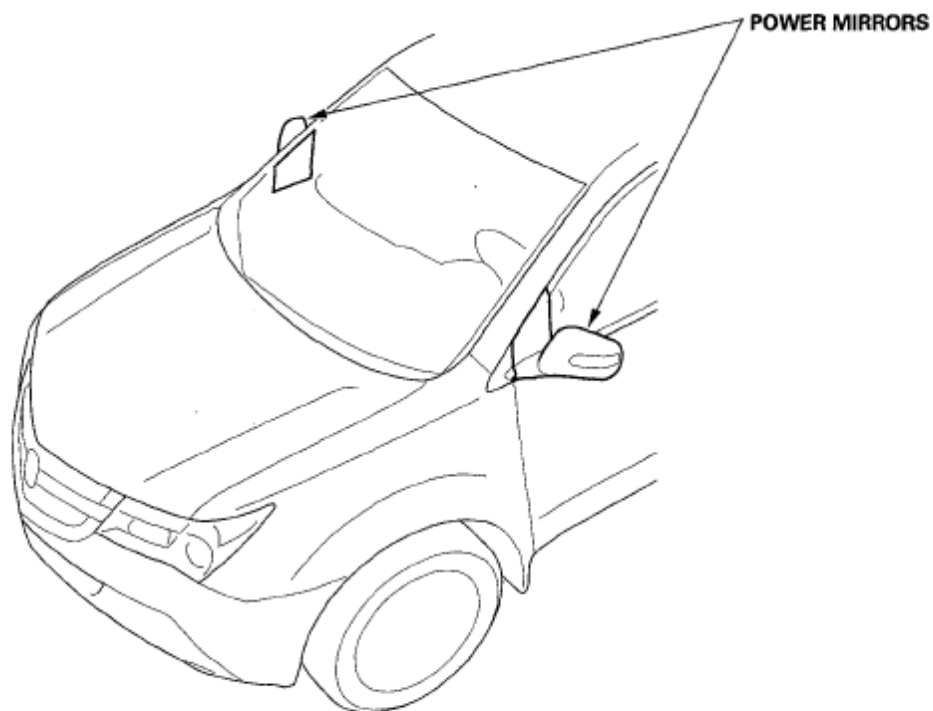
2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Mirrors-MDX

2007-09 ACCESSORIES AND EQUIPMENT

Power Mirrors-MDX

COMPONENT LOCATION INDEX



POWER MIRROR SWITCH

REAR WINDOW DEFOGGER/
POWER MIRROR DEFOGGER SWITCH
(Built into the climate control unit)

***** :CAN line
***** :UART line

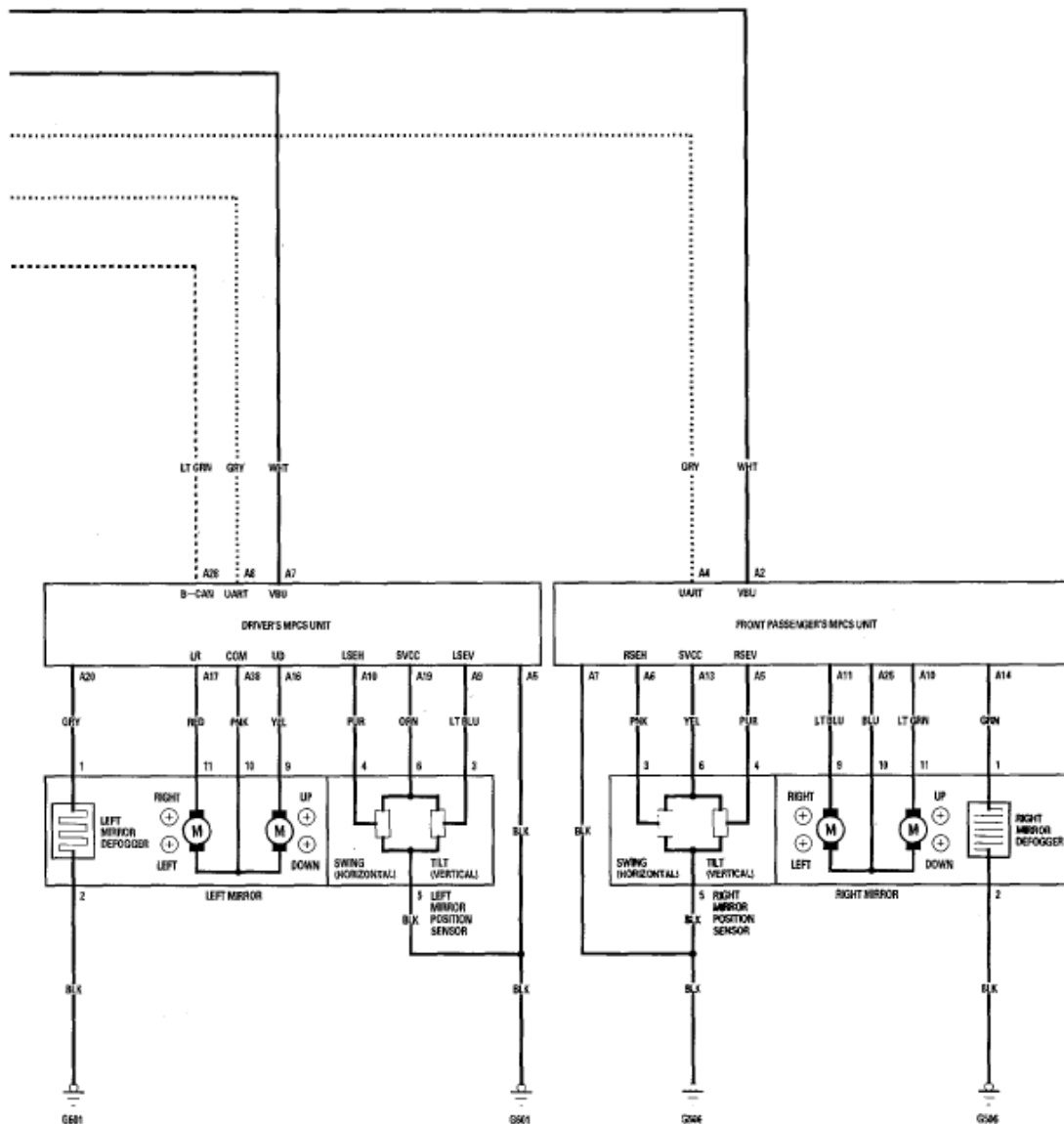


Fig. 3: Power Mirrors - Circuit Diagram (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER MIRROR SWITCH TEST/ REPLACEMENT

1. Carefully pry the switch panel out from the dashboard.
2. Disconnect the 10P connector (A) from the power mirror switch (B).

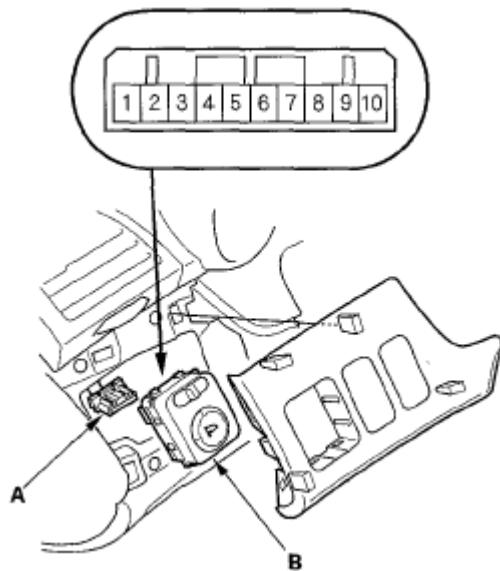


Fig. 4: Identifying 10P Connector And Power Mirror Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	1	2	3	4	7	8	9	10
UP					○	—	—	○
DOWN				○	—	—	—	○
LEFT						○	—	○
RIGHT			○	—	—	—	—	○
L		○	—	—	—	—	—	○
R	○	—	—	—	—	—	—	○

Fig. 5: Continuity Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the power mirror switch.

POWER MIRROR ACTUATOR TEST

NOTE: The power mirror actuator can be tested by using the HDS and following these steps:

- Select BODY ELECTRICAL from the SYSTEM SELECT menu.
- Select FUNCTION TEST, and then the appropriate power mirror function test.

1. Remove the door panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION).

2. Disconnect the 16P connector (A) from the power mirror actuator (B).

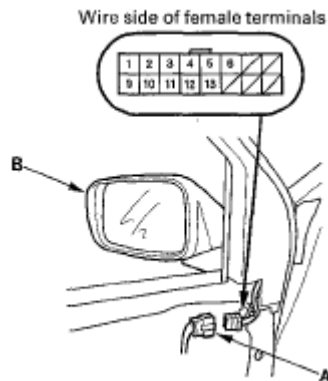


Fig. 6: Identifying 16P Connector And Power Mirror Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check actuator operation by connecting power and ground according to the table.

LEFT

Terminal	9	10	11
Position			
TILT UP	⊖	⊕	
TILT DOWN	⊕	⊖	
SWING LEFT		⊕	⊖
SWING RIGHT		⊖	⊕

Fig. 7: Actuator Operation Chart - Left
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT

Terminal	9	10	11
Position			
TILT UP		⊖	⊕
TILT DOWN		⊕	⊖
SWING LEFT	⊖	⊕	
SWING RIGHT	⊕	⊖	

Fig. 8: Actuator Operation Chart - Right
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the mirror fails to work properly, replace the mirror actuator.

DEFOGGER TEST

5. Measure the resistance between the No. 1 and No. 2 terminals of the 16P connector. There should be about 8 ohms or less. If there is no continuity, check for an open circuit.

POWER MIRROR ACTUATOR REPLACEMENT

ACTUATOR REPLACEMENT

1. Remove the mirror holder (see **POWER MIRROR REPLACEMENT**).
2. Remove the three TORX screws using a tamperproof T10 TORX bit.
3. Remove the connectors (A) and the actuator (B).

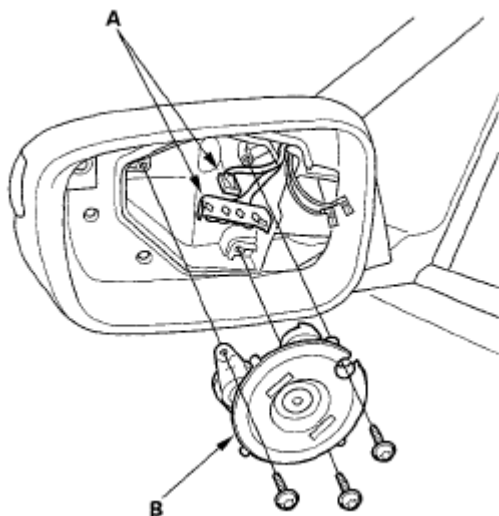


Fig. 9: Identifying Connectors And Actuator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the actuator in the reverse order of removal.

ACTUATOR HARNESS REPLACEMENT

1. Remove the mirror holder (see **POWER MIRROR REPLACEMENT**).
2. Remove the power mirror (see **POWER MIRROR REPLACEMENT**).
3. Remove the three TORX screws from the actuator (A) using a tamperproof T10 TORX bit.

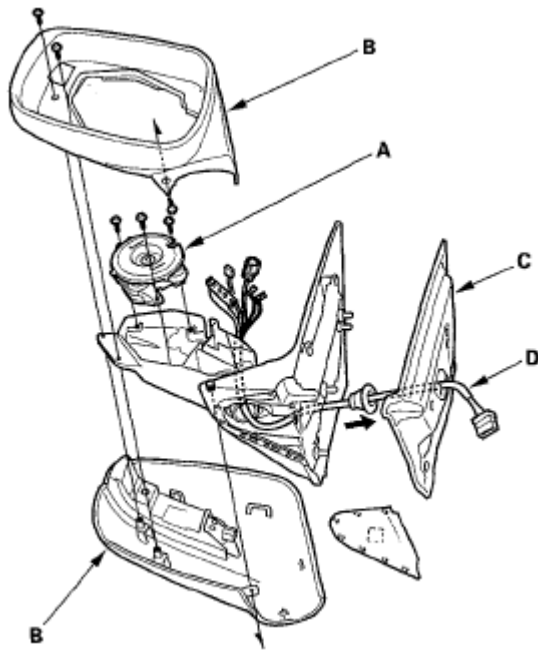


Fig. 10: Identifying Actuator, Housing, Gasket And Harness
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the three TORX screws from the housing (B) using a tamperproof T10 TORX bit.
5. Disconnect the connectors from the actuator and the side turn signal light.
6. Remove the gasket (C) and the harness (D) from the power mirror.
7. Route the wire harness of the new actuator through the hole in the bracket and the gasket in the reverse order of removal.
8. Connect the connectors to the actuator and the side turn signal light securely.
9. Install the actuator, housing and the gasket in the reverse order of removal.
10. Install the power mirror on the door, and make sure the actuator, mirror defogger, and side turn signal light operation.

2007-09 ACCESSORIES AND EQUIPMENT

Power Seats - MDX

COMPONENT LOCATION INDEX

For the driver's power seat, refer to the Driving Position Memory System (DPMS)

Component Location Index, see **DRIVER POSITION MEMORY SYSTEM (DPMS)**

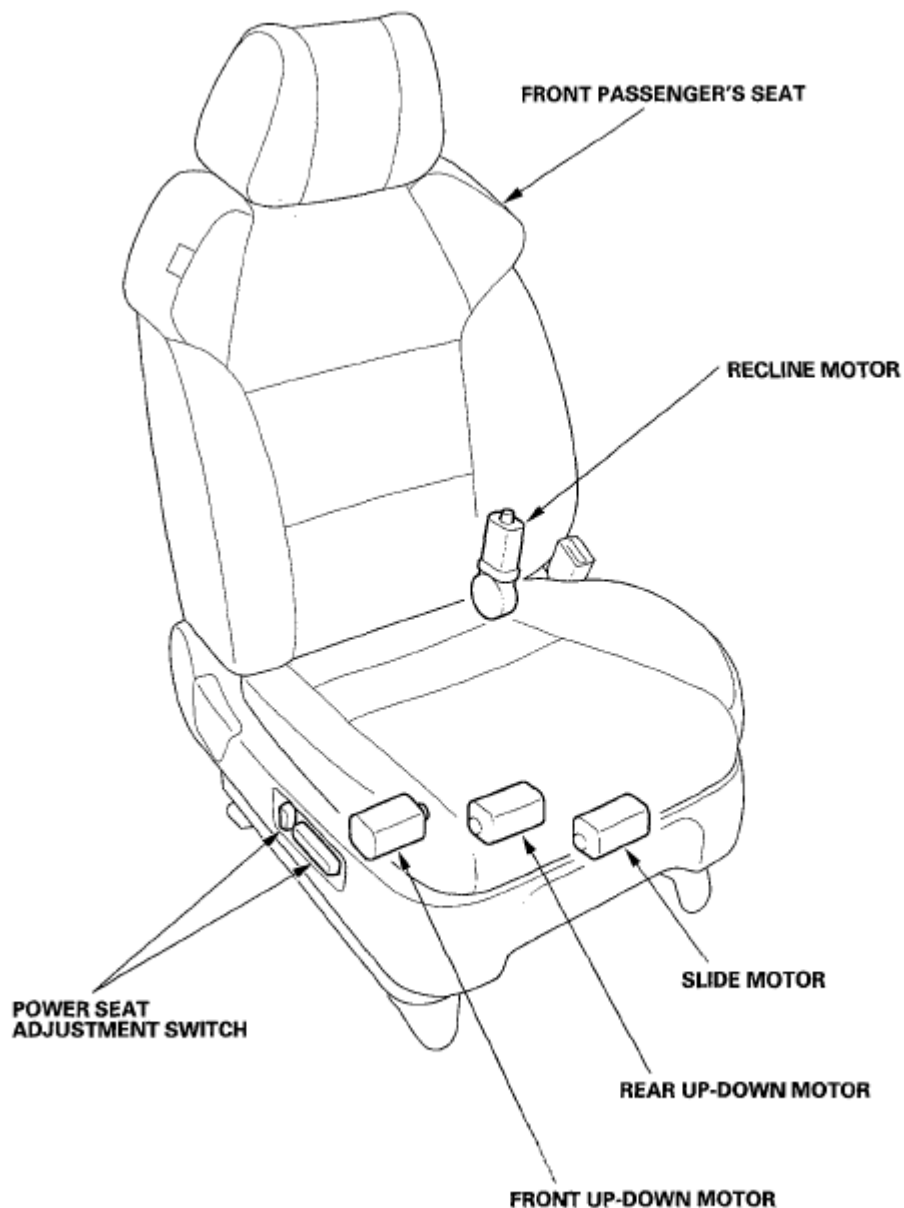
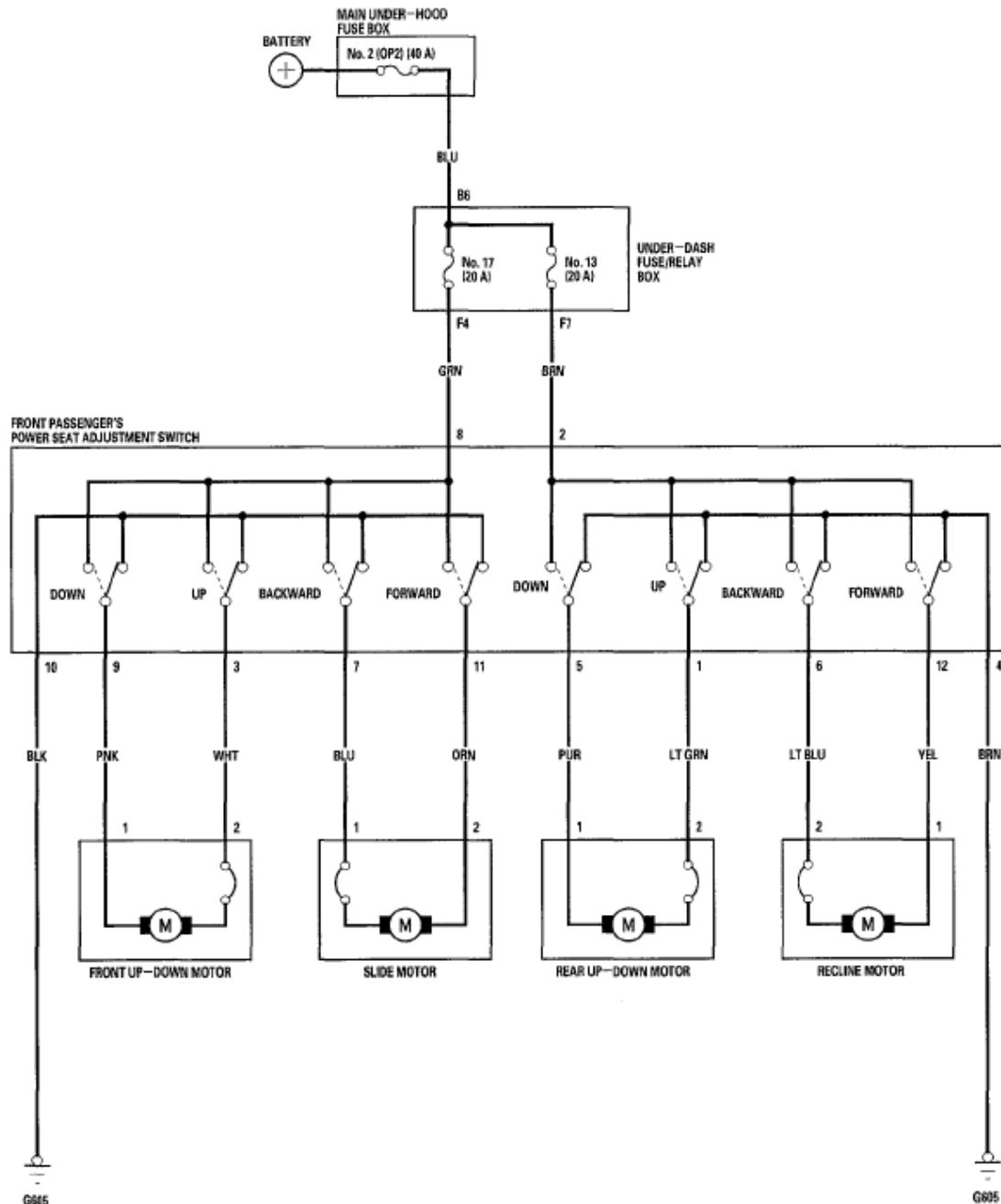


Fig. 1: Identifying Power Seats Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - FRONT PASSENGER'S POWER SEAT**Fig. 2: Circuit Diagram - Front Passenger's Power Seat**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT

FRONT PASSENGER'S SEAT

1. Remove the power seat adjustment switch knobs and recline cover from the front passenger's power seat, then remove the power seat switch (see **FRONT SEAT DISASSEMBLY/REASSEMBLY**).
2. Disconnect the 12P connector from the power seat adjustment switch (A).

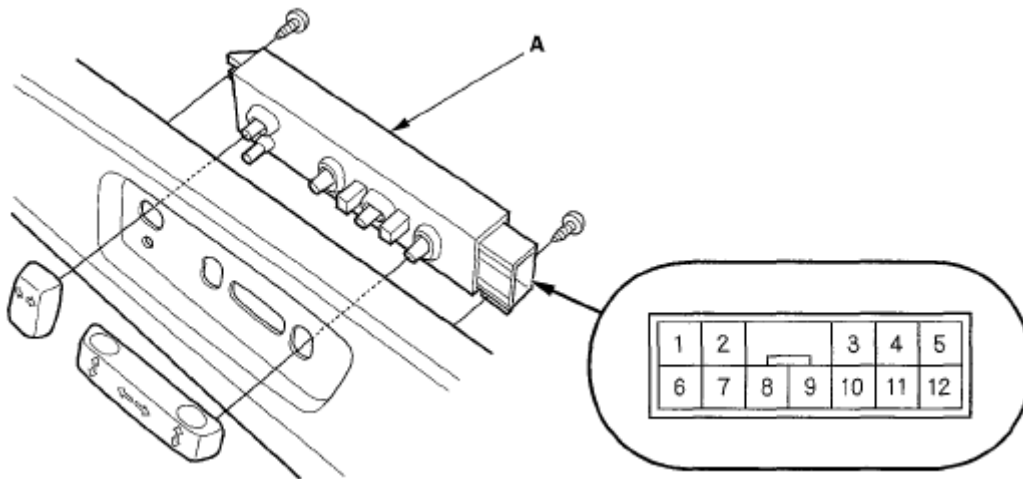


Fig. 3: Identifying Power Seat Adjustment Switch
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the adjustment switch knobs to the switch.
4. Check for continuity between the terminals in each switch position according to the table.

Terminal		1	2	3	4	5	6	7	8	9	10	11	12
Position													
SLIDE SWITCH	Forward							○	○		○	○	
	Backward							○	○		○	○	
RECLINE SWITCH	Forward		○		○		○						○
	Backward		○		○		○						○
FRONT UP-DOWN SWITCH	UP			○					○		○	○	
	DOWN			○					○	○	○		
REAR UP-DOWN SWITCH	UP	○	○		○	○							
	DOWN	○	○		○	○							

Fig. 4: Continuity Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the switch.

FRONT PASSENGER'S POWER SEAT MOTOR TEST

1. Remove the front passenger's power seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the power seat adjustment switch (B) (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**) and disconnect the 12P connector (A) from the switch.

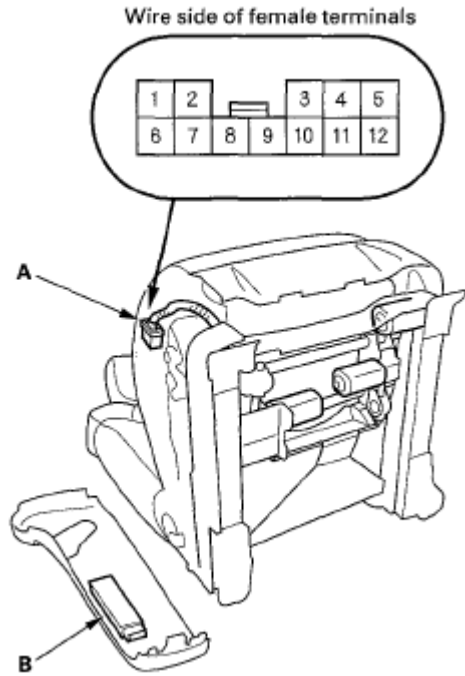


Fig. 5: Identifying Power Seat Adjustment Switch And 12P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. At the power seat adjustment switch 12P connector, test the motor by applying battery power and ground to the terminals according to the table.

Slide motor:

Terminal Position	7	11
Forward	⊖	⊕
Backward	⊕	⊖

Fig. 6: Slide Motor Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Recline motor:

Terminal Position	6	12
Forward	⊖	⊕
Backward	⊕	⊖

Fig. 7: Recline Motor Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Front up-down motor:

Terminal Position	3	9
UP	⊕	⊖
DOWN	⊖	⊕

Fig. 8: Front Up-Down Motor Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear up-down motor:

Terminal Position	1	5
UP	⊕	⊖
DOWN	⊖	⊕

Fig. 9: Rear Up-Down Motor Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the motor does not run or fails to run smoothly, check for an open in the front passenger's seat wire harness between the power seat adjustment switch and each motor. If the wire harness is OK, replace the appropriate motor (see **POWER SEAT ADJUSTMENT SWITCH TEST/REPLACEMENT**).

NOTE: The slide and up-down motors are not available separately because of the part of seat linkage, refer to the seat linkage disassembly/ reassembly (see **FRONT SEAT LINKAGE DISASSEMBLY/REASSEMBLY**).

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

2007-09 STEERING

Manual And Power Steering - MDX

POWER STEERING

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07LAG-SM40100	Piston Seal Ring Guide	1
②	07LAG-SM40200	Piston Seal Ring Sizing Tool	1
③	07MAA-SL00200	Locknut Wrench, 43 mm	1
④	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑤	07RAK-S040122	P/S Joint Adapter (Hose)	1
⑥	07VAK-P8A011A	P/S Joint Adapter (Pump)	1
⑦	07VAK-P8A012B	P/S Joint Adapter Plate (Pump)	1
⑧	07ZAB-S5A0100	Pulley Holder	1
⑨	070GD-0010100	Driver Handle, 480 mm	1
⑩	07406-0010001 or 07406-001000A or 07406-001A101	P/S Pressure Gauge	1
⑪	07746-0010300	Attachment, 42 x 47 mm	1
⑫	07749-0010000	Driver	1
⑬	07946-MJ00201	Driver Head	1
⑭	07946-1870100	Attachment, 28 x 30 mm	1
⑮	07965-SA50500	Front Hub Dis/assembly Tool	1

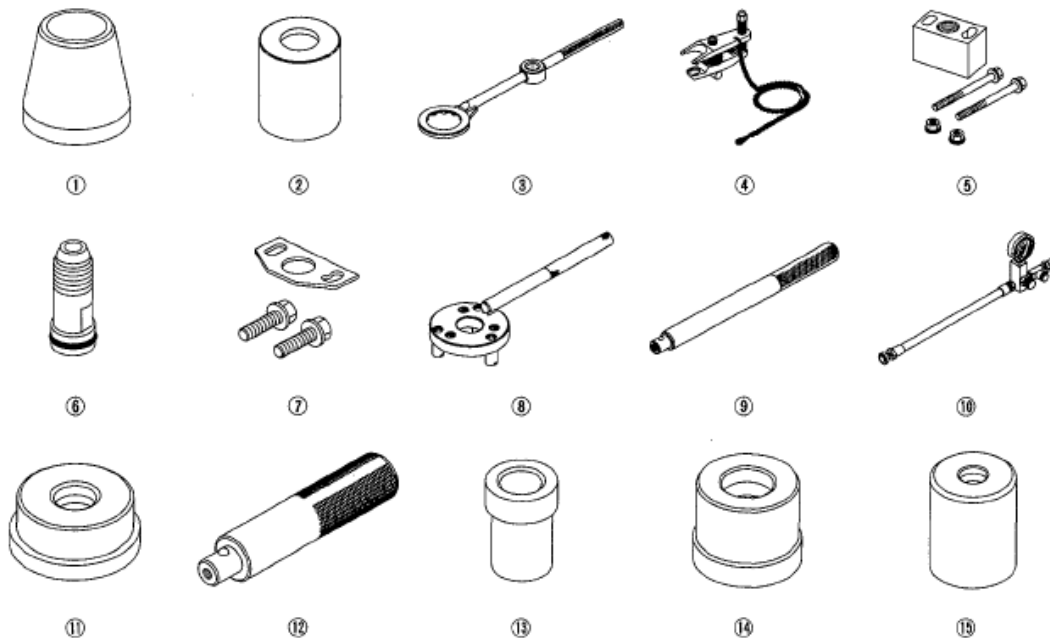


Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

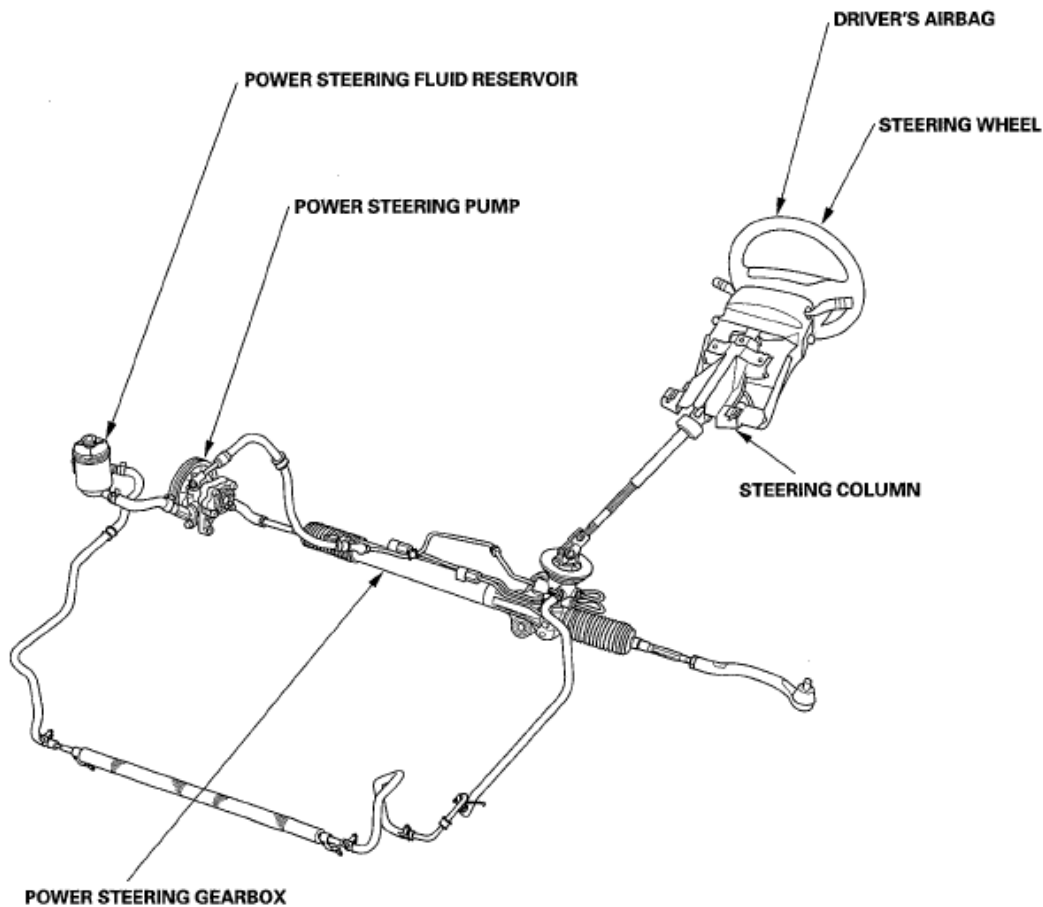


Fig. 2: Identifying Steering Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

Find the symptom in the chart below, and do the related procedures in the order listed until you find the cause.

TROUBLESHOOTING CHART

Symptom	Procedure(s)	Also check for
Hard steering	Troubleshoot the system (see <u>SYMPTOM TROUBLESHOOTING</u>).	• Modified suspension • Damaged suspension • Tire sizes, tire varieties, and air pressure
		Front wheel

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Assist (excessively light steering at high speed)	Check the rack guide adjustment (see <u>RACK GUIDE ADJUSTMENT</u>).	alignment (see <u>WHEEL ALIGNMENT</u>)
Shock or vibration when the steering wheel is turned to full lock	1. Check the rack guide adjustment (see <u>RACK GUIDE ADJUSTMENT</u>). 2. Check the drive belt for slippage (see <u>DRIVE BELT INSPECTION</u>). 3. Check the power steering pump fluid pressure with T/N 07406-0010001 (see <u>PUMP PRESSURE TEST WITH T/N 07406-0010001</u>), T/N 07406-001000A or T/N 07406-001A101 (see <u>PUMP PRESSURE TEST WITH T/N 07406-001000A OR T/N 07406-001A101</u>). 4. Overhaul the steering gearbox (see <u>STEERING GEARBOX OVERHAUL</u>).	
Steering wheel will not return smoothly	1. Check cylinder lines for deformation. 2. Check the ball joints for binding. 3. Check wheel alignment (see <u>WHEEL ALIGNMENT</u>). 4. Overhaul the steering gearbox (see step 2).	
Uneven or rough steering	1. Check the rack guide adjustment (see <u>RACK GUIDE ADJUSTMENT</u>). 2. Check the drive belt (see <u>DRIVE BELT INSPECTION</u>). 3. Check for low or erratic engine idle speed (see <u>IDLE SPEED INSPECTION</u>). 4. Check for air in the power steering system due to air entering inlet side of pump. 5. Check for low fluid level in the power steering reservoir due to possible leaks in system (see <u>POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT</u>). 6. Overhaul the steering gearbox (see step 2).	
Steering wheel kicks back during wide turns	1. Check the drive belt (see <u>DRIVE BELT INSPECTION</u>). 2. Check the power steering pump fluid pressure with T/N 07406-0010001 (see <u>PUMP PRESSURE TEST WITH T/N 07406-0010001</u>), T/N 07406-001000A or T/N 07406-001A101 (see <u>PUMP PRESSURE TEST WITH T/N 07406-001000A OR T/N 07406-001A101</u>).	
	1. Check when the noise occurs:	

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

Humming noise from the power steering system	• If the noise is heard during the first 2-3 minutes after starting the engine in cold weather, this is normal. • If the noise is heard when the wheel is turned with the vehicle stopped, this is normal due to the fluid pulsation. 2. Check for the high-pressure hose touching the subframe or body. 3. Check for automatic transmission torque converter noise. 4. Check for air bubbles in the power steering fluid, leak on inlet side of pump. 5. Check for particle contamination of fluid and restricted filter in the reservoir.	Pump pressure
Power steering rack rattle or chattering	1. Check for loose steering components (tie-rod and ball joints). Tighten or replace as necessary. 2. Check the steering column shaft for wobbling. If the steering column wobbles, replace the steering column assembly (see <u>STEERING COLUMN REMOVAL AND INSTALLATION</u>). 3. Check the rack guide adjustment (see <u>RACK GUIDE ADJUSTMENT</u>). 4. Check the power steering pump pulley: • If the pulley is loose, tighten it (see step 33). • If the pump shaft is loose, replace the pump (see <u>PUMP REPLACEMENT</u>).	
Hissing from the power steering system/foaming fluid	• Check the fluid level. If low, fill the reservoir to the proper level and check for leaks (see <u>FLUID REPLACEMENT</u>). • Check the reservoir for leaks. • Check for crushed inlet hose or loose hose clamp allowing air into the suction side of the system (see <u>FLUID LEAKAGE INSPECTION</u>). • Check the power steering pump shaft oil seal for leaks.	Air in the P/S fluid
Noise from the power steering pump	• Compare the pump noise at normal operating temperature to another like vehicle (pump noise during the first 2-3 minutes after starting the engine in cold weather is normal). • Remove and inspect the pump for wear and damage (see <u>PUMP REPLACEMENT</u>).	• P/S pump pressure • Air in the P/S fluid
Squeaking from the power steering pump	Check the drive belt (see <u>DRIVE BELT INSPECTION</u>).	

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

Fluid leaks from the steering gearbox	- Fluid leaks from the top of the valve body unit. Replace the valve body unit (see <u>STEERING GEARBOX OVERHAUL</u>). - Fluid leaks from the driver's side boot. Replace the valve oil seal on the pinion shaft. Replace the cylinder end seal on the gearbox side. - Fluid leaks from the passenger's side boot. Replace the cylinder end seal on the cylinder side. - Fluid leaks from pinion shaft near the lower steering joint bolt. Replace the valve body unit (see <u>STEERING GEARBOX OVERHAUL</u>). - Fluid leaks from the steering damping valve covers on the valve body unit. Replace the valve housing.	
Fluid leaks from the power steering line	- Fluid leaks from the cylinder line connections (flare nuts). Tighten the connection and retest (see <u>POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT</u>). - Fluid leaks from a damaged cylinder line(s). Replace the cylinder line (see <u>POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT</u>). - Fluid leaks from the pump outlet hose or return line fitting on the valve body unit (flare nuts). Tighten the fitting and retest. If it still leaks, replace the hose, the line, or valve body unit as necessary.	
Fluid leaks from the power steering pump	- Fluid leaks from the front oil seal. Replace the front oil seal. - Fluid leaks from the power steering pump housing. Replace the leaking O-rings or seals (see <u>FLUID LEAKAGE INSPECTION</u>), and if necessary replace the power steering pump (see <u>PUMP REPLACEMENT</u>).	
Fluid leaks from the power steering reservoir	- Fluid leaks from around the reservoir cap because fluid level is too high. Drain the reservoir to the proper level. If the fluid is aerated check for an air leak on the inlet side of pump. - Fluid leaks from reservoir. Check the reservoir for cracks and replace as necessary.	
Fluid leaks from the power steering pump outlet hose (high-pressure)	- Check the fitting for loose bolts. If the bolts are tight, replace the fitting O-ring. - Fluid leaks at the swagged joint. Replace the pump outlet hose.	
Fluid leaks from the		

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

power steering pump inlet hose (low-pressure)	Check the hose for damage, deterioration, or improper assembly. Replace or repair as necessary.	
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SYMPTOM TROUBLESHOOTING

Hard Steering

1. Check the power assist (see **STEERING WHEEL ROTATIONAL PLAY CHECK**).

Is the initial turning load more than 29 N (3.0 kgf, 6.6 lbf) ?

YES - Go to step 2.

NO - Power assist is OK.

2. Connect the P/S joint adapter (pump), P/S joint adapter (hose), and P/S pressure gauge T/N 07406-0010001 (see **PUMP PRESSURE TEST WITH T/N 07406-0010001**), T/N 07406-001000A or T/N 07406-001A101 (see **PUMP PRESSURE TEST WITH T/N 07406-001000A OR T/N 07406-001A101**) to the pump.
3. Measure steady-state fluid pressure from the pump at idle.

Is the pressure 1,470 kPa (15 kgf/cm² , 213 psi) or less?

YES - Go to step 4.

NO - Go to step 8.

4. Measure the pump relief pressure at idle.

Is the pressure 8,920- 9,420 kPa (91-96 kgf/cm² , 1,290 - 1,370 psi) or more?

YES - Go to step 5.

NO - Go to step 9.

5. With a spring scale, measure the power assist in both directions, to the left and to the right.

Are the two measurements within 5.0 N (0.51 kgf, 1.12 lbf) of each other?

YES - Go to step 6.

NO - Go to step 11.

6. Measure the fluid pressure with both pressure gauge valves open (if so equipped), while turning the steering wheel fully to the left and fully to the right.

Is the pressure 8,920- 9,420 kPa (91-96 kgf/² , 1,290 - 1,370 psi) or more?

YES - Go to step 7.

NO - Faulty steering gearbox.

7. Adjust the rack guide (see **RACK GUIDE ADJUSTMENT**), and retest.

Is the steering OK?

YES - Repair is completed.

NO - Faulty steering gearbox.

8. Check the outlet and return hoses and lines between the pump and the steering gearbox for clogging and deformation.

Are the lines clogged or deformed?

YES - Repair or replace the lines.

NO - Faulty valve body unit.

9. Disassemble the pump (see **PUMP OVERHAUL**).

10. Check the flow control valve for smooth movement and leaks (see step 13).

Is the flow control valve OK?

YES - Faulty pump assembly.

NO - Faulty flow control valve.

11. Check the cylinder lines for deformation (see **POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT**).

Are any of the lines deformed?

YES - Replace the deformed line.

NO - Go to step 12.

12. Check for a bent rack shaft or misadjusted rack guide (too tight).

Is the rack shaft bent or the rack guide adjusted too tight?

YES - Replace the rack shaft, or readjust the rack guide.

NO - Faulty valve body unit.

STEERING WHEEL ROTATIONAL PLAY CHECK

1. Turn the front wheels to the straight ahead position.
2. Measure how far you can turn the steering wheel left and right without moving the front wheels.
 - If the play is within the limit, the steering gearbox and linkages are OK.
 - If the play exceeds the limit, adjust the rack guide (see **RACK GUIDE ADJUSTMENT**). If the play is still excessive after rack guide adjustment, inspect the steering linkage and steering gearbox (see **STEERING LINKAGE AND GEARBOX INSPECTION**).

Rotational play: 0-10 mm (0-0.39 in.)

Rotational play: 0—10 mm (0—0.39 in.)

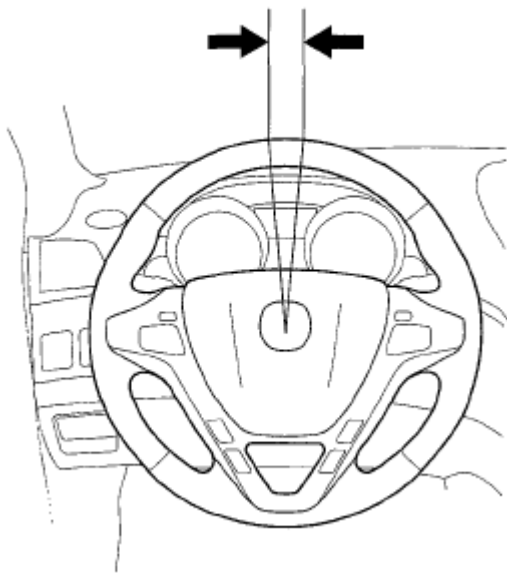


Fig. 3: Identifying Steering Wheel Rotational Play
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER ASSIST CHECK

NOTE: This test should be done with original equipment tires and wheels at the correct tire pressure.

1. Check the power steering fluid level (see **FLUID REPLACEMENT**).
2. Start the engine, let it idle, and turn the steering wheel from lock-to-lock several times to warm up the fluid.
3. Attach a commercially available spring scale to the steering wheel. With the engine idling and the vehicle on a clean, dry floor, pull the scale as shown and read it as soon as the tires begin to turn.
 - If the scale reads no more than the specification, the steering gearbox and pump are OK.

- If the scale reads more than the specification, troubleshoot the steering system (see **SYMPTOM TROUBLESHOOTING**).

Initial turning load: 29 N (3.0 kgf, 6.6 lbf)

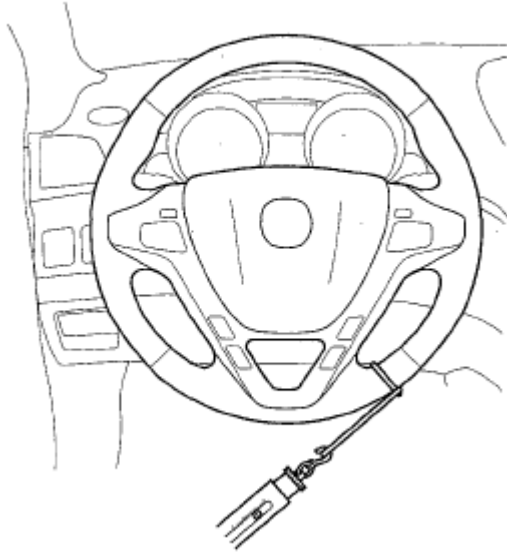


Fig. 4: Identifying Steering Wheel With Spring Scale
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING LINKAGE AND GEARBOX INSPECTION

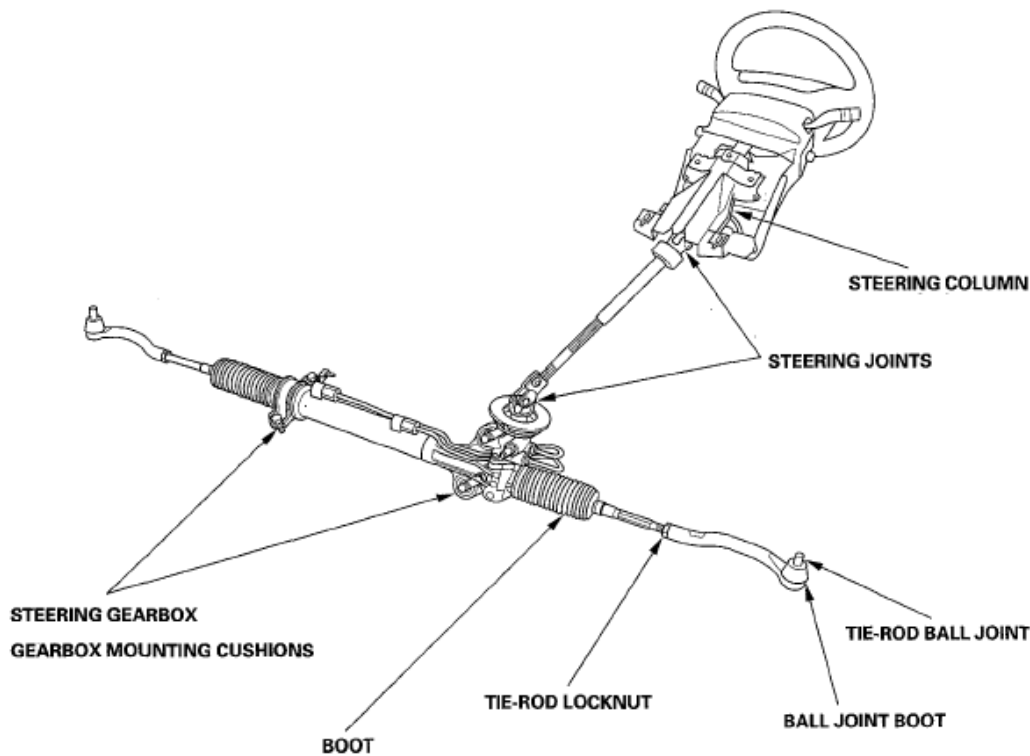


Fig. 5: Identifying Steering Linkage And Gearbox Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PUMP PRESSURE TEST WITH T/N 07406-0010001

Special Tools Required

- P/S joint adapter (pump) 07VAK-P8A011A
- P/S joint adapter plate (pump) 07VAK-P8A012B
- P/S joint adapter (hose) 07RAK-S040122
- P/S pressure gauge 07406-0010001

Check the fluid pressure as follows to determine whether the trouble is in the pump or steering gearbox.

1. Check the power steering fluid level (see **FLUID REPLACEMENT**).
2. Disconnect the pump outlet hose (A) from the pump outlet with care so as not to spill the power steering fluid on the frame and other parts, then install the P/S joint adapter (pump) on the pump outlet (B) with the P/S joint outlet plate.

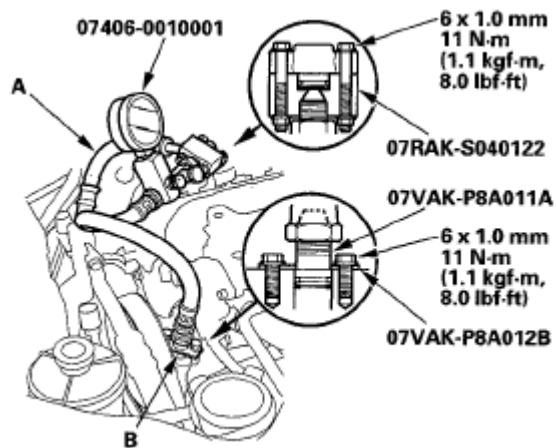


Fig. 6: Identifying P/S Joint Adapter (Hose) To P/S Pressure Gauge With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the P/S joint adapter (hose) to the P/S pressure gauge, then connect the pump outlet hose to the P/S joint adapter (hose).
4. Install the P/S pressure gauge to the P/S joint adapter (pump).
5. Fully open the shut-off valve (A).

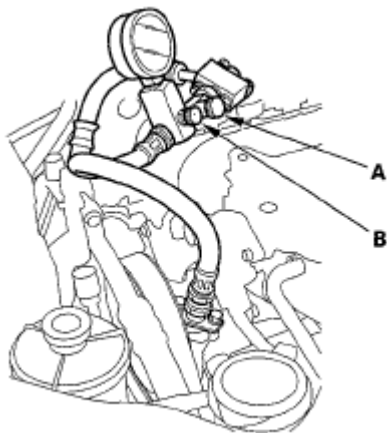


Fig. 7: Identifying Shut-Off Valve And Pressure Control Valve
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Fully open the pressure control valve (B).
7. Start the engine and let it idle.
8. Turn the steering wheel from lock-to-lock several times to warm the fluid to operating temperature at 158°F(70°C).
9. Measure steady-state fluid pressure while the engine is idling. If the pump is in good condition, the gauge should read no more than 1,470 kPa (15kgf/cm² , 213 psi).

If it reads high, check for:

- Clogged or deformed inlet or return line and return or outlet hose between the pump and the steering gearbox.
 - Clogged valve body unit.
10. Close the shut-off valve, then close the pressure control valve gradually until the pressure gauge needle is stable. Read the pressure.

NOTE: Do not keep the shut-off valve closed more than 5 seconds or the pump could be damaged by over-heating.

11. Immediately open the shut-off valve fully. If the pump is in good condition, the gauge should read at least 8,920-9,420 kPa (91 -96 kgf/cm² , 1,290-1,370 psi). A low reading means pump output is too low for full assist. Repair or replace the pump.

PUMP PRESSURE TEST WITH T/N 07406-001000A OR T/N 07406-001A101

Special Tools Required

- P/S joint adapter (pump) 07VAK-P8A011A
- P/S joint adapter plate (pump) 07VAK-P8A012B
- P/S joint adapter (hose) 07RAK-S040122
- P/S pressure gauge 07406-001000A or 07406-001A101

Check the fluid pressure as follows to determine whether the trouble is in the pump or steering gearbox.

1. Check the power steering fluid level (see **FLUID REPLACEMENT**).
2. Disconnect the pump outlet hose (A) from the pump outlet with care so as not to spill the power steering fluid on the frame and other parts, then install the P/S joint adapter (pump) on the pump outlet (B) with the P/S joint outlet plate.

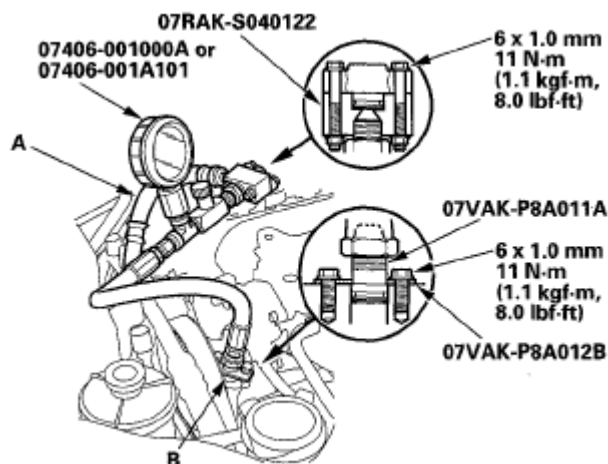


Fig. 8: Identifying Pump Outlet Hose From Pump Outlet With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the P/S joint adapter (hose) to the P/S pressure gauge, then connect the pump outlet hose to the P/S joint adapter (hose).
4. Install the P/S pressure gauge to the P/S joint adapter (pump).
5. Open the shut-off valve (A) fully.



Fig. 9: Identifying Shut-Off Valve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Start the engine and let it idle.
7. Turn the steering wheel from lock-to-lock several times to warm the fluid to operating temperature at 158T(70°C).
8. Measure steady-state fluid pressure while the engine is idling. If the pump is in good condition, the gauge should read no more than 1,470 kPa (15kgf/cm² , 213psi).

If it reads high, check for:

- Clogged or deformed inlet or return line and return or outlet hose between the pump and the steering gearbox.
 - Clogged valve body unit.
9. Let the engine idle, and gradually close the shut-off valve and immediately read the pressure.

NOTE: **Do not keep the shut-off valve closed more than 5 seconds or the pump could be damaged by over-heating.**

10. Immediately open the shut-off valve fully. If the pump is in good condition, the gauge should read at least 8,920-9,420 kPa (91-96 kgf/cm² , 1,290-1,370 psi). A low reading means pump output is too low for full assist. Repair or replace the pump.

FLUID LEAKAGE INSPECTION

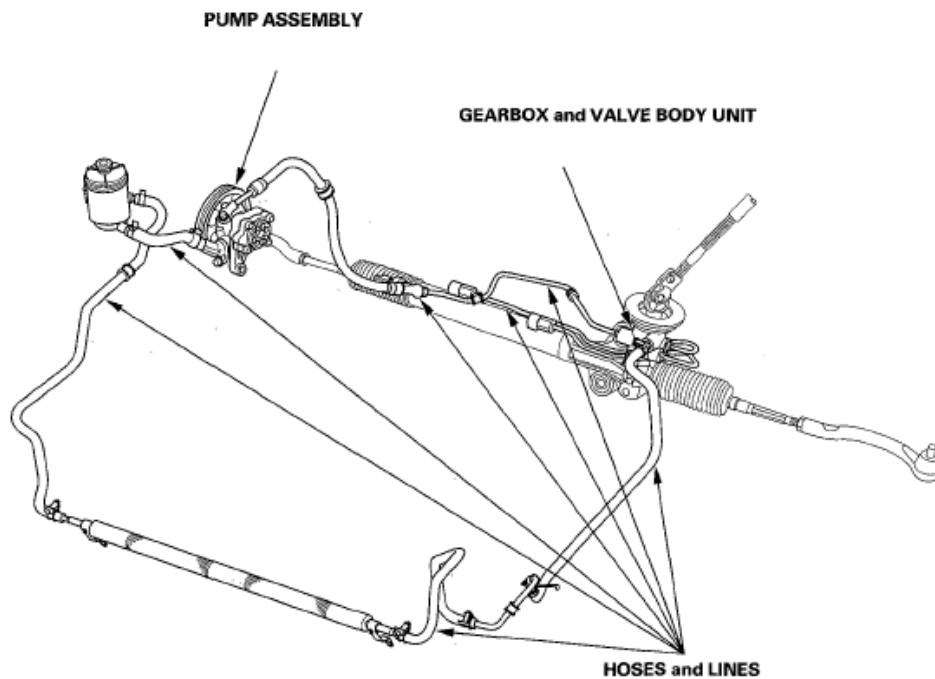


Fig. 10: Identifying Fluid Leakage Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FLUID REPLACEMENT

Check the reservoir (A) at regular intervals, and add the recommended fluid as necessary. Always use Acura Power Steering Fluid. Using any other type of power steering fluid or automatic transmission fluid can cause increased wear and poor steering in cold weather.

NOTE: If the fluid is contaminated, the screen in the reservoir may be partially blocked. Replace the reservoir if necessary.

System capacity:

1.03 L (1.09 US. qt) at disassembly

Reservoir capacity:

0.34 L (0.36 US. qt)

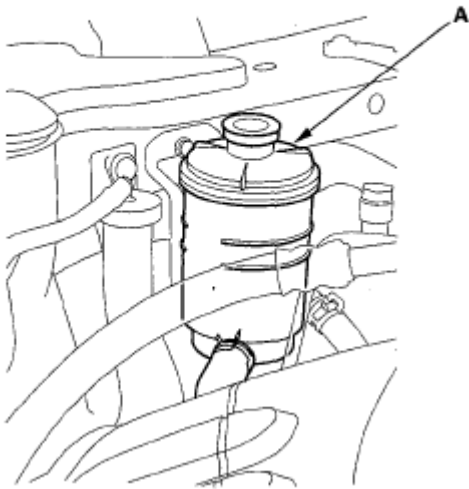


Fig. 11: Identifying Reservoir

Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Remove the reservoir from its holder. Raise the reservoir, then disconnect the return hose (A) to drain the reservoir. Take care not to spill the fluid on the body and parts. Wipe off any spilled fluid at once.

NOTE: **Inspect the reservoir screen for any debris. If the reservoir screen is clogged, replace the reservoir.**

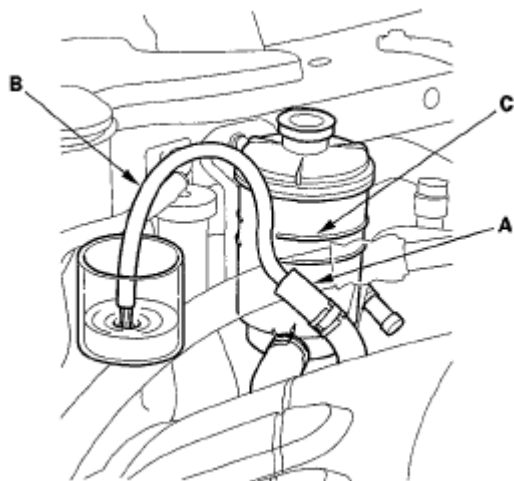


Fig. 12: Identifying Fluid In Container

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect a hose (B) of suitable diameter to the disconnected return hose, and put the hose end in a suitable container.

3. Start the engine, let it run at idle, and turn the steering wheel from lock-to-lock several times. When fluid stops running out of the hose, shut off the engine. Discard the fluid.
4. Reinstall the return hose on the reservoir.
5. Fill the reservoir to the upper level line (C).
6. Start the engine and run it at idle, then turn the steering from lock-to-lock several times to bleed air from the system.
7. Recheck the fluid level and add some if necessary. Do not fill the reservoir beyond the upper level line.
8. If the fluid is contaminated, dark, or discolored, repeat the procedure as necessary.

POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT

Note these items during installation:

- Connect each hose to the corresponding line securely until it contacts the stop on the line. Install the clamp or adjustable clamp at the specified distance from the hose end as shown.
- Check all clamps for deterioration or deformation; replace the clamps with new ones if necessary.
- Add the recommended power steering fluid to the specified level on the reservoir and check for leaks.

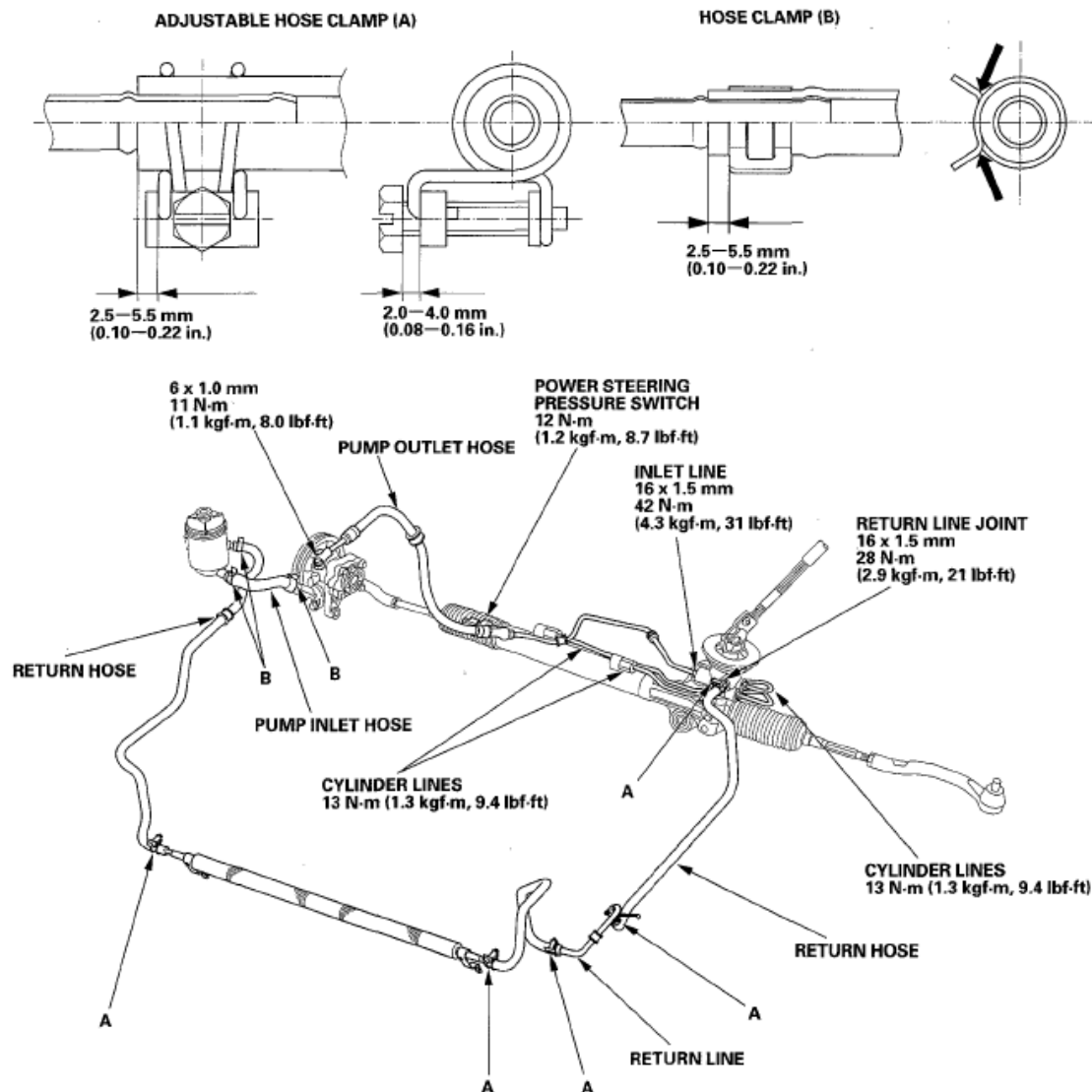


Fig. 13: Identifying Hose Clamp Dimension With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

PUMP REPLACEMENT

1. Place a suitable container under the vehicle.
2. Drain the power steering fluid from the reservoir (see **FLUID REPLACEMENT**).
3. Remove the engine cover (see step 8 **ENGINE REMOVAL**).
4. Remove the drive belt (A) from the pump pulley (see **DRIVE BELT INSPECTION**).

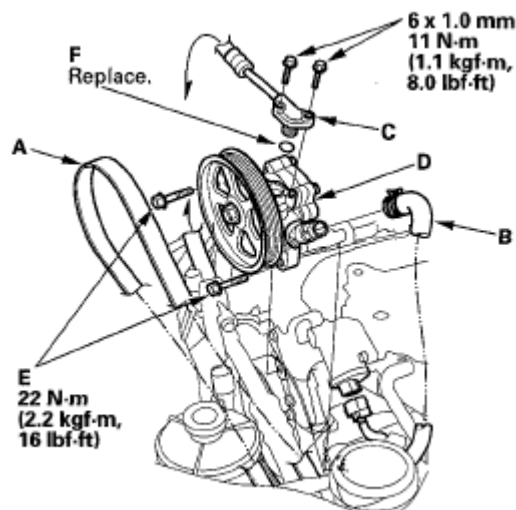


Fig. 14: Identifying Drive Belt, Pump Pulley, Pump Inlet Hose With Pump Outlet Hose With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Cover the auto-tensioner, alternator, and A/C compressor with several shop towels to protect them from spilled power steering fluid. Disconnect the pump inlet hose (B) and pump outlet hose (C) from the pump (D), and plug them. Take care not to spill the fluid on the body or parts. Wipe off any spilled fluid at once. Do not turn the steering wheel with the pump removed.
6. Remove the pump mounting bolts (E).
7. Cover the opening of the pump with a piece of tape to prevent foreign material from entering the pump.
8. Connect the pump inlet hose and pump outlet hose onto the new pump with the new O-ring (F).
9. Loosely install the pump in the pump bracket with the mounting bolts, then tighten the pump fittings securely.
10. Tighten the pump mounting bolts to the specified torque.
11. Install the drive belt (A).

Note these items during drive belt installation:

- Make sure that the belt is properly positioned on the pulleys (B).
- Do not get power steering fluid or grease on the auto-tensioner, alternator, A/C compressor, and drive belt or pulley faces. Clean off any fluid or grease before installation.

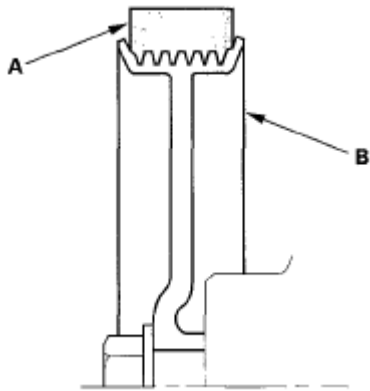


Fig. 15: Identifying Drive Belt Installation Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Fill the reservoir to the upper level line (see **FLUID REPLACEMENT**).

PUMP OVERHAUL

Exploded View

Replace the pump as an assembly if any of the parts indicated with an asterisk (*) are worn or damaged.

2008 Acura MDX

2007-09 STEERING Manual And Power Steering - MDX

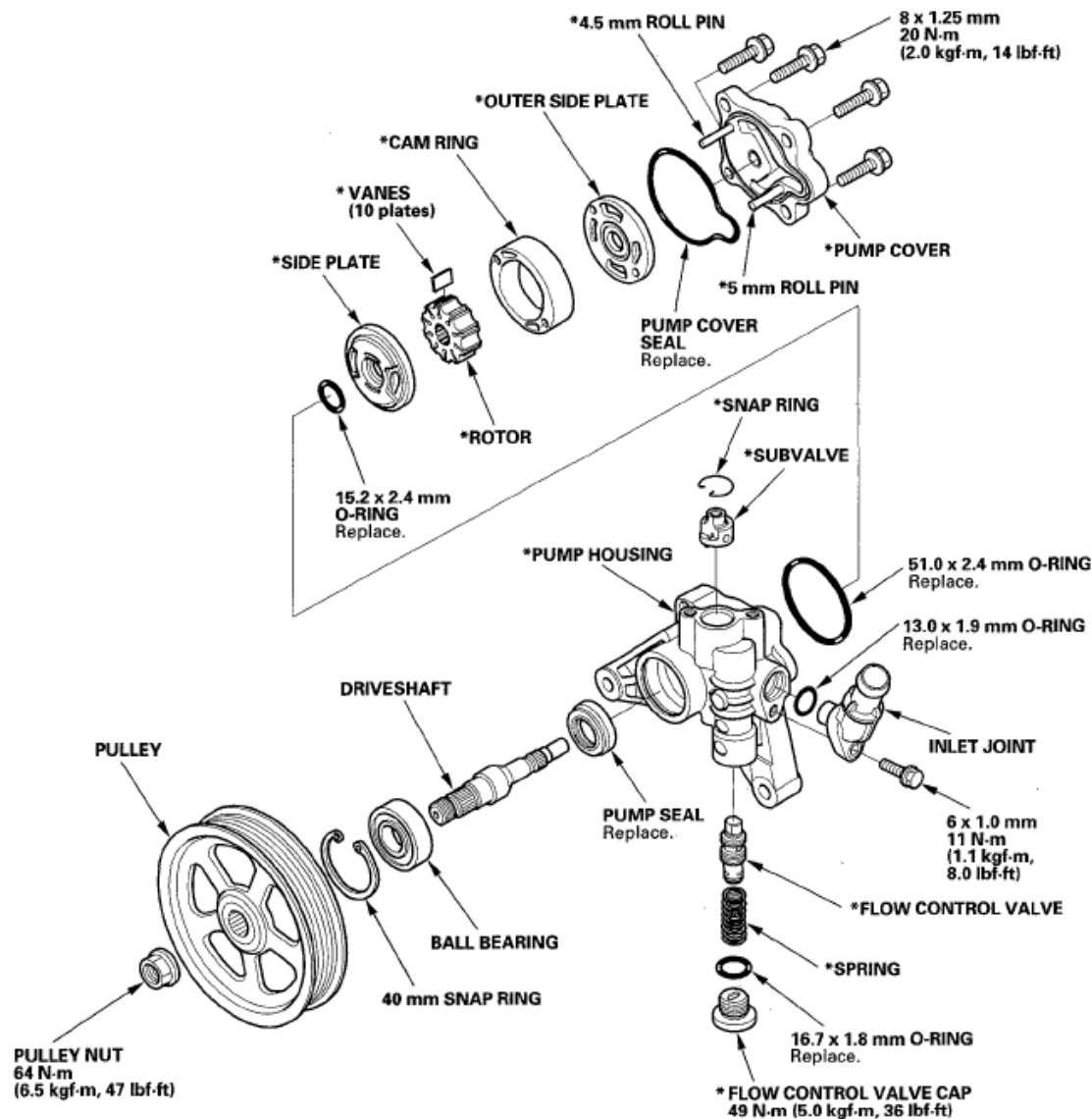


Fig. 16: Exploded View Of Pump Overhaul With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Pulley holder 07ZAB-S5A0100
- Attachment, 28 x 30 mm 07946-1870100
- Driver 07749-0010000

Disassembly

NOTE: Refer to the **EXPLODED VIEW** as needed during the following procedure.

1. Drain the fluid from the power steering pump (see **FLUID REPLACEMENT**).

2. Remove the power steering pump (see **PUMP REPLACEMENT**).
3. Hold the power steering pump (A) in a vise with soft jaws (B), then hold the pulley (C) with the pulley holder (D), and remove the pulley nut (E) and pulley. Be careful not to damage the pump housing with the jaws of the vise.

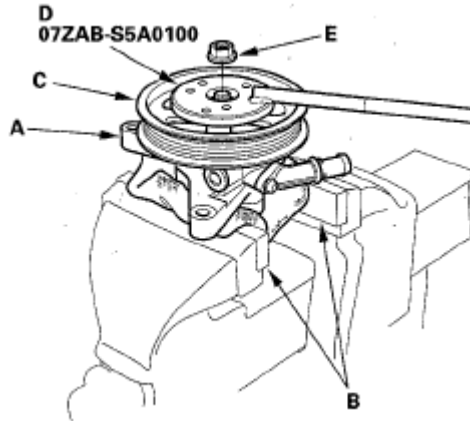


Fig. 17: Identifying Power Steering Pump In Vise With Soft Jaws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the inlet joint and O-ring.
5. Loosen the flow control valve cap with a hex wrench, and remove the cap, O-ring, spring, and flow control valve.
6. Remove the pump cover and pump cover seal.
7. Remove the outer side plate, cam ring, rotor, vanes, side plate and O-rings.
8. Remove the snap ring, then remove the sub valve from the pump housing.
9. Remove the snap ring, then remove the driveshaft by tapping the shaft end with a soft face hammer.
10. Remove the pump seal from the pump housing.

Inspection

11. Check the flow control valve for wear, burrs, and other damage to the edges of the grooves in the valve.

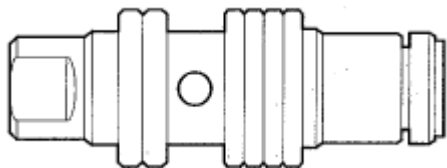


Fig. 18: Identifying Flow Control Valve
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Inspect the bore of the flow control valve on the pump housing for scratches and wear.
13. Slip the flow control valve back in the pump housing, and check that it moves in and out smoothly. If

OK, go to step 14; if not, replace the pump as an assembly. The flow control valve (A) is not available separately.

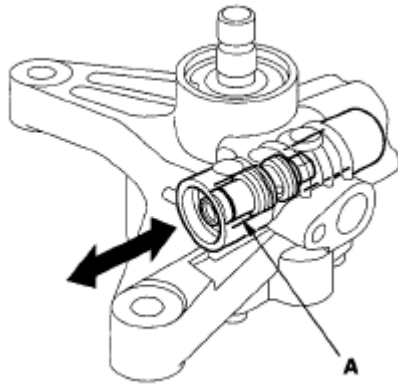


Fig. 19: Identifying Flow Control Valve

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Attach a hose (A) to the end of the flow control valve (B) as shown. Then submerge the flow control valve in a container of power steering fluid or solvent (C), and apply compressed air in the hose.
 - If air bubbles leak through the valve at less than 98 kPa (1.0 kgf/cm² , 14.2 psi), replace the pump as an assembly. The flow control valve is not available separately.
 - If the flow control valve is OK, set it aside for reassembly later.

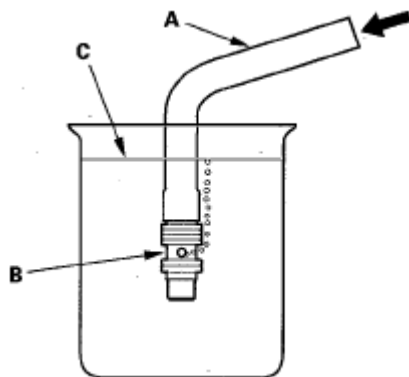


Fig. 20: Identifying Compressed Air In Hose

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Inspect the ball bearing by rotating the outer race slowly. If you feel any play (axial or radial) or roughness, remove the faulty ball bearing (A) and install a new one (B).

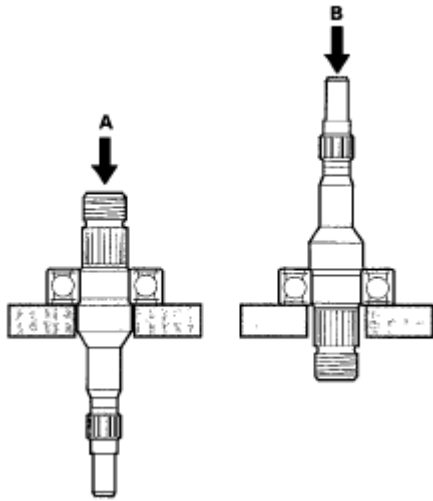


Fig. 21: Identifying Ball Bearing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Inspect each part shown with an asterisk in the Exploded View. If any of them are worn or damaged, replace the pump as an assembly.

Reassembly

17. Align the pin (A) of the subvalve (B) with the oil passage (C) in the pump housing, and push the subvalve into place, then install the snap ring (D).

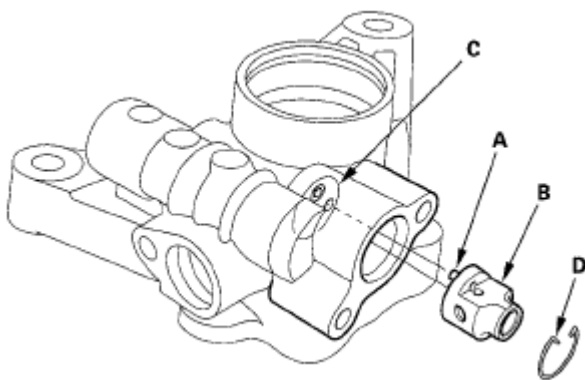


Fig. 22: Identifying Pin Of Subvalve With Oil Passage In Pump Housing

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the new pump seal (A) (with its grooved side facing in) into the pump housing (B) by hand first, then drive it in using the driver and attachment until there is no step at the top of the pump seal, and the seal is fully seated in the pump housing.

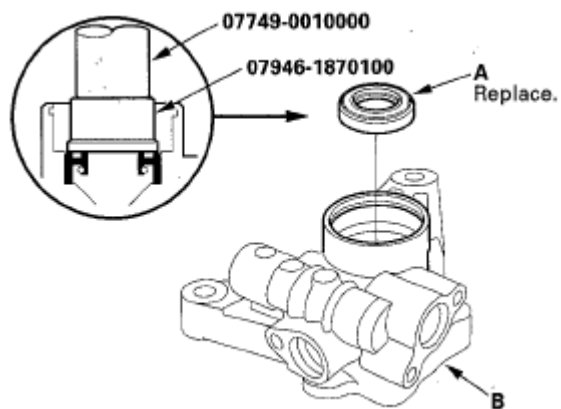


Fig. 23: Identifying Pump Seal Into Pump Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Position the driveshaft (A) in the pump housing, then press it in with the appropriate size socket wrench (B) as shown.

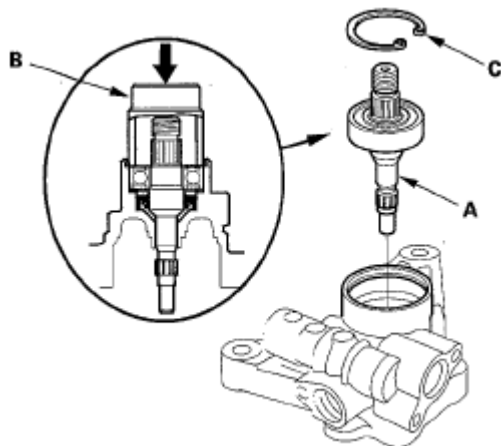


Fig. 24: Identifying Driveshaft In Pump Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the 40 mm snap ring (C) with its beveled edge facing out.
21. Coat the new pump cover seal (A) with power steering fluid, and install it into the groove in the pump cover (B).

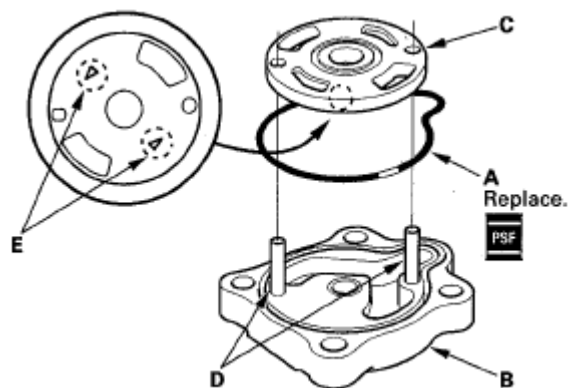


Fig. 25: Identifying Pump Cover Seal And Pump Cover With Roll Pins
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the outer side plate (C) over the two roll pins (D) with its arrow marks stamped (E) facing down.
23. Set the cam ring (A) over the two roll pins (D) with the "*** " marks (B) facing down.

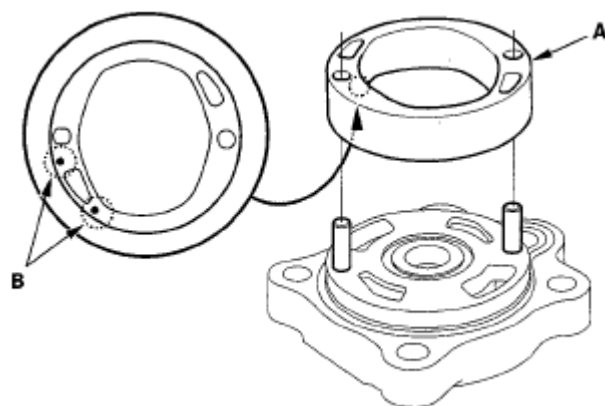


Fig. 26: Identifying Cam Ring To Roll Pins
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the rotor (A) to the pump cover (B) with its "*** " mark (C) facing up.

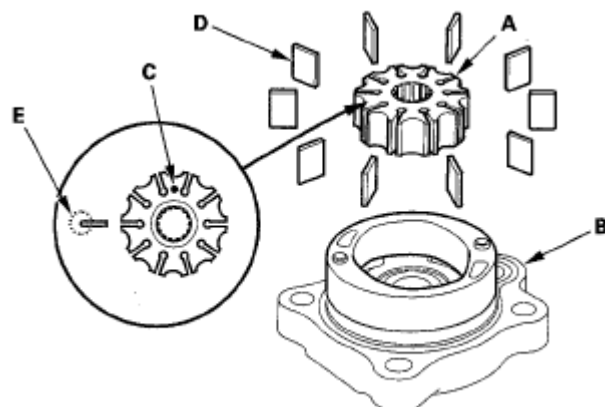


Fig. 27: Identifying Pump Cover And Rotor With Vanes
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Set the 10 vanes (D) in the grooves in the rotor. Make sure that the round ends(E) of the vanes are in contact with the sliding surface of the cam ring.
26. Coat the new 15.2 mm O-ring (A) with power steering fluid, and install it into the groove in the side plate (B).

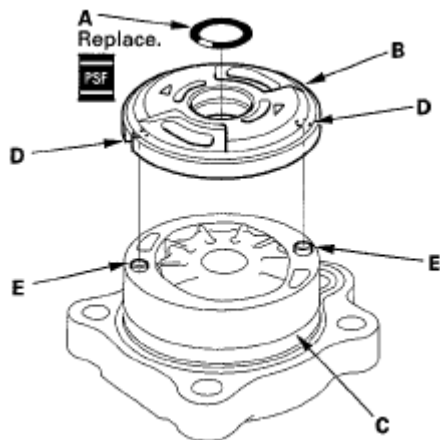


Fig. 28: Identifying Roll Pin Set Holes In Side Plate With Roll Pins
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the side plate on the cam ring (C) by aligning the roll pin set holes (D) in the side plate with the roll pins(E).
28. Coat the new 51.0 mm O-ring (A) with power steering fluid, and position it in the bottom of the pump housing.

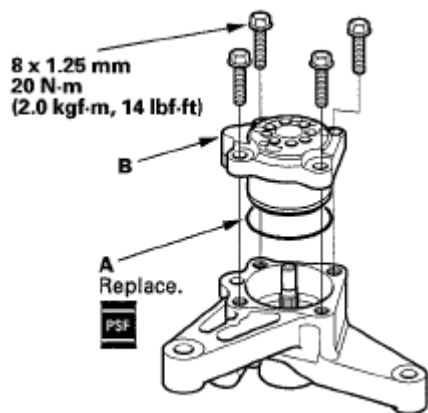


Fig. 29: Identifying Pump Cover Assembly With O-Ring With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the pump cover assembly (B) in the pump housing. Tighten the bolts to the specified torque alternating in two or more steps.

30. Coat the flow control valve (A) with power steering fluid, then install it and the spring (B) in the pump housing.

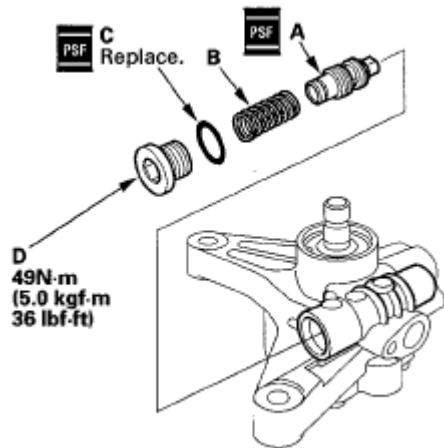


Fig. 30: Identifying Flow Control Valve And Spring With O-Ring With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Coat the new 16.7 mm O-ring (C) with power steering fluid, and install it on the flow control valve cap (D), then install the cap on the pump housing. Tighten it to the specified torque.
32. Coat the new 13.0 mm O-ring (A) with power steering fluid, and install it on the inlet joint (B). Install the inlet joint on the pump housing.

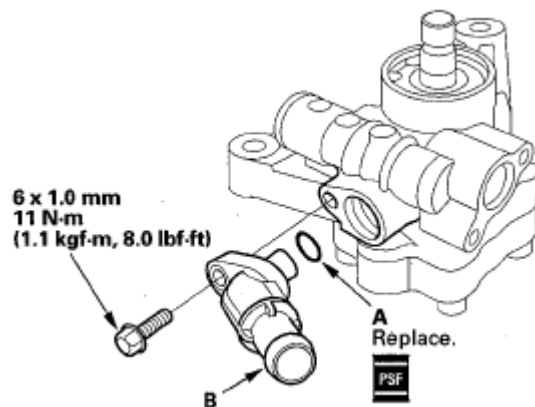


Fig. 31: Identifying Inlet Joint On Pump Housing With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Install the pulley (A), then loosely install the pulley nut (B). Hold the steering pump in a vise with soft jaws. Be careful not to damage the pump housing with the jaws of the vise.

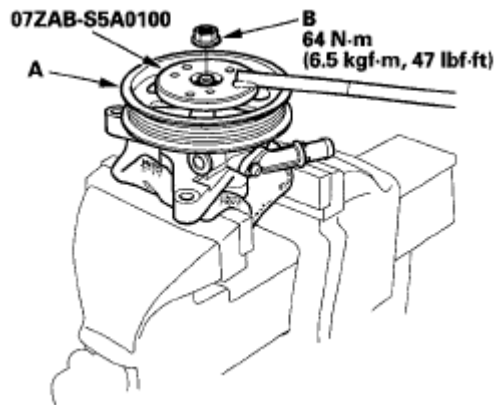


Fig. 32: Identifying Pulley With Pulley Holder With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Hold the pulley with the pulley holder, and tighten the pulley nut to the specified torque.
35. Check that the pump turns smoothly by turning the pulley by hand. If it turns hard, loosen the four flange bolts on the cover, then retighten them in the same manner as in step 29. Retest. If the pump is still hard to turn, replace the pump.
36. Reinstall the power steering pump (see **PUMP REPLACEMENT**).

STEERING WHEEL REMOVAL

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

1. Do the battery terminal disconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
2. Align the front wheels straight ahead, then remove the driver's airbag from the steering wheel (see **DRIVER'S AIRBAG REPLACEMENT**).
3. Disconnect the cable reel subharness connector (A).

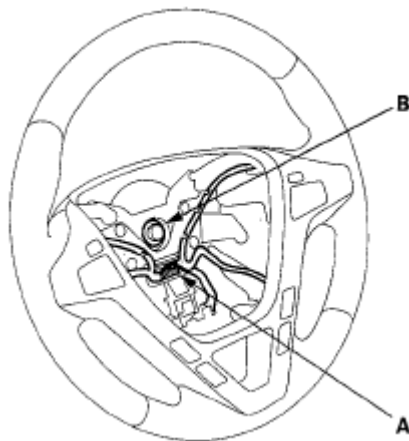


Fig. 33: Identifying Cable Reel Subharness Connector And Steering Wheel Bolt
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosen the steering wheel bolt (B).
5. Install a commercially available steering wheel puller (A) on the steering wheel (B). Free the steering wheel from the steering column shaft by turning the pressure bolt (C) of the puller.

Note these items when removing the steering wheel:

- Do not tap on the steering wheel or the steering column shaft when removing the steering wheel.
- If you thread the puller bolts (D) into the wheel hub more than five threads, the bolts will hit the cable reel and damage it. To prevent this, install a pair of jam nuts five threads upon each puller bolt.

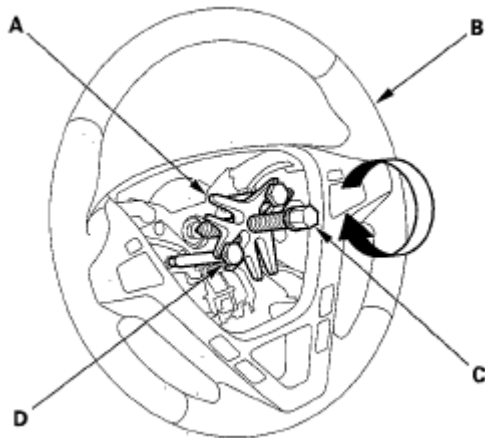


Fig. 34: Identifying Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the steering wheel puller, then remove the steering wheel bolt and steering wheel from the steering column.

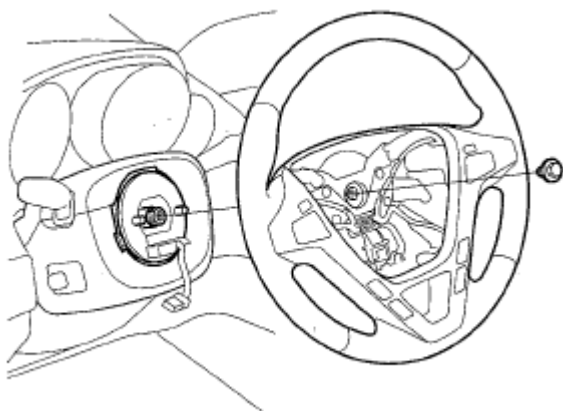


Fig. 35: Identifying Steering Wheel Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL DISASSEMBLY/REASSEMBLY

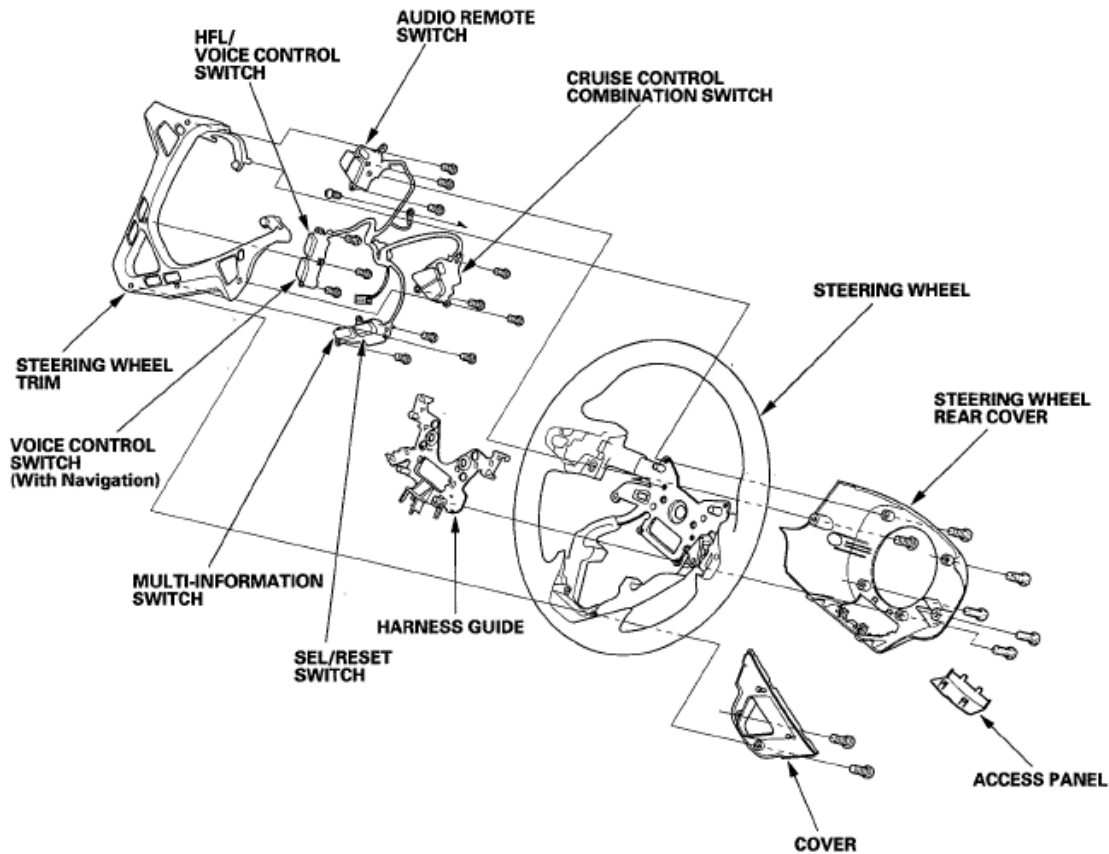


Fig. 36: Identifying Steering Wheel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL INSTALLATION

1. Before installing the steering wheel, make sure the front wheels are pointing straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise about three full turns. The arrow mark (B) on the cable reel label should point straight up.

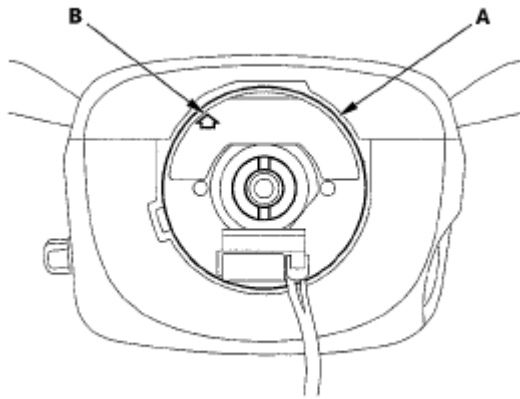


Fig. 37: Identifying Steering Wheel Installation Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Position the two tabs (A) of the turn signal canceling sleeve (B) as shown. Install the steering wheel on to the steering column shaft, making sure the steering wheel hub (C) engages the pins (D) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.

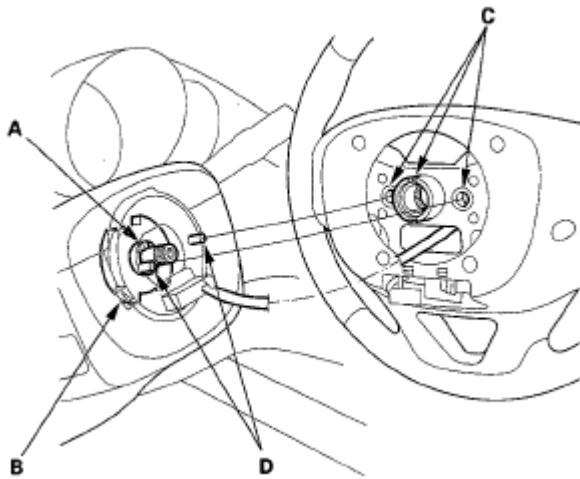


Fig. 38: Identifying Steering Wheel On To Steering Column Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the steering wheel bolt (A), and tighten it to the specified torque. Connect the cable reel subharness connector (B). Make sure the wire harness is routed and fastened properly.

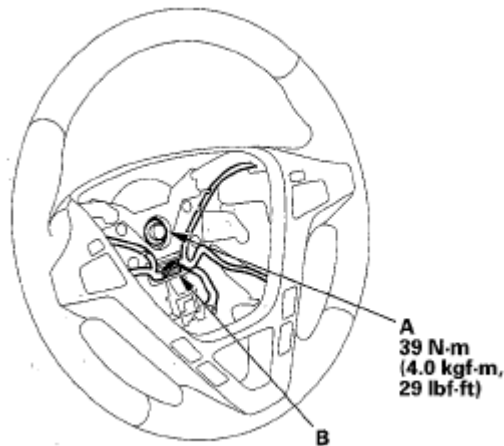


Fig. 39: Identifying Steering Wheel Bolt And Cable Reel Subharness Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the driver's airbag, and confirm that the system is operating properly (see **DRIVER'S AIRBAG REPLACEMENT**).
5. Reconnect the negative battery cable to the battery, and do these tasks:
 - Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
 - Enter the anti-theft code for the audio system or the navigation system (if equipped).
 - Make sure the horn and turn signal switches work properly.
 - Make sure the steering wheel switches work properly.
 - Do the steering column position memorization (see **STEERING COLUMN POSITION MEMORIZATION**).
6. After installation, do these checks:
 - Check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft serrations.
 - Set the steering column to the center tilt position, then do the front toe inspection (see **WHEEL ALIGNMENT**).

STEERING COLUMN REMOVAL AND INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**), and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

Removal

1. Adjust the steering column to full tilt down position, and to the full telescopic out position.
2. Make sure the ignition switch is LOCK (0), then disconnect the negative battery cable from the battery.

3. Remove the driver's airbag assembly and the steering wheel (see **STEERING WHEEL REMOVAL**).
4. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
5. Remove the steering joint cover (A).

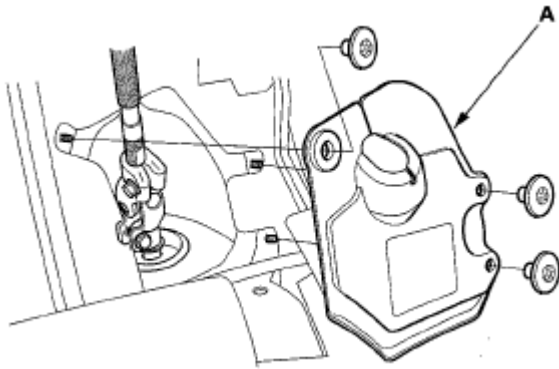


Fig. 40: Identifying Steering Joint Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the upper column cover (see **COLUMN COVER REMOVAL/INSTALLATION**), and disconnect the connectors from the power tilt/telescopic switch (A) (see **POWER TILT/TELESCOPIC STEERING SWITCH TEST/REPLACEMENT**).

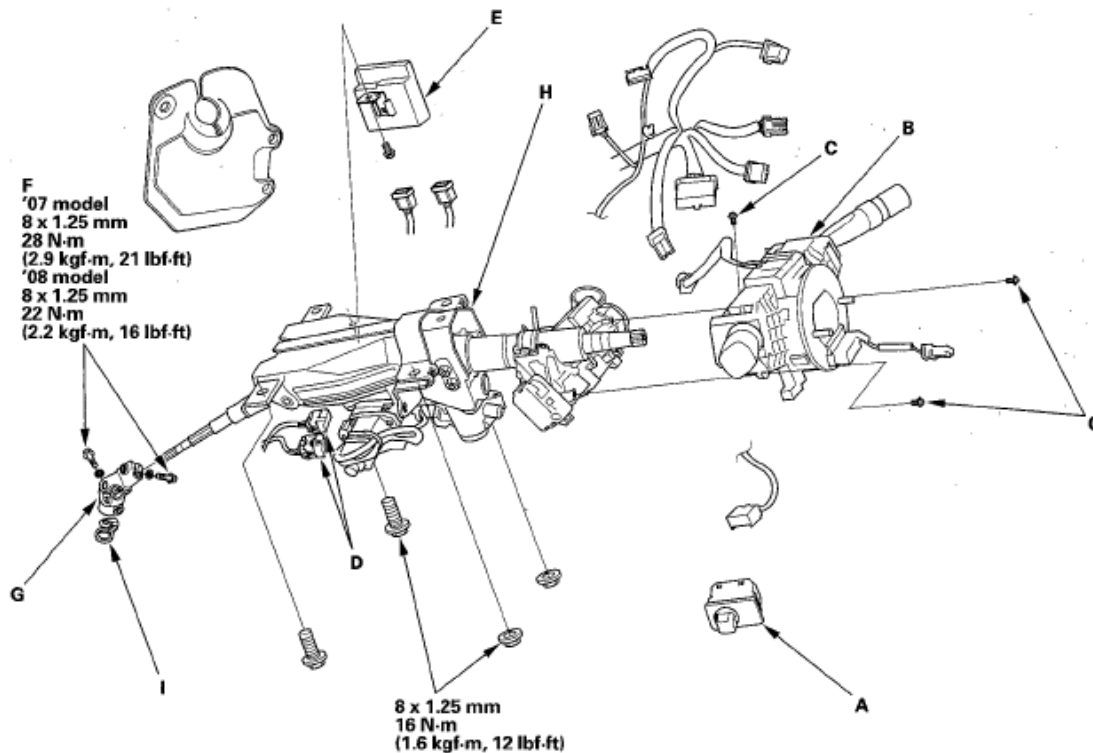


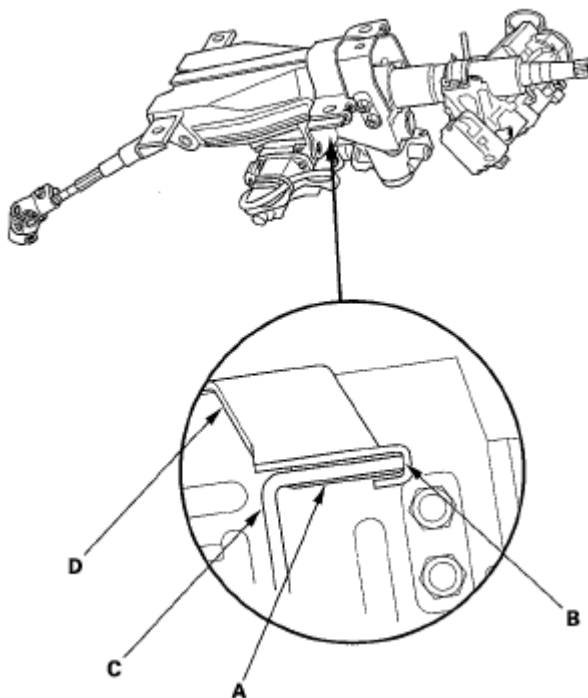
Fig. 41: Identifying Steering Column Remove / Install Components With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the wire harness connectors from the combination switch assembly and the cable reel (B).
8. Remove the combination switch assembly from the steering column shaft by removing the three screws (C).
9. Disconnect the connectors from the ignition switch, and release the wire harness clips from the steering column.
10. Disconnect the connectors (D) from the tilt/telescopic motors.
11. Disconnect the connectors from the tilt/telescopic control unit (E).
12. Remove the steering joint bolts (F), then disconnect the steering joint (G) from the pinion shaft and the steering column shaft.
13. Remove the steering column (H) by removing the attaching nuts and bolts.
14. Remove the center guide (I) (if equipped) from the top of the pinion shaft, and discard it. The center guide is for factory assembly use only.

Installation

1. Install the steering column in the reverse order of removal; and note these items:
 - Take care not to let the sliding plates (A) fall out of position during column installation.
 - Make sure the wires are not caught or pinched by any parts.
 - Make sure that there is no gap (B) between bracket (C), sliding plates, and absorbing plate (D) once column is mounted in place and fixing bolts and nuts are tightened.

**Fig. 42: Identifying Sliding Plates, Bracket And Fixing Bolts**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Center the steering rack within its stroke.
3. Insert the upper end of the steering joint onto the steering shaft (A) (line up the bolt hole (B) with the flat portion (C) on the shaft), and loosely install the upper joint bolt (D).

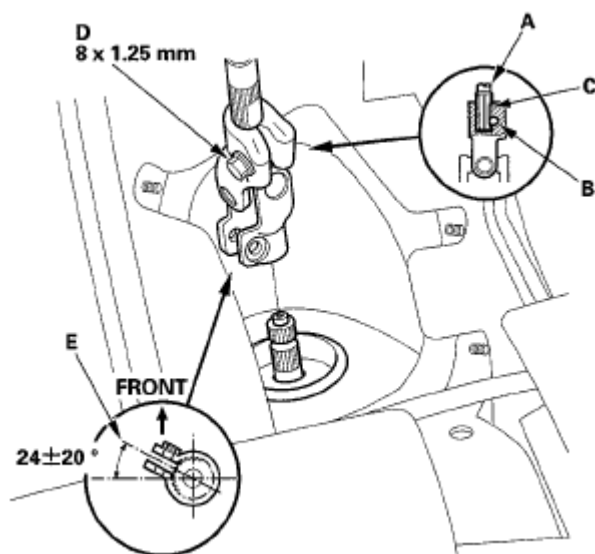


Fig. 43: Identifying Upper End Of Steering Joint Onto Steering Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Slip the lower end of the steering joint onto the pinion shaft taking care to align the gap (E) within the angle.
5. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft then loosely install the joint bolt (C).

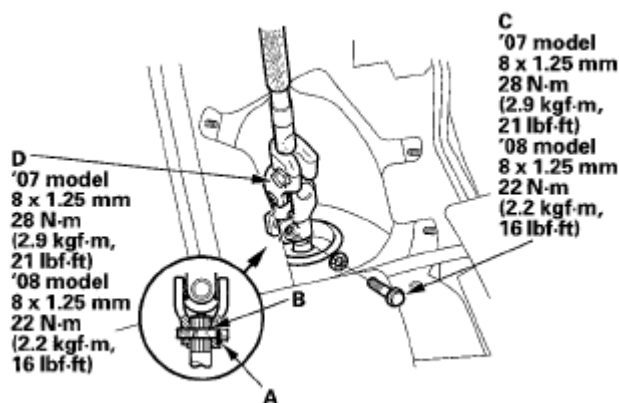


Fig. 44: Identifying Bolt Hole On Steering Joint With Groove With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the lower joint

bolt to the specified torque.

7. Tighten the upper joint bolt (D) to the specified torque.
8. Install the steering joint cover (A).

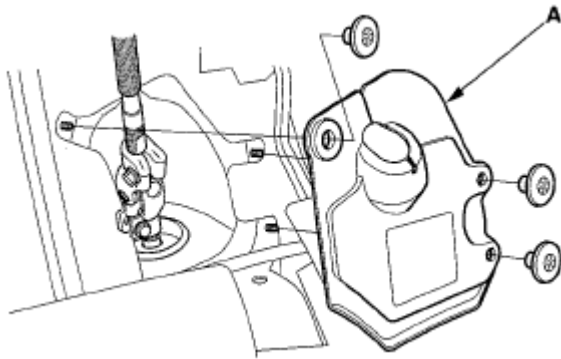


Fig. 45: Identifying Steering Joint Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the steering wheel (see **STEERING WHEEL INSTALLATION**).
10. Reconnect the negative battery cable to the battery, and do these tasks:
 - Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.
 - Enter the anti-theft code for the audio system or the navigation system (if equipped).
 - Make sure the horn and turn signal switches work properly.
 - Make sure the steering wheel switches work properly.
 - Do the steering column position memorization (see **STEERING COLUMN POSITION MEMORIZATION**).
11. After installation, do these checks:
 - Check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft serrations.
 - Set the steering column to the center tilt position, then do the front toe inspection (see **WHEEL ALIGNMENT**).

STEERING COLUMN POSITION MEMORIZATION

NOTE: If the battery is disconnected, the power tilt and telescopic steering wheel system needs to be reset when you reconnect the battery.

1. Insert the built-in key into the ignition switch, and remove it.
2. The steering wheel automatically moves fully in and up to let you know the system is reset.

STEERING COLUMN INSPECTION

- Check the steering column ball bearing (A) and the steering joint bearings (B) for play and proper movement. If any bearing is noisy or has excessive play, replace the steering column as an assembly.
- Check the sliding capsules (C) for distortion or breakage. If there is distortion or breakage, replace the steering column as an assembly.
- Check the tilt mechanism and telescopic mechanism for movement and damage.
- Check the absorbing plates (D) for distortion or breakage. If there is distortion or breakage, replace the steering column as an assembly.

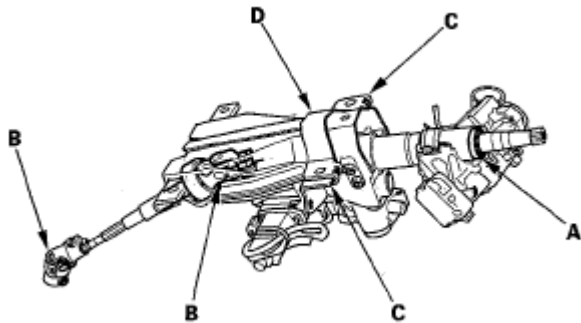


Fig. 46: Identifying Steering Column Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING LOCK REPLACEMENT

1. Remove the steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
2. Center-punch each of the two shear bolts, and drill their heads off with a 5 mm (3/16 in.) drill bit. Be careful not to damage the switch body and steering column when removing the shear bolts.

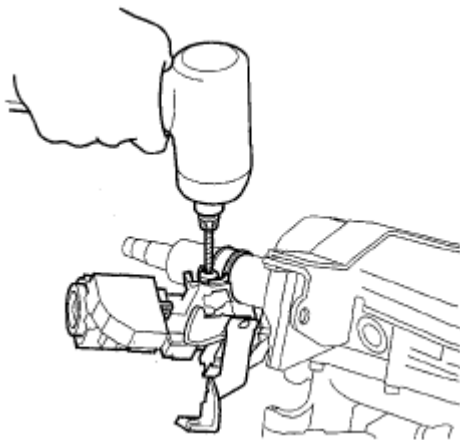


Fig. 47: Identifying Shear Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the shear bolts from the switch body.
4. Install the switch body without the key inserted.

5. Loosely tighten the new shear bolts.
6. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
7. Tighten the shear bolts (A) until the hex heads (B) twist off.

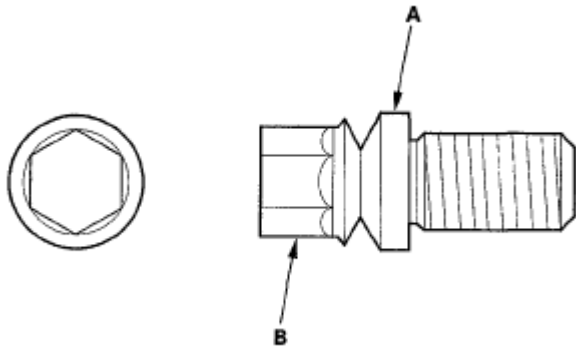


Fig. 48: Identifying Shear Bolts With Hex Heads
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Register the immobilizer-keyless control unit (see **IMMOBILIZER KEY REGISTRATION**), and make sure the immobilizer system works properly.

RACK GUIDE ADJUSTMENT

Special Tools Required

Locknut wrench, 43 mm 07MAA-SL00200

1. Set the wheels in the straight ahead position.
2. Loosen the rack guide screw locknut (A) with the locknut wrench, then remove the rack guide screw (B).

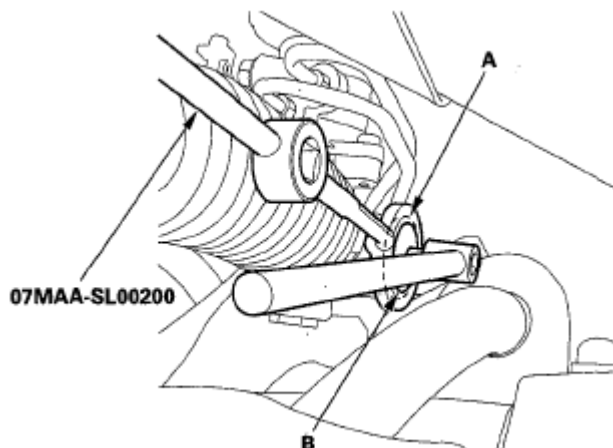


Fig. 49: Identifying Rack Guide Screw Locknut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the old sealant from the rack guide screw (A), and apply new sealant (Loctite 565) to the middle of the threads (B). Loosely install the rack guide screw on the steering gearbox.

NOTE: If more than 5 minutes has passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.

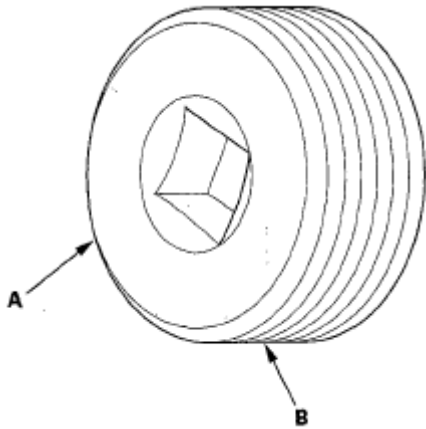


Fig. 50: Identifying Rack Guide Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Tighten the rack guide screw (A) to 25 N.m (2.5 kgf.m, 18 lbf.ft), then loosen it.

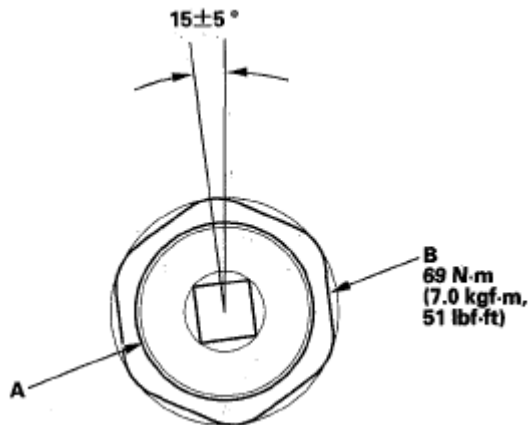


Fig. 51: Identifying Rack Guide Screw With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Retighten the rack guide screw to 3.9 N.m (0.4 kgf.m, 4 lbf.ft), then back it off to the specified angle.

Specified return angle: 15±5°

6. Hold the rack guide screw stationary with a wrench, and tighten the locknut by hand until it's fully seated.
7. Install the locknut wrench on the locknut (B), and hold the rack guide screw stationary with a wrench.

Tighten the locknut to the specified torque.

8. Check for unusual steering effort through the complete turning range.
9. Check the steering wheel rotation play (see **STEERING WHEEL ROTATIONAL PLAY CHECK**) and the power assist (see **POWER ASSIST CHECK**).

STEERING GEARBOX REMOVAL

Special Tools Required

- Ball joint remover, 28 mm 07MAC-SLOA202
- Front subframe adapter EQS02BMDXSB0 *
- Engine support hanger, A and Reds AAR-T-12566 *
- Engine hanger balance bar VSB02C000019 *
- Engine hanger adapter set VSB02C000031 *

* Available through the Acura Tool and Equipment program, 1-888-424-6857.

Note these items during removal:

- Using solvent and a brush, wash any oil and dirt off the valve body unit, it's lines, and the end of the steering gearbox. Blow dry with compressed air.
 - Be sure to remove the steering wheel before disconnecting the steering joint. Damage to the cable reel can occur.
 - Lower the front subframe from the body and remove the steering gearbox through the gap produced by lowering the front subframe.
1. Drain the power steering fluid (see **FLUID REPLACEMENT**).
 2. Do the battery terminal disconnection procedure.(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**)
 3. Raise the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
 4. Remove the front wheels.
 5. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
 6. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
 7. Remove steering joint cover (A).

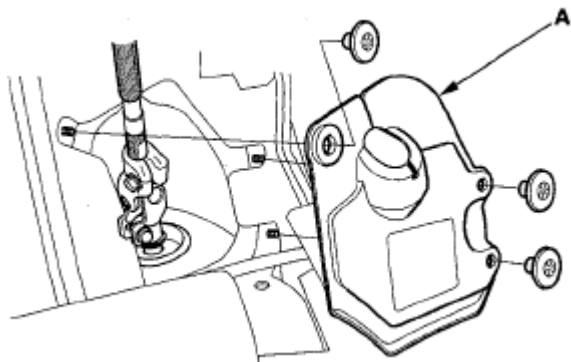


Fig. 52: Identifying Steering Joint Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the steering joint bolts (A), disconnect the steering joint by moving the steering joint (B) toward the column.

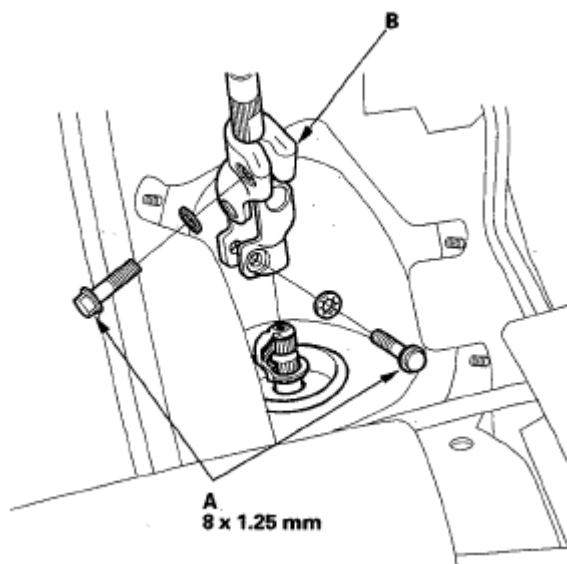


Fig. 53: Identifying Steering Joint And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it. The center guide is for factory assembly use only.

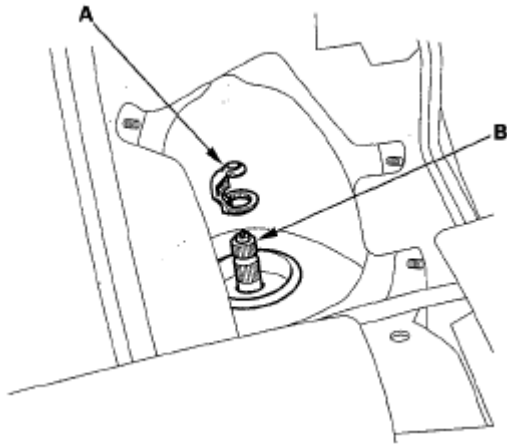


Fig. 54: Identifying Center Guide And Pinion Shaft
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Apply vinyl tape to the splines on the pinion shaft.
11. Remove the air cleaner housing (see **AIR CLEANER ELEMENT INSPECTION/REPLACEMENT**).
12. Remove the service caps (A) for the front damper flange nuts from the cowl cover (B). Position the engine hanger adapters (VSB02C000031) with the "FRONT" mark facing forward over the damper flange nuts.

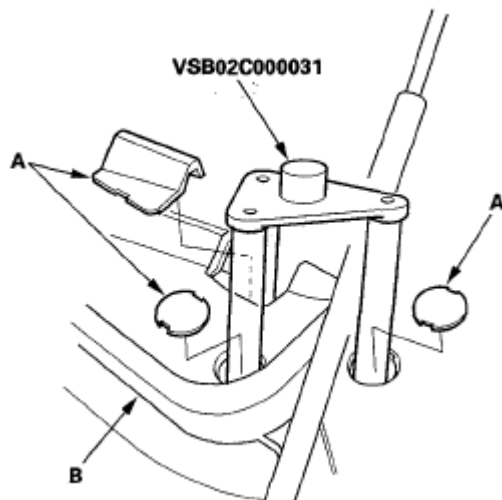


Fig. 55: Identifying Service Caps
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the engine hanger balancer bar (VSB02C000019); attach the front arm (A) to the front cylinder head with a spacer (B) and 10 x 1.25 mm bolt (C), attach the rear arm (D) to the rear cylinder head with 8 x 1.25 mm bolt (E).

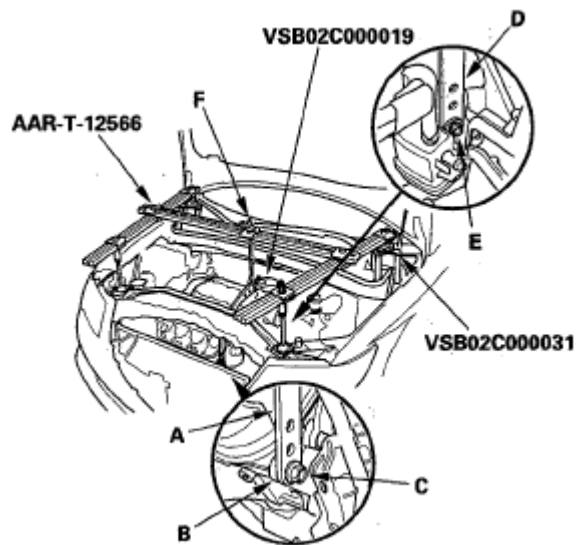


Fig. 56: Identifying Engine Hanger Balancer Bar (VSB02C000019) On Cylinder Head
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the engine support hanger (AAR-T-12566) to the vehicle, and attach the hook to the slotted hole in the engine hanger balancer bar. Tighten the wing nut (F) by hand to lift and support the engine/transmission.
15. Loosen the adjustable hose clamp (A), and disconnect the return hose (B).

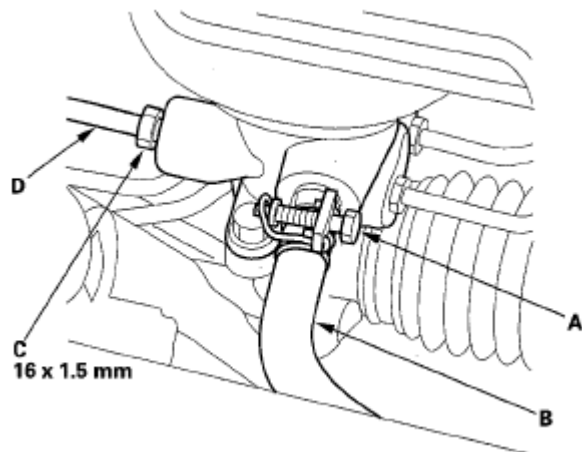


Fig. 57: Identifying Return Hose And Adjustable Hose Clamp
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Loosen the 16 mm flare nut (C), and disconnect the inlet line (D).
17. Remove the cotter pins (A) from the tie-rod ball joints and remove the nuts (B).

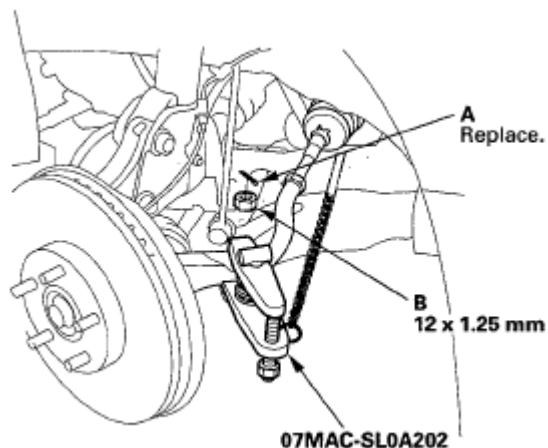


Fig. 58: Identifying Tie-Rod Ball Joints And Knuckles
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Separate the tie-rod ball joints and knuckles using the ball joint remover (see **BALL JOINT REMOVAL**).
19. Disconnect the lower arm ball joints from the knuckles (see **LOWER ARM REMOVAL/INSTALLATION**).
20. Disconnect the stabilizer links (A) from the lower arms (see **STABILIZER LINK REMOVAL/INSTALLATION**).

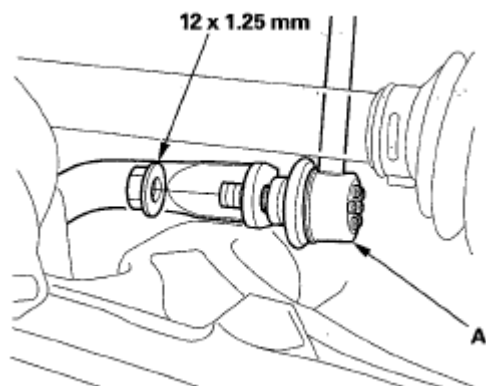


Fig. 59: Identifying Stabilizer Links From Lower Arms
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Remove the front undercover (see **FRONT UNDERCOVER REPLACEMENT**) and the front splash shield (see **SPLASH SHIELD REPLACEMENT**).
22. Remove the front subframe stiffener plate (A).

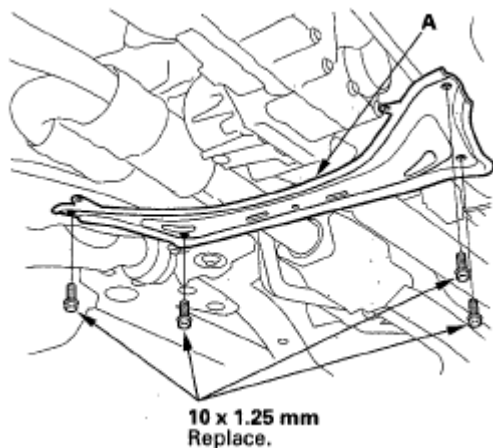


Fig. 60: Identifying Front Subframe Stiffener Plate And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Remove exhaust pipe A (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
24. Remove the propeller shaft and propeller shaft protectors (see **PROPELLER SHAFT REMOVAL**).
25. Remove the inlet line clamp bolts (A).

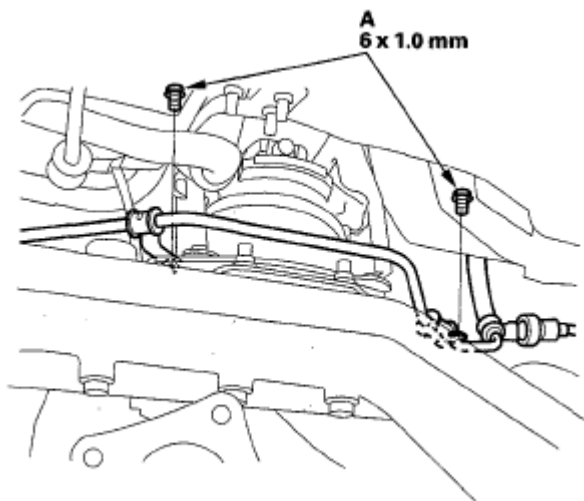


Fig. 61: Identifying Inlet Line Clamp Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Remove the rear mount stop (A) from the rear engine mount.

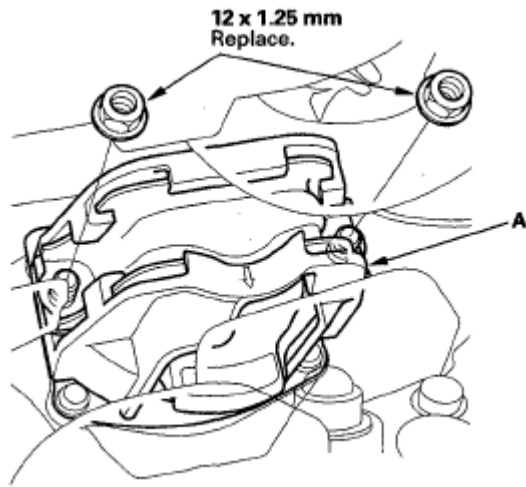


Fig. 62: Identifying Rear Mount Stop And Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Remove the rear engine mount (A) from the base bracket, and move it aside.

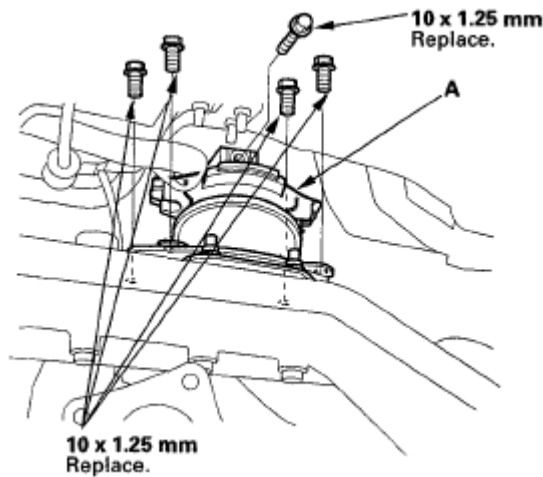


Fig. 63: Identifying Rear Engine Mount And Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Remove the base bracket (A) from the front subframe.

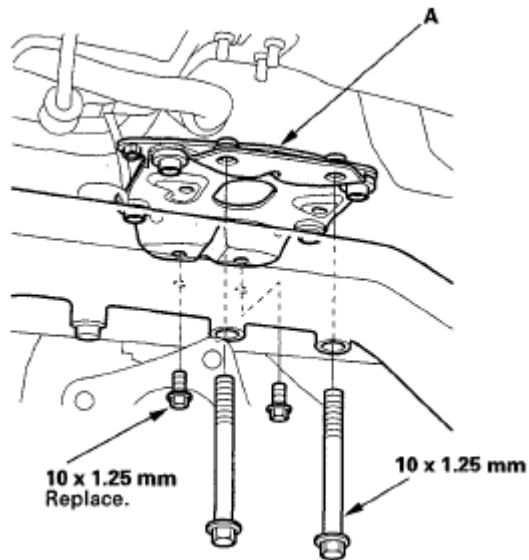


Fig. 64: Identifying Base Bracket And Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Remove the ground cable bolt (A) from the transmission.

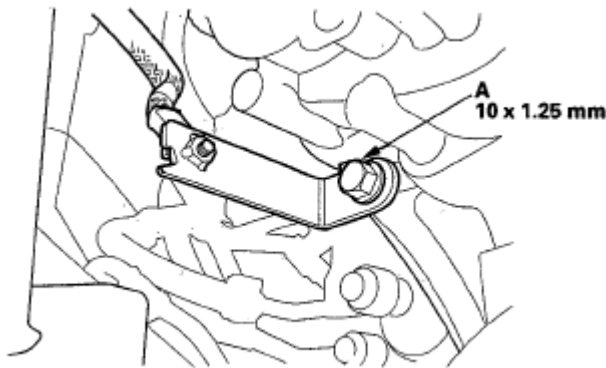


Fig. 65: Identifying Ground Cable Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

30. Make reference marks (A) on the body across the marks (B) on the edge of the front subframe (C).

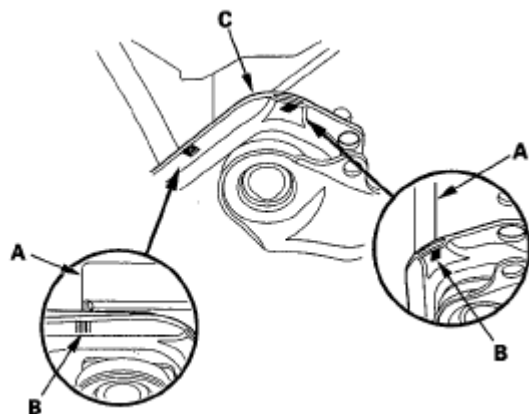


Fig. 66: Identifying Reference Marks Location
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Loosen the four bolts (A) holding the adjustable arms (B) of the front subframe adapter to its center plate.

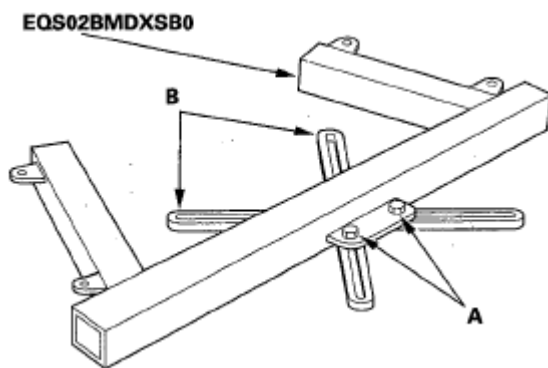


Fig. 67: Identifying Adjustable Arms Of Front Subframe Adapter To Center Plate
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Line up the slots in the arms with the bolt holes on the corner of the jack base, then attach the front subframe adapter (A) to the jack base with the bolts (B) that came with the jack. Tighten all bolts securely.

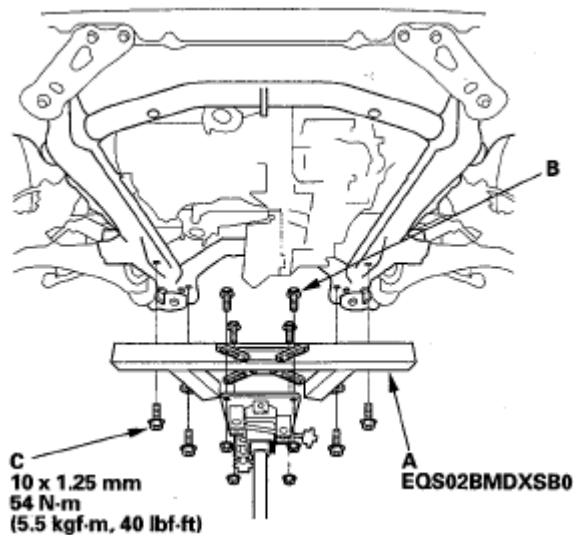


Fig. 68: Identifying Front Subframe With Transmission Jack With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

33. Raise the jack to vehicle height, then attach the front subframe adapter to the front subframe using the subframe stiffener mounting bolts (C) and bolt holes.
34. Support the front subframe securely by raising the transmission jack.
35. Remove the mounting bolts (A) from the front subframe front brackets (B).

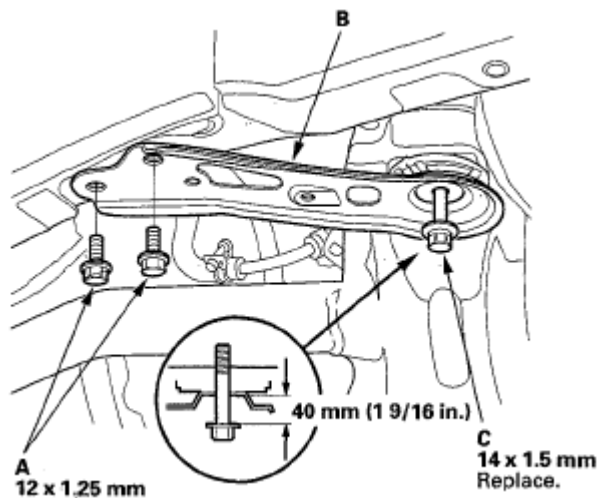


Fig. 69: Identifying Mounting Bolts From Front Subframe Front Brackets
Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Loosen the special bolts (C) on the front subframe front brackets so they are about 40 mm (1 9/16 in.) from the mounting surface. Do not loosen the special bolts more than necessary.
37. Remove the mounting bolts (A) from the front subframe rear brackets (B).

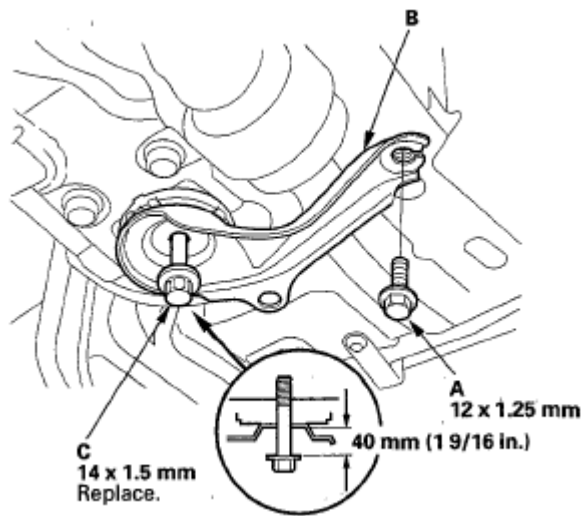


Fig. 70: Identifying Mounting Bolts From Front Subframe Rear Brackets
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Loosen the special bolts (C) on the front subframe rear brackets so they are about 40 mm (1 9/16 in.) from the mounting surface. Do not loosen the special bolts more than necessary.
39. Lower the transmission jack slowly until the front subframe has dropped about 40 mm (1 9/16 in.).
40. Remove the mounting bolts (A) from the left side of the steering gearbox.

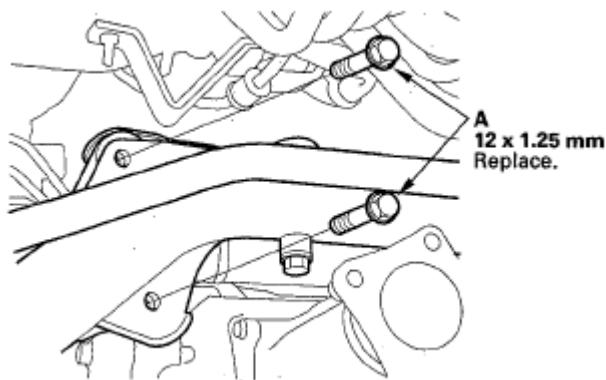


Fig. 71: Identifying Mounting Bolts From Left Side Of Steering Gearbox
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Remove the gearbox stiffener bracket (A) from the left side of the front subframe.

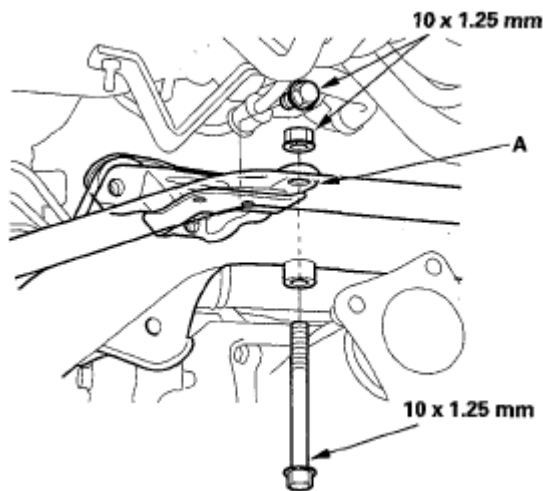


Fig. 72: Identifying Gearbox Stiffener Bracket From Left Side Of Front Subframe
Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Remove the mounting bolts from the right side of the steering gearbox, then remove the mounting bracket (A) and cushion (B).

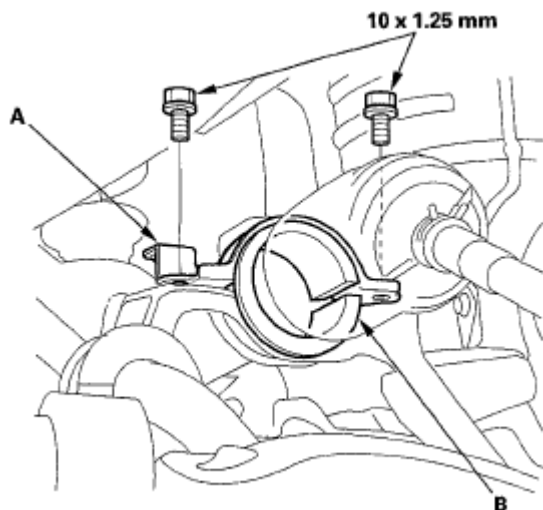


Fig. 73: Identifying Mounting Bracket And Cushion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Carefully move the steering gearbox (A) toward the driver's side until the pinion shaft clears the wheelwell opening on the frame.

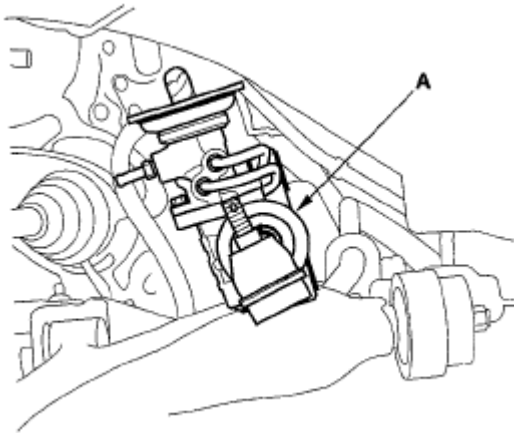


Fig. 74: Identifying Steering Gearbox

Courtesy of AMERICAN HONDA MOTOR CO., INC.

44. Remove the steering gearbox through the wheelwell opening on the driver's side.

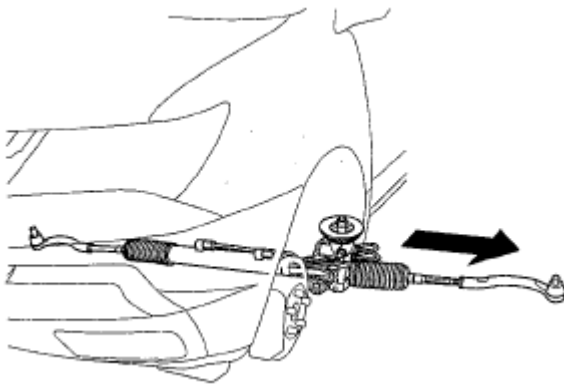


Fig. 75: Identifying Steering Gearbox

Courtesy of AMERICAN HONDA MOTOR CO., INC.

45. Remove the pinion shaft grommet B from the top of the valve housing.

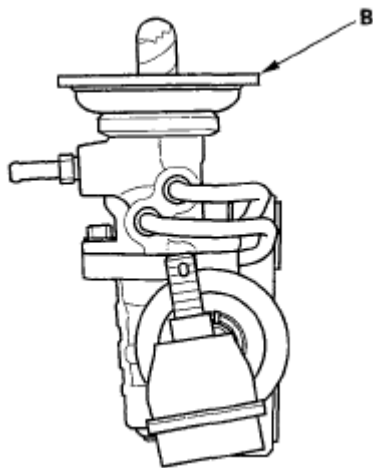


Fig. 76: Identifying Pinion Shaft Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Replace the pinion shaft grommet A if necessary.

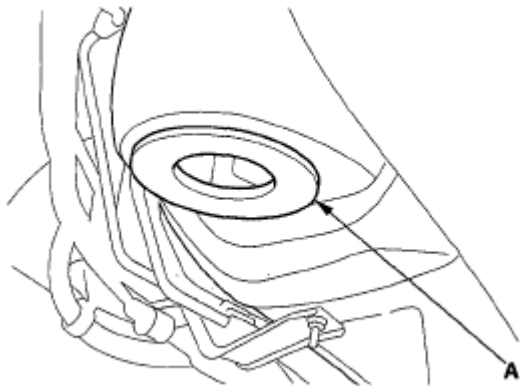


Fig. 77: Identifying Pinion Shaft Grommet
Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. After removing the steering gearbox, make sure that no power steering fluid gets on the gearbox mount cushions, gearbox housing, surface of the front subframe and stiffener. Wipe off any spilled fluid at once.

STEERING GEARBOX OVERHAUL

Exploded View

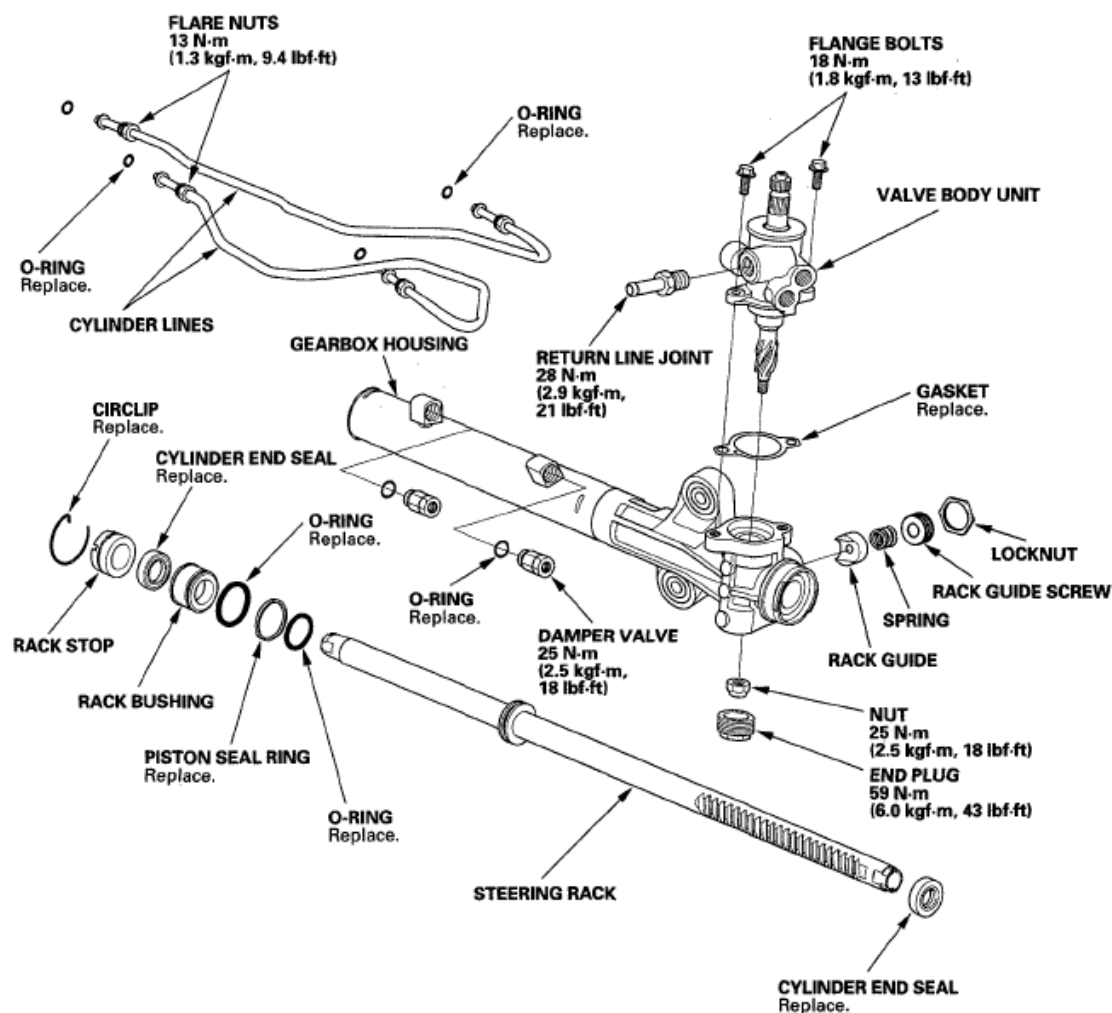


Fig. 78: Exploded View Of Steering Gearbox Overhaul With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Driver handle, 480 mm 070GD-0010100
- Driver head 07946-MJ00201
- Piston seal ring guide 07LAG-SM40100
- Piston seal ring sizing tool 07LAG-SM40200
- Driver 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300
- Pincer Oetiker 1098, or equivalent, commercially available

NOTE: Refer to the EXPLODED VIEW as needed during the following procedure.

Removal

1. Remove the steering gearbox (see **STEERING GEARBOX REMOVAL**).

Disassembly

2. Remove the boot bands (A) and tie-rod clips (B). Pull the boots away from the ends of the steering gearbox.

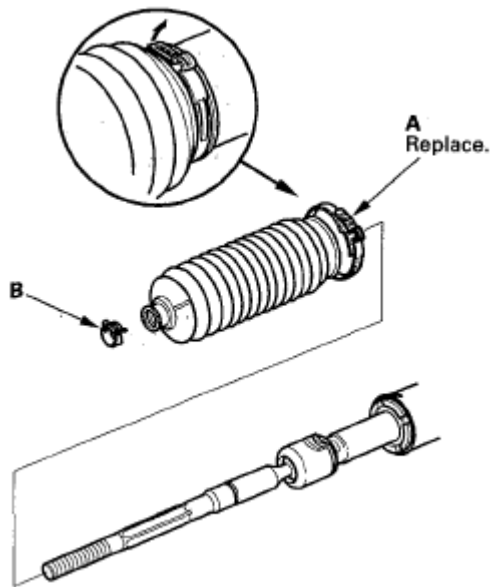


Fig. 79: Identifying Boot Bands And Tie-Rod Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Unbend the lock washer (A).

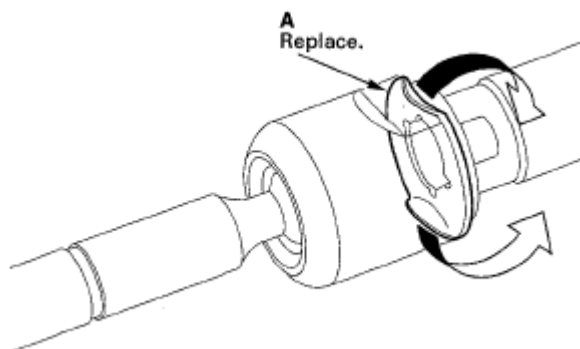


Fig. 80: Identifying Lock Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Hold the flat surface sections (A) of the steering rack (B) with one wrench, and unscrew both rack ends (C) with another wrench. Be careful not to damage the rack surface with the wrench.

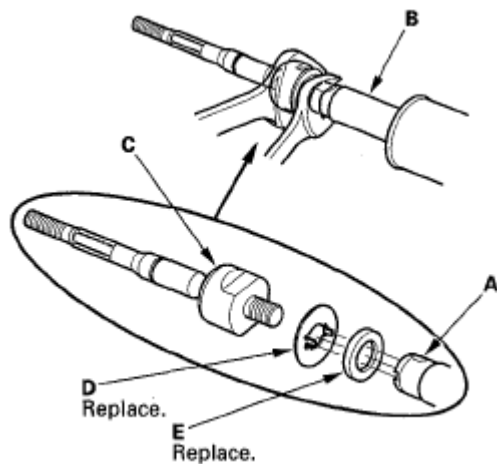


Fig. 81: Identifying Flat Surface Sections Of Steering Rack With Wrench
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the lock washer (D) and stop washer (E).
6. Loosen the locknut (A), then remove the rack guide screw (B).

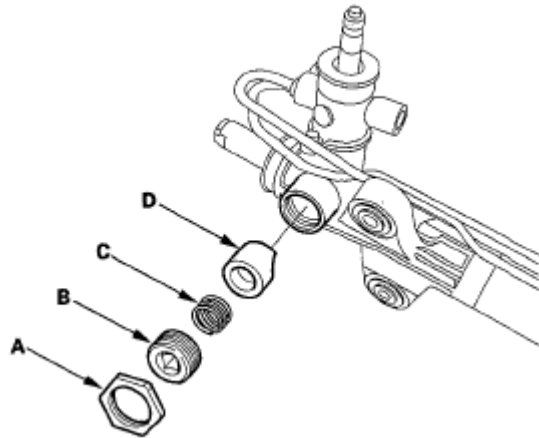


Fig. 82: Identifying Spring, Rack Guide, Gearbox Housing, Locknut And Rack Guide Screw
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the spring (C) and the rack guide (D) from the gearbox housing.
8. Remove the cylinder lines from the steering gearbox.

NOTE: Use a second wrench when loosening the cylinder lines to avoid damage to the fittings on the steering gearbox. Do not loosen the A and B connectors.

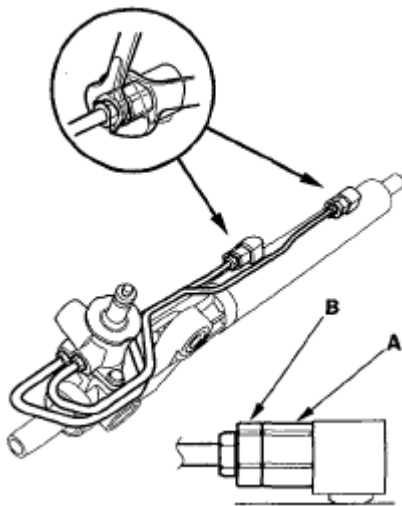


Fig. 83: Identifying Cylinder Lines From Steering Gearbox
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the damper valves (C) and O-rings (D) from the steering gearbox.

NOTE: Do not loosen the A and B connectors.

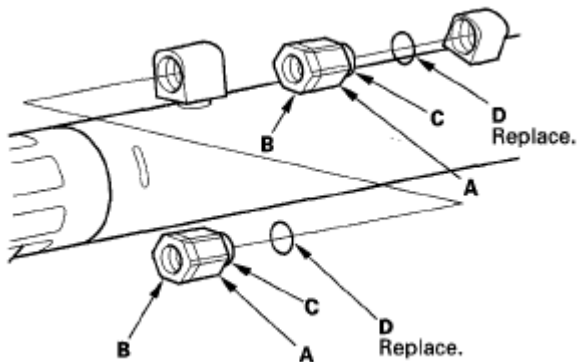


Fig. 84: Identifying Damper Valves And O-Rings With Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Drain the fluid from the cylinder fittings by slowly moving the steering rack back and forth.
11. Remove the end plug (A) from the gearbox housing, then remove the self-locking nut (B) from the pinion shaft end.

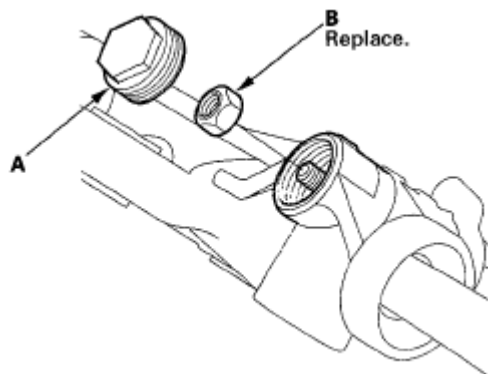


Fig. 85: Identifying Gearbox Housing Plug And Self-Locking Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Loosen the 16 mm flare nut (A), and remove the return line joint (B).

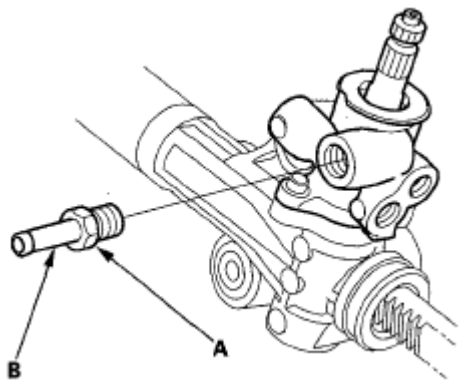


Fig. 86: Identifying Return Line Joint And Flare Nut
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the two flange bolts, the valve body unit (A), and gasket (B) from the gearbox housing. Check that the valve turns smoothly by turning the pinion shaft. If any play or roughness is felt, replace the valve body unit with a new part. Do not try to disassemble the valve body unit.

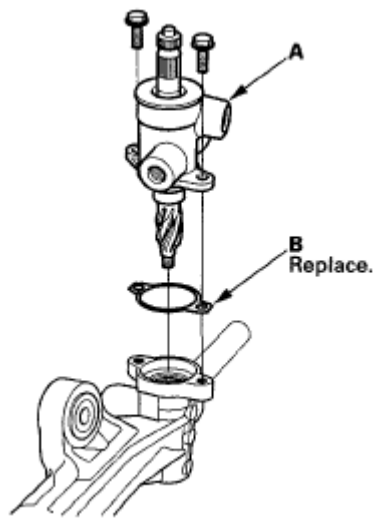


Fig. 87: Identifying Valve Body Unit And Gasket From Gearbox Housing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Slide the steering rack all the way towards the valve body end of the gearbox housing.
15. 15. Turn the rack stop (A) counterclockwise until the end (B) of the circlip (C) sticks out from the hole (D) in the cylinder housing. Then turn it clockwise to remove the circlip.

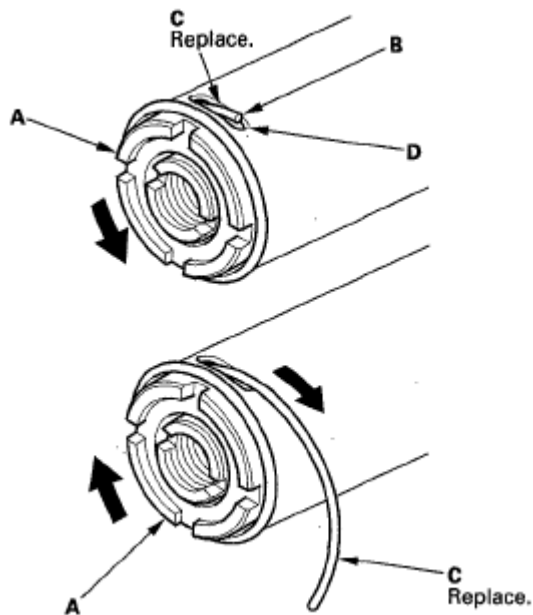


Fig. 88: Identifying Rack Stop
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the rack stop (A), rack bushing (B), and steering rack (C) from the steering gearbox.

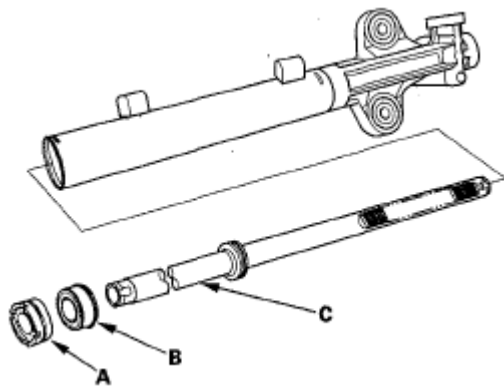


Fig. 89: Identifying Rack Stop, Rack Bushing And Steering Rack From Steering Gearbox
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the O-ring (A) and cylinder end seal (B) from the rack bushing (C).

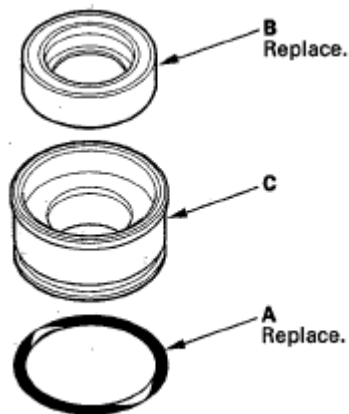


Fig. 90: Identifying O-Ring And Cylinder Seal From Rack Bushing
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Carefully pry the piston seal ring (A) and O-ring (B) off the rack piston. Be careful not to damage the inside of the seal ring groove and piston edges when removing the seal ring.

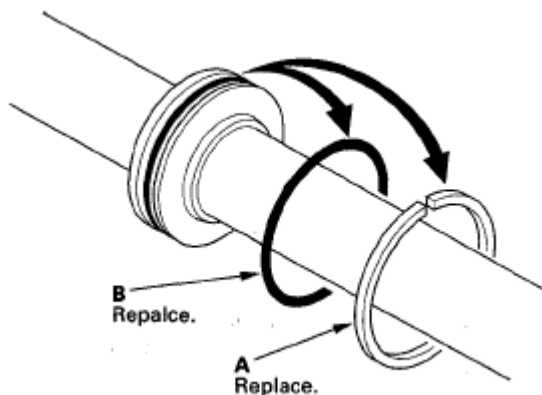
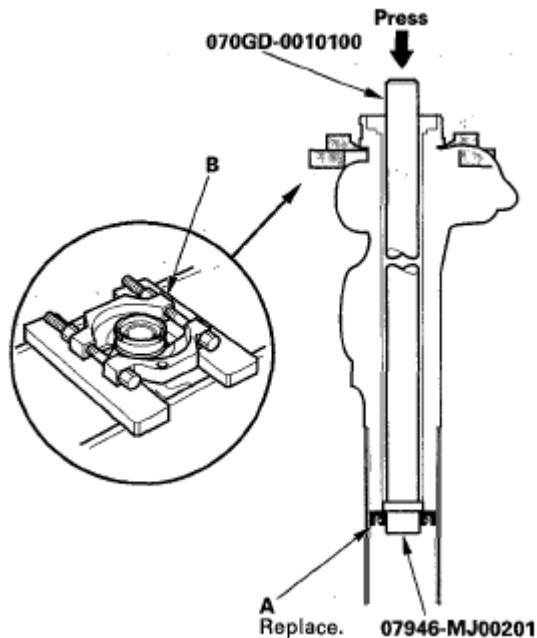


Fig. 91: Identifying Piston Seal Ring And O-Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Insert the driver handle and driver head, and carefully place them on the cylinder end seal (A) as shown. Make sure that the driver head is securely positioned on the cylinder end seal.

**Fig. 92: Identifying Placing On Cylinder Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the bearing separator (B) on the gearbox housing. Set the steering gearbox in a press so the gearbox housing points upward, then push out the cylinder end seal by pressing on the end of the driver handle and driver head.
21. Remove the steering gearbox from the press, and set a driver extension (A) on the driver handle. Place the steering gearbox in a press, then remove the cylinder end seal (B) from the gearbox housing by pressing on the end of the extension.

Note these items when pressing the cylinder end seal:

- Keep the tool straight to avoid damaging the cylinder wall. Check the tool angle, and correct it if necessary, when removing the cylinder end seal.
- Use a press to remove the cylinder end seal. Do not try to remove the seal by striking the tool; striking the tool would break the cylinder end seal, and the seal would remain in the gearbox housing.

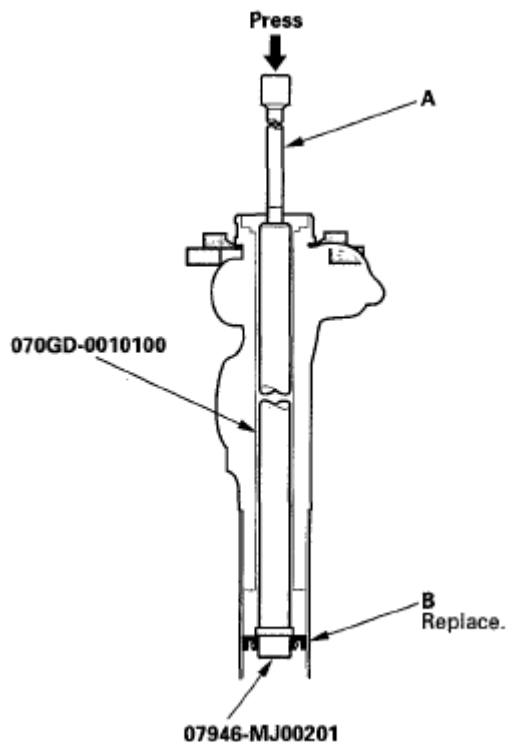


Fig. 93: Identifying Steering Gearbox

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Reassembly

22. Coat the piston seal ring guide with power steering fluid, then slide it onto the rack, big end first.
23. Position the new O-ring (A) and new piston seal ring (B) on the piston seal ring guide, then slide them down toward the big end of the tool.

Note these items during reassembly:

- Do not over expand the resin seal rings. Install the resin seal rings with care so as not to damage them. After installation, make sure you contract the seal ring using the sizing tool.
- Replace the piston's O-ring and seal ring as a set.

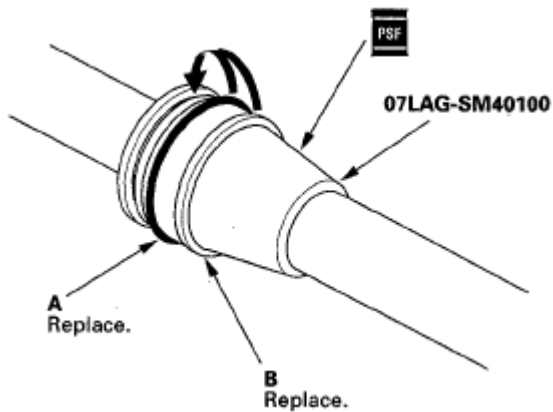


Fig. 94: Identifying Seal Ring On Piston Seal Ring Guide
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Pull the O-ring off into the piston groove, then pull the piston seal ring off into the piston groove on top of the O-ring.
25. Coat the piston seal ring (A), and the inside of the piston seal ring sizing tool with power steering fluid, then carefully slide the tool onto the rack and over the piston seal ring.

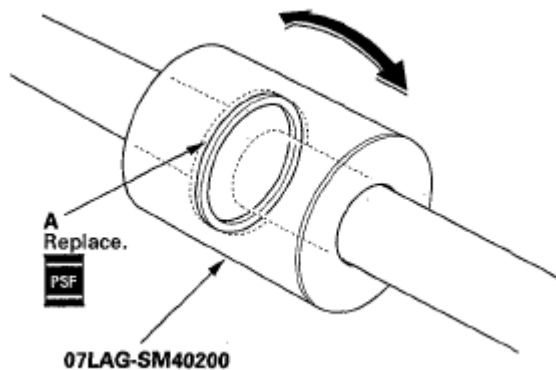


Fig. 95: Identifying Sliding Tool Onto Rack And Over Piston Seal Ring
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Move the piston seal ring sizing tool back and forth several times to make sure the piston seal ring fits snugly in the piston.
27. Wrap vinyl tape around the rack teeth and rack end edges, then coat the surface of the tape with power steering fluid. Make sure that the vinyl tape is wrapped carefully so that there is no stepped portion.

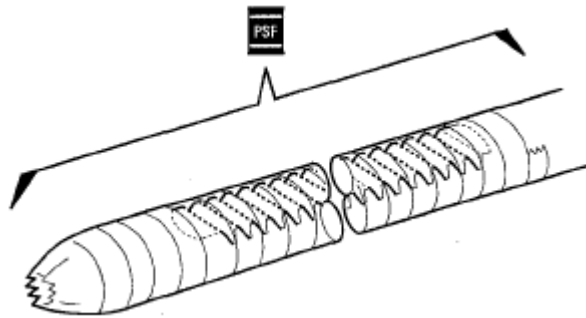


Fig. 96: Identifying Vinyl Tape Around Rack Teeth And Rack
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Coat the inside surface of the new cylinder end seal (A) with power steering fluid, then install it onto the steering rack with its grooved side toward the piston. When installing the cylinder end seal, be careful not to damage the lip of the seal with the edges or teeth of the steering rack.

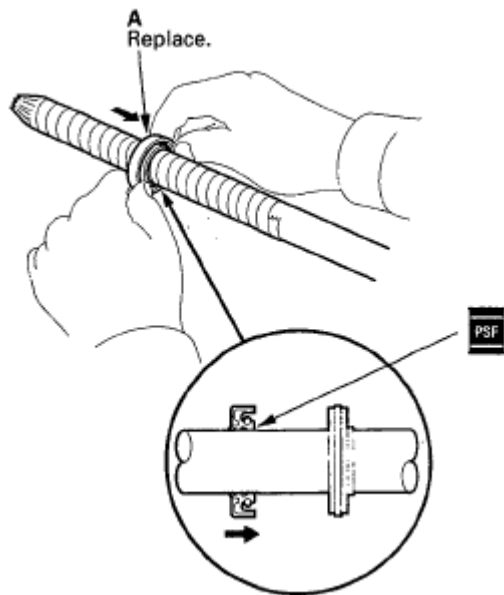


Fig. 97: Identifying Coating Inside Surface Of Cylinder Seal With Power Steering Fluid
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Remove the vinyl tape from the steering rack, then remove any adhesive residue.
30. Apply multipurpose grease to the steering rack teeth, then insert the steering rack into the gearbox housing. Be careful not to damage the inner surface of the cylinder wall with the rack edges.

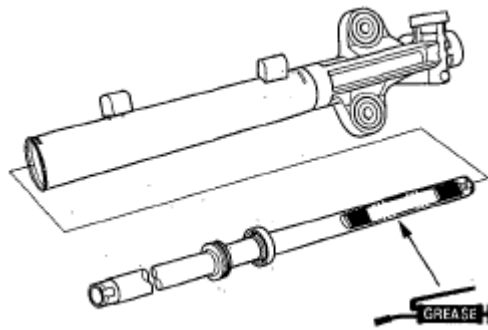


Fig. 98: Identifying Multipurpose Grease To Steering Rack Teeth
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Insert an appropriate sized deep socket (A) onto the steering rack as shown.

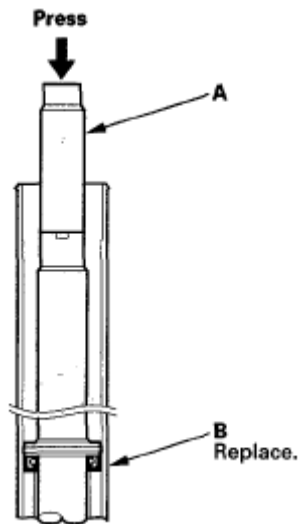


Fig. 99: Identifying Appropriate Sized Deep Socket Onto Steering Rack
Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Install the cylinder end seal (B) into the bottom of the cylinder by pressing on the tool with a press. Do not push on the tool with excessive force as it may damage the cylinder end seal.
33. Remove the tool, and center the steering rack.
34. Wrap vinyl tape around the rack end edges, and coat the surface of the tape with power steering fluid. Make sure that the vinyl tape is wrapped carefully so that there is no stepped portion.

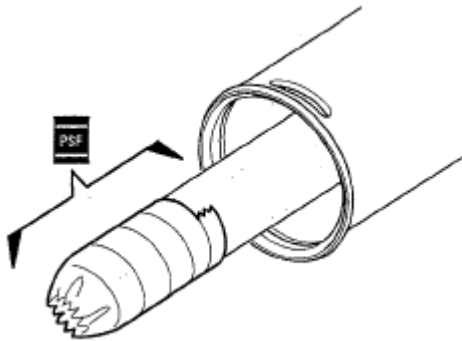


Fig. 100: Identifying Vinyl Tape Around Rack End Edges
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Coat the inside surface of the new cylinder end seal (A) with power steering fluid, then press it into the rack bushing (B) using the driver and attachment.

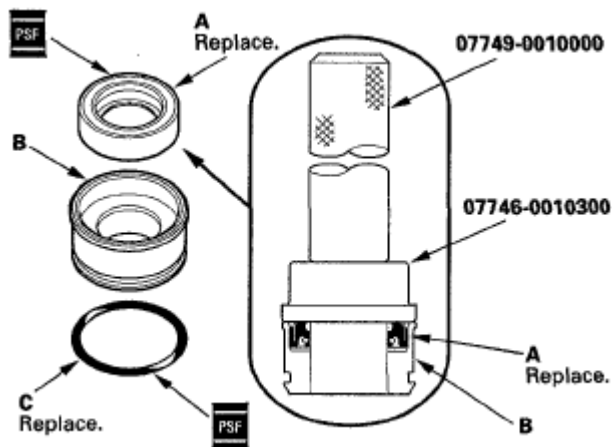


Fig. 101: Identifying Coating Inside Surface Of Cylinder Seal With Power Steering Fluid
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

36. Coat the new O-ring (C) with power steering fluid, and carefully fit it in the groove of the rack bushing.
37. Install the rack bushing onto the steering rack with the cylinder end seal grooved side toward the piston. Push in the rack bushing with your finger.

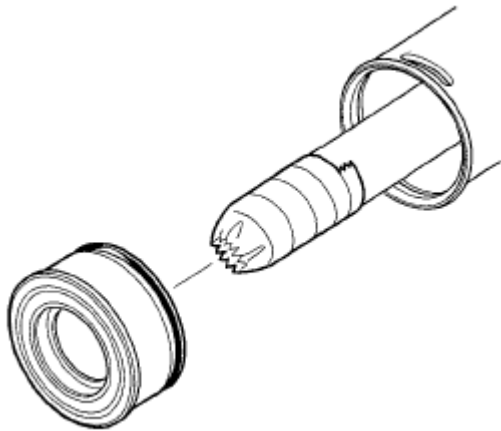


Fig. 102: Identifying Rack Bushing Onto Steering Rack
Courtesy of AMERICAN HONDA MOTOR CO., INC.

38. Remove the vinyl tape from the steering rack, then remove any adhesive residue.
39. Install the rack stop (A) onto the steering rack so the hole (B) is aligned with the slot (C) on the cylinder housing.

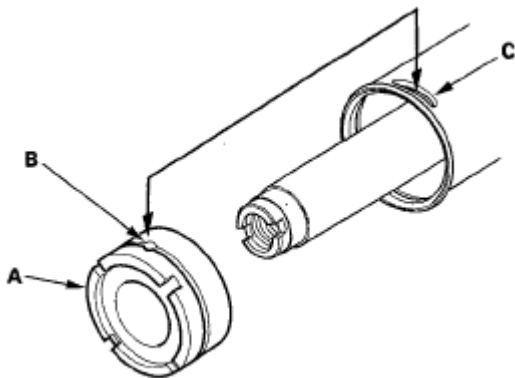


Fig. 103: Identifying Rack Stop Onto Steering Rack Hole
Courtesy of AMERICAN HONDA MOTOR CO., INC.

40. Insert the end of the circlip (A) into the hole (B) of the rack stop (C). Turn the rack stop counterclockwise until the circlip is fully seated in the rack stop.

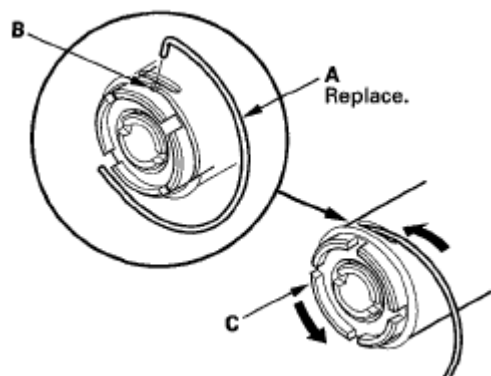


Fig. 104: Inserting Circlip Into Hole Of Rack Stop
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

41. Apply multipurpose grease to the bearings (A) in the gearbox housing, and install the valve body unit (B) and new gasket (C) by engaging the gears. Note the valve body unit installation position (direction of line connections). Then loosely install the two flange bolts.

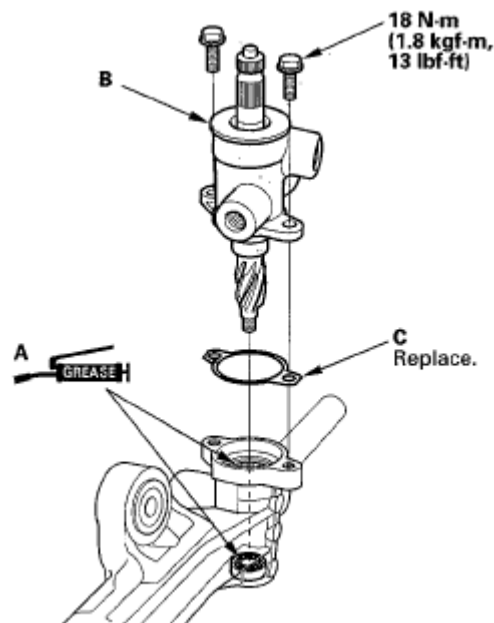


Fig. 105: Identifying Multipurpose Grease To Bearings In Gearbox Housing With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Install the new self-locking nut (A) onto the pinion shaft end, and tighten to the specified torque.

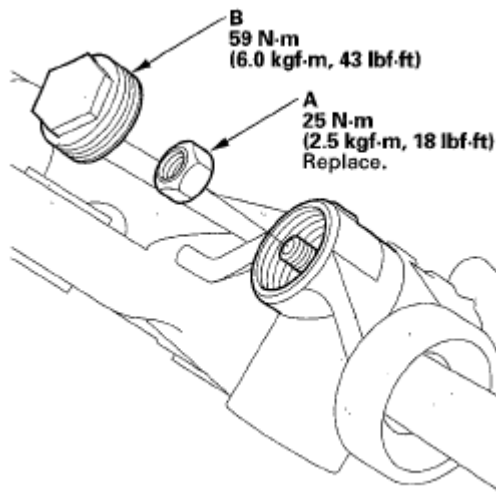


Fig. 106: Identifying Self-Locking Nut Onto Pinion Shaft With Torque Specifications With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

43. Tighten the flange bolts to the specified torque.
44. Remove the old sealant from the end plug (B), and apply new sealant (Loctite 565) all the way around the threads on the end plug, install the end plug onto the gearbox housing, and tighten it to the specified torque.

NOTE: If more than 5 minutes has passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.

45. After tightening, use a drift to stake (A) the end plug shoulder against the gearbox housing.

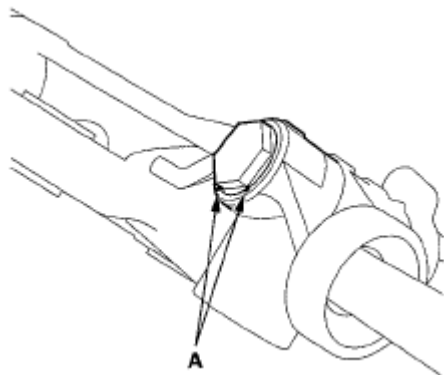


Fig. 107: Identifying Mark Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

46. Install the return line joint (A), and tighten the 16 mm flare nut (B) to the specified torque.

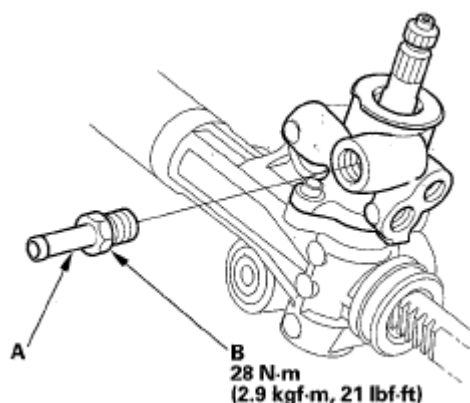


Fig. 108: Identifying Return Line Joint And Flare Nut With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

47. Coat the new O-rings (A) with power steering fluid, then install the O-rings to the damper valves (B).

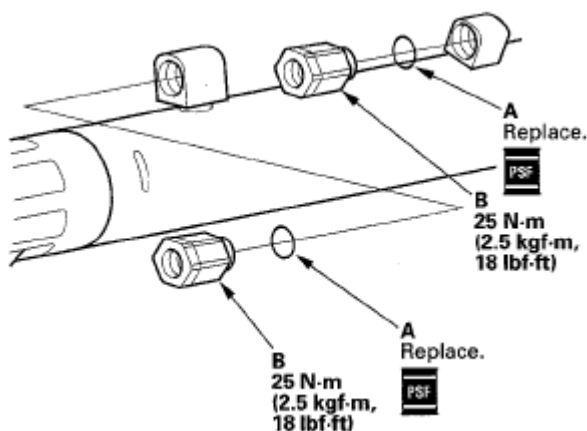


Fig. 109: Identifying Damper Valves And O-Rings With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

48. Install the damper valves to the steering gearbox, and tighten the damper valves to the specified torque.
 49. Before installing the cylinder lines, coat the new O-rings with power steering fluid, then install the lines.

Note these items during reassembly:

- Thoroughly clean the joints of the cylinder lines. The joints must be free of foreign material.
- Install the cylinder lines by tightening the flare nuts by hand first, then tighten the flare nuts to the specified torque.

NOTE: Use a second wrench when tightening the cylinder lines to avoid damaging the fittings on the steering gearbox.

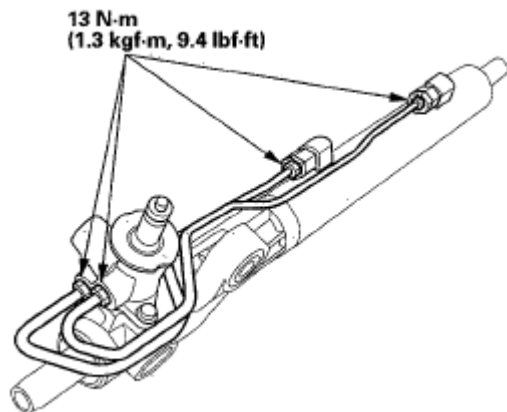


Fig. 110: Identifying Cylinder Lines Nut With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

50. Apply multipurpose grease to the sliding surface of the rack guide (A), and install it onto the gearbox housing.

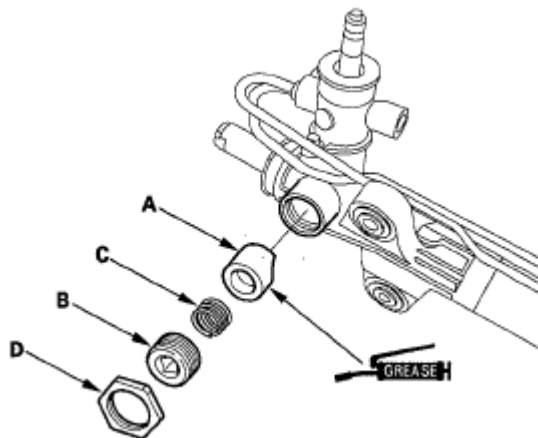


Fig. 111: Identifying Multipurpose Grease To Sliding Surface Of Rack Guide
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

51. Remove the old sealant from the rack guide screw (B), and apply new sealant (Loctite 565) to the middle of the threads of the rack guide screw, then install the spring (C), rack guide screw, and locknut (D).

NOTE: If more than 5 minutes has passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.

52. Adjust the rack guide screw (see **RACK GUIDE ADJUSTMENT**). After adjusting, check that the rack moves smoothly by sliding it right and left.
53. Install the new stop washer (A) and new lock washer (B). Align the lock washer tabs (C) with the slots (D). Install the rack end (E) while holding the lock washer in place. Repeat this step for the other side of the rack.

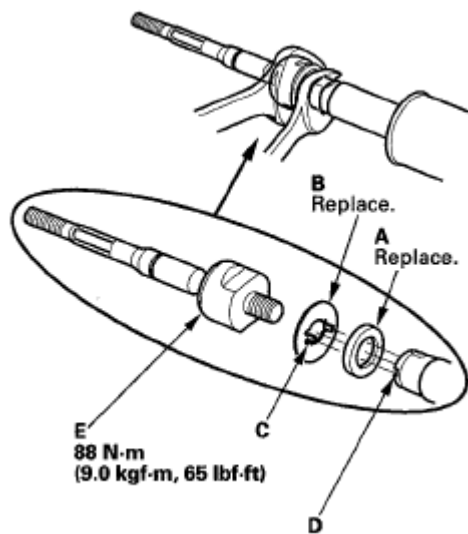


Fig. 112: Identifying Lock Washer With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

54. Hold the flat surface sections of the steering rack with one wrench, and tighten both rack ends with another wrench. Be careful not to damage the rack surface with the wrench.
55. Bend the lock washer (A) back against the flat spots on the rack end joint housing.

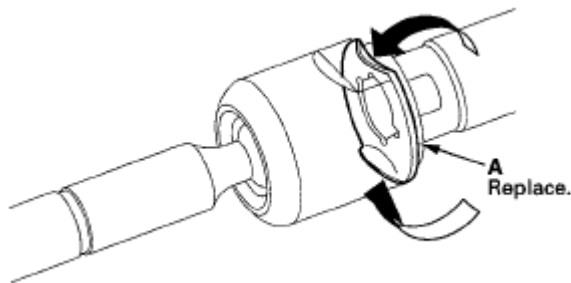


Fig. 113: Identifying Lock Washer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

56. Apply multipurpose grease to the circumference of the rack end joint housing (A).

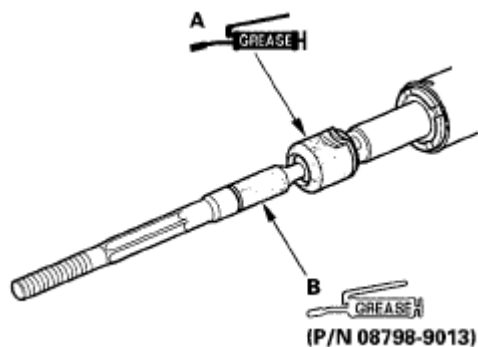


Fig. 114: Identifying Multipurpose Grease To Circumference Of Rack Joint Housing
Courtesy of AMERICAN HONDA MOTOR CO., INC.

57. Apply a light coat of silicone grease to the boot grooves (B) on the rack ends.
58. Center the steering rack within its stroke.
59. Clean off any grease or contamination from the boot installation surfaces (A) on the gearbox housing. Install the boots (B) on the rack ends with the tie-rod clips (C), and fit the boot end on the housing properly.

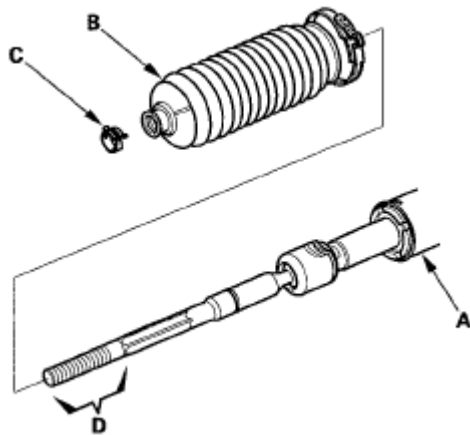


Fig. 115: Identifying Boots And Rack With Tie-Rod Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

60. After installing the boots, wipe the grease off the threaded section (D) of the rack end.
61. Install the new boot bands by aligning the tabs (A) with the holes (B) of the band.

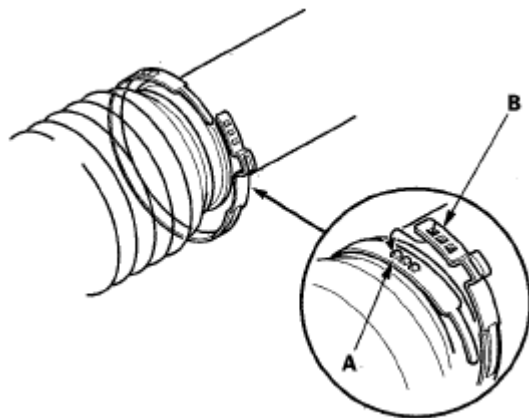


Fig. 116: Identifying Tabs With Holes Of Band
Courtesy of AMERICAN HONDA MOTOR CO., INC.

62. Close the ear portion (A) of the band with a commercially available Oetiker 1098 pincer or equivalent (B).

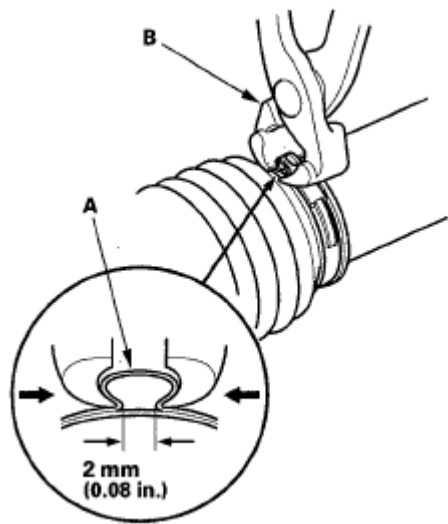


Fig. 117: Identifying Portion Of Band

Courtesy of AMERICAN HONDA MOTOR CO., INC.

63. Slide the rack right and left to be certain that the boots are not deformed or twisted.

STEERING GEARBOX INSTALLATION

1. Before installing the steering gearbox, make sure that no power steering fluid is on the mating surface of the steering gearbox and front subframe. To prevent the gearbox mounting bolts from loosening after the installation, remove any power steering fluid from the mount cushions and bolt holes.
2. Apply vinyl tape to the splines on the pinion shaft (A).

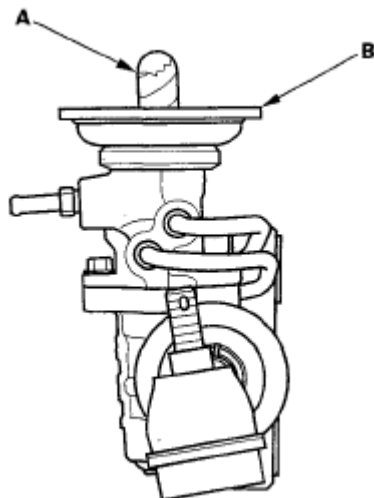


Fig. 118: Identifying Vinyl Tape To Splines On Pinion Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the pinion shaft grommet on the top of the valve housing.

4. Slide the steering gearbox (A) between the front subframe and body from the driver's side.

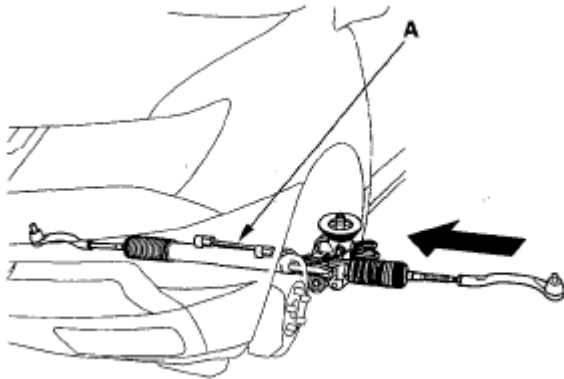


Fig. 119: Identifying Steering Gearbox Between Front Subframe And Body From Driver'S Side
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Carefully move the steering gearbox (A) toward the passenger's side until the pinion shaft clears the wheelwell opening on the body.

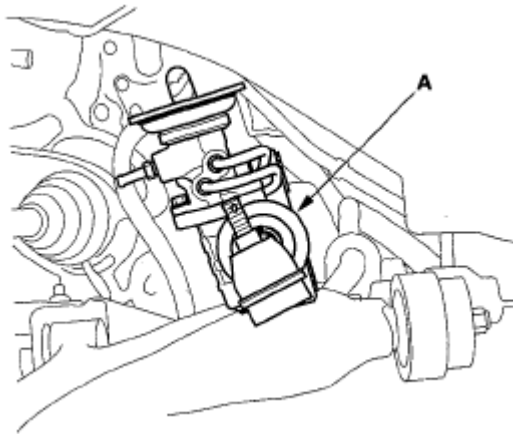


Fig. 120: Identifying Steering Gearbox
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Continue moving the gearbox toward the passenger's side until the steering gearbox is in position.
7. Install the gearbox stiffener bracket (A) on the left side of the front subframe, and tighten the bolts and nut to the specified torque.

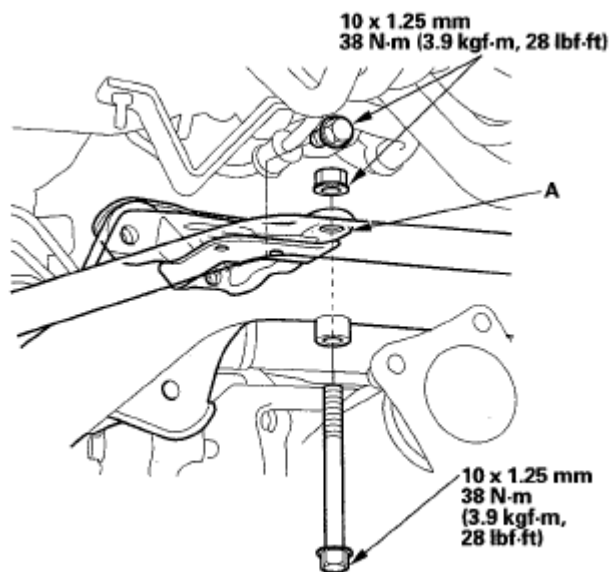


Fig. 121: Identifying Gearbox Stiffener Bracket On Left Side Of Front Subframe With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Loosely install the new mounting bolts (A) on the left side of the steering gearbox.

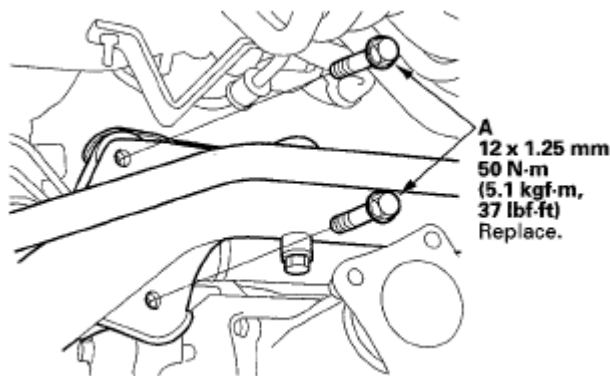


Fig. 122: Identifying Mounting Bolts On Left Side Of Steering Gearbox With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Position the cutout (A) on the mounting cushion (B) as shown, and install it on the right side of the steering gearbox.

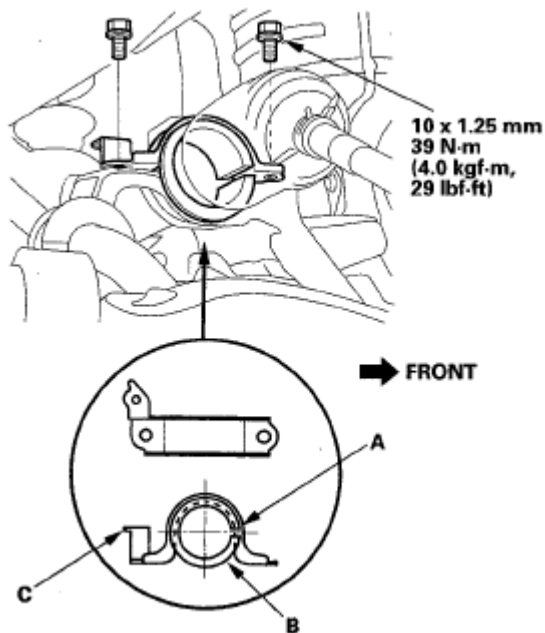


Fig. 123: Identifying Cutout On Mounting Cushion With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the gearbox mounting bracket (C) over the mounting cushion, and loosely install the mounting bolts.
11. Tighten the mounting bolts on both sides of the steering gearbox to the specified torque alternately in two or more steps.
12. Carefully raise the front subframe with the subframe adapter and the transmission jack or the powertrain lift until the subframe is in its position.
13. Align all reference marks (A) on the front subframe (B) with the body.

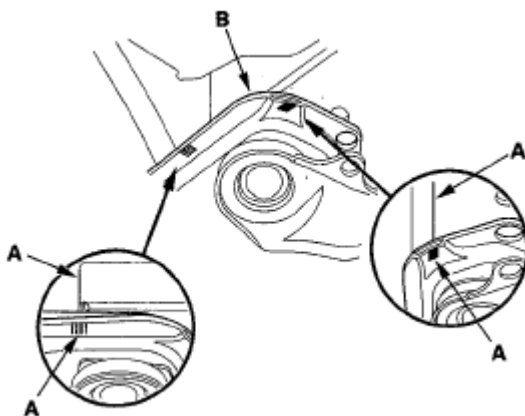


Fig. 124: Identifying Reference Marks On Front Subframe With Body
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the front subframe front brackets (A) with mounting bolts (B) and the new special bolts (C), and

tighten to the specified torque.

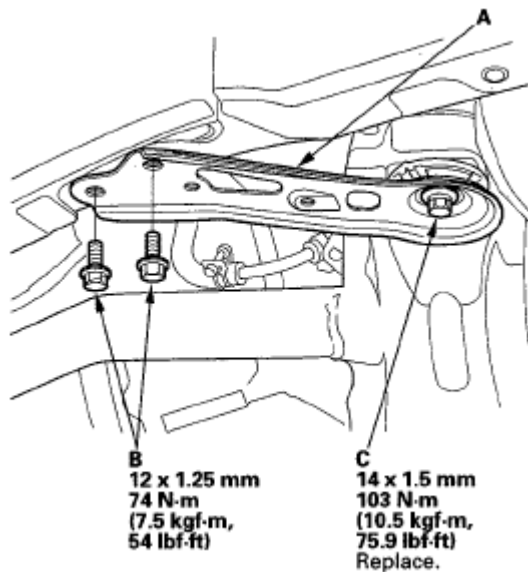


Fig. 125: Identifying Front Subframe Front Brackets With Mounting Bolts And Special Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the front subframe rear brackets (A) with mounting bolts (B) and the new special bolts (C), and tighten to the specified torque.

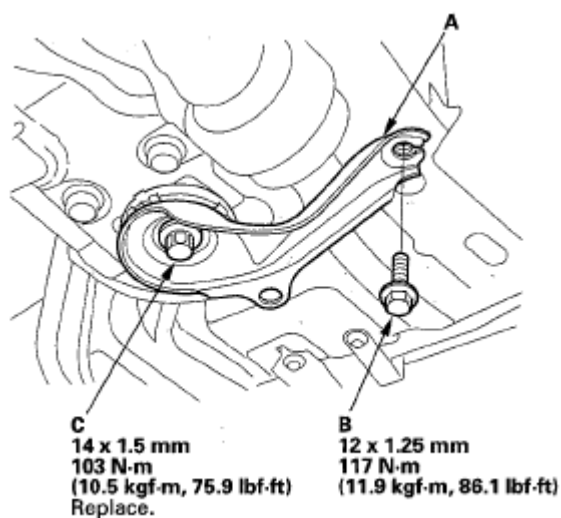


Fig. 126: Identifying Front Subframe Rear Brackets With Mounting Bolts And Special Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Lower the transmission jack supporting the front subframe.
17. Install the ground cable bolt (A) to the transmission.

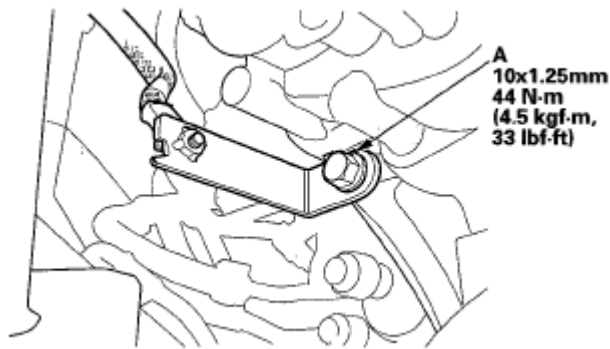


Fig. 127: Identifying Ground Cable Bolt To Transmission With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Install the base bracket (A) with new mounting bolts (B) and mounting bolts (C), and tighten to the specified torque.

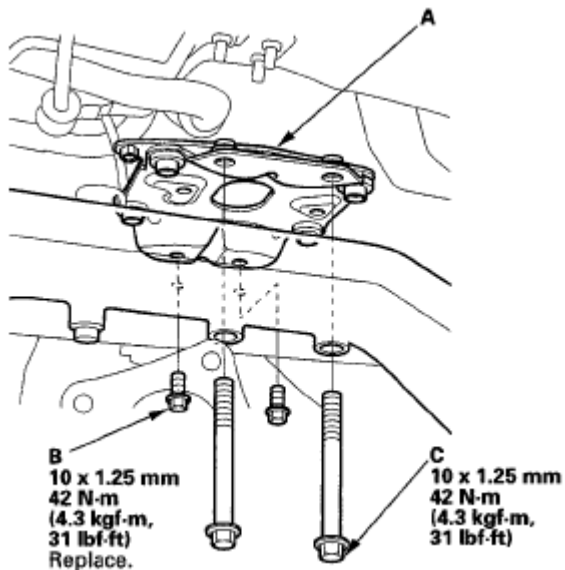


Fig. 128: Identifying Base Bracket With Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the rear engine mount (A) with new mounting bolts (B), and tighten to the specified torque.

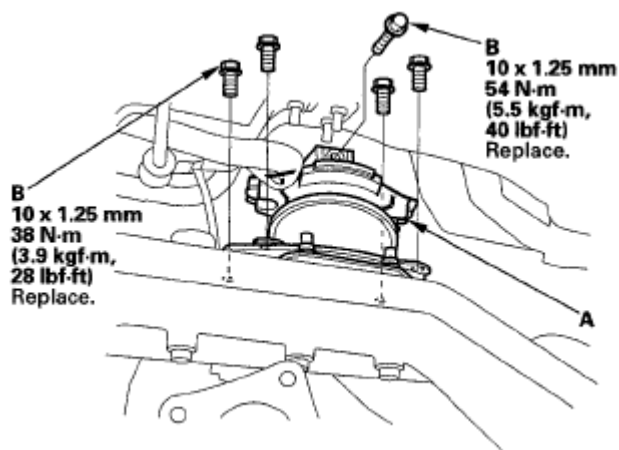


Fig. 129: Identifying Rear Engine Mount With Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the rear mount stop (A) with new mounting nuts (B), and tighten to the specified torque.

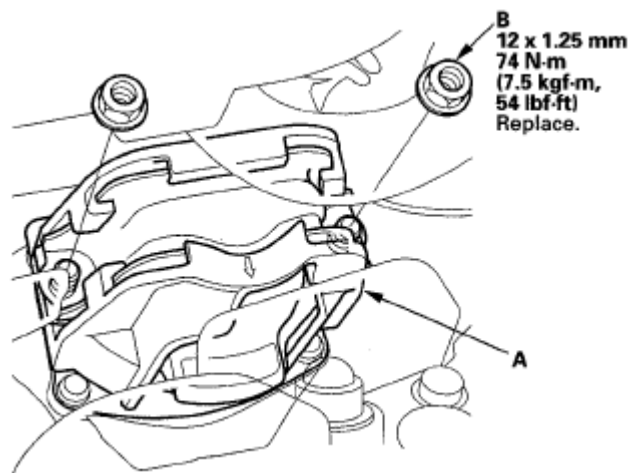


Fig. 130: Identifying Rear Mount Stop With Mounting Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the inlet line clamp bolts (A), and tighten to the specified torque.

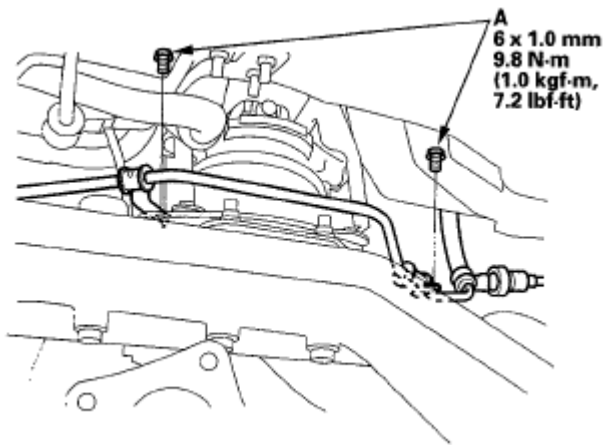


Fig. 131: Identifying Inlet Line Clamp Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install exhaust pipe A (see **EXHAUST PIPE AND MUFFLER REPLACEMENT**).
23. Install the propeller shaft and propeller shaft protectors (see **PROPELLER SHAFT INSTALLATION**).
24. Install the front subframe stiffener plate (A) with new mounting bolts (B), and tighten to the specified torque.

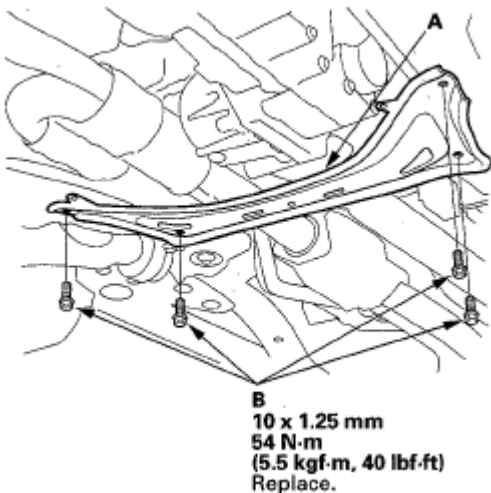


Fig. 132: Identifying Front Subframe Stiffener Plate With Mounting Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the front undercover (see **FRONT UNDERCOVER REPLACEMENT**) and the front splash shield (see **SPLASH SHIELD REPLACEMENT**).
26. Connect the stabilizer links (A) to the lower arms (see **STABILIZER LINK REMOVAL/INSTALLATION**).

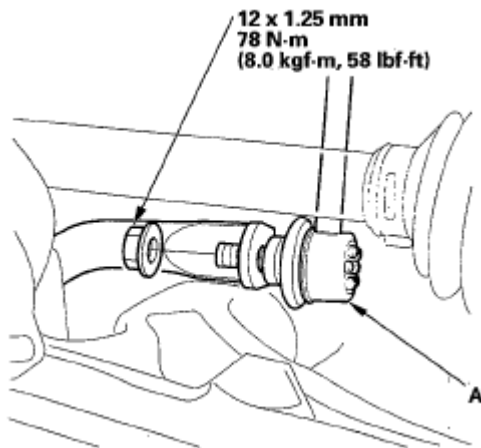


Fig. 133: Identifying Stabilizer Links To Lower Arms With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Connect the lower arm ball joints to the knuckles (see **LOWER ARM REMOVAL/INSTALLATION**).
28. Wipe off any grease contamination from the ball joint tapered section and threads. Reconnect the tie-rod ball joints (A) to the knuckles. Install the 12 mm nuts (B) and tighten it to the specified torque.

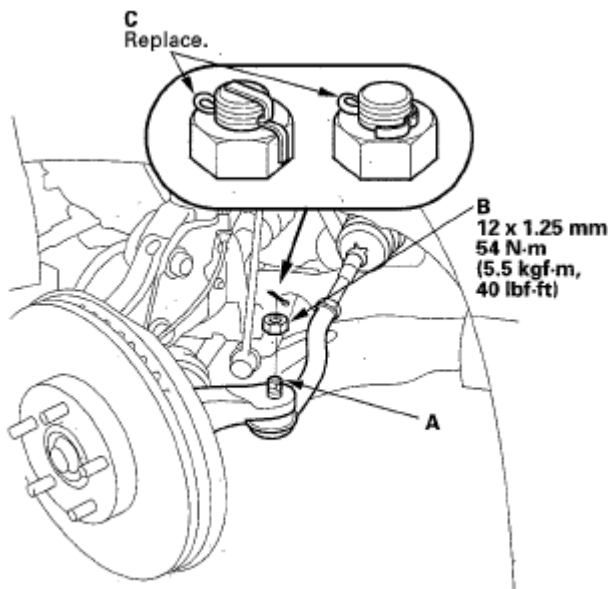


Fig. 134: Identifying Tie-Rod Ball Joints And Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Install the new cotter pin (C) and bend it as shown.
30. Remove the engine support hanger, the hanger balance bar, and the hanger adapter set.
31. Connect the return hose (A) securely, and tighten the adjustable hose clamp (B) (see **POWER STEERING HOSE, LINE, AND PRESSURE SWITCH REPLACEMENT**).

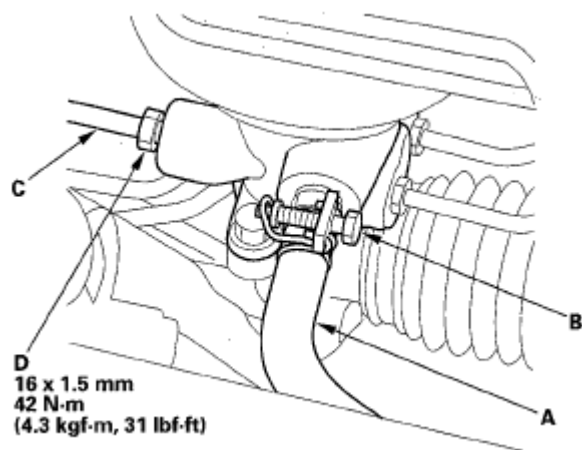


Fig. 135: Identifying Return Hose, Hose Clamp And Inlet Line With Flare Nut With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Connect the inlet line (C), and tighten the 16 mm flare nut (D) to the specified torque.
33. Install the front wheel, then set the wheels in the straight ahead position.

NOTE: Before installing the wheel, clean the mating surfaces of the brake disc and inside of the wheel.

34. Lower the vehicle.
35. Center the steering rack within its stroke.
36. Insert the upper end of the steering joint onto the steering shaft (A) (line up the bolt hole (B) with the flat portion (C) on the shaft), and loosely install the upper joint bolt (D).

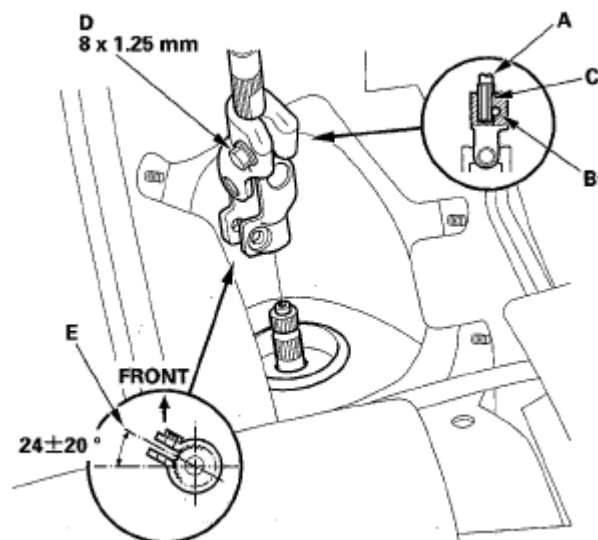


Fig. 136: Identifying Upper Of Steering Joint Onto Steering Shaft

Courtesy of AMERICAN HONDA MOTOR CO., INC.

37. Slip the lower end of the steering joint onto the pinion shaft taking care to align the gap (E) within the angle.
38. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft then loosely install the joint bolt (C).

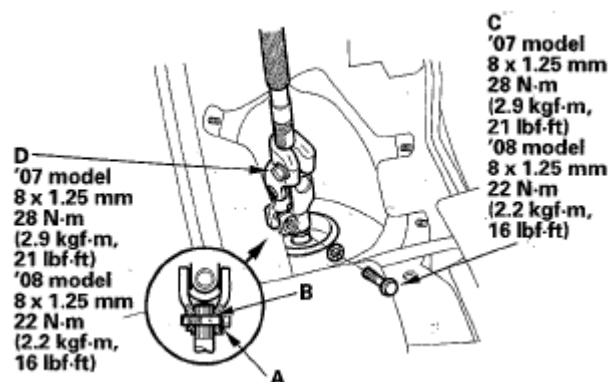


Fig. 137: Identifying Bolt Hole On Steering Joint With Groove With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

39. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the lower joint bolt to the specified torque.
40. Tighten the upper joint bolt (D) to the specified torque.
41. Install the steering joint cover (A).

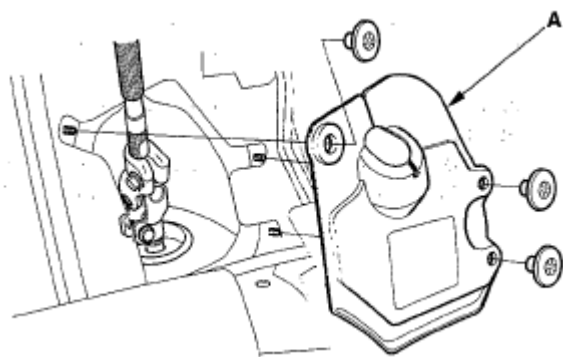


Fig. 138: Identifying Steering Joint Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

42. Install the steering wheel (see STEERING WHEEL INSTALLATION).
43. Do the battery terminal reconnection procedure(see BATTERY TERMINAL DISCONNECTION AND RECONNECTION), and do these tasks:
 - Turn the ignition switch ON (II); the SRS indicator should come on for about 6 seconds and then go off.

- Make sure the horn and turn signal switches work properly.
 - Make sure the steering wheel switches work properly.
44. Fill the system with power steering fluid, and bleed air from the system (see **FLUID REPLACEMENT**).
 45. After installation, do these checks:
 - Start the engine, allow it to idle, and turn the steering wheel from lock-to-lock several times to warm up the fluid. Check the gearbox for leaks (see **FLUID LEAKAGE INSPECTION**).
 - Check the steering wheel spoke angle. If steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft serrations, then adjust the front toe by turning the tie-rod ends, if necessary.
 - Set the steering column to the center tilt position, then do the front toe inspection (see **WHEEL ALIGNMENT**).

TIE-ROD BALL JOINT BOOT REPLACEMENT

Special Tools Required

Front hub dis/assembly tool 07965-SA50500

1. Disconnect the tie-rod ball joint from the knuckle (see step 17 on).
2. Remove the tie-rod end from the rack end.
3. Remove the tie-rod ball joint boot from the tie-rod end, and wipe the old grease off the ball pin.
4. Pack the lower area of the ball pin (A) with fresh multipurpose grease.

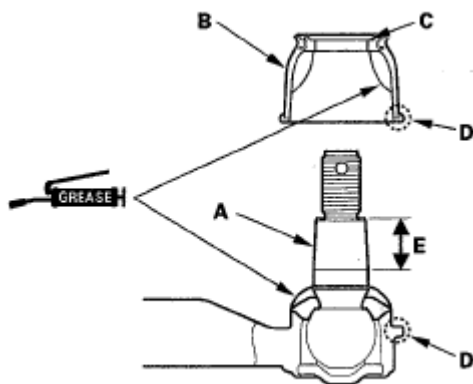


Fig. 139: Identifying Multipurpose Grease Applying Area
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pack the interior of the new tie-rod ball joint boot (B) and lip (C) with fresh multipurpose grease.

Note these items when installing new grease:

- Keep grease off the boot mounting area (D) and the tapered section (E) of the ball pin.

- Do not allow dust, dirt, or other foreign materials to enter the boot.
6. Install the new tie-rod ball joint boot (A) using the front hub dis/assembly tool. The boot must not have a gap at the boot installation sections (B). After installing the boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.

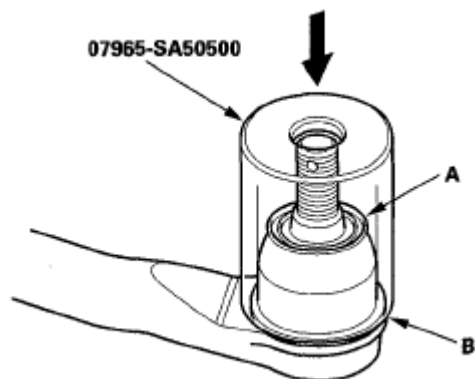


Fig. 140: Identifying Tie-Rod Ball Joint Boot
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the tie-rod end to the rack end.
8. Connect the tie-rod ball joint to the knuckle (see step 28 on).
9. Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

GEARBOX MOUNT CUSHION REPLACEMENT

1. Remove the steering gearbox (see STEERING GEARBOX REMOVAL).
2. Position the 34 mm socket wrench (A) on the flange part of the gearbox housing with a washer (B), a 10 x 105 mm flange bolt (C) and a 10 mm nut (D) as shown.

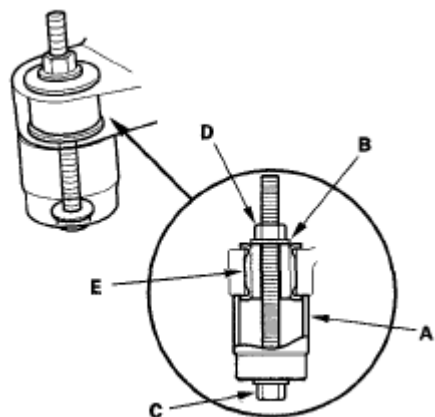


Fig. 141: Identifying Socket Wrench On Flange Part Of Gearbox Housing With Washer
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Hold the flange bolt with a wrench, and tighten the nut with a wrench. Remove the gearbox mount cushion (E).
4. Apply a mild soap and water solution to the new gearbox mount cushion surface (A), then place it on the gearbox mounting cushion hole.

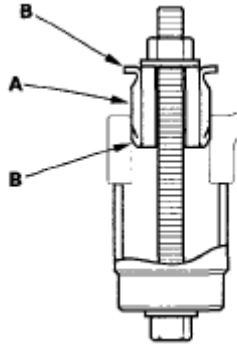


Fig. 142: Identifying Mild Soap And Water Solution To Gearbox Mount Cushion Surface
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Position the 34 mm socket wrench on the flange part of the gearbox housing with a washer, a flange bolt, and a nut as shown.
6. Install the gearbox mount cushion by tightening the nut until the mount cushion edges (B) contact the gearbox flange surface.
7. Install the steering gearbox (see **STEERING GEARBOX INSTALLATION**).

2007-09 ACCESSORIES AND EQUIPMENT

Power Tailgate - MDX

COMPONENT LOCATION INDEX

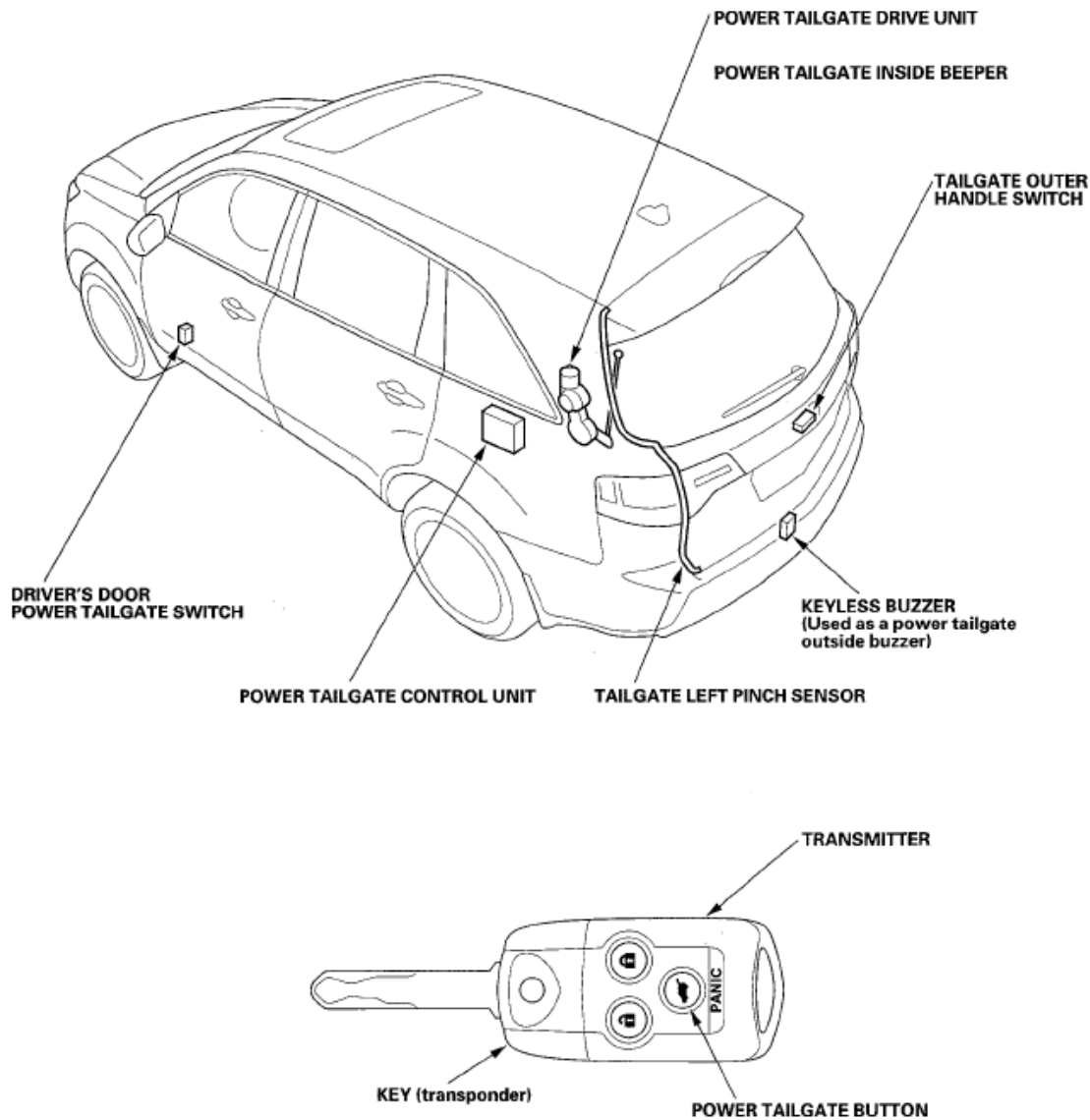


Fig. 1: Identifying Power Tailgate Component Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

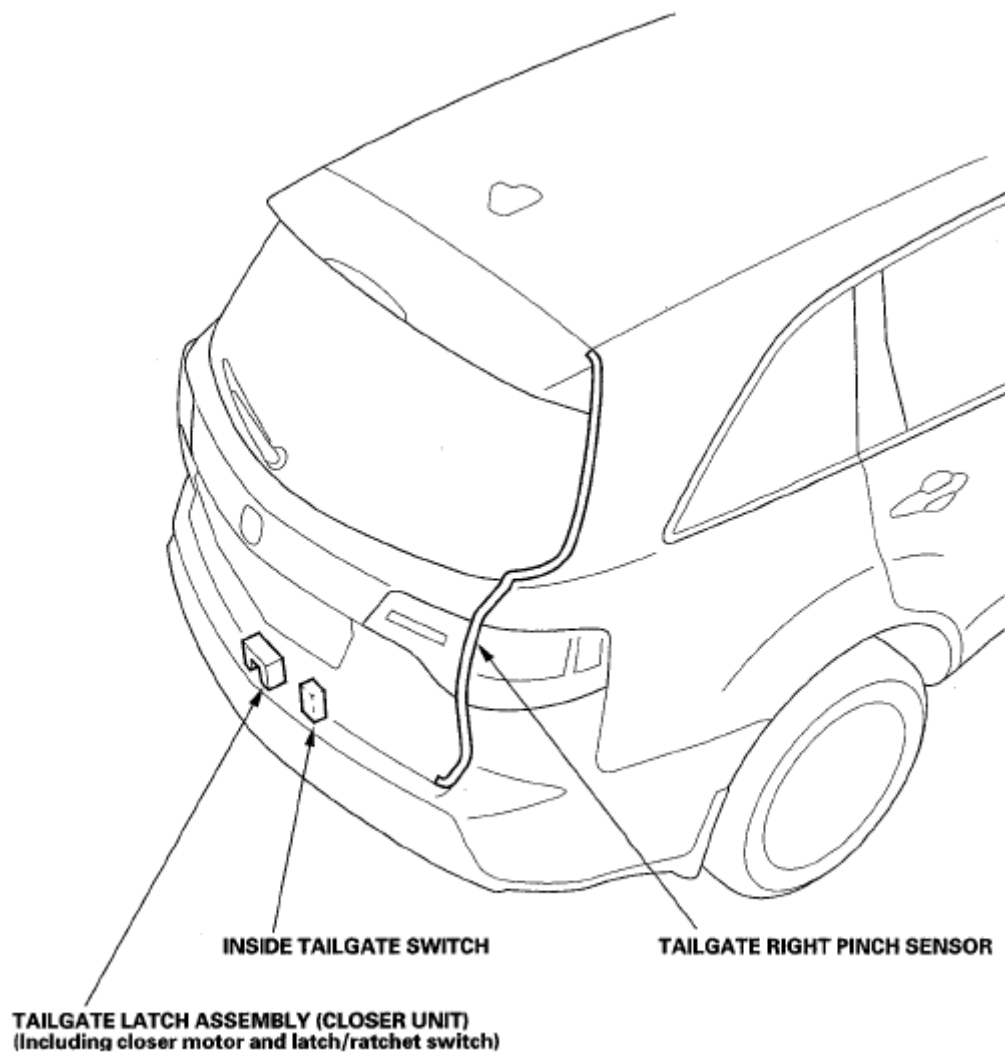


Fig. 2: Identifying Power Tailgate Component Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

The power tailgate can be opened and closed automatically by operating the dashboard switch, outer handle switch (for open), inside tailgate switch (for close) or the keyless transmitter. The power tailgate has two safety functions for safeguarding passengers: obstruction detection, and fall-down detection.

BASIC OPERATION

OPEN: The power tailgate can be opened by operating the driver's switch, outer handle, or the keyless transmitter under the following conditions:

- Tailgate is fully closed (full-latched position is detected.).

- Driver's door or Passenger's door lock knob switch is in UNLOCKED.
- The remote unlock button is pressed twice, and then the tailgate button is pressed and held for 2 seconds (unless customized setting is set to unlock all doors).
- Shift lever is in Park position.
- Vehicle speed is less than 1.2 mph (2 km/h).
- Closer unit detects the neutral position.
- Battery voltage (VBU) is more than 11 V.
- System is not in fail-safe mode.

CLOSE: The power tailgate can be closed by operating the driver's door tailgate switch, inside tailgate switch, or the keyless transmitter under the following conditions:

- Tailgate is fully open.
- Pinch sensor detects no obstruction.
- Closer unit detects the neutral position.
- Battery voltage (VBU) is more than 11 V.
- System is not in fail-safe mode.

OBSTRUCTION DETECTION FUNCTION

If any obstruction is detected while the tailgate is automatically opening or closing, the tailgate will stop and the reverse operation is activated. An obstruction is detected by the tailgate pinch sensor and the pulser in the drive unit. If the obstruction is detected when the shift lever is in any other position than P, or the vehicle speed exceeds 1.2 mph (2 km/h), the tailgate stops moving immediately.

FALL-DOWN DETECTION FUNCTION

This function prevents the tailgate from suddenly falling down because of an accumulation of snow, or other causes. If the pulser in the drive unit detects abnormal pulses, the tailgate starts to open. If this operation is activated twice, the tailgate will close automatically. If the obstruction detection function detects any obstruction several times during this fall-down detection function, the tailgate stops moving.

NOTE: **If the tailgate falls repeatedly, replace the tailgate support strut (see TAILGATE SUPPORT STRUT REPLACEMENT).**

- A. Auto open action completed
- B. Tailgate falling is detected
- C. Clutch reconnect when falling is detected
- D. Auto open action (power tailgate motor reverse action)
- E. Close function activated from fully open position

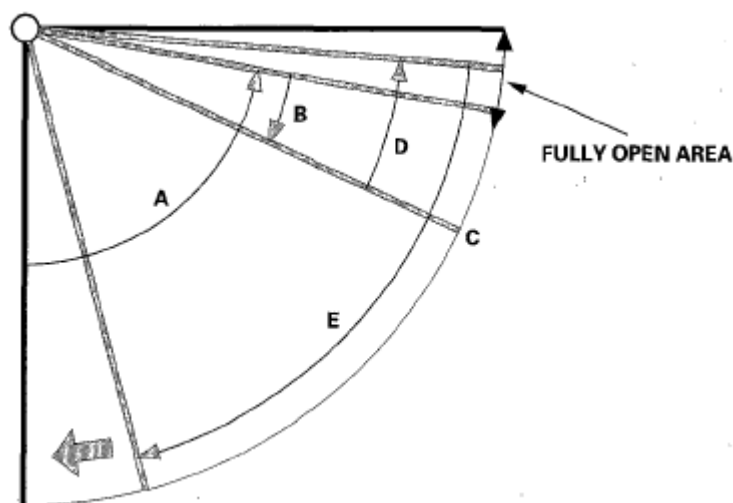


Fig. 3: Fall-Down Detection Function

Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER TAILGATE BUZZER BEEP PATTERN

POWER TAILGATE BUZZER BEEP PATTERN

Condition	Beep Pattern
When the tailgate starts to open automatically	Beeps 1 time
When the tailgate starts to close automatically	Beeps 1 time
When the reverse operation is started after the tailgate has detected any obstruction	Beeps 3 times
When the reverse operation is started by switch operation	Beeps 3 times
When the vehicle speed exceeds 1.2 mph (2 km/h) while the tailgate is opening automatically	Beeps intermittently until the condition is corrected
When the operating time is over	Beeps 3 times
When the vehicle speed exceeds 1.2 mph (2 km/h) while the tailgate is closing automatically	Beeps intermittently until the condition is corrected
When the tailgate is not fully-latched, and the following condition is met: The shift lever is any position other than P, and brake pedal position switch and parking brake switch is OFF, and the vehicle speed exceeds 1.2 mph (2 km/h).	Beeps intermittently until the condition is corrected
When the tailgate fall-down detection function is activated	Beeps continuously

RESETTING THE POWER TAILGATE CONTROL UNIT

If the battery terminal is disconnected or No. 7 (10 A) fuse in the under-dash fuse/relay box is removed while the power tailgate is operating, the power tailgate will not be able to open or close automatically until it is reset. To reset the system, fully close the tailgate manually. Once the battery terminals are reconnected or No. 7 (10 A) fuse in the under-dash fuse/relay box is replaced, the power tailgate system will automatically reset. Make

sure the power tailgate operates properly.

CIRCUIT DIAGRAM

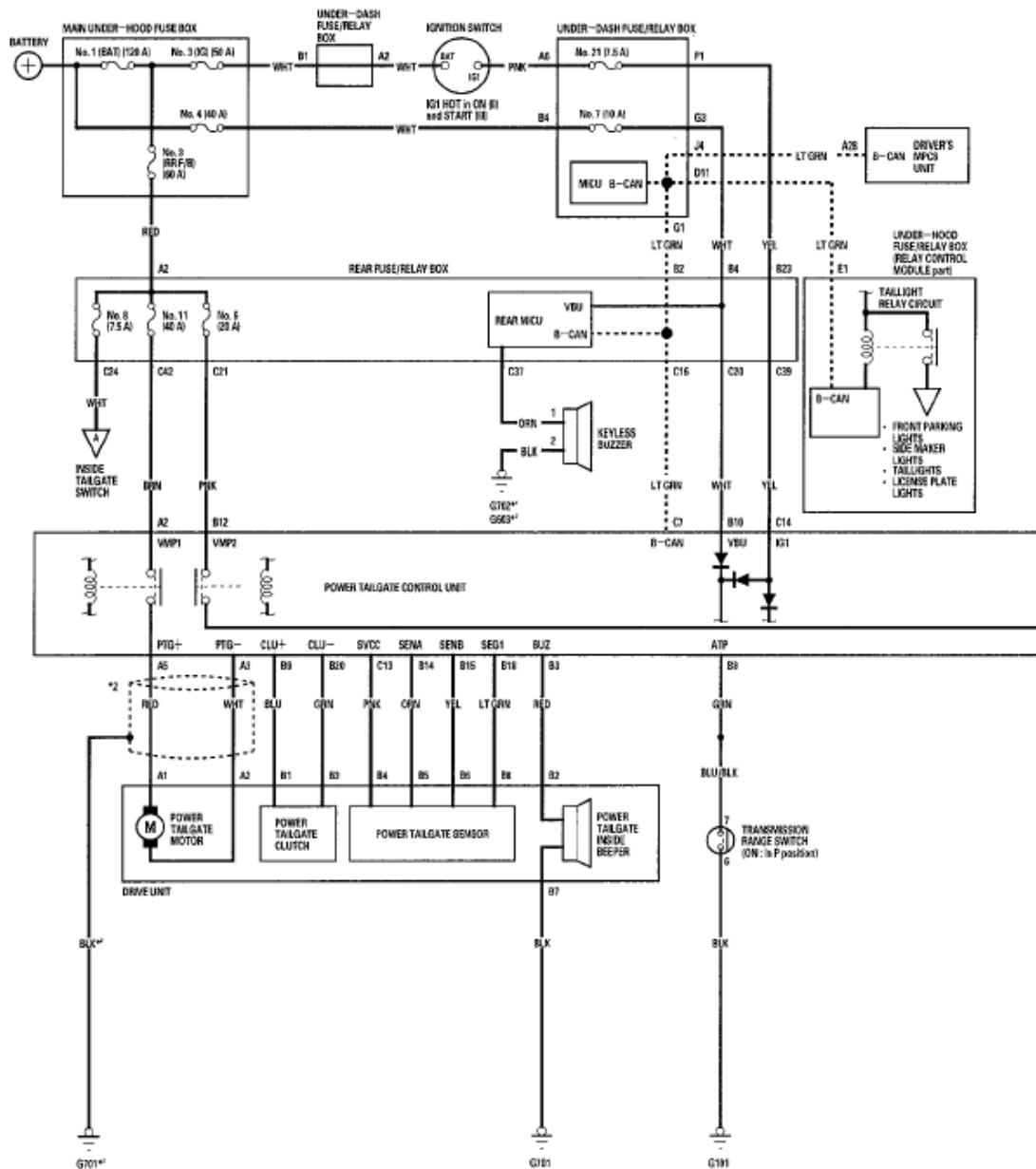


Fig. 4: Power Tailgate - Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

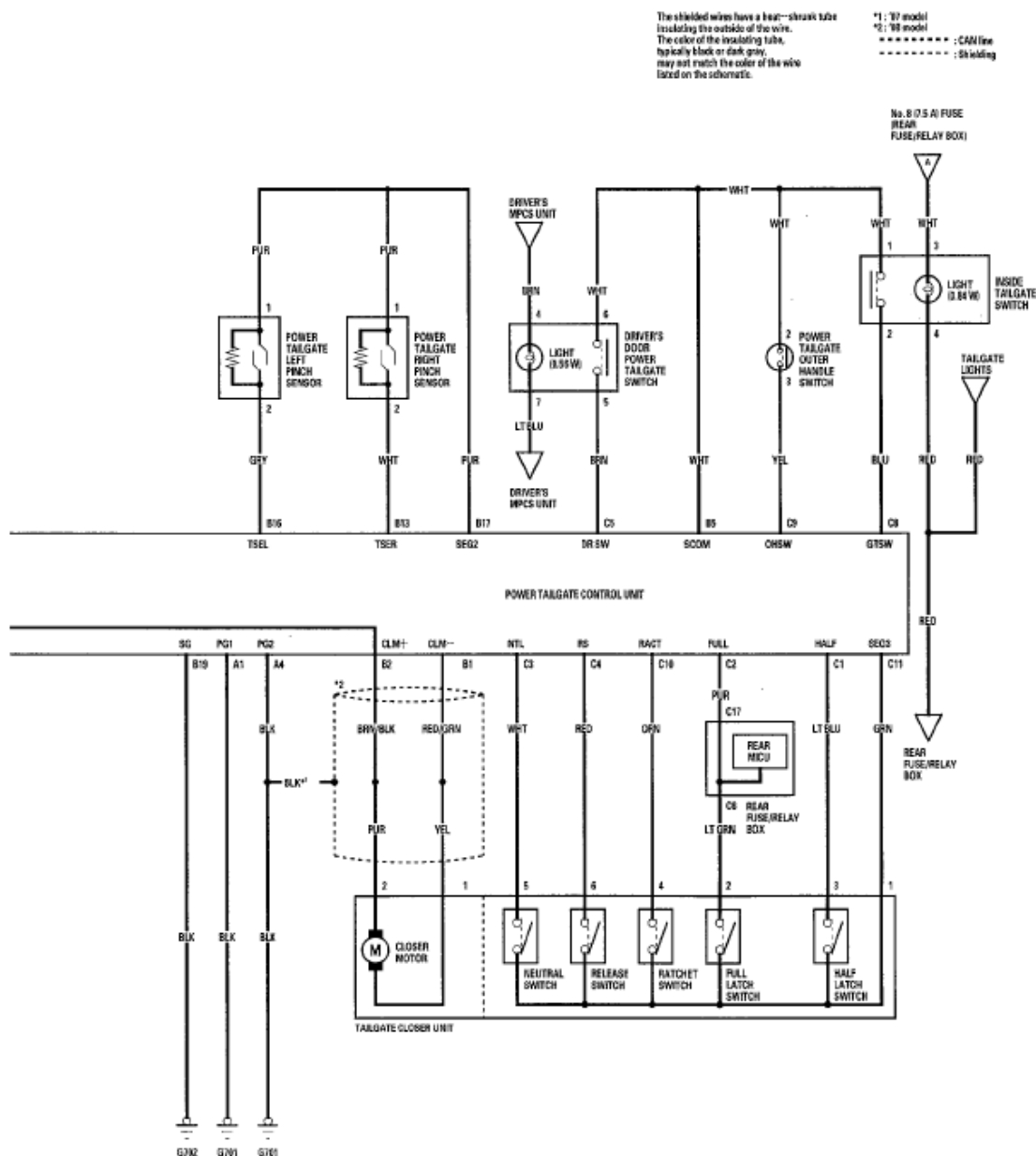


Fig. 5: Power Tailgate - Circuit Diagram (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1352: POWER TAILGATE CONTROL UNIT INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Tailgate - MDX

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the data link connector.
3. Remove the No. 7 (10 A) fuse from the under-dash fuse/relay box.
4. Wait for 1 minute, then reinstall the No. 7 (10 A) fuse to the under-dash fuse/relay box.
5. Close the tailgate manually (not with the power tailgate switch).
6. Turn the ignition switch ON (II).
7. Check for DTCs with the HDS.

Is DTC B1352 indicated?

YES - Replace the power tailgate control unit.

NO - Intermittent failure, the power tailgate control unit is OK at this time. Check for loose or poor connections between the power tailgate control unit and the MICU.

DTC B1355: POWER TAILGATE CONTROL UNIT LOST COMMUNICATION WITH MICU (MICU MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1355 indicated?

YES - Go to Step 5.

NO - Intermittent failure, the power tailgate control unit is OK at this time. Check for loose or poor connections between the power tailgate control unit and the MICU.

5. Check for DTCs with the HDS.

Are DTCs B1055, B1157, B1160, B1255, B1955, B2155, and/or B1806 also indicated?

YES - Do the MICU input test (see **MICU INPUT TEST**).

NO - Do the power tailgate control unit input test (see **CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1356: POWER TAILGATE CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S

MPCS UNIT (DRLOCKSW MESSAGE); DTC B1358: POWER TAILGATE CONTROL UNIT LOST COMMUNICATION WITH DRIVER'S MPCS UNIT (ASLOCKSW MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1356 and/or B1358 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the driver's MPCS unit.

5. Check for DTCs with the HDS.

Are DTCs B1013, B1015, B1065, B1182, and B1905 also indicated?

YES - Do the driver's MPCS unit input test (see **DRIVER'S MPCS UNIT INPUT TEST**).

NO - Do the power tailgate control unit input test (see **CONTROL UNIT INPUT TEST/REPLACEMENT**).

DTC B1357: POWER TAILGATE CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (VSP/NE MESSAGE); DTC B1359: POWER TAILGATE CONTROL UNIT LOST COMMUNICATION WITH GAUGE CONTROL MODULE (A/T MESSAGE)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for 6 seconds or more.
4. Check for DTCs with the HDS.

Is DTC B1357 and/or B1359 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the gauge control module.

5. Check for DTCs with the HDS.

Are DTCs B1011, B1060, B1061, B1205, B1206, B1207, B1906, B1956, and/or B2160 also indicated?

YES - Do the gauge control module input test (see GAUGE CONTROL MODULE INPUT TEST).

NO - Do the power tailgate control unit input test (see CONTROL UNIT INPUT TEST/REPLACEMENT).

DTC B1375: DRIVER'S DOOR POWER TAILGATE SWITCH CIRCUIT MALFUNCTION

NOTE: If the power tailgate motor does not operate, test the motor first.

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.
3. Operate the driver's door power tailgate switch for more than 1 second.
4. Check for DTCs with the HDS.

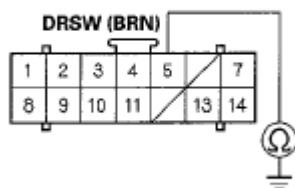
Is DTC B1375 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the driver's door power tailgate switch.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the 5P connector from the driver's door power tailgate switch.
7. Disconnect power tailgate control unit connector C (14P).
8. Check for continuity between the power tailgate control unit connector C (14P) No. 5 terminal and body ground.

POWER TAILGATE CONTROL
UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 6: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 5

Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short in the wire.**NO** - Go to step 9.

9. Disconnect power tailgate control unit connector B (20P).
10. Check for continuity between the power tailgate control unit connector B (20P) No. 5 terminal and body ground.

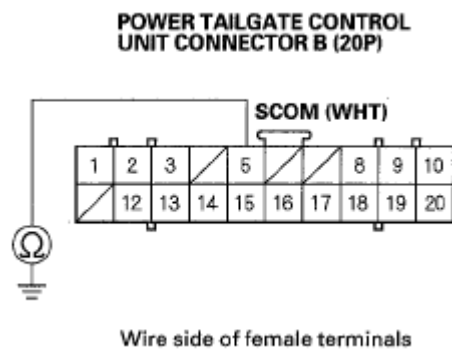


Fig. 7: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short in the wire.**NO** - Go to step 11.

11. Do the driver's door power tailgate switch test (see **DRIVER'S DOOR POWER TAILGATE SWITCH TEST/REPLACEMENT**).

*Is the switch OK?***YES** - Replace the power tailgate control unit.**NO** - Replace the driver's door power tailgate switch.**DTC B1376: TAILGATE OUTER HANDLE SWITCH CIRCUIT MALFUNCTION**

NOTE: If the power tailgate motor does not operate, test the motor first.

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS, and wait for 2 seconds.
3. Pull the tailgate outer handle for more than 2 seconds.
4. Check for DTCs with the HDS.

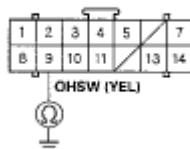
Is DTC B1376 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections at the power tailgate control unit and at the tailgate outer handle switch.

5. Turn the ignition switch to LOCK (0).
6. Open the power tailgate with the keyless transmitter.
7. Disconnect the 3P connector from the tailgate outer handle switch.
8. Disconnect power tailgate control unit connector C (14P).
9. Check for continuity between the power tailgate control unit connector C (14P) No. 9 terminal and body ground.

POWER TAILGATE CONTROL
UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 8: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 9 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to Step 10.

10. Disconnect power tailgate control unit connector B (20P).
11. Check for continuity between the power tailgate control unit connector B (20P) No. 5 terminal and body ground.

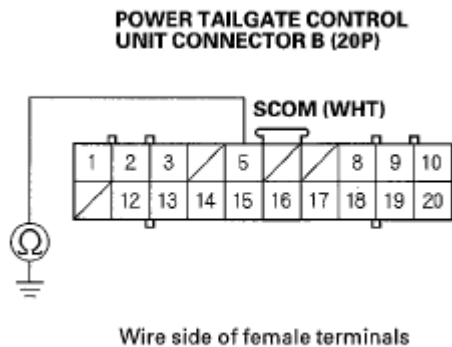


Fig. 9: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 5 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 12.

12. Test the tailgate outer handle switch (see **TAILGATE RELEASE ACTUATOR TEST**).

Is the switch OK?

YES - Replace the power tailgate control unit.

NO - Replace the tailgate outer handle switch.

DTC B1377: INSIDE TAILGATE SWITCH CIRCUIT MALFUNCTION

1. Turn the ignition switch to LOCK (0), and then back ON (II).
2. Clear the DTCs with the HDS.
3. Open the tailgate with the keyless transmitter.
4. Push the inside tailgate switch for more than 2 seconds.
5. Check for DTCs with the HDS.

Is DTC B1377 indicated?

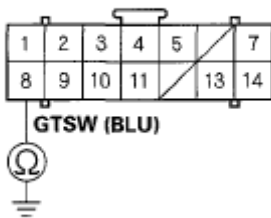
YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the inside tailgate switch.

6. Turn the ignition switch to LOCK (0).

7. Disconnect the 5P connector from the inside tailgate switch.
8. Disconnect power tailgate control unit connector C (14P).
9. Check for continuity between the power tailgate control unit connector C(14P) No. 8 terminal and body ground.

**POWER TAILGATE CONTROL
UNIT CONNECTOR C (14P)**



Wire side of female terminals

Fig. 10: Identifying Continuity Between Power Tailgate Control Unit Connector C(14P) No. 8 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

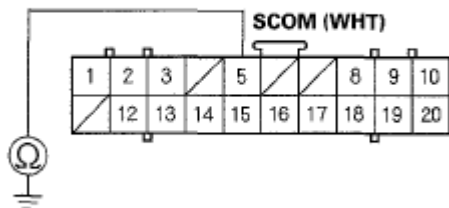
Is there continuity?

YES - Repair short in the wire.

NO - Go to step 10.

10. Disconnect power tailgate control unit connector B (20P).
11. Check for continuity between the power tailgate control unit connector B (20P) No. 5 terminal and body ground.

**POWER TAILGATE CONTROL
UNIT CONNECTOR B (20P)**



Wire side of female terminals

Fig. 11: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 12.

12. Test the inside tailgate switch (see **INSIDE TAILGATE SWITCH TEST/ REPLACEMENT**).

Is the switch OK?

YES - Replace the power tailgate control unit.

NO - Replace the inside tailgate switch.

DTC B1378: POWER TAILGATE RIGHT PINCH SENSOR CIRCUIT MALFUNCTION

1. Open the tailgate manually or with the keyless transmitter.
2. Close the tailgate with the keyless transmitter or driver's door power tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

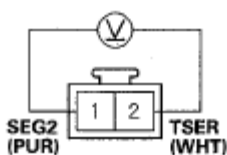
Is DTC B1378 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the power tailgate right pinch sensor.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 2P connector from the power tailgate right pinch sensor.
8. Turn the ignition switch ON (II).
9. Measure the voltage between the harness side of the power tailgate right pinch sensor 2P connector No. 2 (+) and No. 1 (-) terminals.

**POWER TAILGATE RIGHT PINCH
SENSOR 2P CONNECTOR**



Terminal side of male terminals

Fig. 12: Identifying Voltage Between Harness Side Of Power Tailgate Right Pinch Sensor 2P Connector No. 2 And No. 1 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the power tailgate right pinch sensor.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Disconnect power tailgate control unit connector B (20P).
12. Check for continuity between the power tailgate control unit connector B (20P) No. 13 terminal and the power tailgate right pinch sensor 2P connector No. 2 terminal.

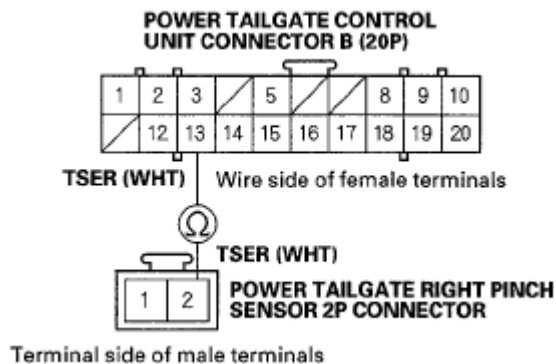


Fig. 13: Identifying Continuity Between No. 13 Terminal And No. 2 Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the power tailgate control unit connector B (20P) No. 17 terminal and the power tailgate right pinch sensor 2P connector No. 1 terminal.

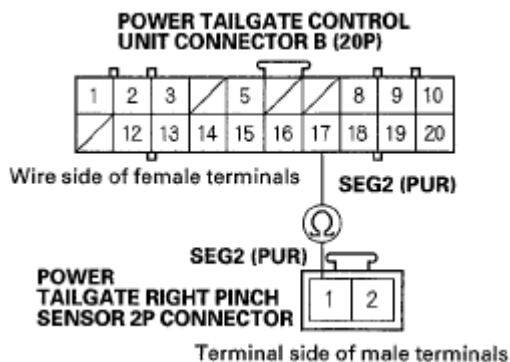


Fig. 14: Identifying Continuity Between No. 17 Terminal And No. 1 Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power tailgate control unit.

NO - Repair open in the wire.

DTC B1379: POWER TAILGATE LEFT PINCH SENSOR CIRCUIT MALFUNCTION

1. Open the tailgate manually or with the keyless transmitter.
2. Close the tailgate with the keyless transmitter or driver's door power tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

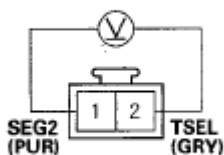
Is DTC B1379 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the power tailgate left pinch sensor.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 2P connector from the power tailgate left pinch sensor.
8. Turn the ignition switch ON (II).
9. Measure the voltage between the harness side of the power tailgate left pinch sensor 2P connector No. 2 (+) and No. 1 (-) terminals.

**POWER TAILGATE LEFT PINCH
 SENSOR 2P CONNECTOR**



Terminal side of male terminals

Fig. 15: Identifying Voltage Between Harness Side Of Power Tailgate Left Pinch Sensor 2P Connector No. 2 And No. 1 Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the power tailgate left pinch sensor.

NO - Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Disconnect power tailgate control unit connector B (20P).
12. Check for continuity between the power tailgate control unit connector B (20P) No. 16 terminal and the power tailgate left pinch sensor 2P connector No. 2 terminal.

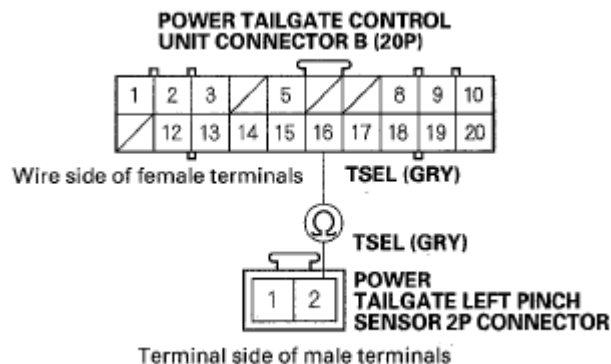


Fig. 16: Identifying Continuity Between No. 16 Terminal And No. 2 Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between the power tailgate control unit connector B (20P) No. 17 terminal and the power tailgate left pinch sensor 2P connector No. 1 terminal.

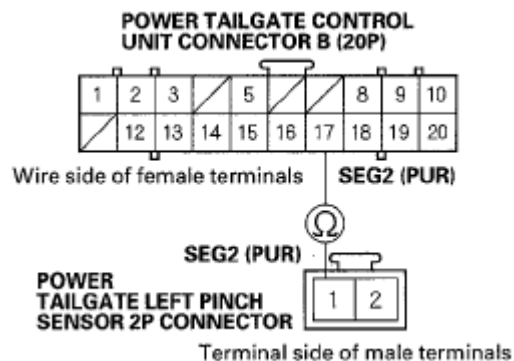


Fig. 17: Identifying Continuity Between No. 17 Terminal And No. 1 Terminal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power tailgate control unit.

NO - Repair open in the wire.

DTC B1380: POWER TAILGATE CLOSER UNIT NEUTRAL SWITCH CIRCUIT MALFUNCTION

1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate manually.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

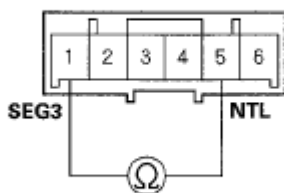
Is DTC B1380 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the power tailgate closer unit.

6. Open the tailgate with the power tailgate outer handle.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the 6P connector from the power tailgate closer unit.
9. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 5 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 18: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 5 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

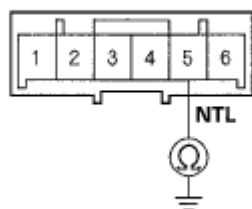
Is there continuity?

YES - Faulty neutral switch, replace the power tailgate closer unit.

NO - Go to step 10.

10. Check for continuity between the power tailgate closer unit 6P connector No. 5 terminal and body ground.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 19: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 5 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

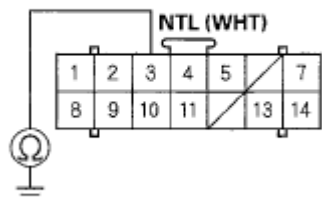
Is there continuity?

YES - Replace the power tailgate closer unit.

NO - Go to step 11.

11. Disconnect power tailgate control unit connector C (UP).
12. Check for continuity between the power tailgate control unit connector C (14P) No. 3 terminal and body ground.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 20: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 13.

13. Turn the tailgate lock latch to the fully-closed position using a screwdriver.
14. Disconnect power tailgate control unit connector B (20P).
15. Connect battery power to the power tailgate control unit connector B (20P) No. 2 terminal and ground the No. 1 terminal momentarily. (The motor should run in the release direction.)

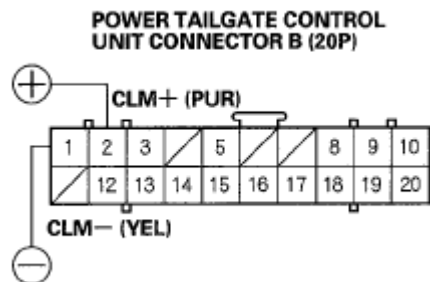
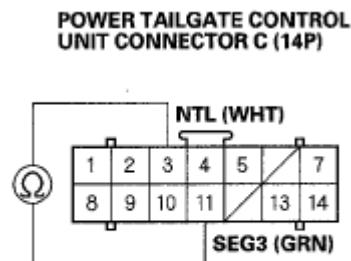


Fig. 21: Identifying Battery Power To Power Tailgate Control Unit Connector B (20P) No. 2 Terminal And Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between the power tailgate control unit connector C (14P) No. 3 and No. 11 terminals.



Wire side of female terminals

Fig. 22: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 3 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

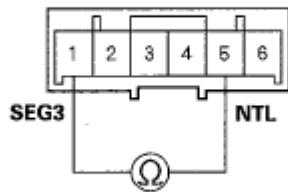
Is there continuity?

YES - Replace the power tailgate control unit.

NO - Go to step 17.

17. Disconnect the 6P connector from the power tailgate closer unit.
18. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 5 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 23: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 5 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the power tailgate closer unit and power tailgate control unit.

NO - Replace the power tailgate closer unit.

DTC B1381: POWER TAILGATE CLOSER UNIT RELEASE SWITCH CIRCUIT MALFUNCTION

1. Open the tailgate with the tailgate outer handle switch.
2. Close the tailgate manually.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

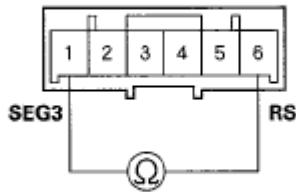
Is DTC B1381 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the tailgate closer unit.

6. Open the tailgate with the tailgate outer handle.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the 6P connector from the power tailgate closer unit.
9. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 6 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 24: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

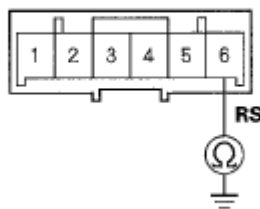
Is there continuity?

YES - Faulty release switch, replace the power tailgate closer unit.

NO - Go to step 10.

10. Check for continuity between the power tailgate closer unit 6P connector No. 6 terminal and body ground.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 25: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 6 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power tailgate closer unit.

NO - Go to step 11.

11. Disconnect power tailgate control unit connector C (14P).
12. Check for continuity between the power tailgate control unit connector C (14P) No. 4 terminal and body ground.

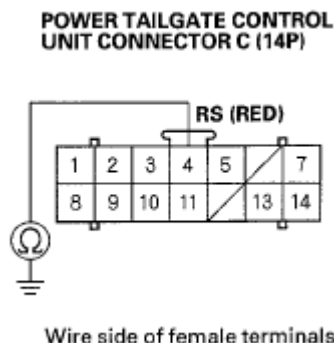


Fig. 26: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 4 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 13.

13. Turn the tailgate lock latch to the fully-closed position using a screwdriver.
14. Disconnect power tailgate control unit connector B (20P).
15. Connect battery power to the power tailgate control unit connector B (20P) No. 2 terminal and ground the No. 1 terminal momentarily. (The motor should run in the release direction.)

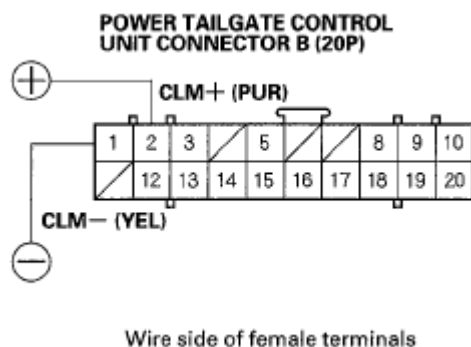
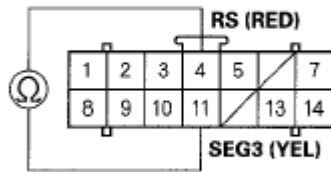


Fig. 27: Identifying Battery Power To Power Tailgate Control Unit Connector B (20P) No. 2 Terminal And Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Check for continuity between the power tailgate control unit connector C (14P) No. 4 and No. 11 terminals.

**POWER TAILGATE CONTROL
UNIT CONNECTOR C (14P)**



Wire side of female terminals

Fig. 28: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 4 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

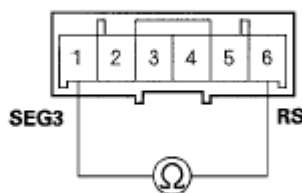
YES - Replace the power tailgate control unit.

NO - Go to step 17.

17. Disconnect the 6P connector from the power tailgate closer unit.

18. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 6 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 29: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 6 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the power tailgate closer unit and power tailgate control unit.

NO - Replace the power tailgate closer unit.

**DTC B1382: POWER TAILGATE CLOSER UNIT FULL LATCH SWITCH CIRCUIT
MALFUNCTION**

1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate manually.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for the DTCs with the HDS.

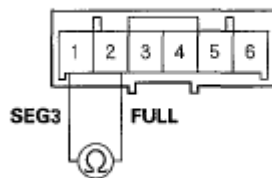
Is DTC B1382 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the power tailgate closer unit.

6. Open the tailgate with the tailgate outer handle.
7. Turn the ignition switch to LOCK (0).
8. Turn the tailgate lock latch to the fully-closed position using a screwdriver.
9. Disconnect the 6P connector from the power tailgate closer unit.
10. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 2 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 30: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

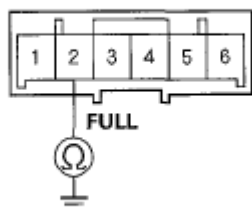
Is there continuity?

YES - Faulty full latch switch, replace the power tailgate closer unit.

NO - Go to step 11.

11. Check for continuity between the power tailgate closer unit 6P connector No. 2 terminal and body ground.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 31: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

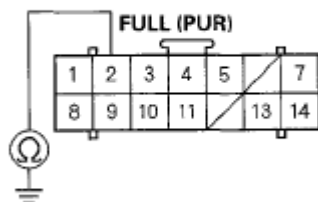
Is there continuity?

YES - Replace the power tailgate closer unit.

NO - Go to step 12.

12. Disconnect power tailgate control unit connector C (14P).
13. Check for continuity between the power tailgate control unit connector C (14P) No. 2 terminal and body ground.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 32: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 2 Terminal And Body Ground

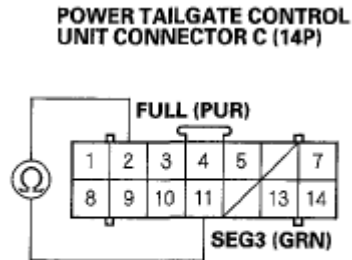
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire between the power tailgate control unit and the rear fuse/ relay box or between the rear fuse/relay box and the power tailgate closer unit. If the wire harness are OK, replace the MICU-rear junction box.

NO - Go to step 14.

14. Turn the tailgate emergency lever to release the tailgate lock latch from the fully-locked position to release position.
15. Check for continuity between the power tailgate control unit connector C (14P) No. 2 and No. 11 terminals.



Wire side of female terminals

Fig. 33: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 2 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

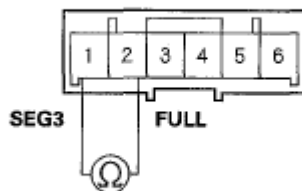
Is there continuity?

YES - Replace the power tailgate control unit.

NO - Go to step 16.

16. Disconnect the 6P connector from the power tailgate closer unit.
17. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 2 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 34: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 2 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the power tailgate closer unit and power tailgate control unit.

NO - Replace the power tailgate closer unit.

DTC B1383: POWER TAILGATE CLOSER UNIT RATCHET SWITCH CIRCUIT MALFUNCTION

1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate manually.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

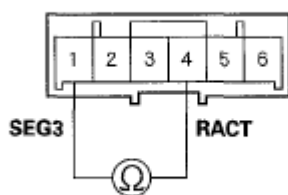
Is DTC B1383 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the power tailgate closer unit.

6. Open the tailgate with the tailgate outer handle.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the 6P connector from the power tailgate closer unit.
9. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 4 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 35: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 4 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

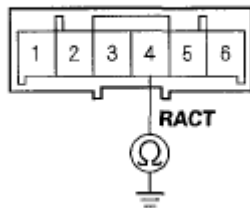
Is there continuity?

YES - Faulty ratchet switch, replace the power tailgate closer unit.

NO - Go to step 10.

10. Check for continuity between the power tailgate closer unit 6P connector No. 4 terminal and body ground.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 36: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

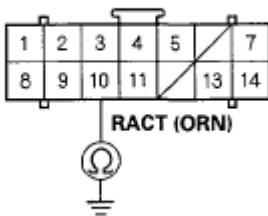
Is there continuity?

YES - Replace the power tailgate closer unit.

NO - Go to step 11.

11. Disconnect power tailgate control unit connector C (UP).
12. Check for continuity between the power tailgate control unit connector C (14P) No. 10 terminal and body ground.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 37: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 10 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

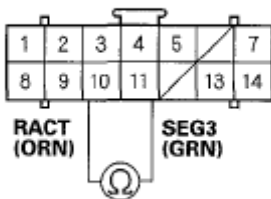
YES - Repair a short to ground in the wire.

NO - Go to step 13.

13. Turn the tailgate lock latch to the fully-locked position using a screwdriver.

14. Turn the tailgate emergency lever to release the tailgate lock latch from the fully-locked position to release position.
15. Check for continuity between the power tailgate control unit connector C (14P) No. 10 and No. 11 terminals.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 38: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 10 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

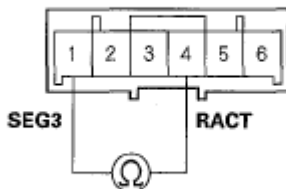
Is there continuity?

YES - Replace the power tailgate control unit.

NO - Go to step 16.

16. Disconnect the 6P connector from the power tailgate closer unit.
17. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 4 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 39: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 4 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the power tailgate closer unit and power tailgate control unit.

NO - Replace the power tailgate closer unit.

DTC B1384: POWER TAILGATE CLOSER UNIT HALF LATCH SWITCH CIRCUIT MALFUNCTION

1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate manually.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

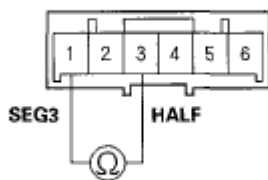
Is DTC B1384 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the tailgate closer unit.

6. Open the tailgate with the tailgate outer handle.
7. Turn the ignition switch to LOCK (0).
8. Turn the tailgate lock latch to the fully-closed position using a screwdriver.
9. Disconnect the 6P connector from the power tailgate closer unit.
10. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 3 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 40: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

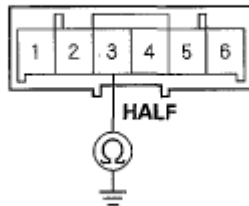
YES - Faulty half latch switch, replace the power tailgate closer unit.

NO - Go to step 11.

11. Check for continuity between the power tailgate closer unit 6P connector No. 3 terminal and body

ground.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 41: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 3 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

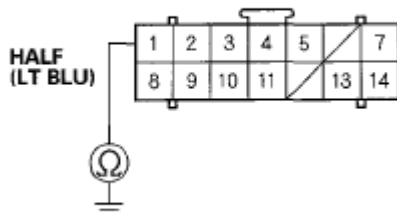
Is there continuity?

YES - Replace the power tailgate closer unit.

NO - Go to step 12.

12. Disconnect power tailgate control unit connector C (14P).
13. Check for continuity between the power tailgate control unit connector C (14P) No. 1 terminal and body ground.

POWER TAILGATE CONTROL UNIT CONNECTOR C (14P)



Wire side of female terminals

Fig. 42: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 1 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 14.

14. Turn the emergency lever of the tailgate and release the tailgate lock latch from the fully-locked position.
15. Check for continuity between the power tailgate control unit connector C (14P) No. 1 and No. 11 terminals.

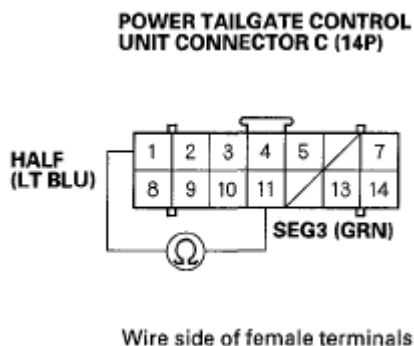


Fig. 43: Identifying Continuity Between Power Tailgate Control Unit Connector C (14P) No. 1 And No. 11 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

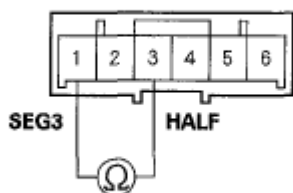
Is there continuity?

YES - Replace the power tailgate control unit.

NO - Go to step 16.

16. Disconnect the 6P connector from the power tailgate closer unit.
17. Check for continuity between the power tailgate closer unit 6P connector No. 1 and No. 3 terminals.

POWER TAILGATE CLOSER UNIT 6P CONNECTOR



Terminal side of male terminals

Fig. 44: Identifying Continuity Between Power Tailgate Closer Unit 6P Connector No. 1 And No. 3 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair open in the wire between the power tailgate closer unit and power tailgate control unit.

NO - Replace the power tailgate closer unit.

DTC B1386: POWER TAILGATE SENSOR PULSE A CIRCUIT MALFUNCTION

NOTE: If the motor does not operate, do the power tailgate motor test (see POWER TAILGATE MOTOR TEST).

1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate automatically with the keyless transmitter or inside tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

Is DTC B1386 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the drive unit.

6. Turn the ignition switch to LOCK (0).
7. Connect the voltmeter to the power tailgate control unit connector B (20P) No. 14 and No. 18 terminals.
8. Measure the voltage between the power tailgate control unit connector B (20P) No. 14 and No. 18 terminals while the tailgate is opening and closing with the keyless transmitter or inside tailgate switch.

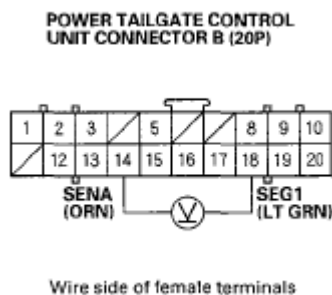


Fig. 45: Identifying Voltage Between Power Tailgate Control Unit Connector B (20P) No. 14 And No. 18 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does it alternate between about 0 V and 5 V? NOTE: Digital voltmeter will read about 2.5 V.

YES - Replace the power tailgate control unit.

NO - Go to step 9.

9. Disconnect power tailgate control unit connector B (20P).

10. Disconnect the 8P connector from the drive unit.
11. Check for continuity between the power tailgate control unit connector B (20P) No. 14 terminal and body ground.

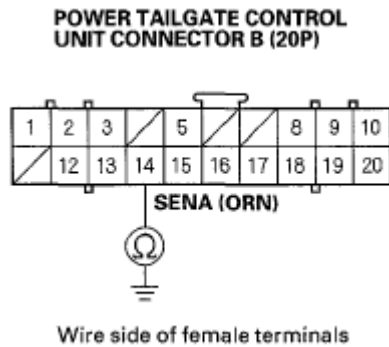


Fig. 46: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 14 Terminal And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 12.

12. Check for continuity between the power tailgate control unit connector B (20P) No. 14 and No. 18 terminals and drive unit connector B (8P) No. 5 and No. 8 terminals respectively.

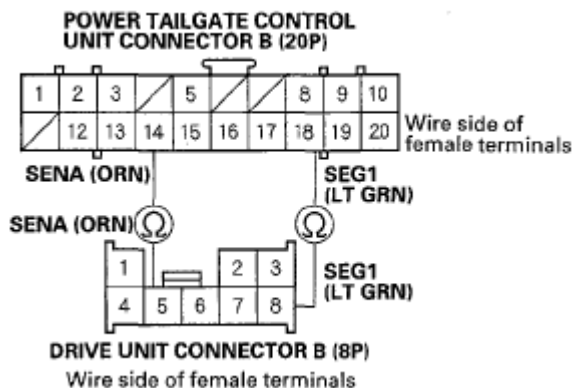


Fig. 47: Identifying Continuity Between No. 14 And No. 18 Terminals And No. 5 And No. 8 Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty power tailgate sensor A, replace the drive unit.

NO - Repair open in the wire.

DTC B1387: POWER TAILGATE SENSOR PULSE B CIRCUIT MALFUNCTION

NOTE: If the motor does not operate, do the power tailgate motor test (see POWER TAILGATE MOTOR TEST).

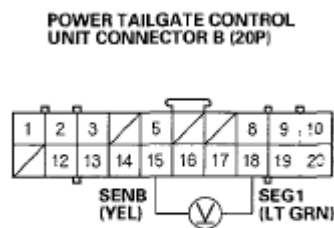
1. Open the tailgate with the tailgate outer handle.
2. Close the tailgate automatically with the keyless transmitter or inside tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

Is DTC B1387 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the drive unit.

6. Turn the ignition switch to LOCK (0).
7. Connect the voltmeter to the power tailgate control unit B connector (20P) No. 15 and No. 18 terminals.
8. Measure the voltage between the power tailgate control unit connector B (20P) No. 15 and No. 18 terminals while the tailgate is opening and closing with the keyless transmitter or inside tailgate switch.



Wire side of female terminals

Fig. 48: Identifying Voltage Between Power Tailgate Control Unit Connector B (20P) No. 15 And No. 18 Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does it alternate between about 0 V and 5 V?

NOTE: Digital voltmeter will read about 2.5 V.

YES - Replace the power tailgate control unit.

NO - Go to step 9.

9. Disconnect power tailgate control unit connector B (20P).
10. Disconnect the 8P connector from the drive unit.
11. Check for continuity between the power tailgate control unit connector B (20P) No. 15 terminal and body ground.

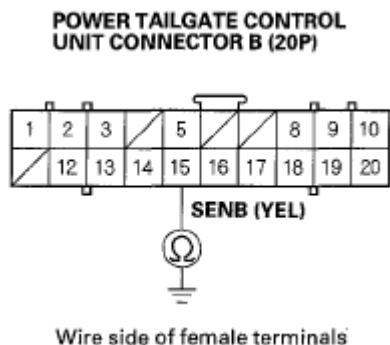


Fig. 49: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 15 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 12.

12. Check for continuity between the power tailgate control unit connector B (20P) No. 15 and No. 18 terminals and drive unit connector B (8P) No. 6 and No. 8 terminals.

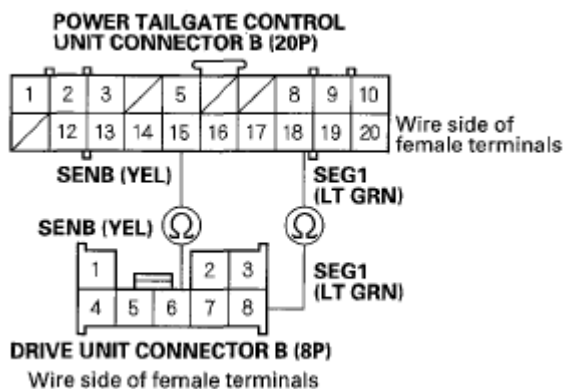


Fig. 50: Identifying Continuity Between No. 15 And No. 18 Terminals And No. 6 And No. 8 Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty power tailgate sensor B, replace the drive unit.

NO - Repair open in the wire.

DTC B1388: POWER TAILGATE MOTOR CIRCUIT MALFUNCTION

1. Open the tailgate.
2. Close the tailgate automatically with the keyless transmitter or inside tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

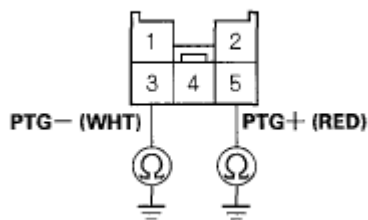
Is DTC B1388 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the drive unit.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the 2P connector from the drive unit.
8. Check for continuity between the power tailgate control unit connector A (5P) No. 3 and No. 5 terminals and body ground respectively.

**POWER TAILGATE CONTROL UNIT
CONNECTOR A (5P)**



Wire side of female terminals

Fig. 51: Identifying Continuity Between Power Tailgate Control Unit Connector A (5P) No. 3 And No. 5 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

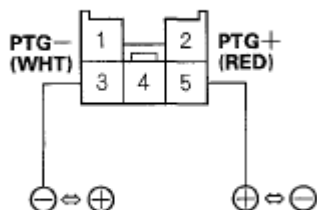
Is there continuity?

YES - Repair short in the wire.

NO - Go to step 9.

9. Connect battery power to the power tailgate control unit connector A (5P) No. 3 (or No. 5) terminal and ground the No. 5 or (No. 3) terminal.

POWER TAILGATE CONTROL UNIT CONNECTOR A (5P)



Wire side of female terminals

Fig. 52: Identifying Battery Power To No. 3 (Or No. 5) Terminal And Ground No. 5 Or (No. 3) Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Check the power tailgate motor operation.

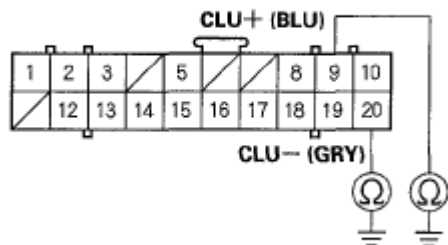
Does the motor run normally?

YES - Go to step 11.

NO - Faulty power tailgate motor, replace the drive unit.

10. Disconnect power tailgate control unit connector B (20P).
11. Check for continuity between the power tailgate control unit connector B (20P) No. 9 and No. 20 terminals and body ground respectively.

POWER TAILGATE CONTROL UNIT CONNECTOR B (20P)



Wire side of female terminals

Fig. 53: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 9 And No. 20 Terminals And Body Ground

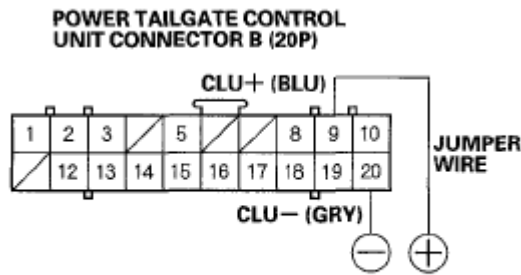
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 13.

12. Connect battery power to the power tailgate control unit connector B (20P) No. 9 terminal and ground the No. 20 terminal. Check for clutch operation.



Wire side of female terminals

Fig. 54: Identifying Battery Power To Power Tailgate Control Unit Connector B (20P) No. 9 Terminal And Ground

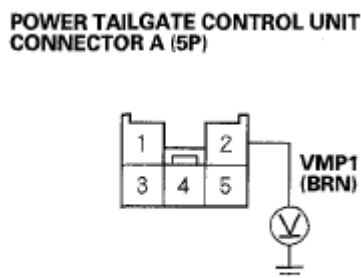
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Can you hear the clutch operate?

YES - Go to step 14.

NO - Faulty power tailgate clutch, replace the drive unit.

13. Measure the voltage between the power tailgate control unit connector A (5P) No. 2 terminal and body ground.



Wire side of female terminals

Fig. 55: Identifying Voltage Between Power Tailgate Control Unit Connector A (5P) No. 2 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 15.

NO - Check the No. 11 (40 A) fuse in the rear fuse/ relay box. If the fuse is OK, check for an open in the wire between the rear fuse/relay box and the power tailgate control unit.

14. Measure the voltage between the power tailgate control unit connector B (20P) No. 12 terminal and body ground.

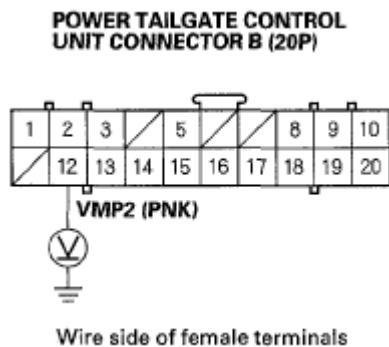


Fig. 56: Identifying Voltage Between Power Tailgate Control Unit Connector B (20P) No. 12 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 16.

NO - Check the No. 6 (20 A) fuse in the rear fuse/ relay box. If the fuse is OK, check for an open in the wire between the rear fuse/relay box and the power tailgate control unit.

15. Check for continuity between the power tailgate control unit connector A (5P) No. 1 and No. 4 terminals and body ground respectively.

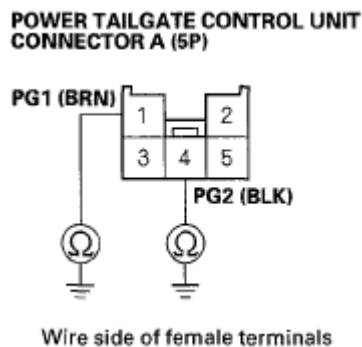


Fig. 57: Identifying Continuity Between Power Tailgate Control Unit Connector A (5P) No. 1 And No. 4 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the power tailgate control unit.

NO - Repair open in the wire or poor ground (G701, G702).

DTC B1389: POWER TAILGATE MOTOR CLUTCH CIRCUIT MALFUNCTION

1. Open the tailgate.
2. Close the tailgate automatically with the keyless transmitter or inside tailgate switch.
3. Turn the ignition switch to LOCK (0), and then back ON (II).
4. Clear the DTCs with the HDS.
5. Check for DTCs with the HDS.

Is DTC B1389 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the drive unit.

6. Turn the ignition switch to LOCK (0).
7. Open the tailgate.
8. Disconnect power tailgate control unit connector B (20P).
9. Check for continuity between the power tailgate control unit connector B (20P) No. 9 and No. 20 terminals and body ground respectively.

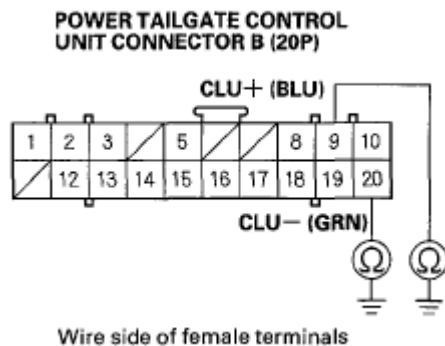


Fig. 58: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 9 And No. 20 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire. If the wire is OK, replace the drive unit.

NO - Go to step 10.

10. Measure the voltage between the power tailgate control unit connector B (20P) No. 12 terminal and body ground.

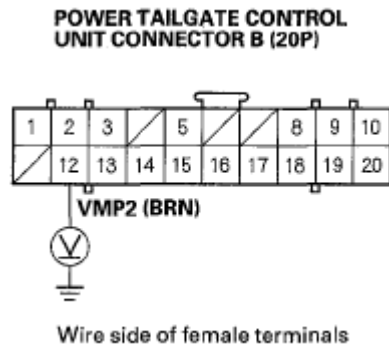


Fig. 59: Identifying Voltage Between Power Tailgate Control Unit Connector B (20P) No. 12 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Replace the power tailgate control unit.

NO - Check the No. 11 (20 A) fuse in the rear fuse/ relay box. If the fuse is OK, check for an open in the wire between the rear fuse/relay box and the power tailgate control unit.

DTC B1390: POWER TAILGATE CLOSER FUNCTION ERROR

1. With the tailgate closed, pull the tailgate outer handle and wait for 10 seconds.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Clear the DTCs with the HDS.
4. Listen for the sound of the latch releasing.

Is there sound?

YES - Go to step 5.

NO - Go to Step 7.

5. Check for DTCs with the HDS.

Is DTC B1390 indicated?

YES - Go to step 6.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections between the power tailgate control unit and the closer motor.

6. Check for DTCs with the HDS.

Are DTCs B1380, B1381, B1382, B1383, and/or B1384 also indicated?

YES - Troubleshoot the indicated DTCs.

NO - Replace the power tailgate control unit and recheck the system.

7. Turn the ignition switch to LOCK (0).
8. Open the tailgate.
9. Disconnect the 2P connector from the power tailgate closer motor.
10. Disconnect power tailgate control unit connector B (20P).
11. Check for continuity between the power tailgate control unit connector B (20P) No. 1 and No. 2 terminals and the power tailgate closer motor 2P connector No. 1 and No. 2 terminals respectively.

POWER TAILGATE CLOSER MOTOR 2P CONNECTOR

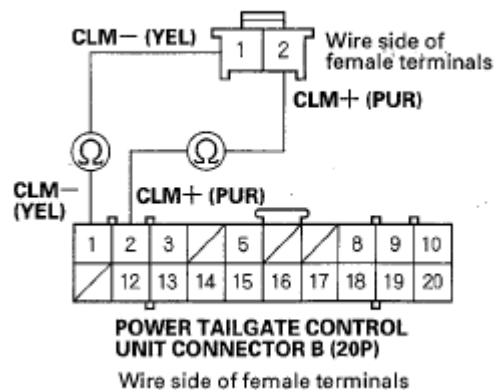


Fig. 60: Identifying Continuity Between No. 1 And No. 2 Terminals And No. 1 And No. 2 Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Repair open in the wire.

12. Measure the voltage between the power tailgate control unit connector B (20P) No. 12 terminal and body ground.

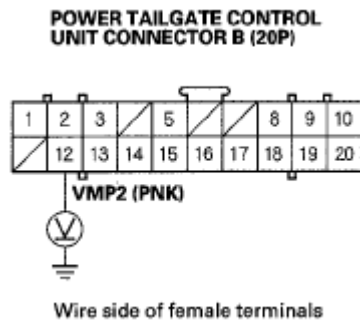


Fig. 61: Identifying Voltage Between Power Tailgate Control Unit Connector B (20P) No. 12 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 14.

NO - Check for No. 6 (20 A) fuse in the rear fuse/ relay box. If the fuse is OK, check for an open in the wire between the rear fuse/relay box and power tailgate control unit.

13. Disconnect power tailgate control unit connector A (5P).
14. Check for continuity between the power tailgate control unit connector A (5P) No. 4 terminal and body ground.

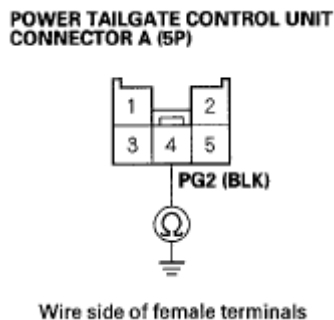


Fig. 62: Identifying Continuity Between Power Tailgate Control Unit Connector A (5P) No. 4 Terminal And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire or poor ground (G701).

15. Turn the tailgate lock latch to the fully-closed position using a screwdriver.
16. Reconnect the power tailgate closer motor 2P connector.

17. Connect battery power to the power tailgate control unit connector B (20P) No. 2 (or No. 1) terminal and ground the No. 1 (or No. 2) terminal momentarily.

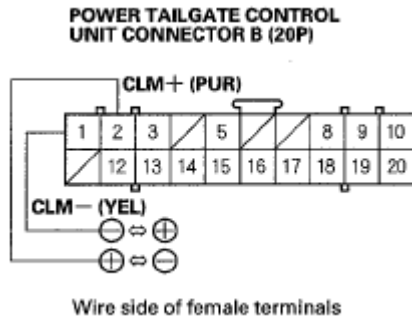


Fig. 63: Identifying Battery Power To Power Tailgate Control Unit Connector B (20P) No. 2 (Or No. 1) Terminal And Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the motor run smoothly?

YES - Replace the power tailgate control unit.

NO - Go to step 18.

18. Reconnect the 6P connector to the power tailgate closer unit.
19. Check for continuity between the power tailgate control unit connector B (20P) No. 1 and No. 2 terminals and body ground respectively.

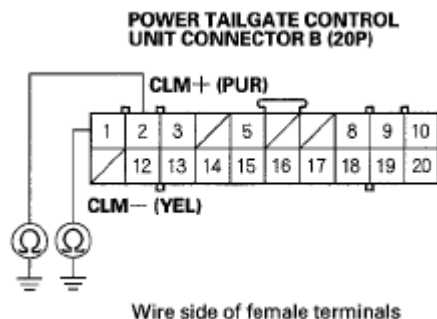


Fig. 64: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 1 And No. 2 Terminals And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 20.

NO - Go to step 22.

20. Disconnect the 6P connector from the power tailgate closer unit.
21. Check for continuity between the power tailgate control unit connector B (20P) No. 1 and No. 2 terminals and body ground respectively.

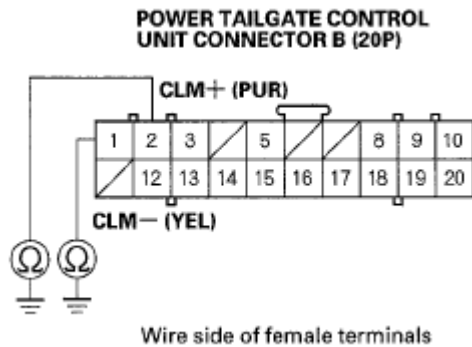


Fig. 65: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 1 And No. 2 Terminals And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Replace the power tailgate closer unit.

22. Check for continuity between the power tailgate control unit connector B (20P) No. 9 terminal and body ground.

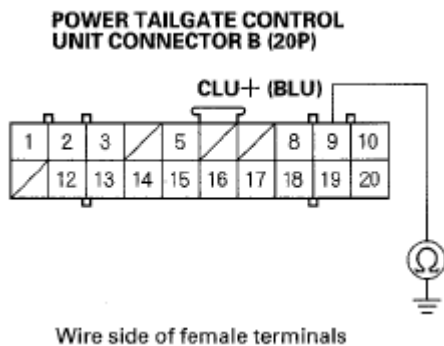


Fig. 66: Identifying Continuity Between Power Tailgate Control Unit Connector B (20P) No. 9 Terminal And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Check for No. 6 (20 A) fuse in the rear fuse/ relay box. If the fuse is OK, check for an open in the wire between the rear fuse/relay box and power tailgate control unit.

CONTROL UNIT INPUT TEST/REPLACEMENT

NOTE: Before testing the power tailgate control unit, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

1. Turn the ignition switch to LOCK (0).
2. Remove the left rear pillar trim (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
3. Disconnect power tailgate control unit connectors A (5P), B (20P), and C (14P).

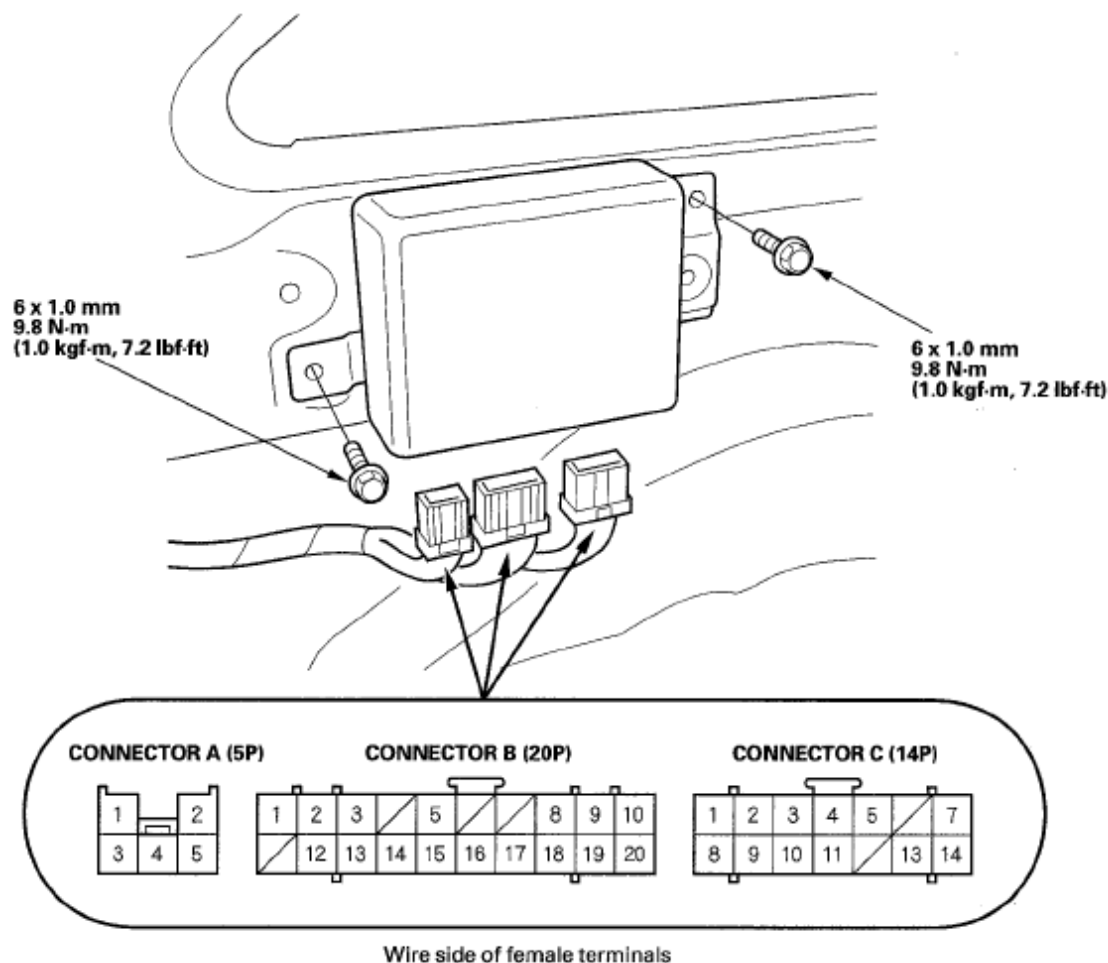


Fig. 67: Identifying Power Tailgate Control Unit Connectors A (5P), B (20P), And C (14P) With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect all the connector and socket terminals to be sure they are all making good contact.

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Power Tailgate - MDX**

- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If the input tests prove OK, go to step 5.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B3	RED	Under all conditions	Connect B10 and B3 terminals with a jumper wire: The beeper should sound.	• Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty beeper • Poor ground(G701) • An open in the wire

6. Reconnect all connectors to the power tailgate control unit, and make these input tests at the appropriate connector.
- If the test indicates a problem, find and correct the cause, then recheck the system.
 - If the input test proves OK, replace the power tailgate control unit.

WIRE CAVITY CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A2	BRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 11 (40 A) fuse in the rear fuse/relay box • An open in the wire
B12	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 6 (20 A) fuse in the rear fuse/relay box • Blown No. 3 (60 A) fuse in the under-hood fuse/relay box • An open in the wire
B10	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Blown No. 15 (40 A) fuse in the under-hood fuse/relay box • An open in the wire
C14	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Tailgate - MDX

A1	BRN	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground(G701) • An open in the wire
A4	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground(G701, G702) • An open in the wire
B19				
B8	GRN	Shift lever in P position	Measure the voltage to ground: There should be less than 1 V.	• Faulty transmission range switch • Poor ground (G101, G102) • An open in the wire

7. Reset the power tailgate control unit (see **RESETTING THE POWER TAILGATE CONTROL UNIT**).

POWER TAILGATE MOTOR TEST

1. Open the tailgate and remove the left rear pillar trim (see **QUARTER PILLAR TRIM**).
2. Disconnect the 2P connector (A) from the power tailgate motor (B).

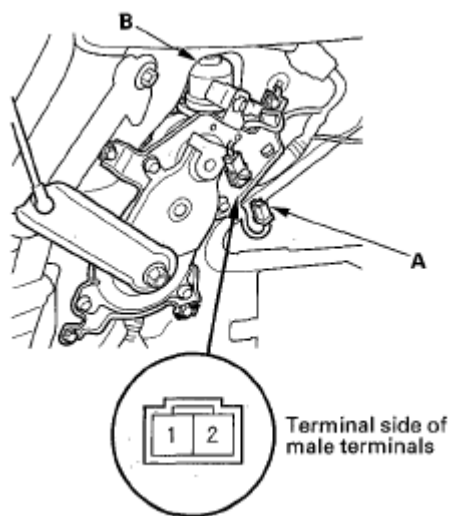


Fig. 68: Identifying 2P Connector And Power Tailgate Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Close the tailgate manually.
4. Check the motor operation by connecting battery power to the No. 1 terminal and ground to the No. 2 terminal. The motor should run (tailgate open).

NOTE: Be careful not to pinch your hands.

5. After opening the tailgate, connect battery power to the No. 2 terminal and ground the No. 1 terminal. The motor should run (tailgate closed).
6. If the motor does not run or fails to run smoothly, replace the drive unit assembly (see **DRIVE UNIT REPLACEMENT**).

POWER TAILGATE INSIDE BEEPER TEST/ REPLACEMENT

1. Open the tailgate and remove the left rear pillar trim (see **QUARTER PILLAR TRIM**).
2. Disconnect the 8P connector (A) from the power tailgate drive unit (B).

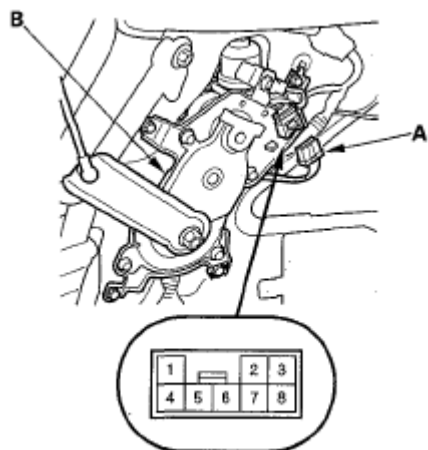


Fig. 69: Identifying 8P Connector And Power Tailgate Drive Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the beeper by connecting battery power to the No. 2 terminal and ground to the No. 7 terminal. The beeper should sound.
4. If the beeper does not sound, disconnect the 2P connector (A) and check for an open in the wire between the 2P connector and the 8P connector. If the wire harness is OK, replace the beeper (B).

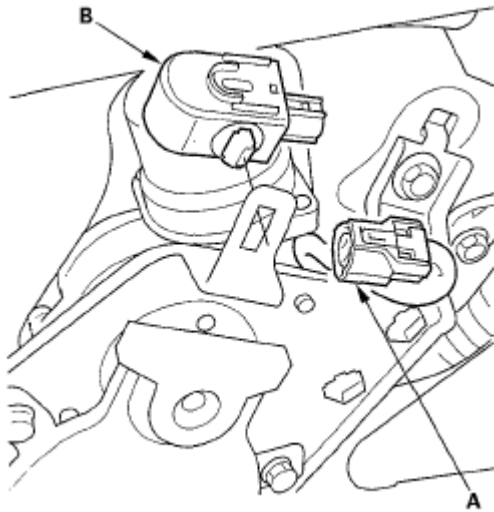


Fig. 70: Identifying 2P Connector And Beeper
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DRIVER'S DOOR POWER TAILGATE SWITCH TEST/REPLACEMENT

1. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
2. Disconnect the 7P connector (A) from the fuel fill door opener/driver's door power tailgate switch (B), then push the switch out from behind the door panel.

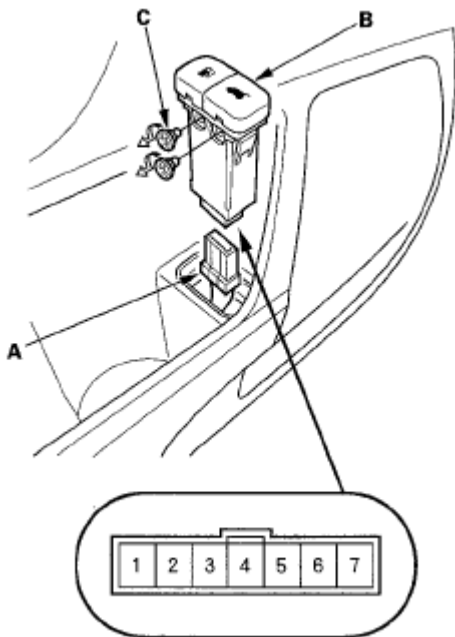


Fig. 71: Identifying 7P Connector And Door Opener/Driver'S Door Power Tailgate Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	5	6	4		7
ON	○	○	○	⊕	○
OFF					

Fig. 72: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the continuity is not as specified, replace the bulbs (C) or the switch.

INSIDE TAILGATE SWITCH TEST/ REPLACEMENT

- Carefully pry out the inside tailgate switch (A), and disconnect the 5P connector (B) from switch.

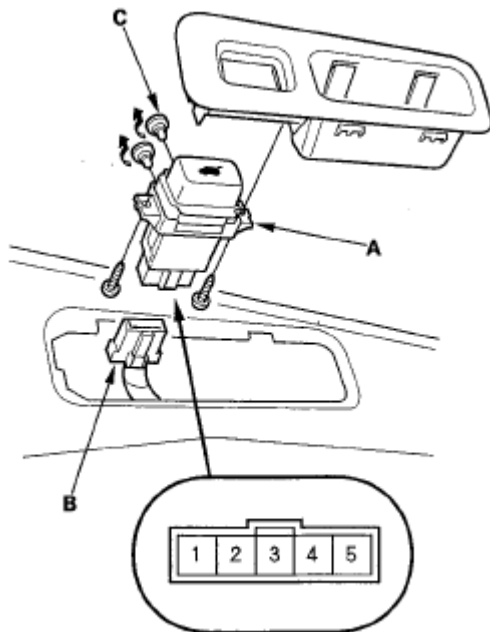


Fig. 73: Identifying Inside Tailgate Switch And 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Check for continuity between the terminals in each switch position according to the table.

Terminal Position	1	2	3		4
ON	○	○	○	⊕	○
OFF					

Fig. 74: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the continuity is not as specified, replace the bulbs (C) or the switch.

POWER TAILGATE LATCH/RATCHET SWITCH TEST

1. Remove the tailgate trim panel (see TRIM REMOVAL/INSTALLATION - TAILGATE AREA).
2. Disconnect the 6P connector (A) from the tailgate closer unit (B).

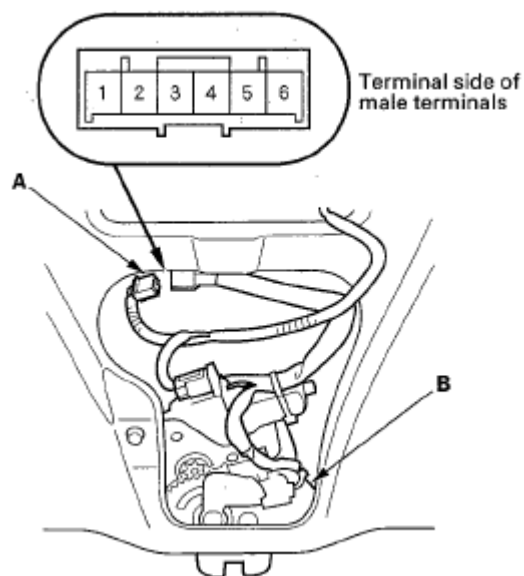


Fig. 75: Identifying 6P Connector And Tailgate Closer Unit
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each latch position according to the table.

Terminal Position	1	4	2	3
Full latched	○	○		
Between the fully-latched position to released position	○	○	○	
Released	○		○	○

Fig. 76: Checking For Continuity Between Terminals In Each Switch Position
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the tailgate latch assembly (see WITHOUT POWER TAILGATE).

POWER TAILGATE CLOSER MOTOR TEST

1. Remove the tailgate trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Disconnect the 2P connector (A) from the closer motor (B).

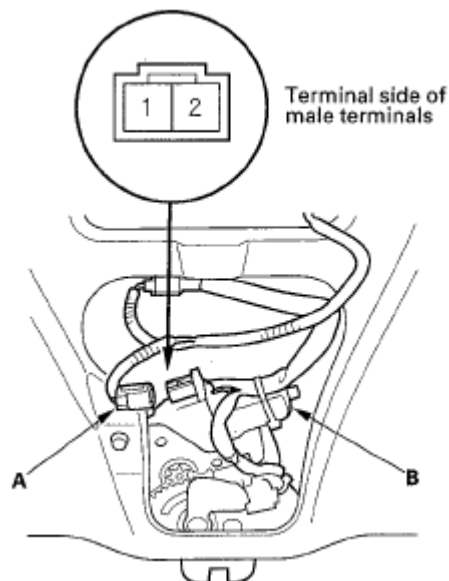


Fig. 77: Identifying 2P Connector And Closer Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check motor operation by connecting battery power to the tailgate closer unit 2P connector No. 2 terminal and ground to the No. 1 terminal. To prevent damage to the motor, apply battery voltage only momentarily. The motor should run.
4. If the motor does not run or fails to run smoothly, replace the tailgate latch assembly (see **WITHOUT POWER TAILGATE**).

DRIVE UNIT REPLACEMENT

1. Remove the rear pillar trim (see **QUARTER PILLAR TRIM**).
2. Disconnect the 2P and 8P connectors (A) from the drive unit (B).

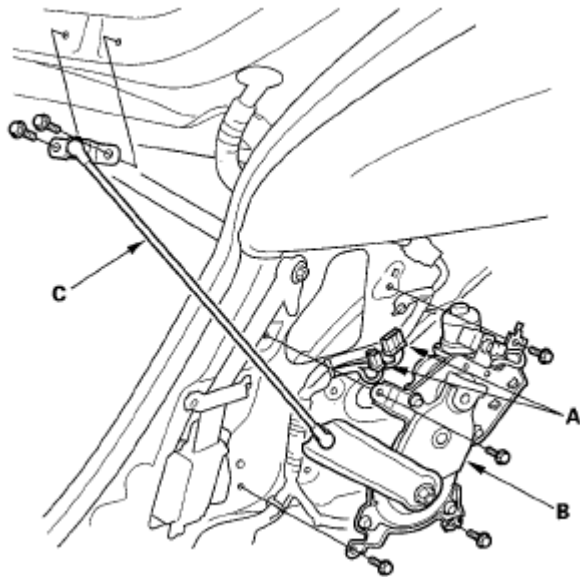


Fig. 78: Identifying 2P, 8P Connectors And Drive Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Carefully remove the bolts and support strut (C) from the tailgate.
4. Remove the mounting bolts and drive unit.
5. Install in the reverse order of removal.

PINCH SENSOR REPLACEMENT

1. Open the tailgate.
2. Remove the clips, screws and nuts from the pinch sensor (A).

NOTE: **The illustration shows left side pinch sensor, right side is symmetrical.**

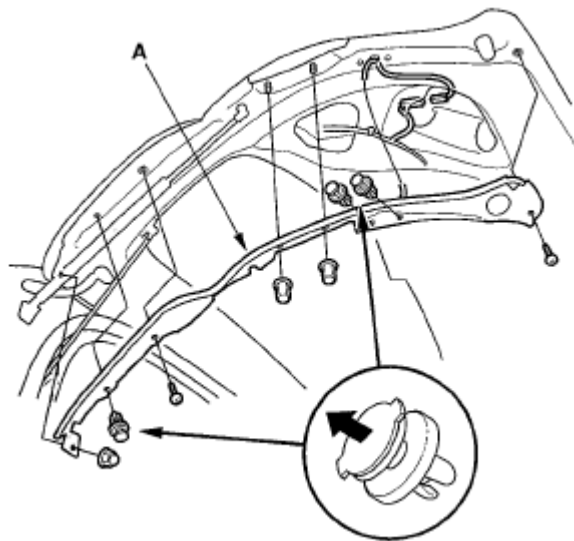


Fig. 79: Identifying Pinch Sensor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the pinch sensor.
4. Install in the reverse order of removal.

2007-09 ACCESSORIES AND EQUIPMENT

Power Windows - MDX

COMPONENT LOCATION INDEX

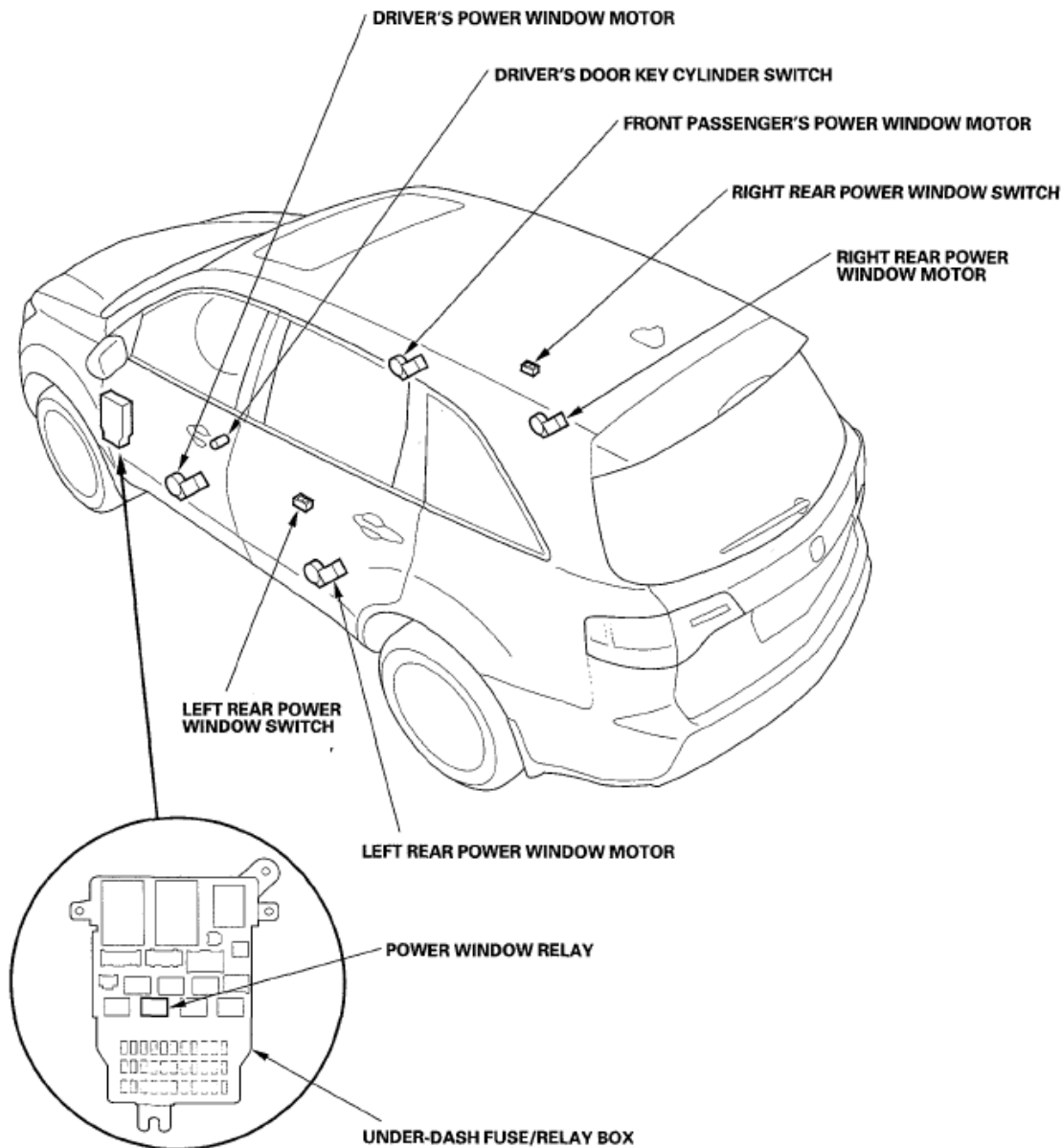


Fig. 1: Identifying Power Windows Component Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

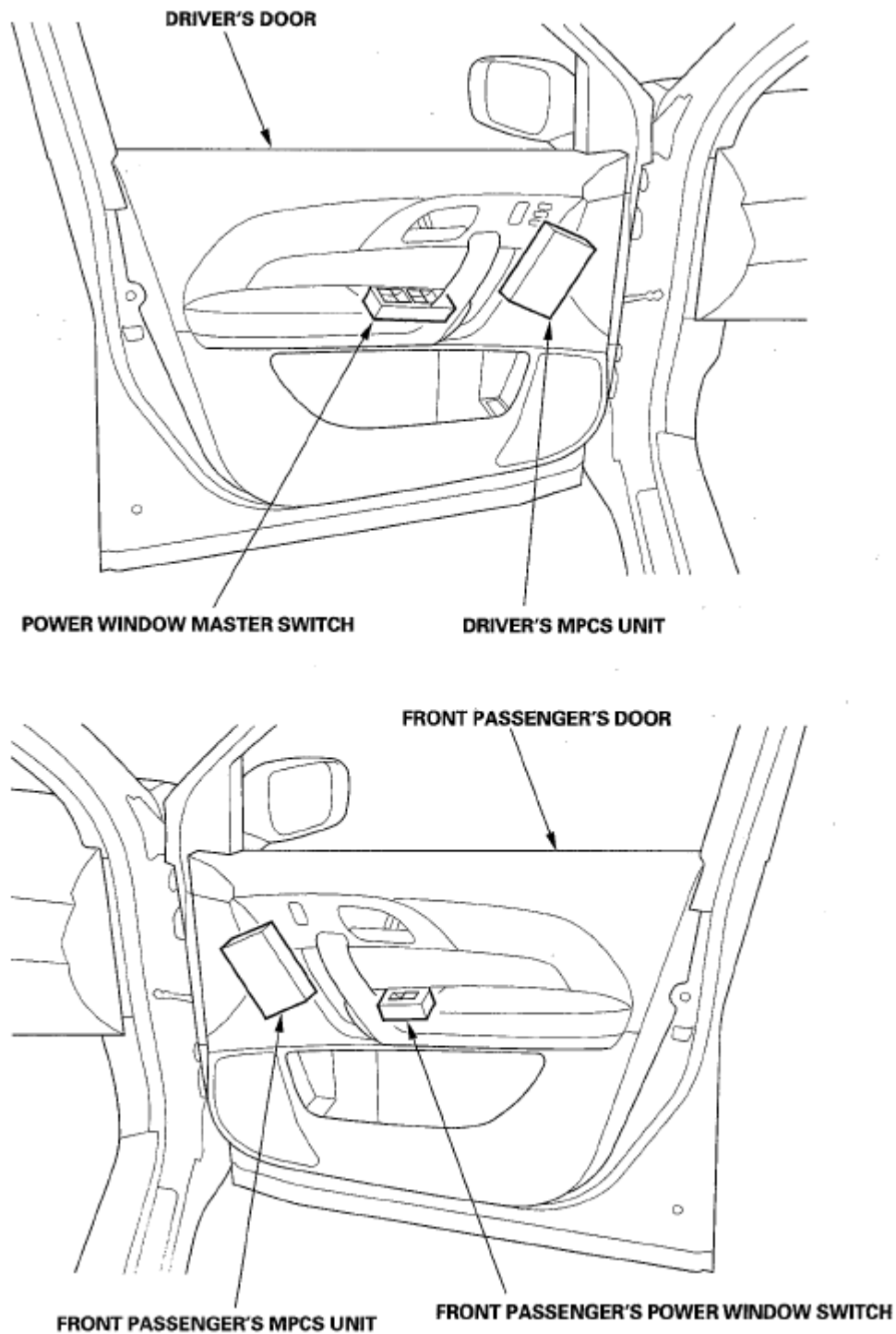


Fig. 2: Identifying Power Windows Component Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYSTEM DESCRIPTION

ANTI-PINCH POWER WINDOW OPERATION

The system is composed of the driver's MPCS unit, front passenger's MPCS unit, power window master switch, passenger's switches, and power window motors.

The power window motor incorporates a pulser which generates pulses during the motor's operation and sends pulses to the driver's and front passenger's MPCS units. As soon as the power window control unit detects a change in the pulse frequency from the pulser, the power window control unit makes the power window motor stop and reverse. This is prevent pinching your hand or fingers during auto-up operation.

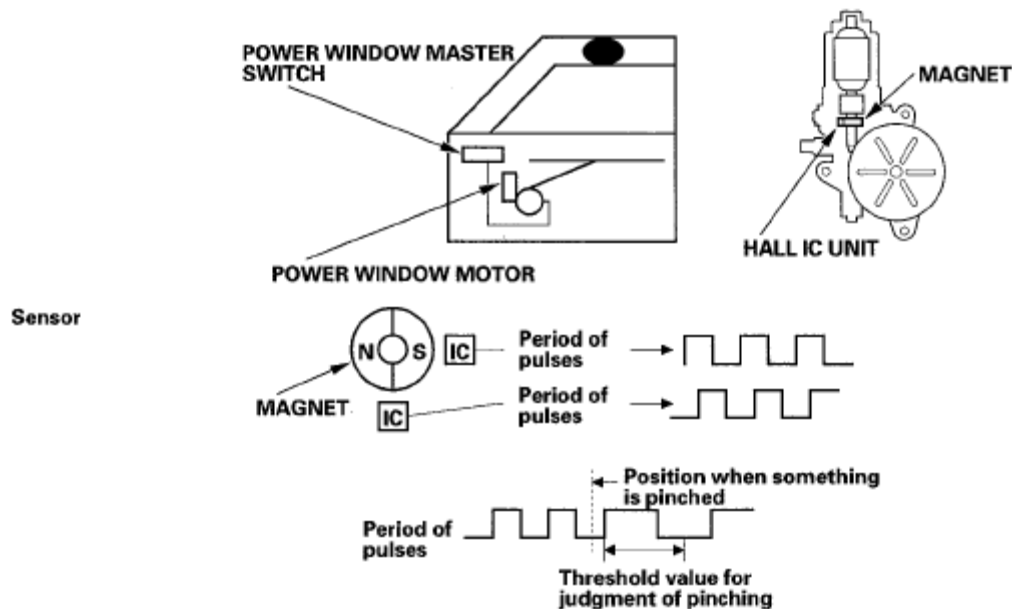


Fig. 3: Blinking Pattern - Anti Pinch Power Window
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Key Cylinder Operation

With the key inserted in the driver's door key cylinder, turn the key a second time within 15 seconds and hold it to operate the windows and moonroof (clockwise to open, counterclockwise to close). The windows and moonroof stop moving when the key is released. The anti-pinch operation is not active when closing the windows and moonroof with the key cylinder.

Keyless Operation

By pressing and holding the UNLOCK button of the keyless transmitter a second time within 15 seconds, the windows and moonroof open. The windows and moonroof stop moving when the UNLOCK button is released. The windows do not close with the LOCK button.

RESETTING THE POWER WINDOW CONTROL UNIT

Resetting the power window control unit is required when any of the following have occurred:

- Power window regulator replacement or repair.
- Power window motor replacement or repair.
- Window run channel replacement.
- Door glass replacement or repair.
- Driver's MPCS unit replacement.
- Front passenger's MPCS unit replacement.
- Power is removed from the Driver's or front passenger's MPCS unit while the power window timer is ON.

NOTE: **If the passenger's window has lost power when the key off timer is ON, it cannot be operated from the driver's switch and must be reset from the passenger's power window switch.**

USING THE HDS

1. Connect the HDS to the data link connector.
2. Turn the ignition switch ON (II), then enter the vehicle's VIN and mileage at the prompts.
3. Select "BODY ELECTRICAL" from the "SYSTEM SELECT" menu.
4. From the "BODY ELECTRICAL SYSTEM SELECT" menu, select "POWER WINDOWS".
5. From the "MODE" menu, select "ADJUSTMENTS".
6. From the "ADJUSTMENT" menu, select "WINDOW PRESET" for driver's side (passenger's side) window.
7. Follow the prompts on the screen.
8. Confirm that the power window control unit is reset by using the window AUTO UP and AUTO DOWN function.

WITHOUT THE HDS

- NOTE:**
- **To start the reset procedure, do the driver's power window master switch first (steps 1-8), then do the passenger's power window switch (steps 9-11) if equipped.**
 - **Do each bulleted item in step 4 within 5 seconds of each other.**

Driver's Power Window

1. Turn the ignition switch ON (II).
2. Move the window all the way down by using the window DOWN switch.
3. Open the driver's door.
4. Do the following 3 times before going to step 5:
 - Turn the ignition switch to LOCK (0).
 - Push and hold the window DOWN switch.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

- Turn the ignition switch ON (II).
 - Release the window DOWN switch.
5. Confirm that AUTO UP no longer works. If AUTO UP still works, go back to step 1.
 6. Move the window all the way down using the window DOWN switch.
 7. Pull up and hold the window UP switch until the window is all the way up, then continue to hold the switch for 1 second.
 8. Confirm that the power window control unit is reset by using the window AUTO UP and AUTO DOWN function.

If the window still does not work in AUTO, repeat the procedure several times, paying close attention to the 5 second time limit between steps. If it still does not work, go to B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

Front Passenger's Power Window (if equipped)

9. Move the front passenger's window all the way down using the front passenger's power window DOWN switch.
10. Pull up and hold the front passenger's power window UP switch until the front passenger's power window is all the way up, then continue to hold the switch for 1 second.
11. Confirm that the power window control unit is reset by using the front passenger's power window AUTO UP and DOWN function.

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

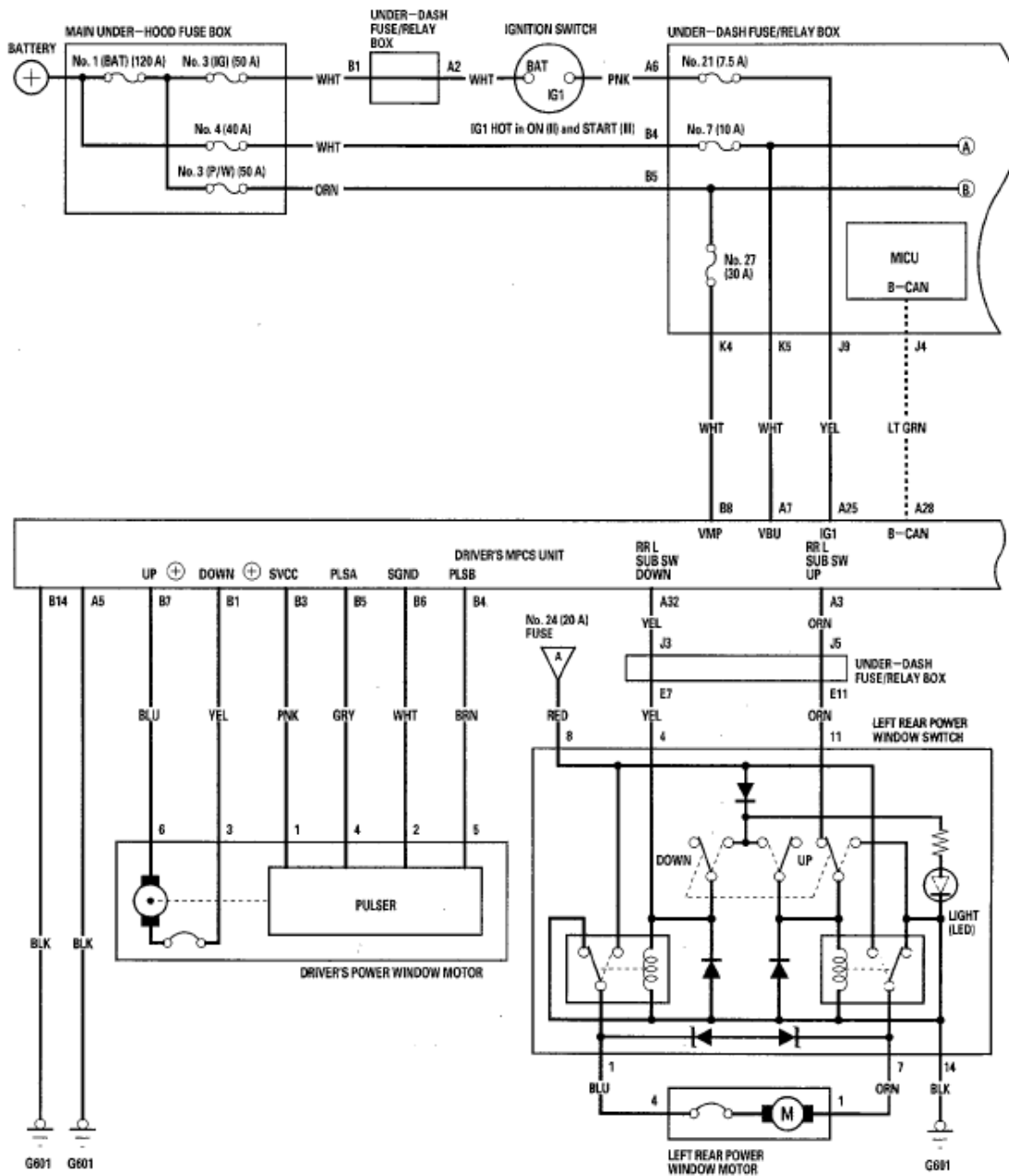


Fig. 4: Power Window Control Unit - Circuit Diagram (1 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

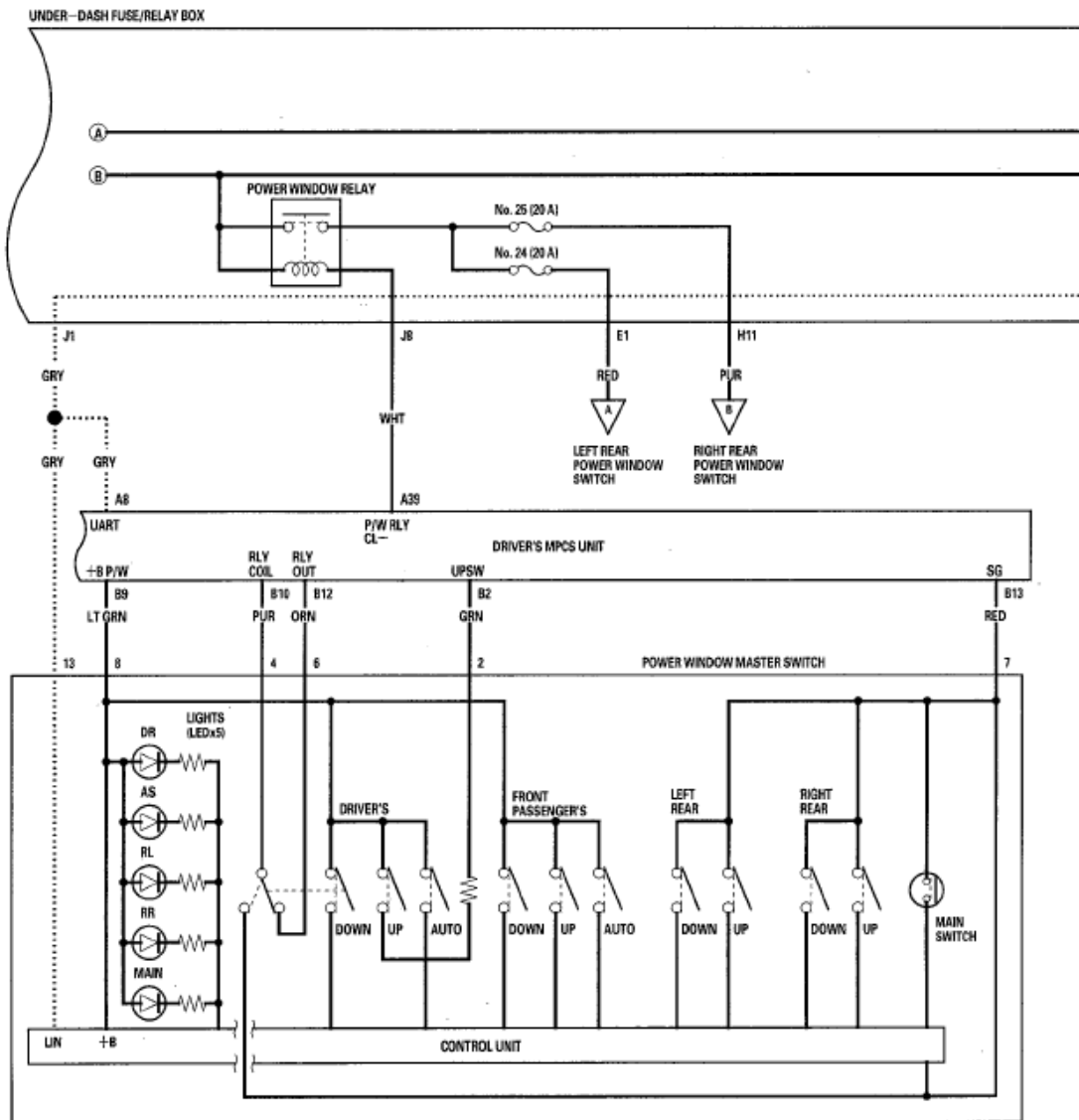


Fig. 5: Power Window Control Unit - Circuit Diagram (2 Of 3)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

..... : CAN line
 : UART line

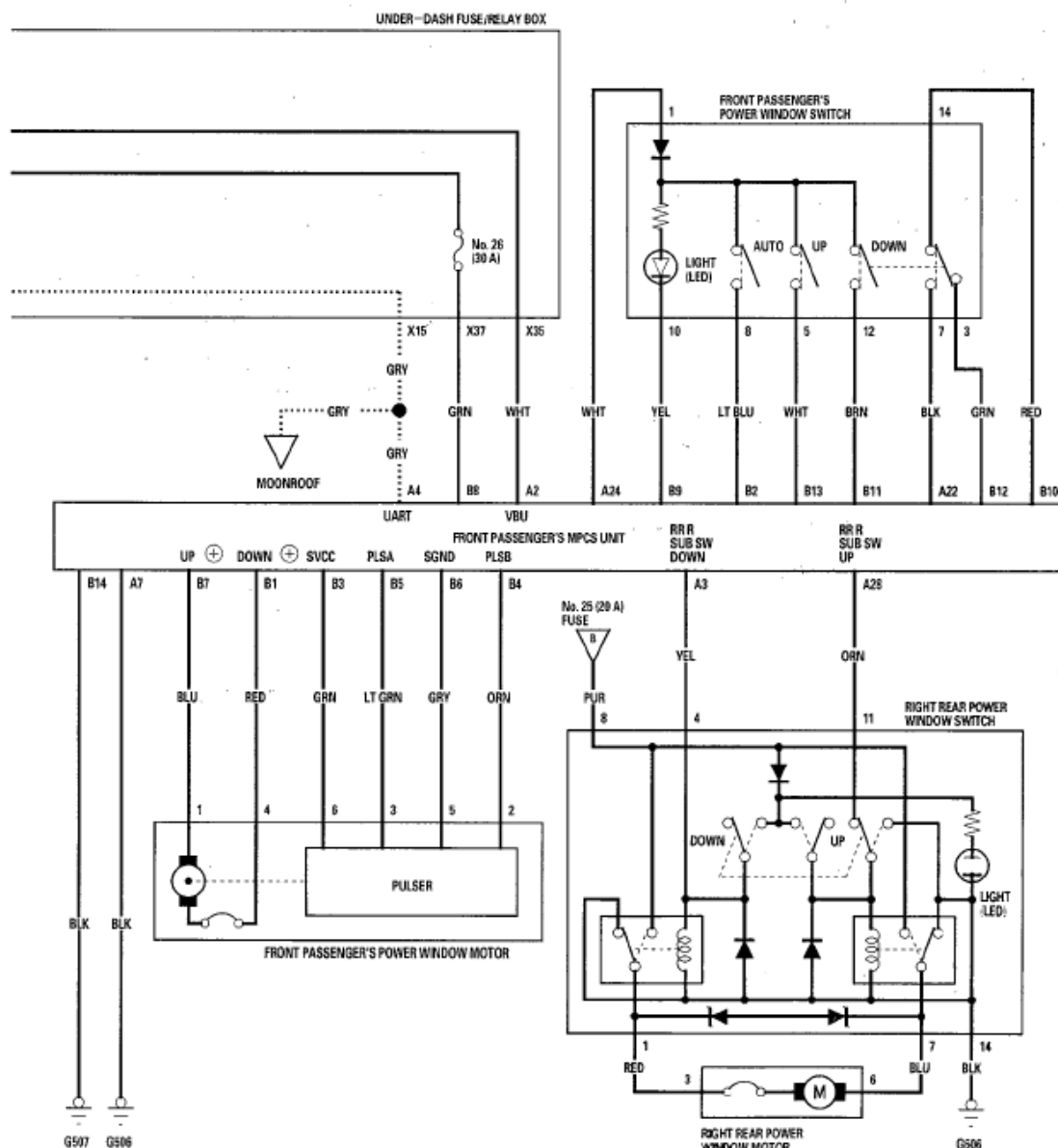


Fig. 6: Power Window Control Unit - Circuit Diagram (3 Of 3)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B2175: DRIVER'S POWER WINDOW MOTOR PULSE A ERROR

NOTE:

If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2175 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Open and close the driver's power window by using the power window master switch manually.

Does the window motor operate?

YES - Go to step 6.

NO - Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**).

6. Select the POWER WINDOWS from the BODY ELECTRICAL system select menu and enter the DATA LIST.
7. Check the DETECT/NONE information of the Driver's window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES - Replace the driver's MPCS unit.

NO - Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2176 also indicated?

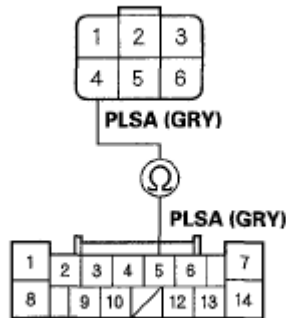
YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect driver's MPCS unit connector B (14P).
11. Disconnect the 6P connector from the driver's power window motor.
12. Check for continuity between driver's MPCS unit connector B (14P) No. 5 terminal and driver's power window motor 6P connector No. 4 terminal.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 7: Identifying Continuity Between Driver's MPCS Unit Connector Terminal 5
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

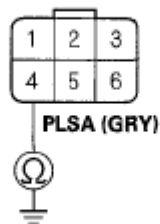
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between driver's power window motor 6P connector No. 4 terminal and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 8: Identifying Continuity Between Driver's Power Window Motor 6P Connector Terminal 4
And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Replace the driver's power window.

14. Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**).

Is the motor OK?

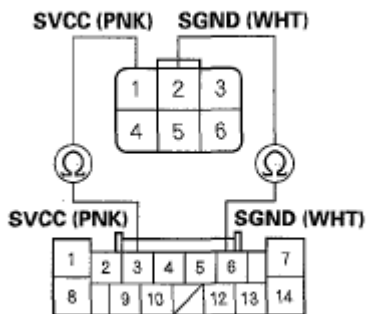
YES - Replace the driver's MPCS unit.

NO - Replace the driver's power window motor.

15. Check for continuity between the driver's MPCS unit connector B (14P) No. 3 and No. 6 terminals and the driver's power window motor 6P connector No. 1 and No. 2 terminals respectively.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 9: Identifying Continuity Between Driver's MPCS Unit B (14P) Connector Terminals 3 And 6
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

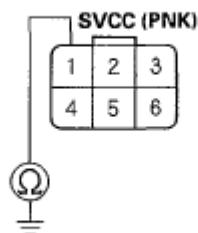
Is there continuity?

YES - Go to step 16.

NO - Repair an open in the wire.

16. Check for continuity between the driver's power window motor 6P connector No. 1 terminal and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 10: Identifying Continuity Between Driver's Power Window Motor 6P Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Replace the driver's power window motor.

DTC B2176: DRIVER'S POWER WINDOW MOTOR PULSE B ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2176 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Open and close the driver's power window by using the power window master switch manually.

Does the window motor operate?

YES - Go to step 6.

NO - Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**).

6. Select the POWER WINDOWS from the BODY ELECTRICAL system select menu and enter the DATA LIST.
7. Check the DETECT/NONE information of the Driver's window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES - Replace the driver's MPCS unit.

NO - Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2175 also indicated?

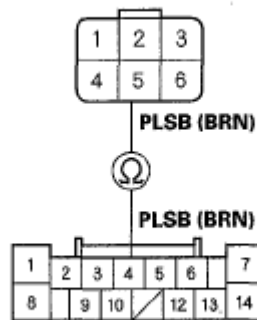
YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect driver's MPCS unit connector B (HP).
11. Disconnect the 6P connector from the driver's power window motor.
12. Check for continuity between driver's MPCS unit connector B (14P) No. 4 terminal and driver's power window motor 6P connector No. 5 terminal.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 11: Identifying Continuity Between Driver's MPCS Unit B (14P) Connector Terminal 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

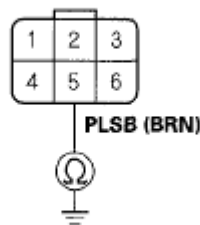
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between driver's power window motor 6P connector No. 5 terminal and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 12: Identifying Continuity Between Driver's Power Window Motor 6P Connector Terminal 5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 14.

14. Test the driver's power window motor (see **DRIVER'S POWER WINDOW MOTOR TEST**).

Is the motor OK?

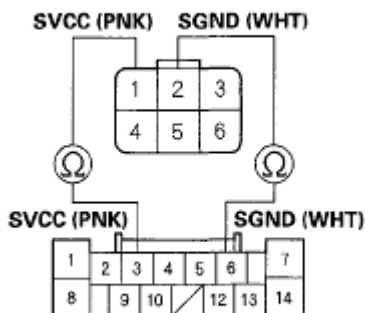
YES - Replace the driver's MPCS unit.

NO - Replace the driver's power window motor.

15. Check for continuity between the driver's MPCS unit connector B (14P) No. 3 and No. 6 terminals and the driver's power window motor 6P connector No. 1 and No. 2 terminals respectively.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 13: Identifying Continuity Between Driver's MPCS Unit B (14P) Connector Terminals 3 And 6
Courtesy of AMERICAN HONDA MOTOR CO., INC.

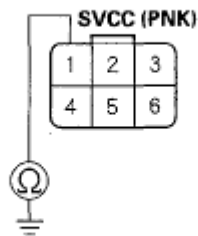
Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire.

16. Check for continuity between the driver's power window motor 6P connector No. 1 terminal and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 14: Identifying Continuity Between Driver's Power Window Motor 6P Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repairs short to ground in the wire.

NO - Replace the driver's power window motor.

DTC B2177: FRONT PASSENGER'S POWER WINDOW MOTOR PULSE A ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the front passenger's power window by using the front passenger's power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B2177 indicated?

YES - Go to step 5.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Open and close the front passenger's power window by using the power window master switch manually.

Does the window motor operate?

YES - Go to step 6.

NO - Test the front passenger's power window motor (see **FRONT PASSENGER'S POWER WINDOW MOTOR TEST**).

6. Select the POWER WINDOWS from the BODY ELECTRICAL system select menu and enter the DATA LIST.
7. Check the DETECT/NONE information of the Front passenger's window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES - Replace the front passenger's MPCS unit.

NO - Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2178 also indicated?

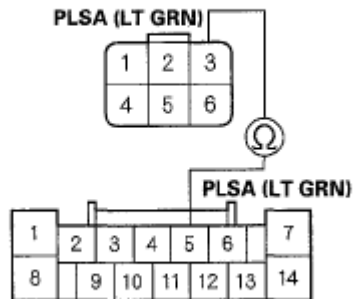
YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect front passenger's MPCS unit connector B(14P).
11. Disconnect the 6P connector from the passenger's power window motor.
12. Check for continuity between front passenger's MPCS unit connector B (14P) No. 5 terminal and front passenger's power window motor 6P connector No. 3 terminal.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 15: Identifying Continuity Between Front Passenger's MPCS Unit B (14P) Connector Terminal 5

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

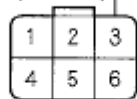
YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between front passenger's power window motor 6P connector No. 3 terminal and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

PLSA (LT GRN)



Wire side of female terminals

Fig. 16: Identifying Continuity Between Front Passenger's Power Window Motor Connector Terminal 3 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 14.

14. Test the front passenger's power window motor (see **FRONT PASSENGER'S POWER WINDOW MOTOR TEST**).

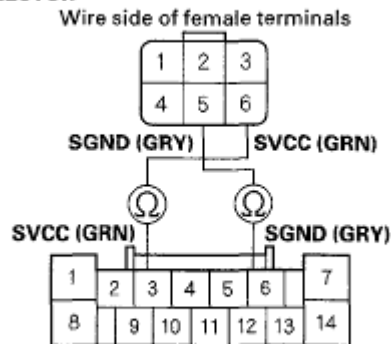
Is the motor OK?

YES - Replace the front passenger's MPCS unit.

NO - Replace the front passenger's power window motor.

15. Check for continuity between the front passenger's MPCS unit connector B (14P) No. 3 and No. 6 terminals and the front passenger's power window motor 6P connector No. 5 and No. 6 terminals respectively.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 17: Identifying Continuity Between Front Passenger's MPCS Unit B (14P) Connector Terminals 3 And 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

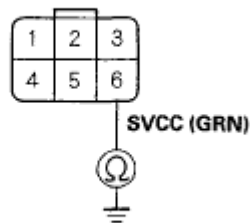
Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire.

16. Check for continuity between the front passenger's power window motor 6P connector No. 6 terminal and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 18: Identifying Continuity Between Front Passenger's Power Window Motor Connector Terminal 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair a short to ground in the wire.

NO - Replace the front passenger's power window motor.

DTC B2178: FRONT PASSENGER'S POWER WINDOW MOTOR PULSE B ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the front passenger's power window by using the front passenger's power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B2178 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Open and close the front passenger's power window by using the power window master switch manually.

Does the window motor operate?

YES - Go to step 6.

NO - Test the front passenger's power window motor (see **FRONT PASSENGER'S POWER**

WINDOW MOTOR TEST).

6. Select the POWER WINDOWS from the BODY ELECTRICAL system select menu and enter the DATA LIST.
7. Check the DETECT/NONE information of the Front passenger's window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES - Replace the front passenger's MPCS unit.

NO - Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2177 also indicated?

YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect front passenger's MPCS unit connector B(14P).
11. Disconnect the 6P connector from the passenger's power window motor.
12. Check for continuity between front passenger's MPCS unit connector B (14P) No. 4 terminal and front passenger's power window motor 6P connector No. 2 terminal.

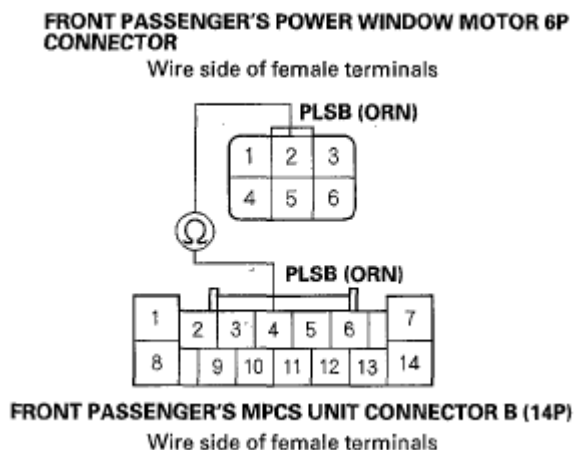


Fig. 19: Identifying Continuity Between Front Passenger's MPCS Unit B (14P) Connector Terminal

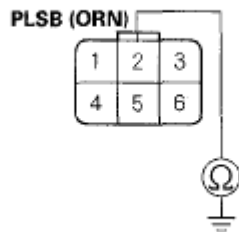
Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire.

13. Check for continuity between front passenger's power window motor 6P connector No. 2 terminal and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 20: Identifying Continuity Between Front Passenger's Power Window Motor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire.

NO - Go to step 14.

14. Test the front passenger's power window motor (see **FRONT PASSENGER'S POWER WINDOW MOTOR TEST**).

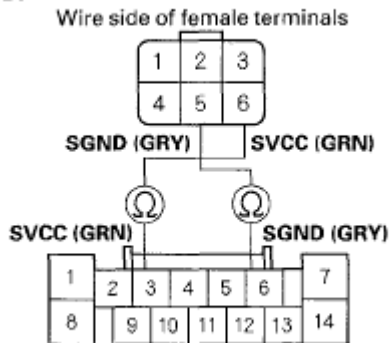
Is the motor OK?

YES - Replace the front passenger's MPCS unit.

NO - Replace the front passenger's power window motor.

15. Check for continuity between the front passenger's MPCS unit connector B (14P) No. 3 and No. 6 terminals and the front passenger's power window motor 6P connector No. 5 and No. 6 terminals respectively.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Fig. 21: Identifying Continuity Between Front Passenger's MPCS Unit B (14P) Connector Terminals 3 And 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

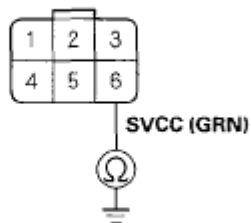
Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire.

16. Check for continuity between the front passenger's power window motor 6P connector No. 6 terminal and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying Continuity Between Front Passenger's Power Window Motor Connector Terminal 6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Replace the front passenger's power window motor.

DTC B2187: COMMUNICATION LINE (UART LINE) DRIVER'S MPCS UNIT CANNOT SEND UART MESSAGES.

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES - Go to step 4.

NO - Intermittent failure, the system is OK at this time.

4. Turn the ignition switch to LOCK (0).
5. Disconnect front passenger's MPCS unit connector A(28P).
6. Turn the ignition switch ON (II).
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to LOCK (0), and then back ON (II).
9. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES - Go to step 10.

NO - Do the front passenger's MPCS unit input test, step No. 6. If OK, replace the front passenger's MPCS unit.

10. Turn the ignition switch to LOCK (0).
11. Disconnect the moonroof control unit/motor 10P connector.
12. Turn the ignition switch ON (II).
13. Clear the DTCs with the HDS.
14. Turn the ignition switch to LOCK (0), and then back ON (II).
15. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES - Go to step 16.

NO - Replace the moonroof control unit/motor.

16. Turn the ignition switch to LOCK (0).
17. Disconnect driver's MPCS unit connector A (40P).
18. Check for continuity between the driver's MPCS unit connector A (40P) No. 8 terminal and body ground.

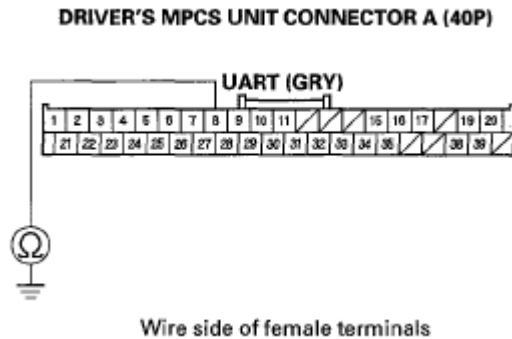


Fig. 23: Identifying Continuity Between Driver's MPCS Unit A (40P) Connector Terminal 8 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to ground in the wire.

NO - Go to step 19.

19. Turn the ignition switch ON (II).
20. Measure the voltage between the driver's MPCS unit connector A (40P) No. 8 terminal and body ground.

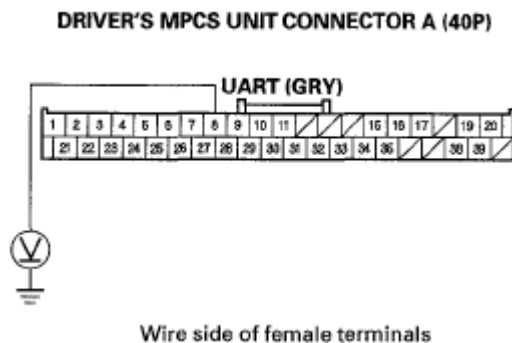


Fig. 24: Identifying Voltage Between Driver's MPCS Unit A (40P) Connector Terminal 8 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there voltage?

YES - Repair short to power in the wire.

NO - Replace the driver's MPCS unit.

DTC B2188: COMMUNICATION LINE (UART LINE) DRIVER'S MPCS UNIT CANNOT RECEIVE UART MESSAGES FROM FRONT PASSENGER'S MPCS UNIT.

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the driver's and front passenger's windows by operating the power window master switch.
4. Check for DTCs with the HDS.

Is DTC B2188 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0).
6. Disconnect driver's MPCS unit connector A (40P).
7. Disconnect front passenger's MPCS unit connector A (28P).
8. Check for continuity between the driver's MPCS unit connector A (40P) No. 8 terminal and the front passenger's MPCS unit connector A (28P) No. 4 terminal.

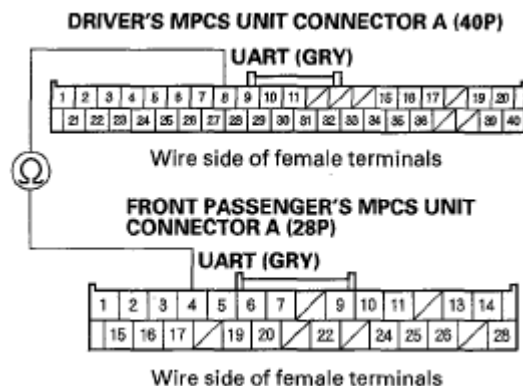


Fig. 25: Identifying Continuity Between Driver's MPCS Unit A (40P) Connector Terminal 8
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good driver's MPCS unit and recheck. If the DTC goes away, replace the original driver's MPCS unit. If the DTC is still present, replace the front passenger's MPCS unit.

NO - Repair open in the wire.

DTC B2189: DRIVER'S POWER WINDOW POSITION DETECT CIRCUIT ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2175 or B2176 also indicated?

YES - Troubleshoot the indicated DTC(s) first.

NO - Go to step 5.

5. Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Open and close the driver's power window by using the power window master switch manually.
9. Check for DTCs with the HDS.

Is DTC B2189 indicated?

YES - Go to step 10.

NO - The system is OK at this time.

10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good driver's MPCS unit.
12. Clear the DTCs with the HDS.
13. Turn the ignition switch to LOCK (0), and then back ON (II).
14. Open and close the driver's power window by using the power window master switch manually.
15. Check for DTCs with the HDS.

Is DTC B2189 indicated?

YES - Replace the driver's power window motor.

NO - Replace the driver's MPCS unit.

DTC B2190: FRONT PASSENGER'S POWER WINDOW POSITION DETECT CIRCUIT ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Open and close the front passenger's window by using the front passenger's power window switch manually.
4. Check for DTCs with the HDS.

Is DTC 82177 or B2178 also indicated?

YES - Troubleshoot the indicated DTC(s) first.

NO - Go to step 5.

5. Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).
6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0), and then back ON (II).
8. Open and close the front passenger's power window by using the front passenger's power window switch manually.
9. Check for DTCs with the HDS.

Is DTC B2190 indicated?

YES - Go to step 10.

NO - The system is OK at this time.

10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good front passenger's MPCS unit.
12. Clear the DTCs with the HDS.
13. Turn the ignition switch to LOCK (0), and then back ON (II).
14. Open and close the front passenger's power window by using the front passenger's power window switch manually.
15. Check for DTCs with the HDS.

Is DTC B2190 indicated?

YES - Replace the front passenger's window motor.

NO - Replace the front passenger's MPCS unit.

DTC B2191: FRONT PASSENGER'S MPCS UNIT INTERNAL (EEPROM) ERROR

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Check for DTCs with the HDS.

Is DTC B2191 indicated?

YES - Replace the front passenger's MPCS unit.

NO - Intermittent failure, the system is OK at this time.

DRIVER'S MPCS UNIT INPUT TEST

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
3. Disconnect driver's MPCS unit (A) connectors A (40P) and B (UP).

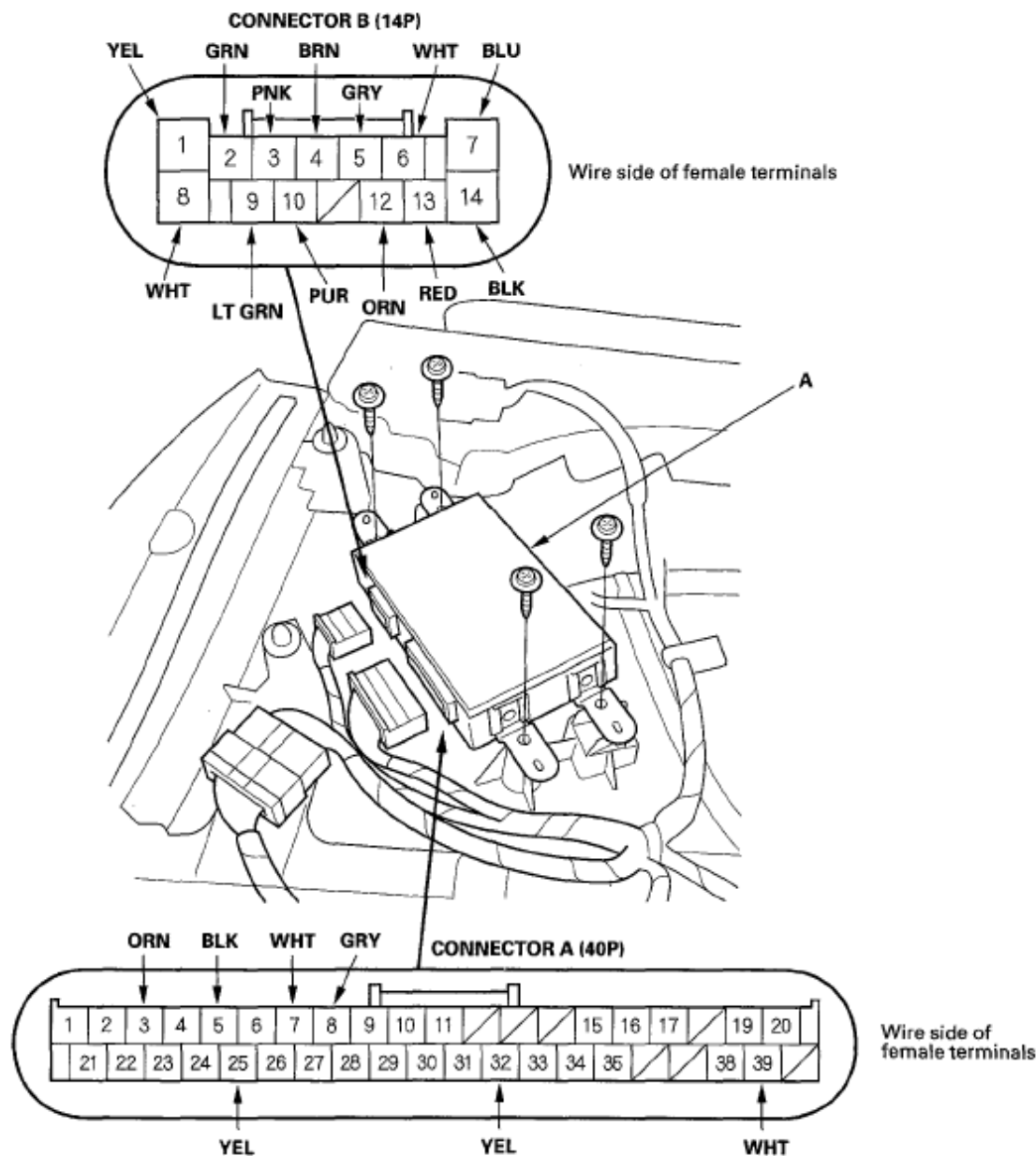


Fig. 26: Identifying Driver's MPCS Unit Connectors Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A8	GRY	Under-dash fuse/relay box connector J (21P) and power window master switch connector B (14P) disconnected	Check for continuity between the A8 terminal and under-dash fuse/relay box connector J (12P) No. 1 terminal, and A8 terminal and power window master switch connector B (14P) No. 13 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	Short to ground in the wire
A39	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 3 (P/W) (50 A) fuse in the main under-hood fuse box - Faulty power window relay - An open in the wire
A3	ORN	Connect the A39 terminal to body ground, and connect the A3 and B8 terminals with a jumper wire.	Check the left rear power window motor operation: The motor should run (the power window should go up).	- Blown No. 24 (20 A) fuse in the under-dash fuse/relay box - Poor ground (G601) - Faulty power window relay - Faulty left rear power window switch - Faulty left rear power window motor - An open in the wire
A32	YEL	Connect the A39 terminal to body ground, and connect the A32 and B8 terminals with a jumper wire.	Check the left rear power window motor operation: The motor should run (the power window should go down).	
B1	YEL	Connect the B8 and B1 terminals, and the B7 and B14 terminals with jumper wires.	Check the driver's power window motor operation: The motor should run (the power window should go down).	- Blown No. 27 (30 A) fuse in the under-dash fuse/relay box - Faulty driver's power window
		Connect the B8 and B7 terminals, and the B1 and	Check the driver's power window motor operation:	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

B7	BLU	B14 terminals with jumper wires.	The motor should run (the power window should go up).	motor An open in the wire
B9 --- B2	LT GRN	Driver's power window switch in UP position	Check for continuity between the terminals: There should be continuity.	- Faulty power window master switch - An open in the wire
	--- GRN	Driver's power window switch released	Check for continuity between the terminals: There should be no continuity.	- Faulty power window master switch - A short to ground in the wire
B10 --- B12	PUR	Under all condition (except pressing the driver's power window switch DOWN position)	Check for continuity between the terminals: There should be continuity.	- Faulty power window master switch - An open in the wire
	--- ORN	Driver's power window switch in DOWN position	Check for continuity between the terminals: There should be no continuity.	- Faulty power window master switch - A short to ground in the wire
B10 --- B13	PUR	Driver's power window switch in DOWN position	Check for continuity between the terminals: There should be continuity.	- Faulty power window master switch - An open in the wire
	--- RED	Driver's power window switch released	Check for continuity between the terminals: There should be no continuity.	- Faulty power window master switch - A short to around in the wire

6. Reconnect the connectors, and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, replace the driver's MPCS unit, then go to step 7.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
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2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

A5	BLK	Under all conditions	Measure the voltage to ground:	Poor ground (G601)
B14			There should be less than 0.5 V.	An open in the wire
A7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 4 (40 A) fuse in the main under-hood fuse box - Blown No. 7 (10 A) fuse in the under-dash fuse/relay box - Faulty under-dash fuse/relay box - An open in the wire
B8	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 3 (P/W) (50 A) fuse in the main under-hood fuse box - Blown No. 27 (30 A) fuse in the under-dash fuse/relay box - An open in the wire
A25	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box - An open in the wire
B3	PNK	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Faulty driver's MPCS unit - An open in the wire
B4	BRN	Ignition switch ON (II), and driver's power window motor runs by connecting the B8 and B1	Measure the voltage between the B4 and B6 terminals: There should be 0-about 5 V - 0- about 5 V repeatedly (a	- Blown No. 27 (30 A) fuse in the under-dash fuse/relay box - Faulty driver's MPCS unit

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

		terminals and the B7 and B14 terminals with jumper wires.	digital voltmeter reads about 2.5 V while the power window moves).	- Faulty driver's power window motor - An open in the wire
B5	GRY	Ignition switch ON (II), and driver's power window motor runs by connecting the B8 and B1 terminals and the B7 and B14 terminals with jumper wires.	Measure the voltage between the B5 and B6 terminals: There should be 0-about 5 V - 0- about 5 V repeatedly (a digital voltmeter reads about 2.5 V while the power window moves).	- Blown No. 27 (30 A) fuse in the under-dash fuse/relay box - Faulty driver's MPC unit - Faulty driver's power window motor - An open in the wire
B6	WHT	Ignition switch ON (II)	Check for continuity to ground: There should be continuity.	- Poor ground (G601) - Faulty driver's MPC unit - An open in the wire
B9	LT GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Faulty driver's MPC unit - Faulty power window master switch - An open in the wire - A short to ground in the wire

- Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

FRONT PASSENGER'S MPCS UNIT INPUT TEST

- Turn the ignition switch to LOCK (0).
- Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**).
- Disconnect front passenger's MPCS unit (A) connectors A (28P) and B (14P).

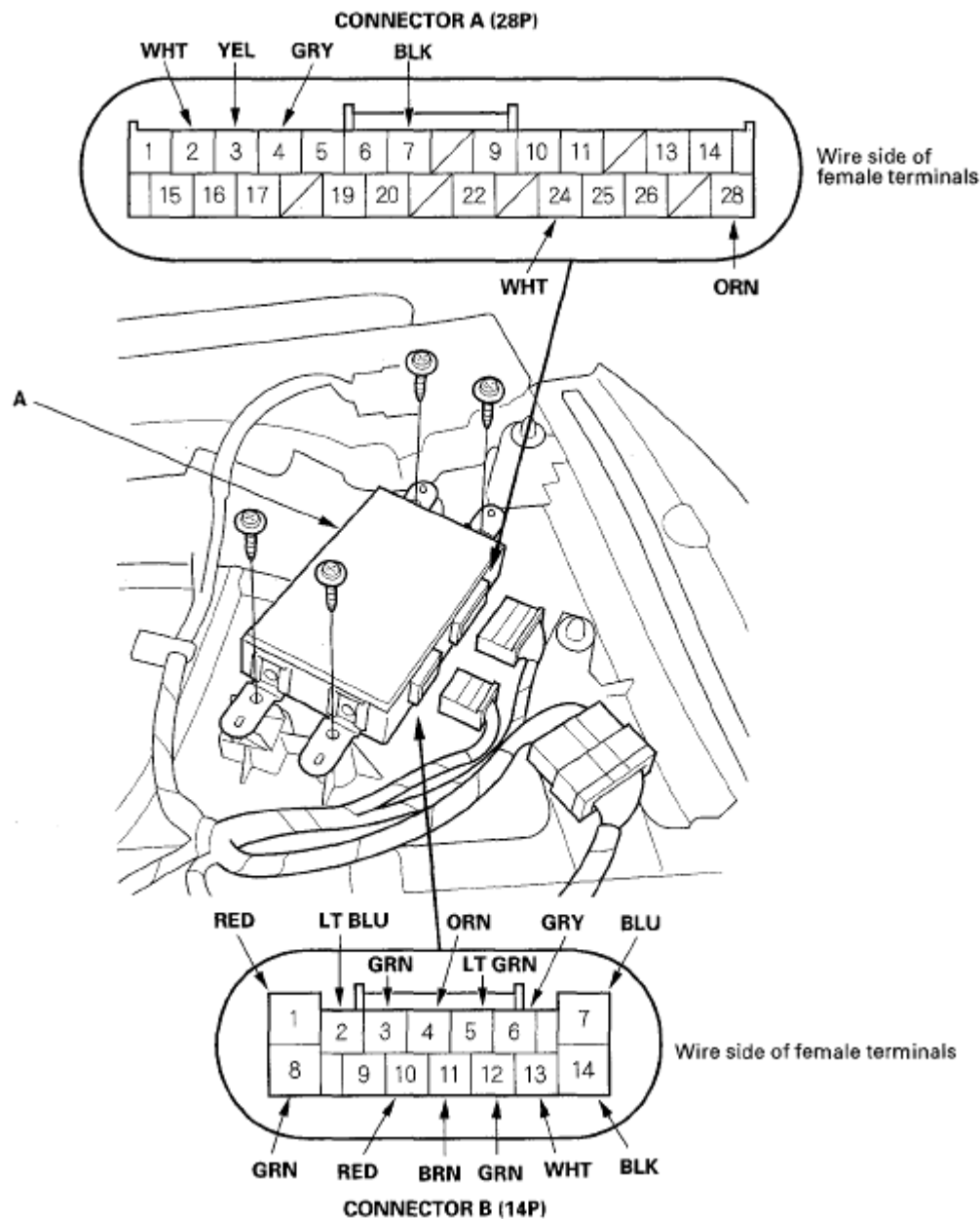


Fig. 27: Identifying Front Passenger's MPCS Unit Connectors Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, make these input tests at the connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A4	GRY	Under-dash fuse/relay box connector X (39P) and moonroof control unit/motor 10P connector disconnected	Check for continuity between the A4 terminal and under-dash fuse/relay box connector X (39P) No. 15 terminal: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	Short to ground in the wire
A3	YEL	Ignition switch ON (II), connect the A3 and B8 terminals with a jumper wire.	Check the right rear power window motor operation: The motor should run (the power window should go down).	- Blown No. 26 (30 A) fuse in the under-dash fuse/relay box - Poor ground (G606) - Faulty power window relay - Faulty right rear power window switch - Faulty right rear power window motor - An open in the wire
A28	ORN	Ignition switch ON (II), connect the A28 and B8 terminals with a jumper wire.	Check the right rear power window motor operation: The motor should run (the power window should go up).	
B1	RED	Connect the B8 and B1 terminals, and the B7 and B14 terminals with jumper wires.	Check the front passenger's power window motor operation: The motor should run (the power window should go down).	- Blown No. 26 (30 A) fuse in the under-dash fuse/relay box - Faulty front passenger's power window motor - An open in the wire
B7	BLU	Connect the B8 and B7 terminals, and the B1 and B14 terminals with jumper wires.	Check the front passenger's power window motor operation: The motor should run (the power window should go up).	
A24 --- B2	WHT	Front passenger's power window switch in AUTO position	Check for continuity between the terminals: There should be continuity.	- Faulty front passenger's power window switch - An open in the wire
	LT BLU	Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

				• A short to ground in the wire
A24 --- B11	WHT --- BRN	Front passenger's power window switch in DOWN position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
		Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
A24 --- B13	WHT --- WHT	Front passenger's power window switch in UP position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
		Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
A22 --- B10	BLK --- RED	Front passenger's power window switch in DOWN position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
		Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
B10 --- B12	RED --- GRN	Under all condition (except pressing the front passenger's power window switch DOWN position)	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
		Front passenger's power window switch in DOWN position	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire

6. Reconnect the connectors, and make these input tests at the connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

- If all the input tests prove OK, replace the front passenger's MPCS unit, then go to step 7.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A7	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G506) • An open in the wire
B14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G507) • An open in the wire
A2	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
B8	GRN	Under all conditions	Measure the voltage to ground: There should be, battery voltage.	• Blown No. 3 (P/W) (50 A) fuse in the main under-hood fuse box • Blown No. 26 (30 A) fuse in the under-dash fuse/relay box • An open in the wire
B3	GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty front passenger's MPCS unit • An open in the wire
				• Blown No. 26 (30 A) fuse in the

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Power Windows - MDX

B4	ORN	Ignition switch ON (II), and front passenger's power window motor runs by connecting the B8 and B1 terminals and the B7 and B14 terminals with jumper wires.	Measure the voltage between the B4 and B6 terminals: There should be 0-about 5 V -0- about 5 V repeatedly (a digital voltmeter reads about 2.5 V while the power window moves).	under-dash fuse/relay box - Faulty front passenger's MPCS unit - Faulty front passenger's power window motor - An open in the wire
B5	LT GRN	Ignition switch ON (II), and front passenger's power window motor runs by connecting the B8 and B1 terminals and the B7 and B14 terminals with jumper wires.	Measure the voltage between the B5 and B6 terminals: There should be 0-about 5 V - 0- about 5 V repeatedly (a digital voltmeter reads about 2.5 V while the power window moves).	- Blown No. 26 (30 A) fuse in the under-dash fuse/relay box - Faulty front passenger's MPCS unit - Faulty front passenger's power window motor - An open in the wire
B6	GRY	Ignition switch ON (II)	Check for continuity to ground: There should be continuity.	- Poor ground (G506, G507) - Faulty front passenger's MPCS unit - An open in the wire

7. Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

DRIVER'S POWER WINDOW MOTOR TEST

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the driver's door wire harness B 28P connector (A) from the driver's door wire harness A.

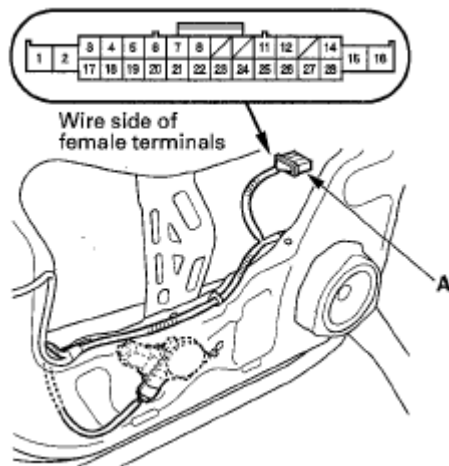


Fig. 28: Identifying Driver's Door Wire Harness B 28P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. At the driver's door wire harness B 28P connector, test the power window motor in each direction by connecting battery power and ground according to the table. When the motor stops running, disconnect one lead immediately.

Terminal	15	16
Direction		
UP	⊕	⊖
DOWN	⊖	⊕

Fig. 29: Driver's Power Window Motor Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the motor does not run or fails to run smoothly, go to step 4.
4. Disconnect the 6P connector (A) from the driver's power window motor (B).

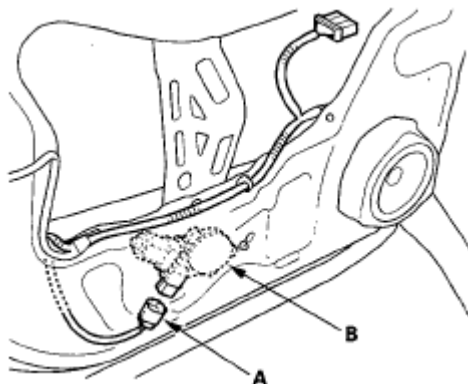


Fig. 30: Identifying Driver's Power Window Motor And Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between the driver's power window motor 6P connector No. 3 and No. 6 terminals and the driver's door wire harness B 28P connector No. 15 and No. 16 terminals respectively. There should be continuity.
 - If there is no continuity, repair open in the wire.
 - If there is continuity, replace the power window motor.

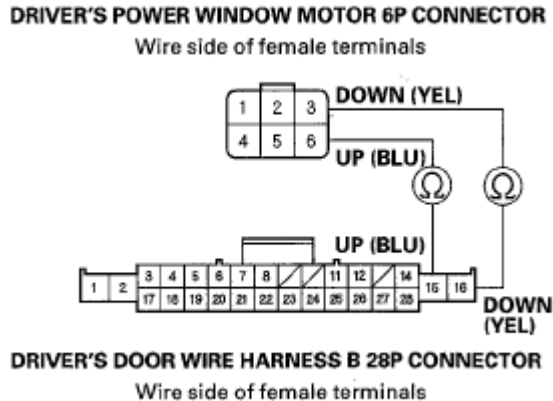


Fig. 31: Identifying Continuity Between Driver's Power Window Motor 6P Connector Terminals 3 And 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. After replacing the power window motor, reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

FRONT PASSENGER'S POWER WINDOW MOTOR TEST

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the front passenger's door wire harness 20P connector (A) from the front passenger's door subharness.

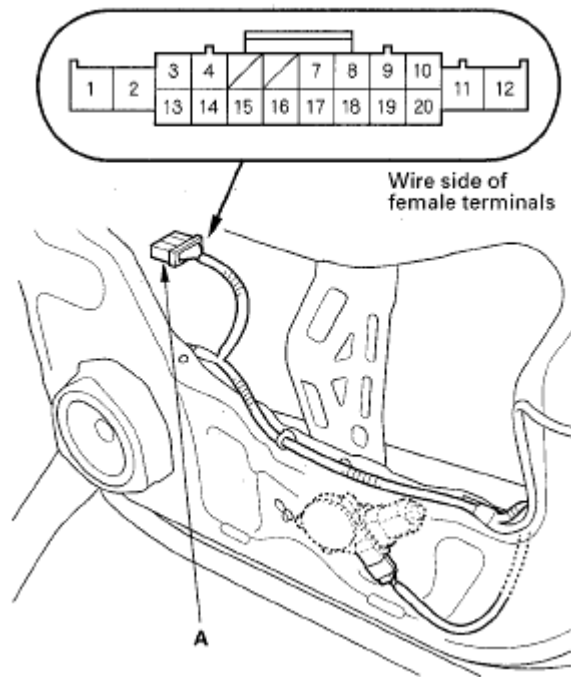


Fig. 32: Identifying Front Passenger's Door Wire Harness 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- At the front passenger's door wire harness 20P connector, test the power window motor in each direction by connecting battery power and ground according to the table. When the motor stops running, disconnect one lead immediately.

Terminal	2	12
Direction		
UP	⊖	⊕
DOWN	⊕	⊖

Fig. 33: Front Passenger's Power Window Motor Continuity Chart
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- If the motor does not run or fails to run smoothly, go to step 4.
- Disconnect the 6P connector (A) from the front passenger's power window motor (B).

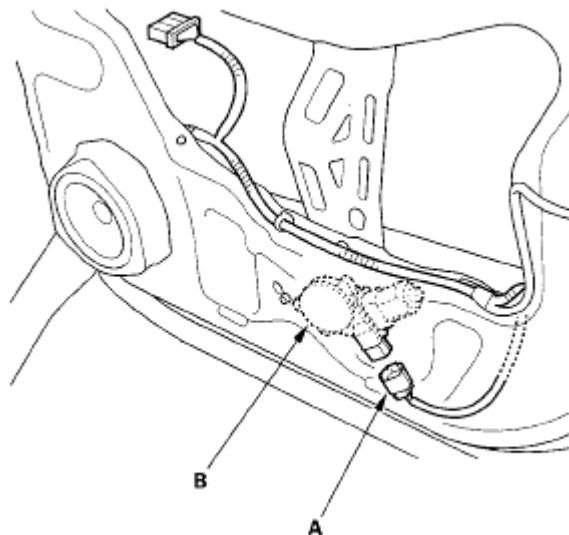


Fig. 34: Identifying Front Passenger's Power Window Motor And 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between the front passenger's power window motor 6P connector No. 1 and No. 4 terminals and the front passenger's door wire harness 20P connector No. 2 and No. 12 terminals respectively. There should be continuity.
 - If there is no continuity, repair open in the wire.
 - If there is continuity, replace the power window motor.

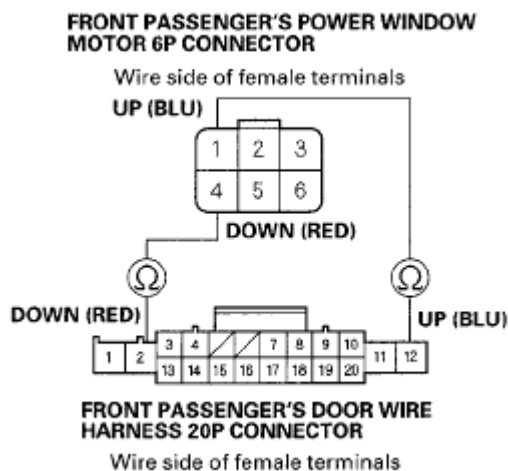


Fig. 35: Identifying Continuity Between Front Passenger's Power Window Motor 6P Connector Terminals 1 And 4
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. After replacing the power window motor, reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

REAR POWER WINDOW MOTOR TEST

1. Remove the door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the rear power window switch 14P connector (A).

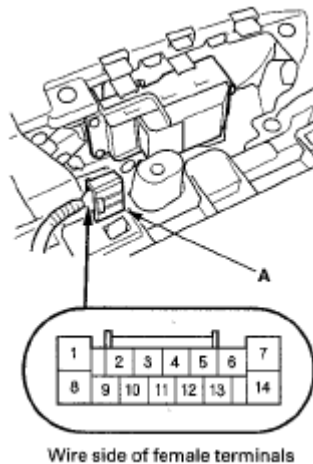


Fig. 36: Identifying Rear Power Window Switch 14P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

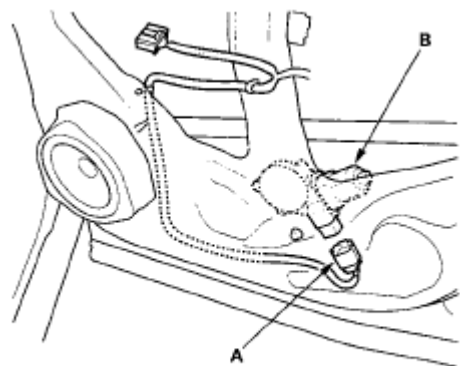
2. Test the power window motor in each direction by connecting battery power and ground according to the table. When the motor stops running, disconnect one lead immediately.

Terminal Direction	1 [6]	4 [3]
UP	⊕	⊖
DOWN	⊖	⊕

[] : Right rear power window

Fig. 37: Rear Power Window Motor Continuity Chart
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the motor does not run or fails to run smoothly, go to step 4.
4. Disconnect the 6P connector (A) from the rear power window motor (B).



The illustration shows the right rear door, the left rear door is symmetrical.

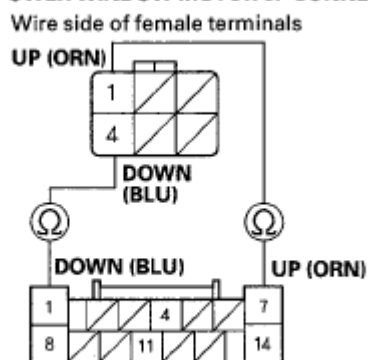
Fig. 38: Identifying Rear Power Window Motor And 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Check for continuity between the rear power window motor 6P connector No. 1 [No. 3] and No. 4 [No. 6] terminals and the front rear power window switch 14P connector No. 1 and No. 7 terminals respectively. There should be continuity.

[] : Right rear power window

- If there is no continuity, repair open in the wire.
- If there is continuity, replace the power window motor.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR

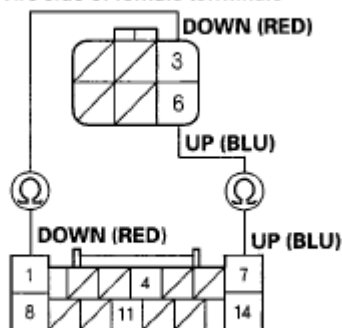
Wire side of female terminals

Fig. 39: Identifying Continuity Between Rear Power Window Motor And Front Rear Power Window Switch (Left)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

Fig. 40: Identifying Continuity Between Rear Power Window Motor And Front Rear Power Window Switch (Right)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- After replacing the power window motor, reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

FRONT PASSENGER'S POWER WINDOW SWITCH TEST

- Remove the front passenger's door panel (see **FRONT DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the 14P connector from the front passenger's power window switch.

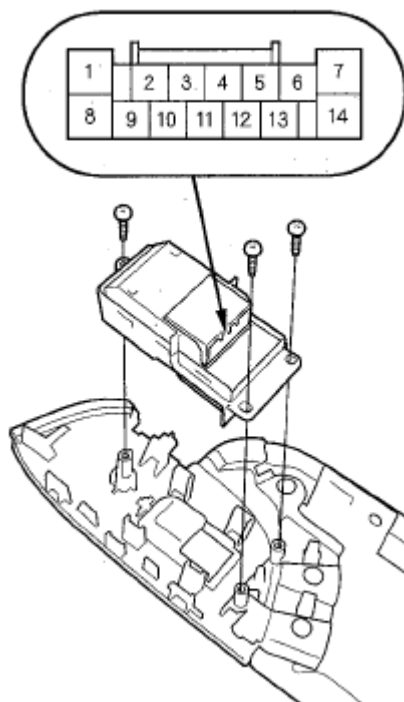


Fig. 41: Identifying Front Passenger's Power Window Switch And 14P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	1	5	8	12	3	7	14
UP	○	○			○	○	○
DOWN	○			○		○	○
AUTO	○	○			○		○

Fig. 42: Checking For Continuity Between Terminals In Switch Position
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the continuity is not as specified, replace the switch (see **POWER WINDOW MASTER SWITCH REPLACEMENT**).

REAR POWER WINDOW SWITCH TEST/REPLACEMENT

1. Remove the rear door panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**), and disconnect the 14P connector from the rear power window switch.
2. Remove the power window switch panel (see **REAR DOOR PANEL REMOVAL/INSTALLATION**).
3. Remove the three mounting screws and the rear power window switch (A).

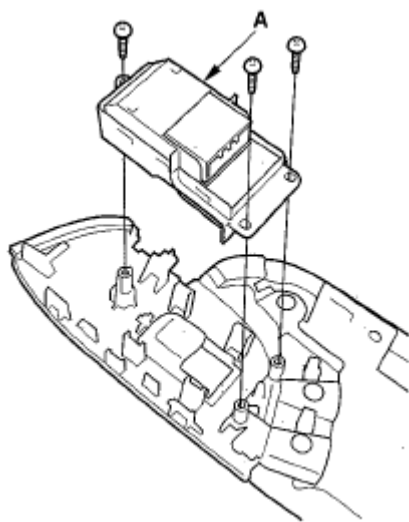


Fig. 43: Identifying Rear Power Window Switch And Mounting Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Swap the rear power window switch with another known-good power window switch and test. If the original power window switch is faulty; replace it.

5. Install the switch in the reverse order of removal.
6. Reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT).

POWER WINDOW MASTER SWITCH REPLACEMENT

1. Remove the driver's door panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION), and disconnect the 14P connector from the power window master switch.
2. Remove the power window switch panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION).
3. Remove the four mounting screws and the power window master switch (A).

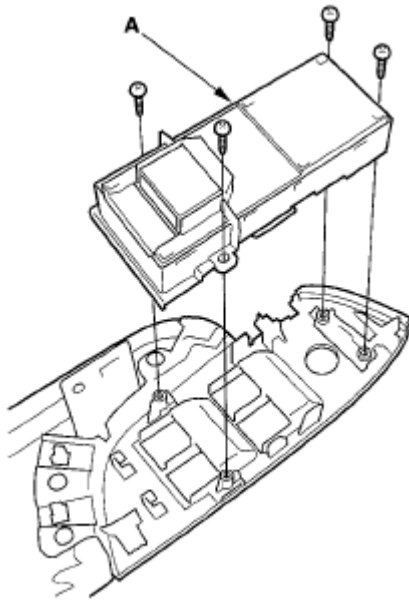


Fig. 44: Identifying Power Window Master Switch And Mounting Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the switch in the reverse order of removal.
5. Reset the power window control unit (see RESETTING THE POWER WINDOW CONTROL UNIT).

FRONT PASSENGER'S POWER WINDOW SWITCH REPLACEMENT

1. Remove the front passenger's door panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION), and disconnect the 14P connector from the front passenger's power window switch.
2. Remove the power window switch panel (see FRONT DOOR PANEL REMOVAL/INSTALLATION).
3. Remove the three mounting screws and the front passenger's power window switch (A).

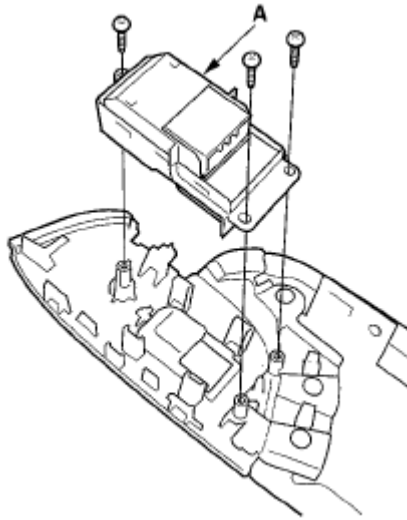


Fig. 45: Identifying Front Passenger's Power Window Switch And Mounting Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the switch in the reverse order of removal.
5. Reset the power window control unit (see **RESETTING THE POWER WINDOW CONTROL UNIT**).

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

2007-09 DRIVELINE/AXLES

Rear Differential - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	070AD-STK0110	Oil Seal Driver A	1
②	070AD-STK0120	Oil Seal Driver B	1
③	070AD-STK0130	Oil Seal Driver C	1
④	070AJ-SJAA101	Adapter, Torque Wrench	1
⑤	07SAZ-001000A	Backprove set	2
⑥	07XAB-001A101	Companion Flange Holder	1
⑦	07AAD-S3VA100	Driveshaft remover	1
⑧	07747-0010100	Fork Seal Driver Weight	1

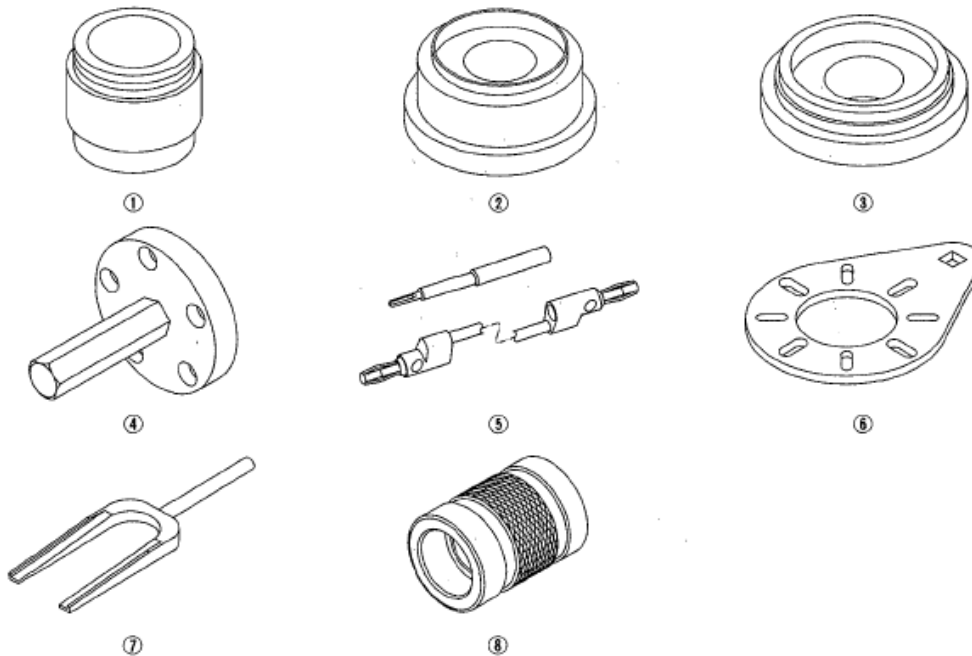


Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

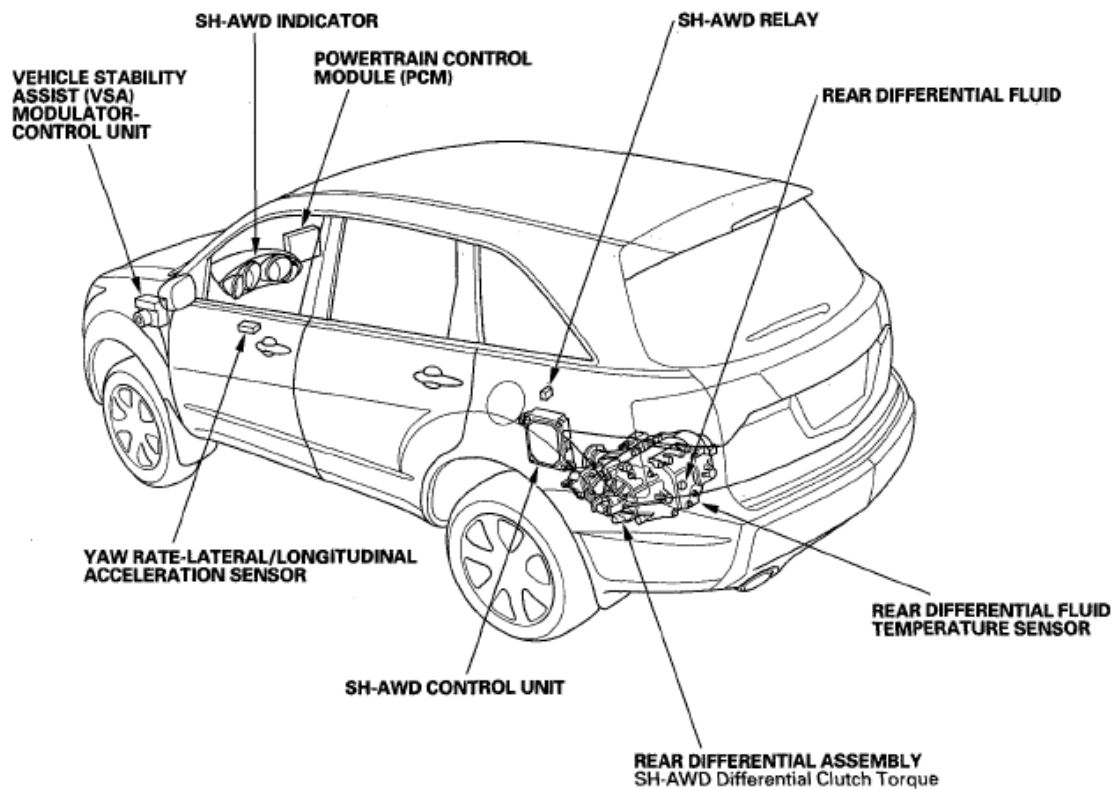


Fig. 2: Identifying Rear Differential Components

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SH-AWD INDICATOR

The SH-AWD indicator comes on under certain conditions even if the AWD system is working normally. Here are some examples:

- When you use high-powered wireless equipment such as a CB or Ham radio in the vehicle.
- When you keep spinning the rear wheels while the vehicle is stuck in sand, mud, snow, etc.
- When the battery voltage suddenly drops below 10 volt.

After the SH-AWD indicator comes on, it stays on until you turn the ignition switch off.

DIAGNOSTIC TROUBLE CODE (DTC)

- The SH-AWD control unit can memorize up to eight different DTCs. The system displays the DTCs by

blinking the SH-AWD indicator. Multiple DTCs are displayed in the order they occurred, beginning with the most recent.

- If the same DTC is detected more than once, the most recent DTC is written over the earlier one. Therefore, when the same problem is detected more than once, it is memorized as a single DTC.
- The DTCs are memorized in the EEPROM (non-volatile memory). Therefore, the memorized DTCs are not cleared when the battery is disconnected or the SH-AWD control unit is disconnected.
- If there is a problem in the central processing unit (CPU) of the SH-AWD control unit, the SH-AWD indicator comes on, but no DTC is memorized.

SELF-DIAGNOSIS

When a problem is detected by self-diagnosis, the system does the following:

- Turns the SH-AWD indicator on.
- Memorizes the DTC.
- Stops AWD control and puts the vehicle back in FWD.
- Reduces engine torque to suit the driving conditions when the abnormality was detected.

HOW TO CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs)

When the SH-AWD control unit senses an abnormality in the input or output systems, the SH-AWD indicator in the gauge assembly will usually come on, and the malfunction indicator lamp (MIL), the D5 indicator, and/or the ABS indicator may also come on.

1. With the ignition switch OFF, connect the HDS to the data link connector (DLC) (A) behind the driver's dashboard lower cover.

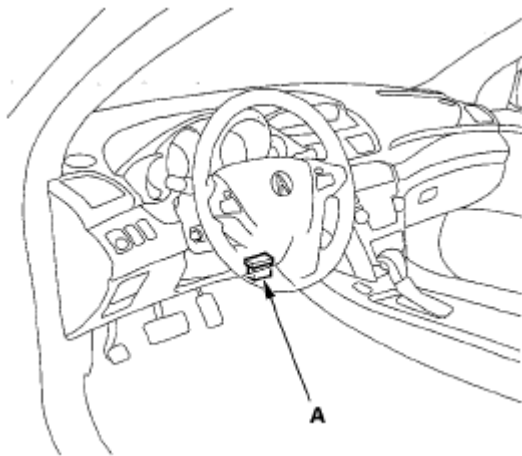


Fig. 3: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II), and follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC(s), refer to the **DTC TROUBLESHOOTING**.

NOTE: See the HDS help menu for specific instruction.

3. If there are fuel and emission DTCs, A/T DTCs, and VSA system DTCs at the same time, troubleshoot the fuel and emission DTCs first.
4. After recording the DTCs, clear all DTCs.
5. Test-drive the vehicle for several minutes in AWD mode, and check for DTCs. If the DTC returns, refer to the **DTC TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all connectors and terminals in the circuit are tight.

HOW TO TROUBLESHOOT CIRCUITS AT THE SH-AWD CONTROL UNIT

Special Tools Required

Backprobe set 07SAZ-001000A (two required)

1. Remove the left side trim panel cover (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
2. Remove the cargo floor lid and the cargo box (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Remove the SH-AWD control unit (A).

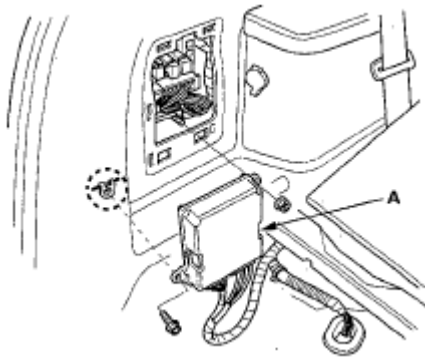


Fig. 4: Identifying SH-AWD Control Unit

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the circuit on the SH-AWD control unit according to the DTC Troubleshooting using the special tools and a digital multimeter or an analog circuit tester (A).

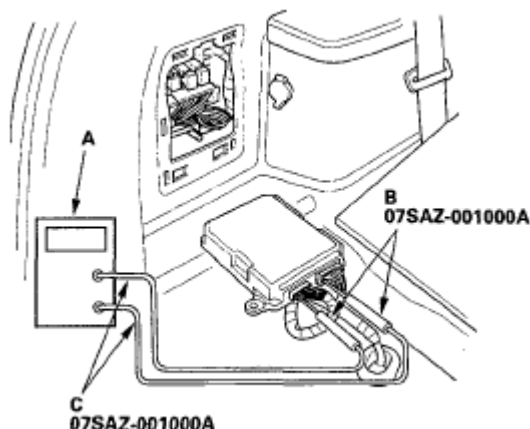


Fig. 5: Identifying Circuit On SH-AWD Control Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the backprobe adapters (B) to the stacking patch cords (C), and connect the cords to the multimeter or an analog circuit tester. Using the wire insulator as a guide for the contoured-tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with the terminal end of the wires.

UPDATING THE SH-AWD CONTROL UNIT

Special Tools Required

- Honda diagnostic system (HDS)
- Honda interface module (HIM)
- HDS pocket tester

NOTE:

- Use this procedure when you need to update the SH-AWD control unit in a troubleshooting procedure.
- Make sure the HDS/HIM has the latest software version.
- Before you update the SH-AWD control unit, make sure the battery in the vehicle is fully charged.
- Never turn the ignition switch OFF during the update. If there is a problem with the update, leave the ignition switch ON.
- To prevent SH-AWD control unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, moonroof, door locks, etc.) during the update.
- To ensure the latest program is installed, do an SH-AWD control unit update whenever the SH-AWD control unit is substituted or replaced.
- You cannot update an SH-AWD control unit with a program it already has. It will only accept a new program.
- If you need to diagnose the Honda interface module (HIM) because the

HIM's red (#3) lamp came on or was flashed during the update, leave the ignition switch in the ON (II) position when you disconnect the HIM from the data link connector (DLC). This will prevent SH-AWD control unit damage.

1. Select the update program, and follow the screen prompts to update the SH-AWD control unit.
2. If the software in the SH-AWD control unit is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the SH-AWD control unit is not the latest, follow the instructions on the screen.
3. Do the SH-AWD control unit initialization (see SH-AWD Control Unit Initialization).
4. Do the SH-AWD differential clutch torque memorization (see SH-AWD Differential Clutch Torque Memorization).
5. Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION).

SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION

Whenever the side clutch set is replaced, the differential clutch torque memorization must be done.

1. With the ignition switch to LOCK (0), connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.

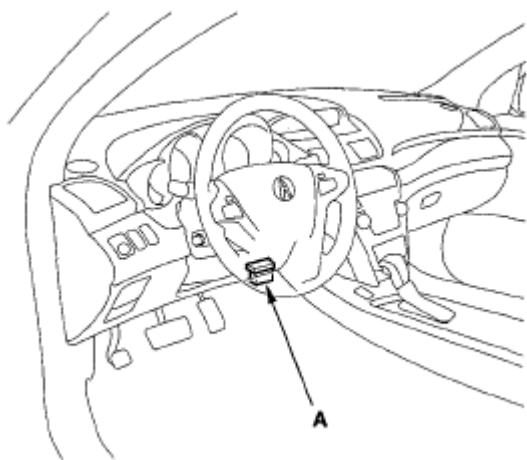


Fig. 6: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), go to the miscellaneous test menu/neutral menu/differential torque and follow the prompts on the HDS screen.

NOTE: See the HDS help menu for specific instructions.

YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL

POSITION MEMORIZATION

Whenever the yaw rate sensor or the lateral acceleration sensor is replaced, its neutral position memorization must be done.

1. With the ignition switch to LOCK (0), connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.

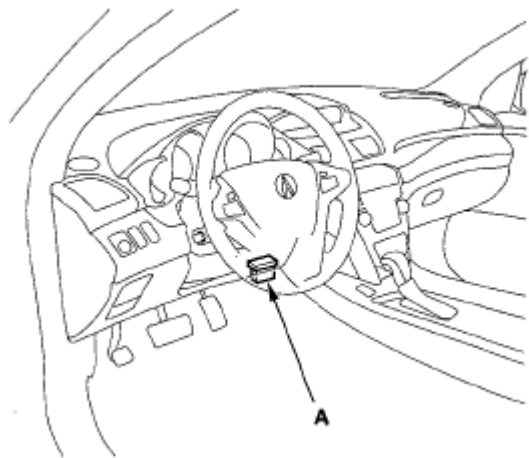


Fig. 7: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II), go to the miscellaneous test menu/neutral menu/all sensor and follow the prompts on the HDS screen.

NOTE: See the HDS help menu for specific instructions.

SH-AWD CONTROL UNIT INITIALIZATION

Whenever the SH-AWD control unit is replaced, it must be initialized.

1. With the ignition switch to LOCK (0), connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.

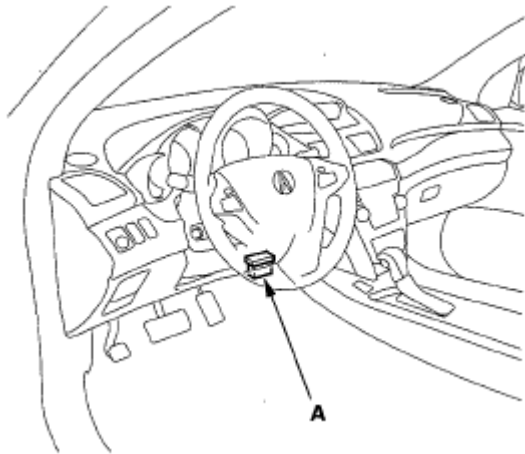


Fig. 8: Identifying Data Link Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Turn the ignition switch to ON (II), go to the miscellaneous test menu/neutral menu/all sensor and follow the prompts on the HDS screen.

NOTE: See the HDS help menu for specific instructions.

DTC TROUBLESHOOTING INDEX

DTC TROUBLESHOOTING CHART

DTC ⁽¹⁾	SH-AWD Indicator Light	Detection Item
<u>12-1</u>	ON	Lateral Acceleration Sensor Malfunction
<u>12-2</u>	ON	Lateral Acceleration Sensor Malfunction
<u>12-3</u>	ON	Lateral Acceleration Sensor Malfunction
<u>15-1</u>	ON	Longitudinal Acceleration Sensor Malfunction
<u>16-3</u>	ON	Steering Angle Sensor Neutral Position Incorrect
<u>33-2</u>	ON	Yaw Rate Sensor Malfunction
<u>33-3</u>	ON	Yaw Rate Sensor Malfunction
<u>41-1</u>	ON	Lost of Communication with Power Control Module (PCM)
<u>41-2</u>	ON	Lost of Communication with VSA
<u>41-4</u>	ON	Lost of Communication with A/T Control Unit
<u>41-5</u>	ON	Lost of Communication with Yaw Rate-Lateral/Longitudinal

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

		Acceleration Sensor
<u>41-6</u>	ON	Lost of Communication with Steering Angle Sensor
<u>42-1</u>	ON	Differential Fluid Temperature Sensor (Short to power)
<u>42-2</u>	ON	Differential Fluid Temperature Sensor (Open/GND Short)
<u>43-1</u>	ON	Differential Fluid Temperature Sensor Circuit Malfunction
<u>44-11</u>	ON	SH-AWD Control Unit
<u>44-12</u>	ON	SH-AWD Relay Stuck ON
<u>44-32</u>	ON	SH-AWD Control Unit Power Supply Stuck ON
<u>44-41</u>	ON	SH-AWD Control Unit Power Supply Stuck OFF
<u>44-50</u>	ON	SH-AWD Control Unit Power Supply Stuck Voltage Low
<u>49-1</u>	ON	SH-AWD Control Unit (PG Line Open)
<u>52-3</u>	ON	Left Clutch Electromagnetic Coil Current Malfunction
<u>53-1</u>	ON	Left Clutch Electromagnetic Coil Malfunction
<u>53-2</u>	ON	Left Clutch Electromagnetic Coil (Short)
<u>53-3</u>	ON	Left Clutch Electromagnetic Coil Malfunction
<u>56-3</u>	ON	Right Clutch Electromagnetic Coil Current Malfunction
<u>57-1</u>	ON	Right Clutch Electromagnetic Coil Malfunction
<u>57-2</u>	ON	Right Clutch Electromagnetic Coil (Short)
<u>57-3</u>	ON	Right Clutch Electromagnetic Coil Malfunction
<u>76-1</u>	ON	Rear Differential Fluid Overheats
<u>77-1</u>	ON	Communication Error with the Power Control Module (PCM)
<u>77-2</u>	ON	Communication Error with the VSA Modulator-Control Unit
<u>77-4</u>	ON	Communication Error with the Automatic-Transmission Control Unit
<u>77-5</u>	ON	Yaw Rate-Lateral/Longitudinal

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

		Acceleration Sensor Malfunction
<u>77-6</u>	ON	Steering Angle Sensor Malfunction
<u>78-xx</u>	ON	SH-AWD Control Unit Self-Diagnostic Malfunction ("x" can be 0 thru 9 or A thru F)
<u>81-1</u>	ON	Left Search Coil Sensor Malfunction
<u>82-1</u>	ON	Right Search Coil Sensor Malfunction
<u>91-1</u>	ON	SH-AWD Control Unit Programming Error
NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you will see on the HDS display. The character is unrelated to your troubleshooting; it designates the SH-AWD control unit manufacturer and other details used for product analysis.		
(1) DTCs are indicated by the SH-AWD indicator when the 16P data link connector (DLC) is connected to the HDS.		

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Most problems in the unit are to be diagnosed by identifying noises from the gears or bearings. Care should be taken during diagnosis not to confuse differential noises with those from other drivetrain components.

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic Procedure	Also check for
The SH-AWD indicator does not go off, and no DTCs are stored	Symptom troubleshooting (see <u>THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCs ARE STORED</u>).	
The SH-AWD indicator does not come on	Symptom troubleshooting (see <u>THE SH-AWD INDICATOR DOES NOT COME ON</u>).	
Gear or bearing noises	• Fluid level too low. • Incorrect or worn out fluid • Damaged or chipped gears. • Side case clearance incorrect. • Incorrect tire size (rolling circumference).	• Add fluid • Drain and fill the differential • Replace the differential carrier assembly • Side case clearance adjustment
Rear differential overheats	• Fluid level too low.	• Add fluid

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

	• Incorrect fluid type.	• Drain and fill the differential
Rear differential leaks fluid	• Fluid level too high. • Clogged breather hose. • Worn or damaged oil seal. • Damaged sealing washer. • Loose mounting bolts or inadequate sealing.	• Lower to proper level • Clean or replace • Replace the sealing washer • Replace the oil seal • Recheck torque or apply sealant
Rear differential screeches, whines, moans, or squeaks	• Fluid level too low. • Incorrect or worn out fluid • Incorrect tire rolling circumference. • Damaged oil pump.	• Add fluid • Drain and fill the differential • Adjust tire pressure or replace tires • Replace the differential carrier assembly
Noise during acceleration, or when accelerating from a full stop	• Incorrect of side case clearance. • Incorrect of pre-load. • Incorrect of backlash of hypoid gear. • Damaged or chipped gears. • Incorrect tire size (rolling circumference).	• Pre-load adjustment • Side case clearance adjustment • Replace the differential carrier assembly
HDS does not communicate with the SH-AWD control unit or the vehicle	Troubleshooting DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>).	

SYSTEM DESCRIPTION

SH-AWD SYSTEM

Outline

This vehicle is equipped with a Super Handling All-wheel Drive (SH-AWD) rear differential system. This system uses electromagnetic clutches and the SH-AWD control unit to control front to rear torque distribution and independent left to right rear torque distribution. This allows the system to function as a limited slip differential and as a torque distribution system to improve standing start performance, straight-line stability, climbing, and cornering ability.

SH-AWD features include

- Independent torque distribution to the front and rear wheels, and to the left and right wheels for neutral handling when cornering.
- Controls differential (inside/outside) wheel speed in a turn to increase cornering stability.
- Limited slip differential function for better acceleration.

Operation

When driving in a straight line, the front and rear wheels are traveling at the same speed. In a normal turn, the distance traveled by the front wheels is longer than that of the rear wheels. The SH-AWD system monitors the speed of the front wheels, and increases torque to the outside rear wheel proportionally. This improves stability and steering response, and on slippery surfaces it provides improved traction of the 4-wheel drive system.

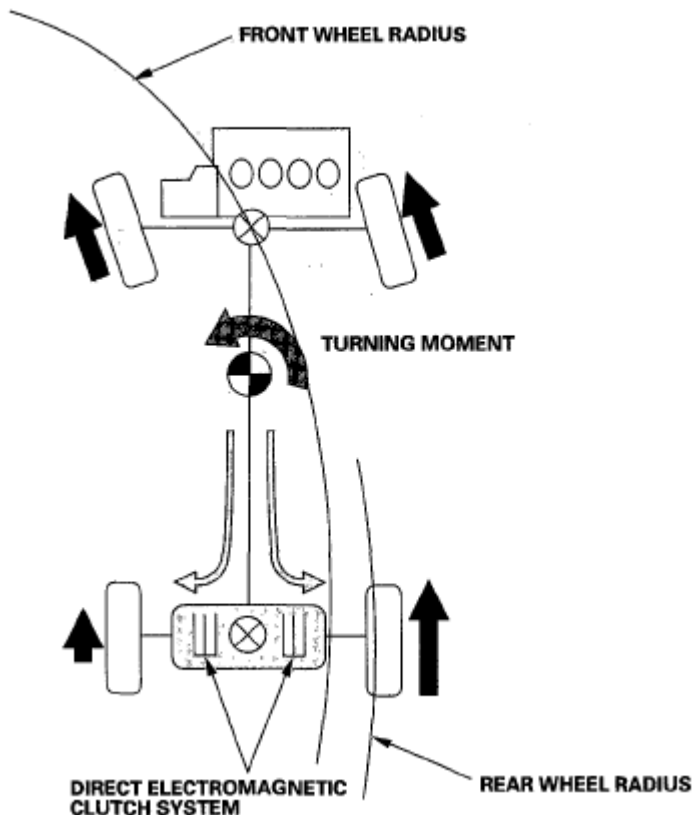


Fig. 9: SH-AWD System Operation Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Construction

1. The differential assembly has a conventional hypoid ring and pinion gear set.
2. The direct electromagnetic clutch system consists of the coils, the planetary gear sets, and the multi-plate clutches that are installed in the side cases on either side of the differential carrier. When driving straight ahead, both rear wheels rotate at the same speed. When turning, current is applied to the appropriate

outside wheel main coil to engage the clutch. The amount of current passed through the electromagnetic clutch controls the amount of driving force to the outside wheel.

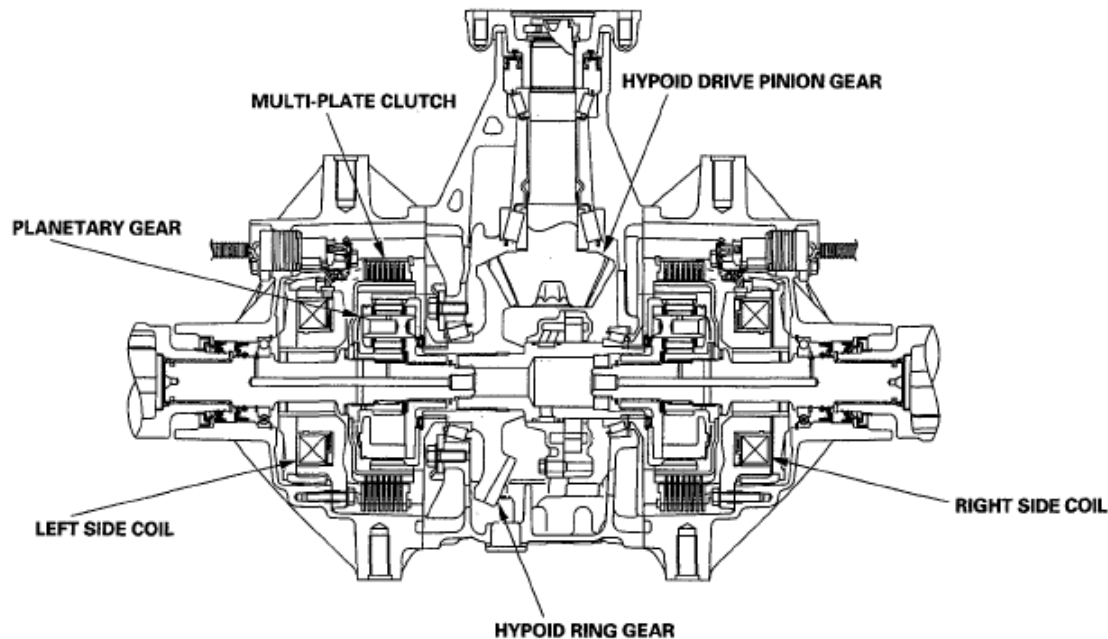


Fig. 10: SH-AWD System Construction Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD 4WD CONTROL SYSTEM

Control System

The SH-AWD control system consists of a SH-AWD control unit, the PCM, the VSA modulator-control unit, along with various sensors and switches that detect the steering angle, the lateral G force, the yaw, and the vehicle speed. A fluid temperature sensor is located on in the rear differential. The control units exchange information via the F-CAN communication lines. The SH-AWD control unit has a self-diagnostic function. If a malfunction is detected, the SH-AWD control unit turns on the SH-AWD indicator in the gauge assembly and the system goes into fail-safe mode. When in fail-safe mode, the vehicle disables the SH-AWD differential. The vehicle defaults to front wheel drive, reduces engine torque to suit the driving conditions.

Driving Force Control

The driving force control distributes the power based on the driver's inputs. It distributes torque to the front and rear wheels based on the throttle opening and the available engine torque output. When turning, torque is applied to the rear wheels independently based on the lateral G input and the direction of the turn. This generates an inward yaw movement to help steer the vehicle around the turn.

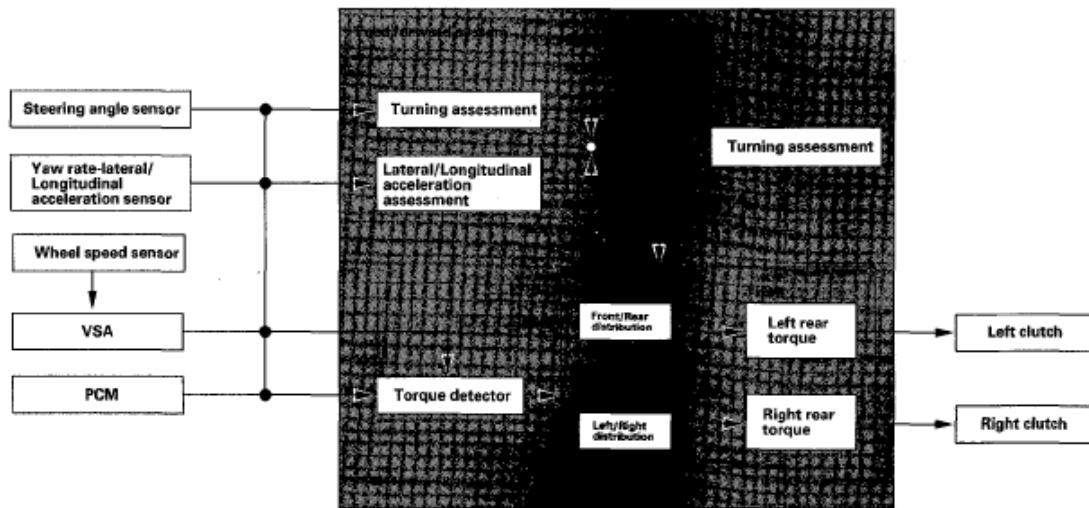


Fig. 11: SH-AWD 4WD Control System Function Diagram - Driving Force Control
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTROMAGNETIC CLUTCH SYSTEM

Construction

The electromagnetic clutch system is incorporated into the side case assemblies on both sides of the differential case. The system consists of the multi-plate clutches, the planetary gears, the pressure guides, the solenoid coil assembly (the search coil and the main coil), the armature assembly (the slider and the armature), and the yoke.

COMPONENTS PURPOSE CHART

Components	Purpose
Multi-plate clutches	Convert thrust into torque, absorb wheel speed differences
Planetary gears	Magnify and convey clutch torque
Pressure guides	Reduce fluctuations in pressure
Search coils	Detect magnetic flux
Main coils	Generates magnetic fields
Slider	Centers the armature
Armature	Generates magnetic flux to generate thrust
Yoke	Generates magnetic flux to clamping force

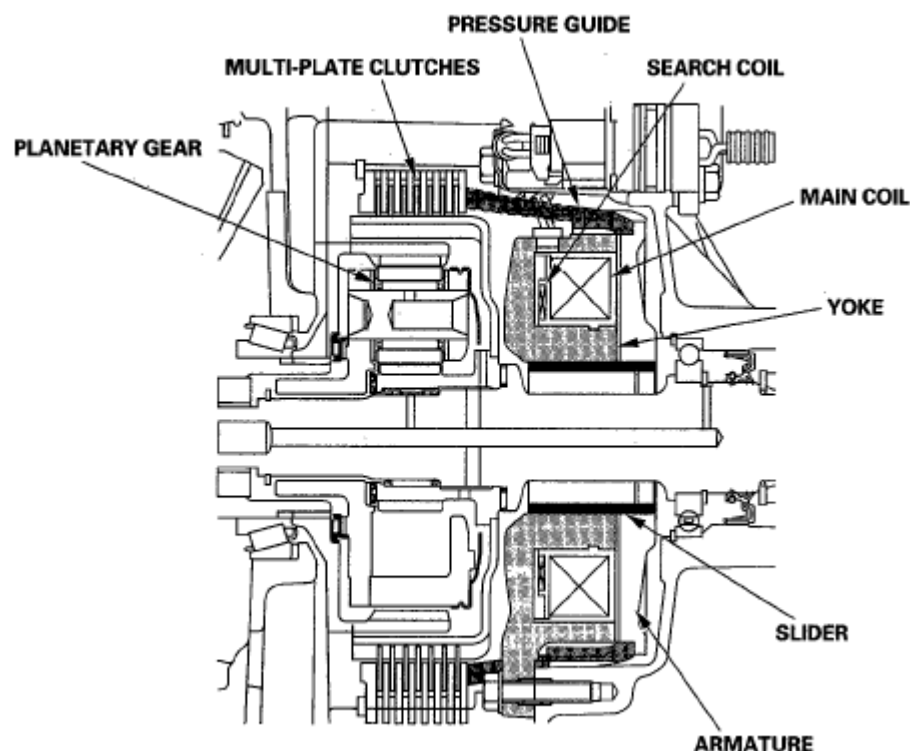


Fig. 12: Electromagnetic Clutch System Construction Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Operation

The SH-AWD control unit receives inputs from the PCM and the VSA modulator-control unit on the driving conditions via the F-CAN. The SH-AWD control unit sends signals to the main coils, which engage the electromagnetic clutches that connect the planetary gear set. This increases the torque applied to the rear wheels. The amount of current sent to the clutch is continuously varied as driving conditions change.

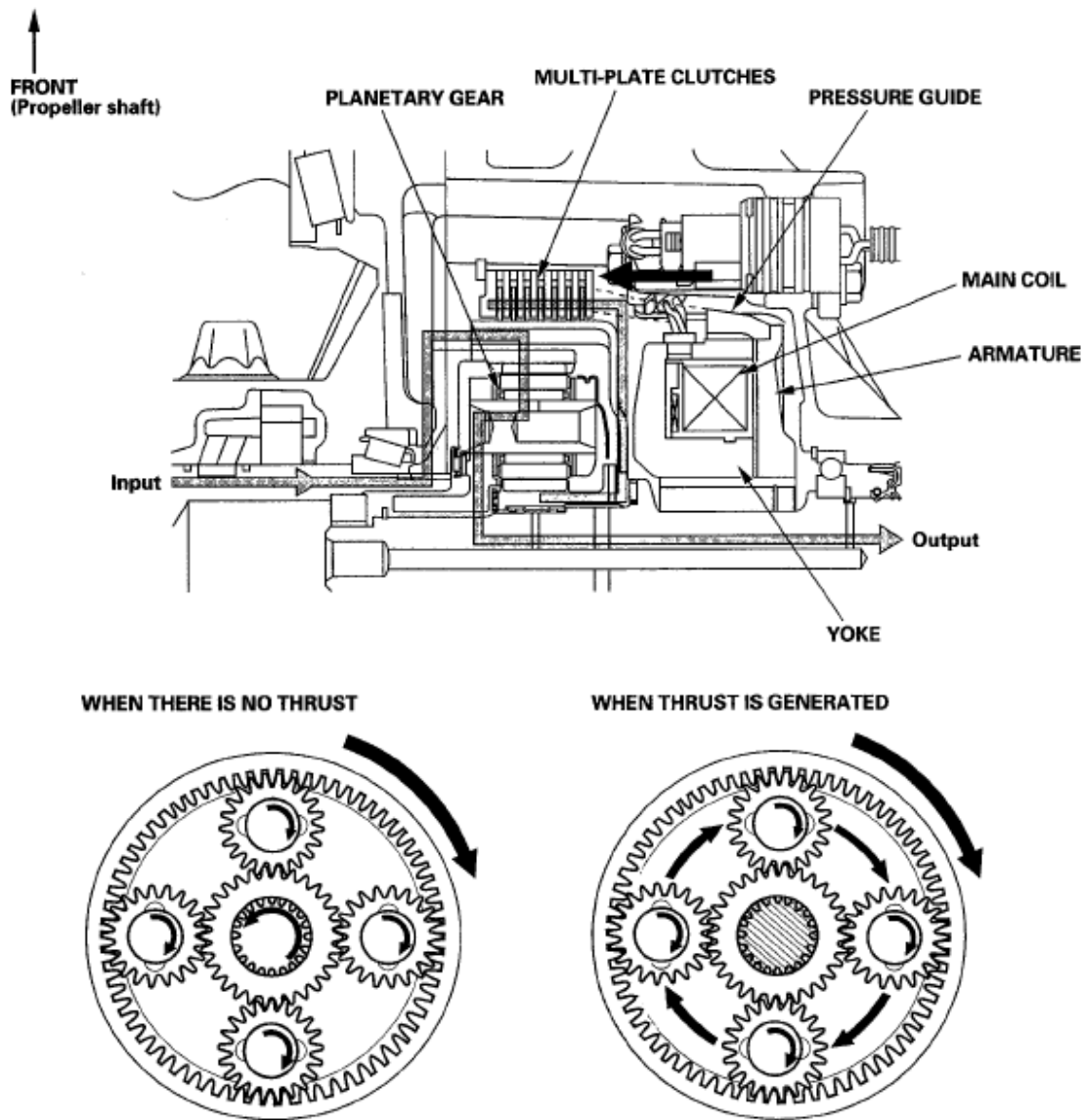


Fig. 13: Electromagnetic Clutch System Operation Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEARCH COIL DETECTION SYSTEM

As the clutch discs wear, the air gap between the pressure guides and the multi-plate clutches increases. The increase in air gap changes the magnetic field generated by the main coil and the yoke. The search coil detects these changes in the magnetic field. The SH-AWD control unit uses predetermined maps to compensate for the changes to maintain precise control and smooth clutch engagement.

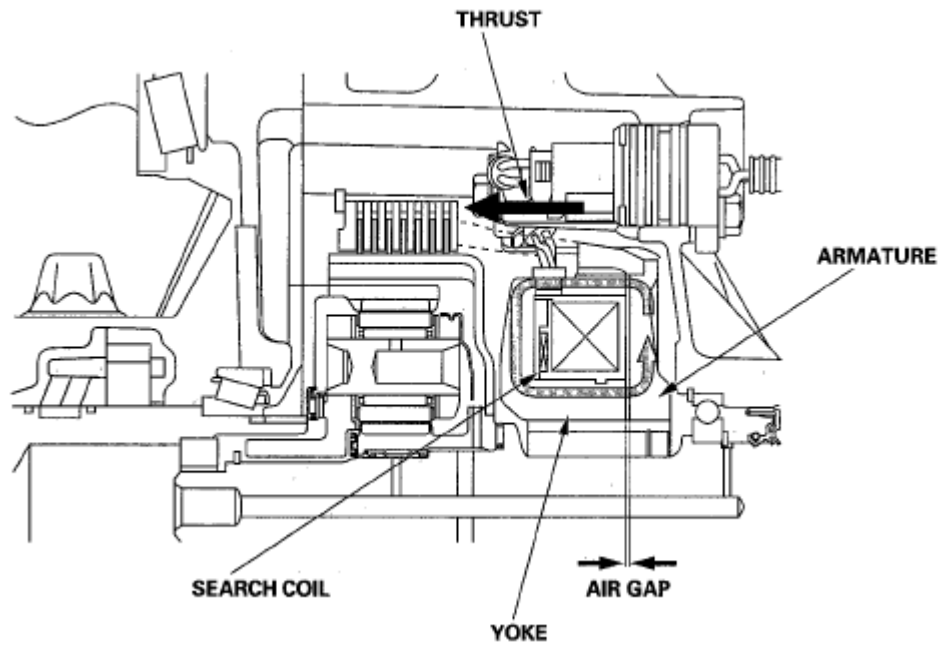


Fig. 14: Search Coil Detection System Function Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

ELECTRIC CONTROL SYSTEM

SH-AWD Control Unit Electrical Connections

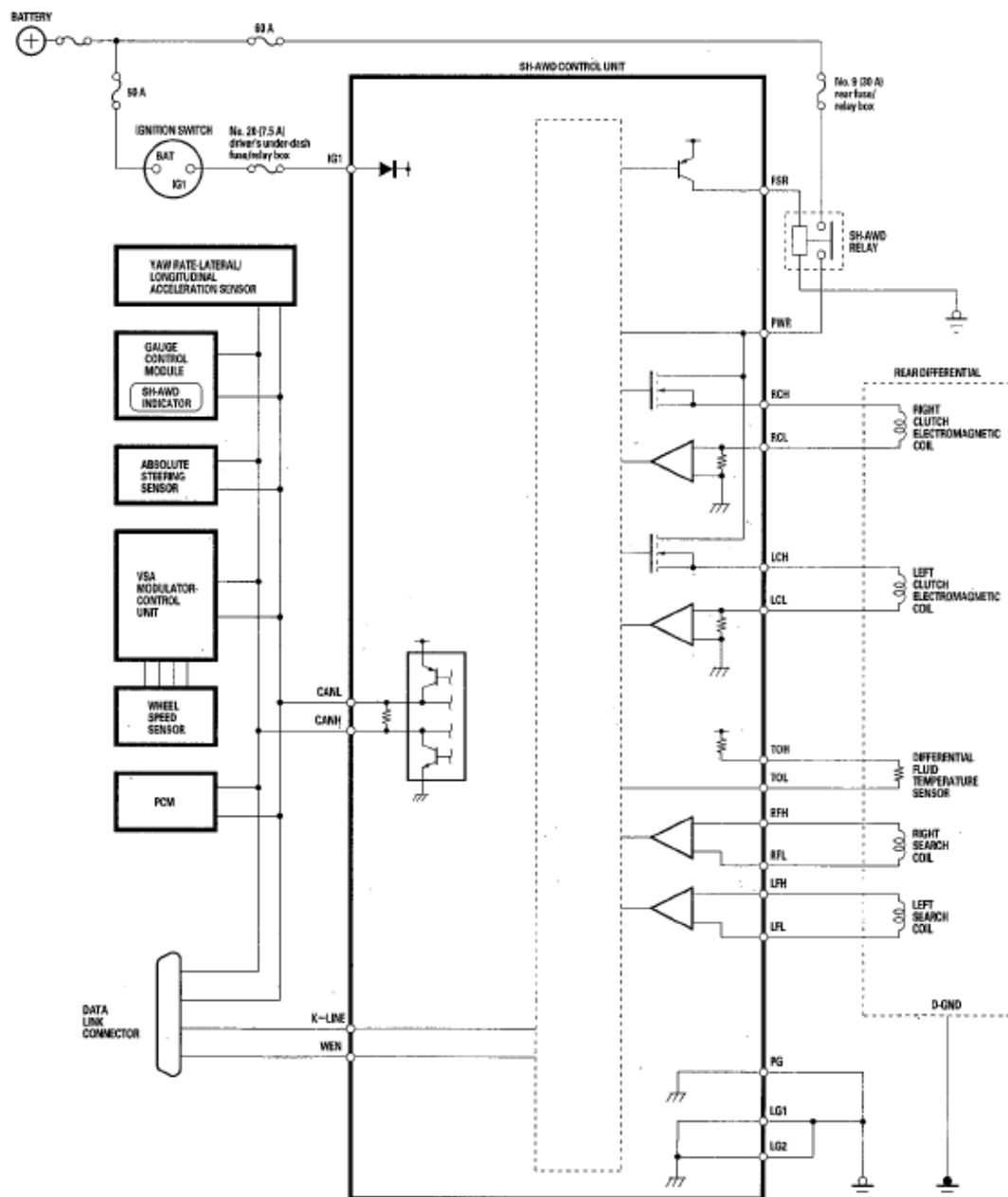


Fig. 15: SH-AWD Control Unit Electrical Connections Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT INPUTS AND OUTPUTS

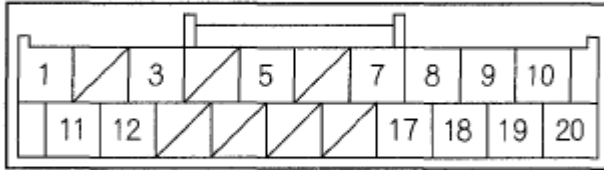
The SH-AWD control unit terminal voltages and the measuring conditions for the SH-AWD control system. Do the SH-AWD inputs and outputs test with the SH-AWD connectors connected.

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

SH-AWD Control Unit Connector Terminal Locations

A (20P)



Terminal side of male terminals

Fig. 16: Identifying SH-AWD Control Unit Connector Terminal Locations - A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT CONNECTOR TERMINAL REFERENCE - A(20P)

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
A1	BLK	LFH	Detects left search coil signal (positive)	With ignition switch ON (II): about 2.5 V
A3	BLU	RFH	Detects right search coil signal (positive)	With ignition switch ON (II): about 2.5 V
A5	LT BLU	K-LINE	Communication line SH-AWD control unit-to-DLC	With ignition switch ON (II): about 0 V or battery voltage
A7	GRN	IG1	Power supply for SH-AWD control unit	With ignition switch ON (II): battery voltage
A8	GRN	TOL	Detects differential fluid temperature sensor (negative)	With ignition switch ON (II): about 0.2 V to 4.7 V (Depending on ATF temperature)
A9	BLK	LG1	Unit ground	With ignition switch ON (II): about 0 V
A10	WHT	CANH	F-CAN communication signal	With ignition switch ON (II): about 2.5 V or 3.5 V
A11	RED	LFL	Detects left search coil signal (negative)	With ignition switch ON (II): about 2.5 V
A12	RED	RFL	Detects right search coil signal (negative)	With ignition switch ON (II): about 2.5 V
A17	ORN	FSR	Drives SH-AWD relay	With ignition switch ON (II): about 0 V or battery voltage
A18	WHT	TOH	Power supply for differential fluid temperature sensor	With ignition switch ON (II): about 4.7 V to 5 V
A19	GRY	WEN	Detects write enable signal	With ignition switch ON (II): about 0 V
A20	RED	CANL	F-CAN communication signal	With ignition switch ON (II): about 2.5 V or 1.5 V

SH-AWD CONTROL UNIT INPUTS AND OUTPUTS

The SH-AWD control unit terminal voltages and the measuring conditions for the SH-AWD control system. Do

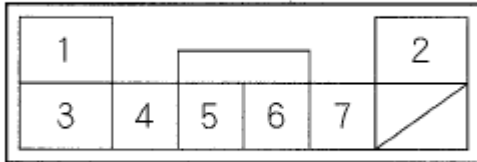
2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

the SH-AWD inputs and outputs test with the SH-AWD connectors connected.

SH-AWD Control Unit Connector Terminal Locations

B (8P)



Terminal side of male terminals

Fig. 17: Identifying SH-AWD Control Unit Connector Terminal Locations - B(8P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT CONNECTOR TERMINAL REFERENCE - B(8P)

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
B1	WHT	PWR	Power supply for SH-AWD actuator	With engine running: battery voltage
B2	BLK	PG	Actuator ground	With ignition switch ON (II): about 0 V
B3	BLK	LG2	Unit ground	With ignition switch ON (II): about 0 V
B4	RED	LCH	Drives left clutch electromagnetic coil (positive)	With clutch off: about 0 V With clutch on: battery voltage
B5	BLU	LCL	Drives left clutch electromagnetic coil (negative)	With ignition switch ON (II): about 0 V
B6	ORN	RCH	Drives right clutch electromagnetic coil (positive)	With clutch off: about 0 V With clutch on: battery voltage
B7	GRY	RCL	Drives right clutch electromagnetic coil (negative)	With ignition switch ON (II): about 0 V

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

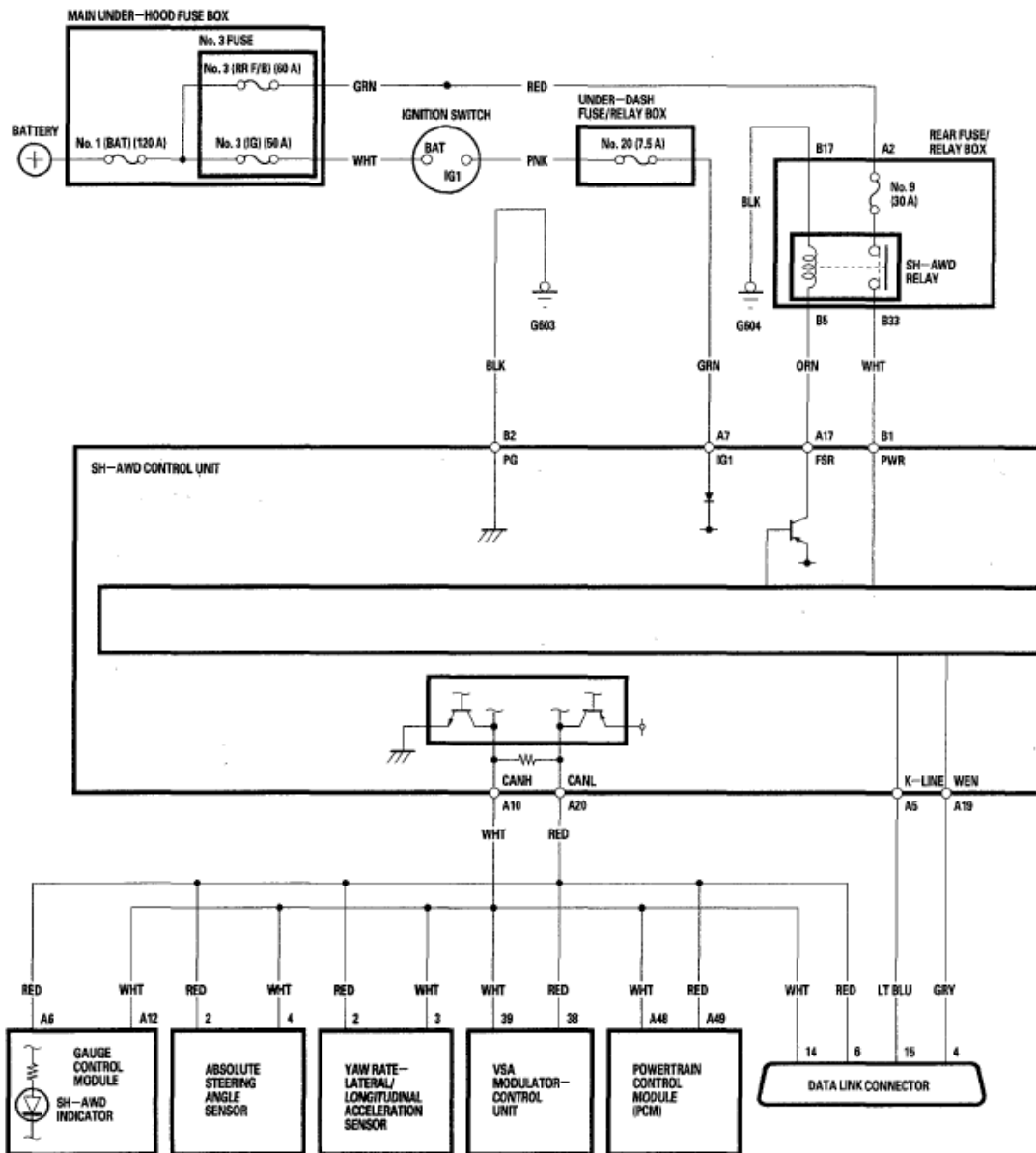


Fig. 18: Rear Differential Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

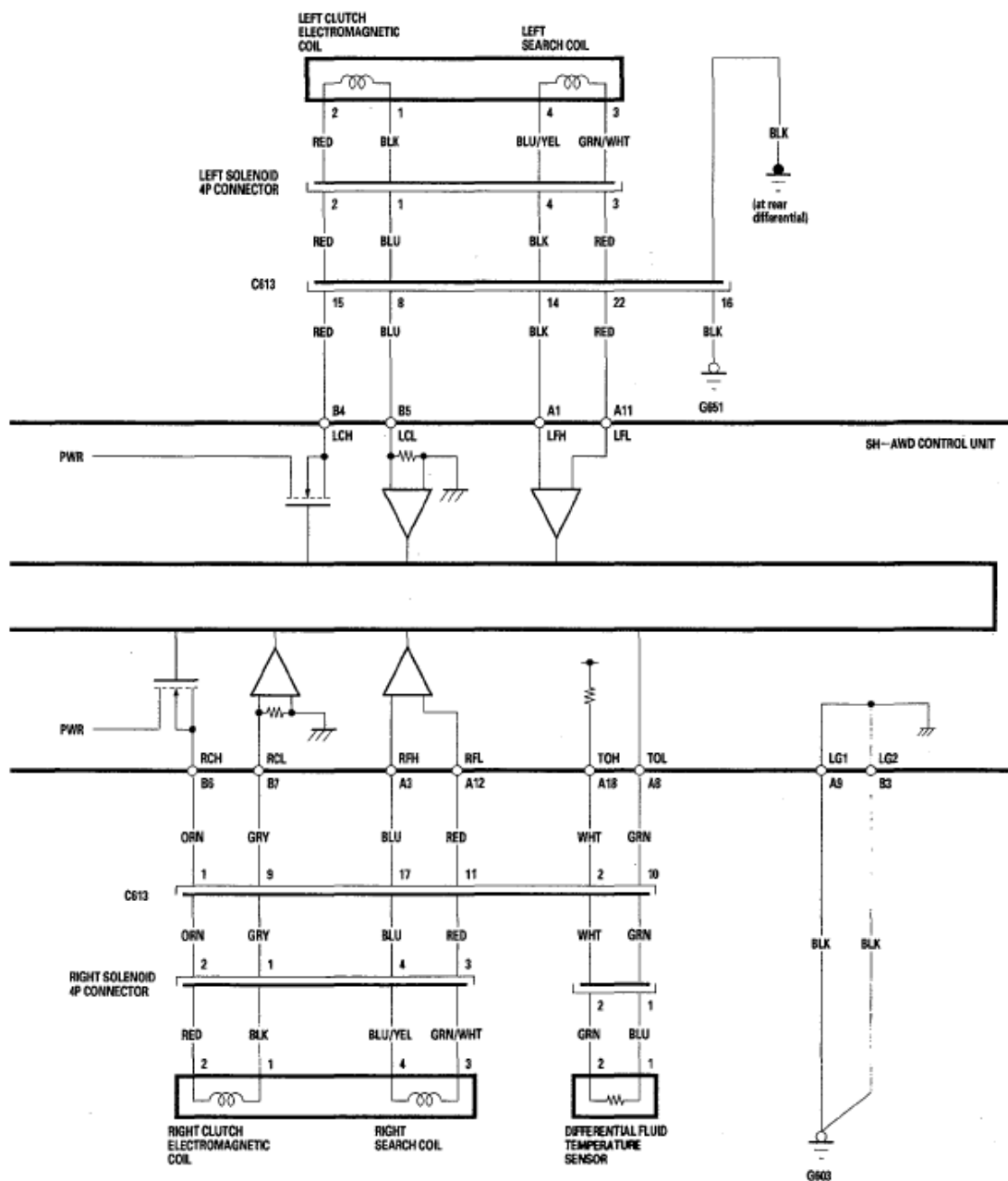


Fig. 19: Rear Differential Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 12-1,12-2,12-3: LATERAL ACCELERATION SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the VSA system with the HDS.

Are any lateral acceleration sensor DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Test-drive the vehicle with an assistant. Drive in a left and right zig-zag pattern at about 13 mph (20 km/h) and check the LATERAL ACCELERATION SENSOR in the DATA LIST with the HDS.

Does the sensor value change when turning?

YES -Go to step 5.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

5. Park the vehicle on a level surface.
6. Check the LATERAL ACCELERATION SENSOR in the DATA LIST with the HDS.

Is there 0.1G or less?

YES -Intermittent failure, the system is OK at this time. If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION**). If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 15-1: LONGITUDINAL ACCELERATION SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

3. Clear the DTC with the HDS.
4. Test-drive the vehicle with an assistant. When accelerating, check the LONGITUDINAL ACCELERATION SENSOR in the DATA LIST with the HDS.

Does the sensor value change when acceleration?

YES -Go to step 5.

NO -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

5. Park the vehicle on a level surface.
6. Check the LONGITUDINAL ACCELERATION SENSOR in the DATA LIST with the HDS.

Is there 0.1 G or less?

YES -Go to step 7.

NO -Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **SH-AWD Differential Clutch Torque Memorization**). If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

7. Test-drive the vehicle for 2 minutes in a vehicle speed is kept constant at 19 mph (30 km/h).
8. Check for DTCs with the HDS.

Is DTC 15-1 indicated?

YES -Replace the yaw rate-lateral/longitudinal acceleration sensor (see **STEERING ANGLE SENSOR CENTER POINT WRITING**).

NO -Intermittent failure, the system is OK at this time. If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 16-3: STEERING ANGLE SENSOR NEUTRAL POSITION INCORRECT

NOTE:

- Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Check the wheel alignment (see **WHEEL ALIGNMENT**).
- Check for installation of the steering angle sensor.

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the VSA system with the HDS.

Are any steering angle sensor DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Start the engine.
5. Check the STEERING ANGLE SENSOR in the DATA LIST with the HDS.

When the steering wheels is turned slowly, does the value change?

YES -Go to step 6.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

6. Test-drive the vehicle in a straight line at 19 mph (30 km/h) or more.
7. Park the vehicle on a level surface, and center the steering wheel.
8. Check the STEERING ANGLE SENSOR in the DATA LIST with the HDS.

It is within ± 25 deg of center?

YES -Intermittent failure, the system is OK at this time. If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Do the steering angle sensor center point writing (see **STEERING ANGLE SENSOR CENTER POINT WRITING**). If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 33-2, 33-3: YAW RATE SENSOR MALFUNCTION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the VSA system with the HDS.

Are any yaw rate sensor DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Test-drive the vehicle with an assistant. Drive in a left and right zig-zag pattern at about 13 mph (20 km/h) and check the YAW RATE SENSOR in the DATA LIST with the HDS.

Does the sensor value change when turning?

YES -Go to step 5.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

5. Park the vehicle on a level surface.
6. Check the YAW RATE SENSOR in the DATA LIST with the HDS.

Is there 3.5 degls or less?

YES -Intermittent failure, the system is OK at this time. If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **SH-AWD Differential Clutch Torque Memorization**). If the DTC returns, replace the SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 41-1: F-CAN MALFUNCTION (LOST COMMUNICATION WITH POWER CONTROL MODULE (PCM))

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the PGM-FI system with the HDS.

Are there any PGM-FI DTCs indicated?

YES -go to .

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Check for DTCs with the HDS.

Is DTC 41-1 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time. Check for intermittent open between SH-AWD control unit connector terminals A10 and A20 and PCM connector terminals A48 and A49.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent PCM damage.

9. Disconnect PCM connector A (49P).
10. Connect PCM connector terminals A 48 and A 49 to body ground with jumper wires.

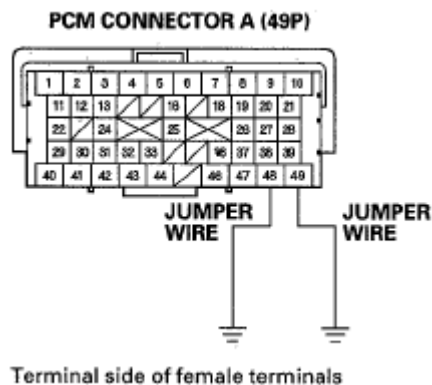
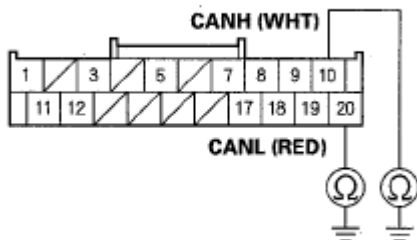


Fig. 20: Identifying PCM Connector Terminals To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect SH-AWD control unit connector A (20P).
12. Check for continuity between SH-AWD control unit connector terminals A10 and A20 to body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 21: Identifying Continuity Between SH-AWD Control Unit Connector Terminals To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Repair open in the wires between the SH-AWD control unit and the PCM.

DTC 41-2: F-CAN MALFUNCTION (LOST COMMUNICATION WITH VSA)

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for PGM-FI DTC's with the HDS.

Are there any PGM-FI DTCs indicated?

YES -Go to the indicated DTC's troubleshooting.

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Check for DTCs with the HDS.

Is DTC 41-2 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time. Check for intermittent open between SH-AWD control unit connector terminals A10 and A20 and VSA modulator-control unit 46P connector terminals No. 38 and No. 39.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent PCM damage.

9. Disconnect the VSA modulator-control unit 46P connector.
10. Connect VSA modulator-control unit 46P connector terminals No. 38 and No. 39 to body ground with jumper wires.

VSA MODULATOR-CONTROL UNIT 46P CONNECTOR

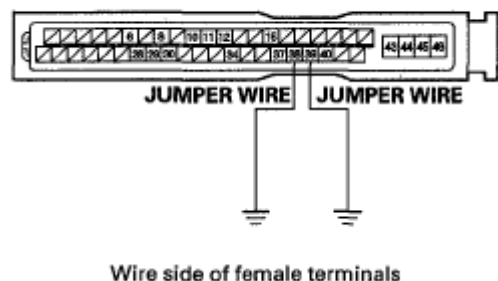


Fig. 22: Identifying VSA Modulator-Control Unit 46P Connector Terminals To Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect SH-AWD control unit connector A (20P).
12. Check for continuity between SH-AWD control unit connector terminals A10 and A20 to body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)

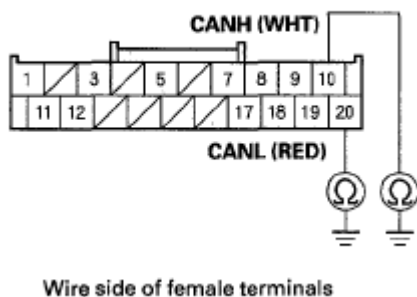


Fig. 23: Identifying Continuity Between SH-AWD Control Unit Connector Terminals To Body

Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Repair open in the wires between the SH-AWD control unit and the VSA modulator-control unit.

DTC 41-4: F-CAN MALFUNCTION (LOST COMMUNICATION WITH A/T CONTROL UNIT)

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the PGM-FI system with the HDS.

Are there any PGM-FI DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Check for DTCs with the HDS.

Is DTC 41-4 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time. Check for intermittent open between SH-AWD control unit connector terminals A10 and A20 and PCM connector terminals A48 and A49.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

NOTE: **This step must be done to prevent PCM damage.**

9. Disconnect the PCM connector A (49P).
10. Connect PCM connector terminals A48 and A49 to body ground with jumper wires.

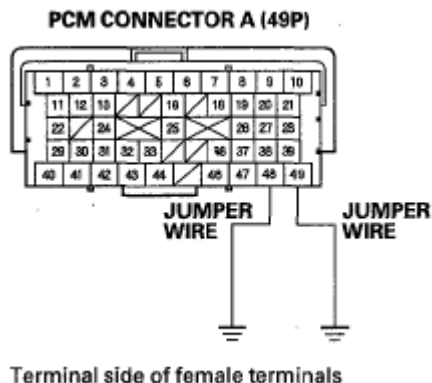


Fig. 24: Identifying PCM Connector Terminals To Body Ground With Jumper Wires
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect SH-AWD control unit connector A (20P).
12. Check for continuity between SH-AWD control unit connector terminals A10 and A20 to body ground.

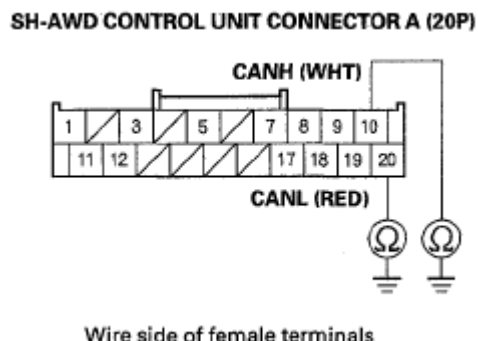


Fig. 25: Identifying Continuity Between SH-AWD Control Unit Connector Terminals To Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).)

NO -Repair open in the wires between the SH-AWD control unit and the PCM.

DTC 41-5: F-CAN MALFUNCTION (LOST COMMUNICATION WITH YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR)

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Check for DTCs in the VSA system with the HDS.

Are any yaw rate-lateral/longitudinal acceleration sensor DTCs or F-CAN indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Check for DTCs with the HDS.

Is DTC 41-5 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time. Check for intermittent open between SH-AWD control unit connector terminals A10 and A20 and yaw rate-lateral/longitudinal acceleration sensor 4P connector terminals No. 3 and No. 2.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent PCM damage.

9. Disconnect the yaw rate-lateral/longitudinal acceleration sensor 4P connector.
10. Connect yaw rate-lateral/longitudinal acceleration sensor 4P connector terminals No. 3 and No. 2 to body ground with jumper wires.

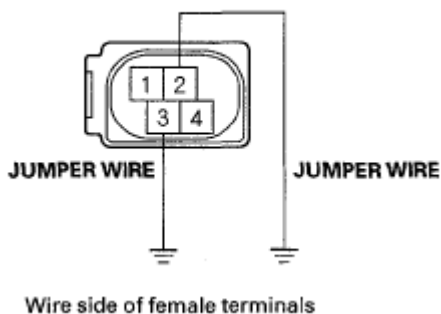
**YAW RATE-LATERAL/LONGITUDINAL
ACCELERATION SENSOR 4P CONNECTOR**

Fig. 26: Identifying Yaw Rate-Lateral/Longitudinal Acceleration Sensor Terminals To Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect SH-AWD control unit connector A (20P).
12. Check for continuity between SH-AWD control unit connector terminals A10 and A20 to body ground.

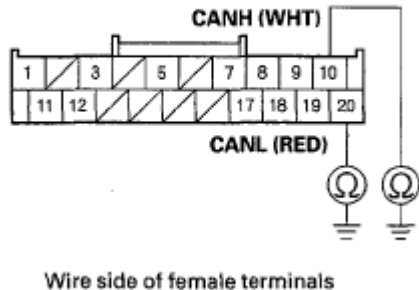
SH-AWD CONTROL UNIT CONNECTOR A (20P)

Fig. 27: Identifying Continuity Between SH-AWD Control Unit Connector Terminals To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Repair open in the wire between the SH-AWD control unit and the yaw rate-lateral/longitudinal acceleration sensor.

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the VSA system with the HDS.

Are any steering angle sensor DTCs of F-CAN Indicated?

YES -go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Check for DTCs with the HDS.

Is DTC 41-6 indicated?

YES -Go to step 7.

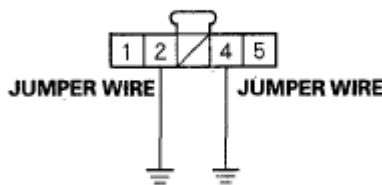
NO -Intermittent failure, the system is OK at this time.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

NOTE: This step must be done to prevent PCM damage.

9. Disconnect the steering angle sensor 5P connector.
10. Connect steering angle sensor 5P connector terminals No. 4 and No. 2 to body ground with jumper wires.

STEERING ANGLE SENSOR 5P CONNECTOR



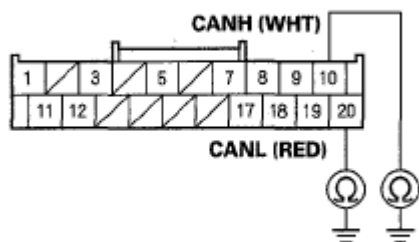
Wire side of female terminals

Fig. 28: Identifying Steering Angle Sensor 5P Connector Terminals To Body Ground With Jumper Wires

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect SH-AWD control unit connector A (20P).
12. Check for continuity between SH-AWD control unit connector terminals A10 and A20 to body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 29: Identifying Continuity Between SH-AWD Control Unit Connector Terminals To Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Update the SH-AWD control unit if it does not have the latest software (see UPDATING THE SH-AWD CONTROL UNIT), or substitute a known-good SH-AWD control unit (see SH-AWD Control Unit Replacement) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see SH-AWD Control Unit Replacement).

NO -Repair open in the wires between the SH-AWD control unit and the steering angle sensor.

DTC 42-1: DIFFERENTIAL FLUID TEMPERATURE SENSOR (SHORT TO POWER)

NOTE:

- Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).
- If the vehicle has been driven, allow the rear differential to cool for about an hour or more before doing this troubleshooting procedure.

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Clear the DTC with the HDS.
4. Check for DTCs with the HDS.

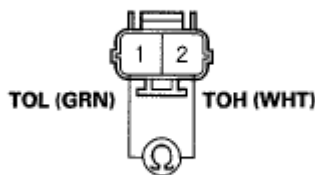
Is DTC 42-1 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the rear differential fluid temperature sensor 2P connector and SH-AWD control unit connector A (20P).
7. Check for continuity between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

**REAR DIFFERENTIAL FLUID TEMPERATURE
SENSOR 2P CONNECTOR**



Wire side of male terminals

Fig. 30: Identifying Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminals

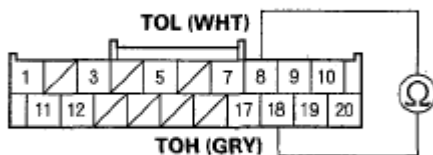
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wire between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

NO -Go to step 8.

8. Connect the rear differential fluid temperature sensor 2P connector.
9. Measure the differential housing temperature with an infrared temperature gauge near the mounting location of the rear differential fluid temperature sensor. The temperature should be below 176°F (80°C) before proceeding to the next step.
10. Measure resistance between SH-AWD control unit connector terminals A8 and A18.

SH-AWD CONTROL UNIT CONNECTOR A (20P)

Wire side of female terminals

Fig. 31: Measuring Resistance Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 260 ohms or more?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Replace the rear differential temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).

DTC 42-2: DIFFERENTIAL FLUID TEMPERATURE SENSOR (OPEN/GND SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Raise the vehicle, make sure it is securely supported, and allow all four wheels to rotate freely.
5. Start the engine and turn the VSA off (the light on the VSA OFF switch comes on). Run the engine in the D position until the vehicle speed reaches 35 mph (56 km/h) and keep running for 10 minutes, then slow down and stop the wheels.
6. Check for DTCs with the HDS.

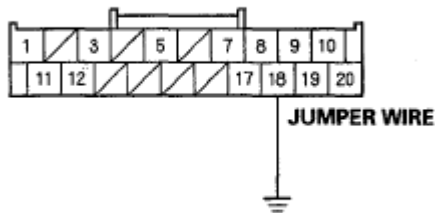
Is DTC 42-2 indicated?

YES -Go to step 7.

NO -Intermittent failure, the system is OK at this time.

7. Turn the ignition switch to LOCK (0).
8. Disconnect SH-AWD control unit connector A (20P).
9. Connect SH-AWD control unit connector terminal A18 to body ground with a jumper wire.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



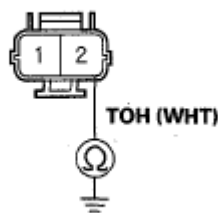
Wire side of female terminals

Fig. 32: Identifying SH-AWD Control Unit Connector Terminal A18 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the rear differential fluid temperature sensor 2P connector.
11. Check for continuity between rear differential fluid temperature sensor 2P connector terminal No. 2 and body ground.

REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR 2P CONNECTOR



Wire side of male terminals

Fig. 33: Identifying Continuity Between Rear Differential Fluid Temperature Sensor Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

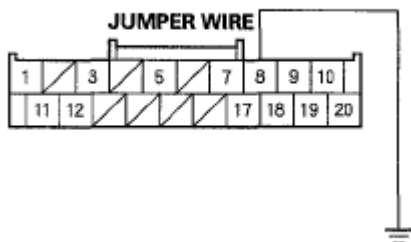
Is there continuity?

YES -Go to step 12.

NO -Repair open in the wire between SH-AWD control unit connector A and the rear differential fluid temperature sensor connector.

12. Connect SH-AWD control unit connector terminal A8 to body ground with a jumper wire.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 34: Identifying SH-AWD Control Unit Connector Terminal A8 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Check for continuity between rear differential fluid temperature sensor 2P connector terminal No. 1 and body ground.

REAR DIFFERENTIAL FLUID TEMPERATURE
SENSOR 2P CONNECTOR



Wire side of male terminals

Fig. 35: Identifying Continuity Between Rear Differential Fluid Temperature Sensor Connector Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

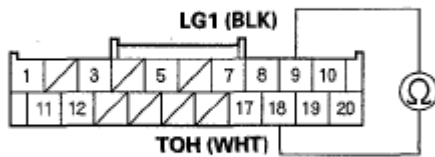
Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between SH-AWD control unit connector A and the rear differential fluid temperature sensor connector.

14. Check for continuity between SH-AWD control unit connector terminals A9 and A18.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 36: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

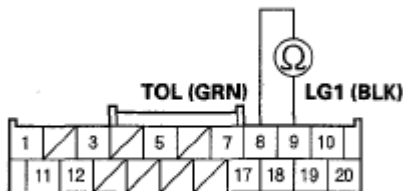
Is there continuity?

YES -Repair short in the wire between SH-AWD control unit connector A and the rear differential fluid temperature sensor connector.

NO -Go to step 15.

15. Check for continuity between SH-AWD control unit connector terminals A8 and A9.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 37: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

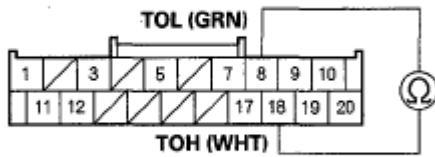
Is there continuity?

YES -Repair short in the wire between SH-AWD control unit connector A and the rear differential fluid temperature sensor connector.

NO -Go to step 16.

16. Reconnect the rear differential fluid temperature sensor 2P connector and SH-AWD control unit connector A (20P).
17. Measure resistance between SH-AWD control unit connector terminals A8 and A18.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 38: Identifying Resistance Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 12.67 kohms or less?

YES -Update the SH-AWD control unit if it does not have the latest software (see UPDATING THE SH-AWD CONTROL UNIT), or substitute a known-good SH-AWD control unit (see SH-AWD Control Unit Replacement) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see SH-AWD Control Unit Replacement).

NO -Replace the rear differential fluid temperature sensor (see REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT).

DTC 43-1: DIFFERENTIAL FLUID TEMPERATURE SENSOR CIRCUIT MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Check for DTCs with the HDS.

Is DTC 42-1 or 42-2 indicated?

YES -Go to the indicated DTCs troubleshooting .

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Let the engine idle 1 minute.
7. Test-drive the vehicle for 5 minutes.

8. Check for DTCs with the HDS.

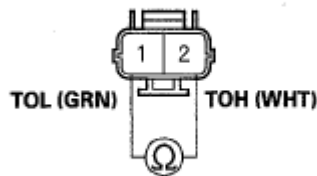
Is DTC 43-1 indicated?

YES -Go to step 9.

NO -Intermittent failure, the system is OK at this time.

9. Turn the ignition switch to LOCK (0).
10. Disconnect SH-AWD control unit connector A (20P).
11. Disconnect the rear differential fluid temperature sensor 2P connector.
12. Check for continuity between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

**REAR DIFFERENTIAL FLUID TEMPERATURE
SENSOR 2P CONNECTOR**



Wire side of male terminals

Fig. 39: Identifying Continuity Between Rear Differential Fluid Temperature Sensor 2P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wire between rear differential fluid temperature sensor 2P connector terminals No. 1 and No. 2.

NO -Go to step 13.

13. Reconnect all connectors.
14. Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**).
15. Start the engine.
16. Let the engine idle 1 minute.
17. Check for DTCs with the HDS.

Is DTC 43-1 indicated?

YES -Replace the rear differential fluid temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT**).

NO -Replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 44-11: SH-AWD CONTROL UNIT

NOTE: **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Check for DTCs with the HDS.

Is DTC 44-11 indicated?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Intermittent failure, the system is OK at this time.

DTC 44-12: SH-AWD RELAY STUCK ON

NOTE: **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 44-12 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0).
7. Remove the SH-AWD relay (see [SH-AWD Control Unit Replacement](#)), then test the SH-AWD relay (see [POWER RELAY TEST](#)).

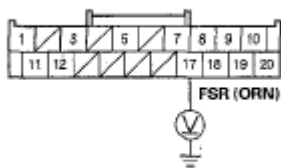
Is the SH-AWD relay OK?

YES -Go to step 8.

NO -Replace the SH-AWD relay (see [SH-AWD Control Unit Replacement](#)).

8. Disconnect SH-AWD control unit connector A (20P).
9. Turn the ignition switch to ON (II).
10. Measure voltage between SH-AWD control unit connector terminal A17 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 40: Identifying Voltage Between SH-AWD Control Unit Connector Terminal A17 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

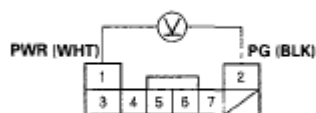
Is there battery voltage?

YES -Repair short to power in the wire between the SH-AWD control unit and the SH-AWD relay (FSR line).

NO -Go to step 11.

11. Disconnect SH-AWD control unit connector B (8P).
12. Measure voltage between SH-AWD control unit connector terminals B1 and B2.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 41: Identifying Voltage Between SH-AWD Control Unit Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Repair short to power in the wire between the SH-AWD control unit and the SH-AWD relay (PWR line).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 44-32: SH-AWD CONTROL UNIT POWER SUPPLY STUCK ON

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 44-32 indicated?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Intermittent failure, the system is OK at this time.

DTC 44-41: SH-AWD CONTROL UNIT POWER SUPPLY STUCK OFF

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).

3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 44-41 indicated?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Intermittent failure, the system is OK at this time.

DTC 44-50: SH-AWD CONTROL UNIT POWER SUPPLY VOLTAGE LOW

NOTE: **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Make sure the battery is fully charged and the charging system is working properly.
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Turn the ignition switch to LOCK (0).
4. Check these fuse:
 - No. 3 (RR F/B) (60 A) fuse in the main under-hood fuse/relay box.
 - No. 9 (30 A) fuse in the rear fuse/relay box.

Are the fuses OK?

YES -Go to step 5.

NO -Replace the blown fuses and recheck. If the No. 3 (60 A) and No. 9 (30 A) fuses blows again, repair short to ground in the wire between the fuse and the SH-AWD relay, then replace the fuse and recheck.

5. Clear the DTC with the HDS.
6. Start the engine.
7. Check for DTCs with the HDS.

Is DTC 44-50 indicated?

YES -Go to step 8.

NO -Intermittent failure, the system is OK at this time.

8. Turn the ignition switch to LOCK (0).
9. Remove the SH-AWD relay (see **SH-AWD Control Unit Replacement**), then test the SH-AWD relay (see **POWER RELAY TEST**).

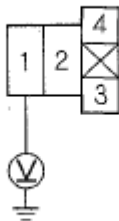
Is the SH-AWD relay OK?

YES -Go to step 10.

NO -Replace the SH-AWD relay (see **SH-AWD Control Unit Replacement**).

10. Measure voltage between SH-AWD relay 4P connector terminal No. 1 and body ground.

SH-AWD RELAY 4P CONNECTOR



Wire side of female terminals

Fig. 42: Identifying Voltage Between SH-AWD Relay 4P Connector Terminal 1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES -Go to step 11.

NO -Repair open in the wire between the No. 1 fuse in the under-hood fuse relay box and the SH-AWD relay.

11. Disconnect SH-AWD control unit connector A (20P) and connector B (8P).
12. Check for continuity between SH-AWD control unit connector terminal B1 and SH-AWD relay 4P connector terminal No. 2.

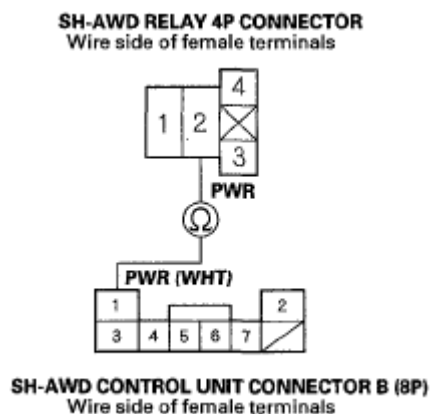


Fig. 43: Identifying Continuity Between SH-AWD Control Unit And SH-AWD Relay Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 13.

NO -Repair open in the wire between SH-AWD control unit connector B and the SH-AWD relay connector.

13. Check for continuity between SH-AWD control unit connector terminal A17 and SH-AWD relay 4P connector terminal No. 3.

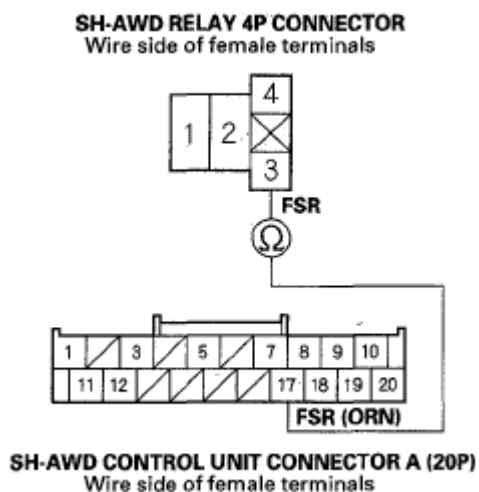


Fig. 44: Identifying Continuity Between SH-AWD Control Unit And SH-AWD Relay 4P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

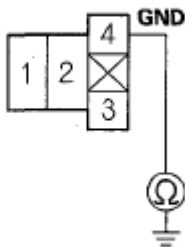
Is there continuity?

YES -Go to step 14.

NO -Repair open in the wire between SH-AWD control unit connector A and the SH-AWD relay connector.

14. Check for continuity between SH-AWD relay 4P connector terminal No. 4 and body ground.

SH-AWD RELAY 4P CONNECTOR



Wire side of female terminals

Fig. 45: Identifying Continuity Between SH-AWD Relay 4P Connector Terminal 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

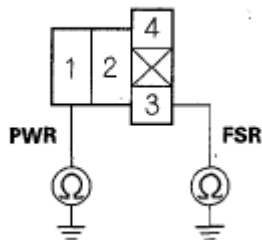
Is there continuity?

YES -Go to step 15.

NO -Repair open in the wire between the SH-AWD relay and body ground.

15. Check for continuity between SH-AWD relay 4P connector terminals No. 1 and No. 3 to body ground (G604).

SH-AWD RELAY 4P CONNECTOR



Wire side of female terminals

Fig. 46: Checking Continuity Between SH-AWD Relay 4P Connector Terminals To Body Ground (G604)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery continuity?

YES -Repair short in the wire between the SH-AWD relay and body ground:

NO -Check for loose connector terminals at the SH-AWD control unit. If the connections are OK, update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 49-1: SH-AWD CONTROL UNIT (PG LINE OPEN)

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Check for DTCs with the HDS.

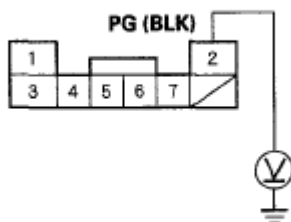
Is DTC 49-1 indicated?

YES -Go to step 5.

NO -Intermittent failure, the system is OK at this time.

5. Measure voltage between SH-AWD control unit connector terminal B2 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 47: Identifying Voltage Between SH-AWD Control Unit Connector Terminal B2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.5 V?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE**

SH-AWD CONTROL UNIT), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Repair open in the wire between SH-AWD control unit connector B and body ground or poor ground (G603).

DTC 52-3: LEFT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see **SH-AWD Function Test**).
5. Check for DTCs with the HDS.

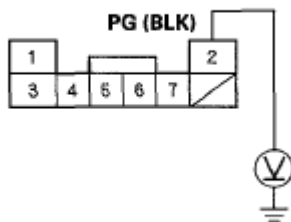
Is DTC 52-3 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Measure voltage between SH-AWD control unit connector terminal B2 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 48: Identifying Voltage Between SH-AWD Control Unit Connector Terminal B2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

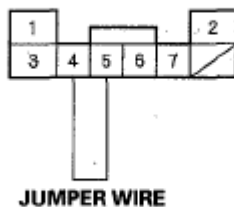
Is there less than 0.5 V?

YES -Go to step 7.

NO -Repair open in the wire between SH-AWD control unit connector B and body ground or poor ground (G603).

7. Turn the ignition switch to LOCK (0).
8. Disconnect SH-AWD control unit connector B (8P).
9. Connect SH-AWD control unit connector terminals B4 and B5 with a jumper wire. Disconnect the left solenoid 4P connector, then check for continuity between left solenoid 4P connector terminals No. 1 and No. 2.

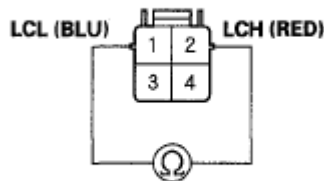
SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 49: Identifying SH-AWD Control Unit Connector Terminals With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 50: Identifying Continuity Between Left Solenoid 4P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

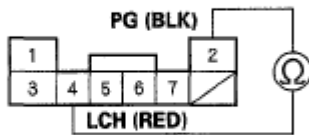
YES -Go to step 10.

NO -Repair open in the wires between the SH-AWD control unit and the left clutch electromagnetic coil.

10. Remove the jumper wire from SH-AWD control unit connector terminals B4 and B5.
11. Check for continuity between SH-AWD control unit connector terminals B2 and B4, then check for

continuity between SH-AWD control unit connector terminals B2 and B5.

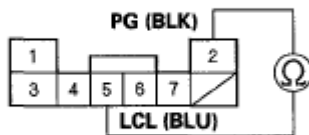
SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 51: Identifying Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

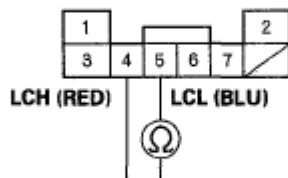
Fig. 52: Identifying Continuity Between SH-AWD Control Unit Connector Terminals B2 And B5
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to ground or short to the ground wire between the SH-AWD control unit and the left clutch electromagnetic coil.

NO -Go to step 12.

12. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

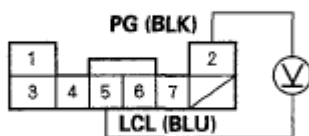
Fig. 53: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wires between the SH-AWD control unit and the left clutch electromagnetic coil.

NO -Go to step 13.

13. Turn the ignition switch to ON (II).
14. Measure voltage between SH-AWD control unit connector terminals B2 and B5.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

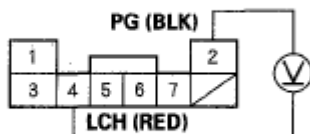
Fig. 54: Identifying Voltage Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES -Repair short to power in the wires between the SH-AWD control unit and the left clutch electromagnetic coil.

NO -Go to step 15.

15. Measure voltage between SH-AWD control unit connector terminals B2 and B4.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

Fig. 55: Identifying Voltage Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES -Repair short to power in the wire between SH-AWD control unit connector terminal B4 and the left clutch electromagnetic coil.

NO -Substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

DTC 53-1,53-3: LEFT CLUTCH ELECTROMAGNETIC COIL MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see **SH-AWD Function Test**).
5. Check for DTCs with the HDS.

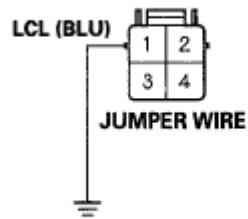
Is DTC 53-1 or 53-3 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0).
7. Disconnect SH-AWD control unit connector B (8P) and the left solenoid 4P connector.
8. Connect between left solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

LEFT SOLENOID 4P CONNECTOR



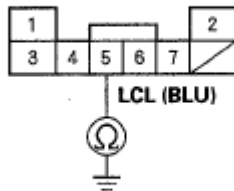
Wire side of female terminals

Fig. 56: Identifying Between Left Solenoid 4P Connector Terminal 1 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between SH-AWD control unit connector terminal B5 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 57: Identifying Continuity Between SH-AWD Control Unit Connector Terminal B5 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

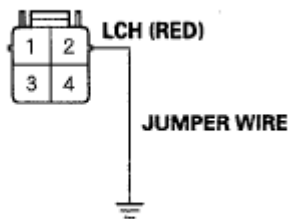
Is there continuity?

YES -Go to step 10.

NO -Repair open in the wires between the SH-AWD control unit and the left clutch electromagnetic coil.

10. Remove the jumper wire from left solenoid 4P connector terminal No. 1.
11. Connect between left solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

LEFT SOLENOID 4P CONNECTOR



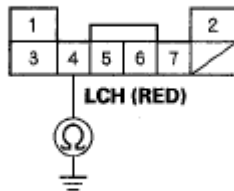
Wire side of female terminals

Fig. 58: Identifying Between Left Solenoid 4P Connector Terminal 2 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between SH-AWD control unit connector terminal B4 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 59: Identifying Continuity Between SH-AWD Control Unit Connector Terminal B4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

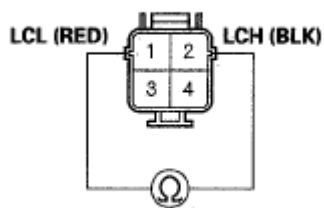
Is there continuity?

YES -Go to step 13.

NO -Repair open in the wires between the SH-AWD control unit and the left clutch electromagnetic coil.

13. Remove the jumper wire from left solenoid 4P connector terminal No. 1.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
17. Turn the ignition switch to LOCK (0).
18. Disconnect the left solenoid 4P connector.
19. Measure resistance between left solenoid 4P connector terminals No. 1 and No. 2.

LEFT SOLENOID 4P CONNECTOR



Wire side of male terminals

Fig. 60: Identifying Resistance Between Left Solenoid 4P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.8 0. or more?

YES -Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 53-2: LEFT CLUTCH ELECTROMAGNETIC COIL (SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see **SH-AWD Function Test**).
5. Check for DTCs with the HDS.

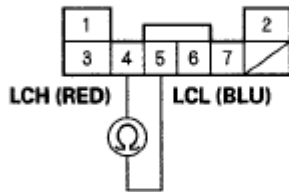
Is DTC 53-2 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0).
7. Disconnect SH-AWD control unit connector B (8P) and the left solenoid 4P connector.
8. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 61: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

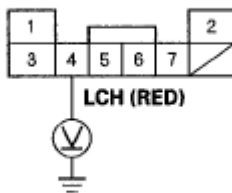
Is there continuity?

YES -Repair short in the wires between SH-AWD control unit connector terminals B4 and B5.

NO -Go to step 9.

9. Turn the ignition switch to ON (II).
10. Measure voltage between SH-AWD control unit connector terminal B4 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 62: Identifying Voltage Between SH-AWD Control Unit Connector Terminal B4 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

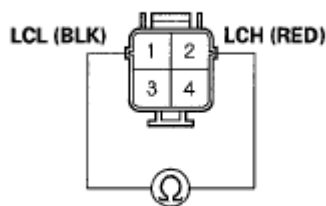
Is there more than 0.5 V?

YES -Repair short to power in the wires between SH-AWD control unit connector terminal B4 and the left clutch electromagnetic coil.

NO -Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Reconnect all connectors.

13. Turn the ignition switch to ON (II).
14. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
15. Turn the ignition switch to LOCK (0).
16. Disconnect the left solenoid 4P connector.
17. Measure resistance between left solenoid 4P connector terminals No. 1 and No. 2.

LEFT SOLENOID 4P CONNECTOR

Wire side of male terminals

Fig. 63: Identifying Resistance Between Left Solenoid 4P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.45 Ω or less?

YES -Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 56-3: RIGHT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see **SH-AWD Function Test**).
5. Check for DTCs with the HDS.

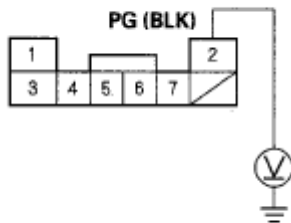
Is DTC 56-3 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Measure voltage between SH-AWD control unit connector terminals B2 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 64: Identifying Voltage Between SH-AWD Control Unit Connector Terminals B2 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

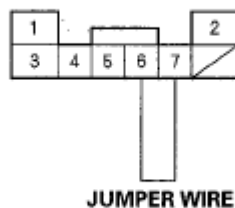
Is there less than 0.5 V?

YES -Go to step 7.

NO -Repair open in the wire between SH-AWD control unit connector B and body ground or poor ground (G603).

7. Turn the ignition switch to LOCK (0).
8. Disconnect SH-AWD control unit connector B (8P).
9. Connect SH-AWD control unit connector terminals B6 and B7 with a jumper wire. Disconnect the right solenoid 4P connector, then check for continuity between right solenoid 4P connector terminals No. 1 and No. 2.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



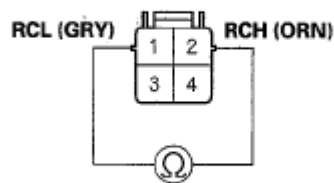
JUMPER WIRE

Wire side of female terminals

Fig. 65: Identifying SH-AWD Control Unit Connector Terminals With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 66: Identifying Continuity Between Right Solenoid 4P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

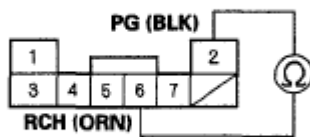
Is there continuity?

YES -Go to step 10.

NO -Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

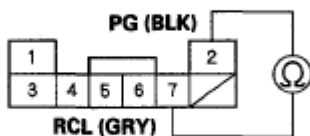
10. Remove the jumper wire from SH-AWD control unit connector terminals B6 and B7.
11. Check for continuity between SH-AWD control unit connector terminals B2 and B6, then check for continuity between SH-AWD control unit connector terminals B2 and B7.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 67: Identifying Continuity Between SH-AWDxs Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

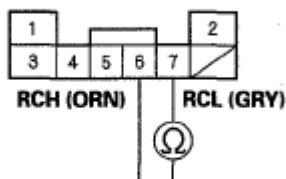
Fig. 68: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to ground or short to the ground wire between the SH-AWD control unit and the right clutch electromagnetic coil.

NO -Go to step 12.

12. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

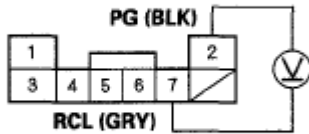
Fig. 69: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wires between the SH-AWD control unit and the right clutch electromagnetic coil.

NO -Go to step 13.

13. Turn the ignition switch to ON (II).
14. Measure voltage between SH-AWD control unit connector terminals B2 and B7.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

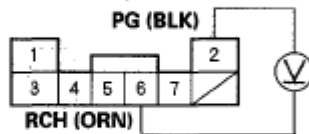
Fig. 70: Identifying Voltage Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES -Repair short to power in the wire between SH-AWD control unit and the right clutch electromagnetic coil.

NO -Go to step 15.

15. Measure voltage between SH-AWD control unit connector terminals B2 and B6.

SH-AWD CONTROL UNIT CONNECTOR B (8P)

Wire side of female terminals

Fig. 71: Identifying Voltage Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES -Repair short to power in the wire between SH-AWD control unit connector terminal B6 and the right clutch electromagnetic coil.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 57-1,57-3: RIGHT CLUTCH ELECTROMAGNETIC COIL MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

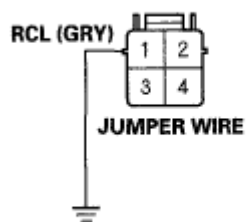
1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see SH-AWD Function Test).
5. Check for DTCs with the HDS.

Is DTC 57-1 or 57-3 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0).
7. Disconnect SH-AWD control unit connector B (8P) and the right solenoid 4P connector.
8. Connect between right solenoid 4P connector terminal No. 1 to body ground with a jumper wire.

RIGHT SOLENOID 4P CONNECTOR

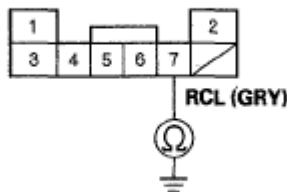
Wire side of female terminals

Fig. 72: Identifying Between Right Solenoid 4P Connector Terminal 1 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Check for continuity between SH-AWD control unit connector terminal B7 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 73: Identifying Continuity Between SH-AWD Control Unit Connector Terminal B7 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

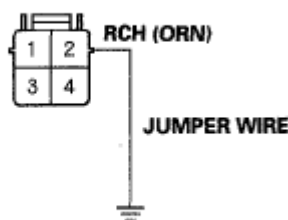
Is there continuity?

YES -Go to step 10.

NO -Repair open in the wires between the SH-AWD control unit and the right clutch electromagnetic coil.

10. Remove the jumper wire from right solenoid 4P connector terminal No. 1.
11. Connect between right solenoid 4P connector terminal No. 2 to body ground with a jumper wire.

RIGHT SOLENOID 4P CONNECTOR



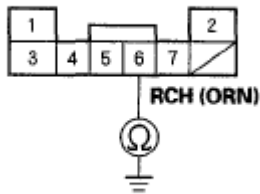
Wire side of female terminals

Fig. 74: Identifying Between Right Solenoid 4P Connector Terminal 2 To Body Ground With Jumper Wire

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Check for continuity between SH-AWD control unit connector terminal B6 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 75: Identifying Continuity Between SH-AWD Control Unit Connector Terminal B6 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

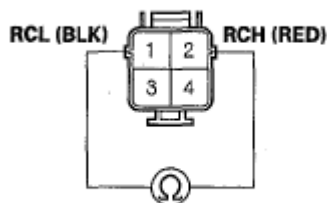
Is there continuity?

YES -Go to step 13.

NO -Repair open in the wires between the SH-AWD control unit and the right clutch electromagnetic coil.

13. Remove the jumper wire from right solenoid 4P connector terminal No. 1.
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20 °C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
17. Disconnect the right solenoid 4P connector.
18. Measure resistance between right solenoid 4P connector terminals No. 1 and No. 2.

RIGHT SOLENOID 4P CONNECTOR



Wire side of male terminals

Fig. 76: Identifying Resistance Between Right Solenoid 4P Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 1.8 Q, or more?

YES -Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 57-2: RIGHT CLUTCH ELECTROMAGNETIC COIL (SHORT)

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS (see **SH-AWD Function Test**).
5. Check for DTCs with the HDS.

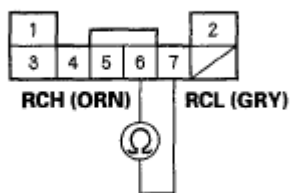
Is DTC 57-2 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Turn the ignition switch to LOCK (0).
7. Disconnect SH-AWD control unit connector B (8P) and the right solenoid 4P connector.
8. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 77: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

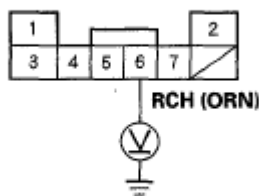
Is there continuity?

YES -Repair short in the wires between SH-AWD control unit connector terminals B6 and B7.

NO -Go to step 9.

9. Turn the ignition switch to ON (II).
10. Measure voltage between SH-AWD control unit connector terminal B6 and body ground.

SH-AWD CONTROL UNIT CONNECTOR B (8P)



Wire side of female terminals

Fig. 78: Identifying Voltage Between SH-AWD Control Unit Connector Terminal B6 And Body Ground

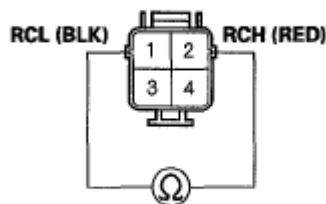
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there more than 0.5 V?

YES -Repair short to power in the Wires between SH-AWD control unit connector terminal B6 and the right clutch electromagnetic coil. '

NO -Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Reconnect all connectors.
13. Turn the ignition switch to ON (II).
14. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20 *C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
15. Turn the ignition switch to LOCK (0).
16. Disconnect the right solenoid 4P connector.
17. Measure resistance between right solenoid 4P connector terminals No. 1 and No. 2.

RIGHT SOLENOID 4P CONNECTOR

Wire side of male terminals

Fig. 79: Identifying Resistance Between Right Solenoid 4P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.45 Ω or less?

YES -Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 76-1: REAR DIFFERENTIAL FLUID OVERHEATS

NOTE:

- Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- When the temperature of the rear differential fluid is abnormally high, the SH-AWD indicator comes on. This is not necessarily a problem, but DTC 76-1 will be stored.
- Check the rear differential fluid level (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**). If it's low, refill it, clear the DTC, and recheck.

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check for DTCs in the VSA system with the HDS.

Are any VSA system DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Test-drive the vehicle at 10 mph (15 km/h).
7. Check for WHEEL SPEED in the DATA LIST with the HDS.

Are all wheel speed the same?

YES -Intermittent failure, the system is OK at this time.

NO -Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Check for rear brake drag.

Are the rear brakes OK?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control Unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Repair the rear brakes (see **BRAKE SYSTEM INSPECTION AND TEST**).

DTC 77-1: THE FUNCTIONAL ABNORMALITIES OF FUEL EMISSION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 77-1 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Check for DTCs in the PGM-FI system with the HDS.

Are any PGM-FI system DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 77-2: THE FUNCTIONAL ABNORMALITIES OF VSA MODULATOR-CONTROL UNIT

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 77-2 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Check for DTCs in the VSA system with the HDS.

Are any VSA system DTCs indicated?

YES -Go to the indicated DTC's troubleshooting.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

77-4: THE FUNCTIONAL ABNORMALITIES OF AUTOMATIC-TRANSMISSION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see**

GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 77-4 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Check for DTCs in the A/T system with the HDS.

Are any A/T system DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 77-5: YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR MALFUNCTION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 77-5 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Check for DTCs in the VSA system with the HDS.

Are any yaw rate-lateral acceleration sensor DTCs indicated?

YES -go to the indicated DTCs troubleshooting.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 77-6: STEERING ANGLE SENSOR MALFUNCTION

NOTE: **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).**

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 77-6 indicated?

YES -Go to step 6.

NO -Intermittent failure, the system is OK at this time.

6. Check for DTCs in the VSA system with the HDS.

Are any steering angle sensor DTCs indicated?

YES -go to the indicated DTCs troubleshooting.

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

DTC 78-XX ("X" CAN BE 0 THRU 9 OR A THRU F): SH-AWD CONTROL UNIT SELF-DIAGNOSTIC MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Clear the DTC with the HDS.
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Turn the ignition switch to ON (II).
4. Check for DTCs with the HDS.

Is DTC 78-xx indicated?

YES -Update the SH-AWD control unit if it does not have the latest software (see UPDATING THE SH-AWD CONTROL UNIT), or substitute a known-good SH-AWD control unit (see SH-AWD Control Unit Replacement) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see SH-AWD Control Unit Replacement).

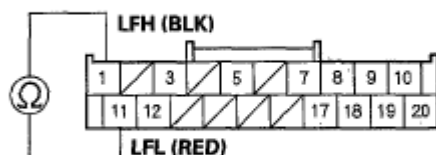
NO -Intermittent failure, the system is OK at this time.

DTC 81-1: LEFT SEARCH COIL SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).

1. Disconnect SH-AWD control unit connector A (20P).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see DLC CIRCUIT TROUBLESHOOTING).
3. Check for continuity between SH-AWD control unit connector terminals A1 and A11.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 80: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

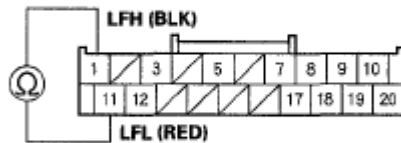
Is there continuity?

YES -Go to step 4.

NO -Go to step 7.

4. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20 'C).
5. Measure resistance between SH-AWD control unit connector terminals A1 and A11.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 81: Identifying Resistance Between SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

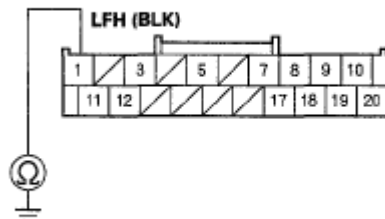
Is there 2.0 ohms or more?

YES -Go to step 6.

NO -Go to step 8.

6. Check for continuity between SH-AWD control unit connector terminal A1 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 82: Identifying Continuity Between SH-AWD Control Unit Connector Terminal A1 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wire between SH-AWD control unit connector terminal A1 and body ground.

NO -Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

7. Connect SH-AWD control unit connector terminals A1 and A11 with a jumper wire. Disconnect the left solenoid 4P connector, then check for continuity between left solenoid 4P connector terminals No. 3 and No. 4.

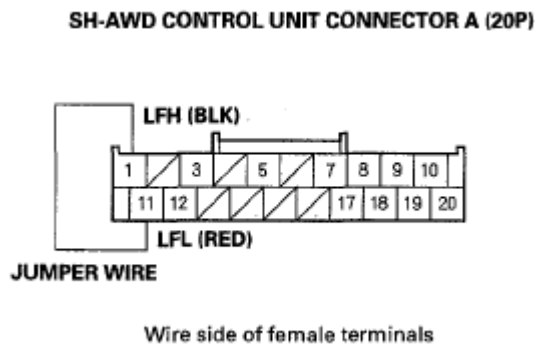
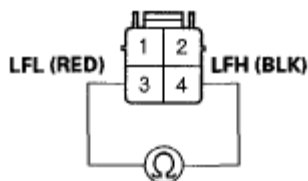


Fig. 83: Identifying SH-AWD Control Unit Connector Terminals With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 84: Identifying Continuity Between Left Solenoid 4P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

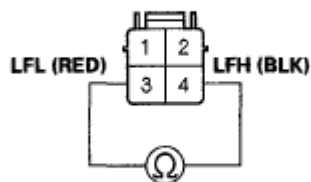
Is there continuity?

YES -Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

NO -Repair open in the wire between left solenoid 4P connector terminals No. 3 and No. 4.

8. Disconnect the left solenoid 4P connector.
9. Check for continuity between left solenoid 4P connector terminals No. 3 and No. 4.

LEFT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 85: Identifying Continuity Between Left Solenoid 4P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short in the wires between SH-AWD control unit connector A and the left search coil sensor connector.

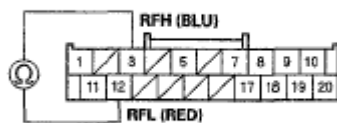
NO -Replace the rear differential left side case (see **SIDE CASE REPLACEMENT**).

DTC 82-1: RIGHT SEARCH COIL SENSOR MALFUNCTION

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Disconnect SH-AWD control unit connector A (20P).
2. Check for continuity between SH-AWD control unit connector terminals A3 and A12.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 86: Identifying Continuity Between SH-AWD Control Unit Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

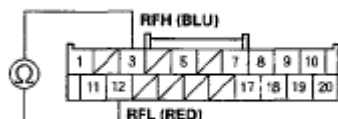
Is there continuity?

YES -Go to step 3.

NO -Go to step 6.

3. Check the REAR DIFFERENTIAL FLUID TEMPERATURE in the DATA LIST is above 68°F (20°C) with the HDS before proceeding to the next step. If the temperature is below 68°F (20°C), drive the vehicle to warm up the rear differential until the fluid temperature becomes above 68°F (20°C).
4. Measure resistance between SH-AWD control unit connector terminals A3 and A12.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 87: Identifying Resistance Between SH-AWD Control Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

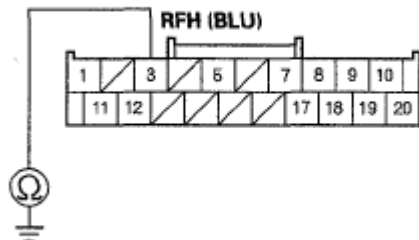
Is there 2.0 ohms or more?

YES -Go to step 5.

NO -Go to step 7.

5. Check for continuity between SH-AWD control unit connector terminal A3 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 88: Identifying Continuity Between SH-AWD Control Unit Connector Terminal A3 And Body Ground
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

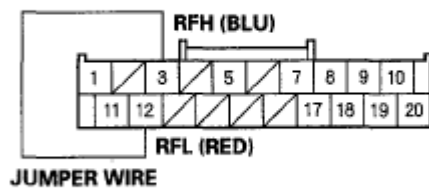
YES -Repair short in the wire between SH-AWD control unit connector terminal A3 and body ground.

NO -Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, update the SH-AWD control unit if it does not have the latest software (see

UPDATING THE SH-AWD CONTROL UNIT), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

6. Connect SH-AWD control unit connector terminals A3 and A12 with a jumper wire. Disconnect the right solenoid 4P connector, then check for continuity between right solenoid 4P connector terminals No. 3 and No. 4.

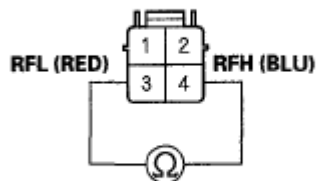
SH-AWD CONTROL UNIT CONNECTOR A (20P)



Wire side of female terminals

Fig. 89: Identifying SH-AWD Control Unit Connector Terminals With Jumper Wire
Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 90: Identifying Continuity Between Right Solenoid 4P Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

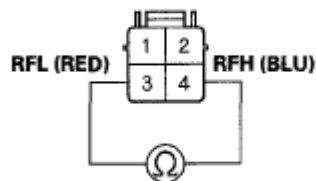
Is there continuity?

YES -Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

NO -Repair open in the wires between right solenoid 4P connector terminals No. 3 and No. 4.

7. Disconnect the right solenoid 4P connector.
8. Check for continuity between right solenoid 4P connector terminals No. 3 and No. 4.

RIGHT SOLENOID 4P CONNECTOR



Wire side of female terminals

Fig. 91: Identifying Continuity Between Right Solenoid 4P Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to ground in the wires between SH-AWD control unit connector A and the right search coil sensor connector.

NO -Replace the rear differential right side case (see **SIDE CASE REPLACEMENT**).

DTC 91-1: SH-AWD CONTROL UNIT PROGRAMMING ERROR

NOTE:

- Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- DTC 91-1 is stored when the SH-AWD system update is not completed.
- Do not turn the ignition switch OFF while updating the SH-AWD system. If you turn the ignition switch OFF before completion, the SH-AWD system can be damaged.

1. Do the SH-AWD system update procedure (see **UPDATING THE SH-AWD CONTROL UNIT**).
2. Check for DTCs with the HDS.

Is DTC 91-1 indicated?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Update is complete.

SYMPTOM TROUBLESHOOTING

THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED**NOTE:**

- Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).
- Make sure the No. 3 (RR F/B) (60 A) fuse in the main under-hood fuse box is OK.
- Make sure the No. 9 (30 A) fuse in the rear fuse/relay box is OK.
- Make sure there are no loose connector terminals at the SH-AWD control unit.
- Make sure charging system is OK.
- Make sure the PGM-FI system and the A/T system is not in the middle of updating.

1. Test the battery (see **BATTERY TEST**). Charge or replace the battery if necessary.
2. Check the COMPLETE MEMORIZATION in the DATA LIST with the HDS.

Does the data list show complete?

YES -Go to step 3.

NO -Do the SH-AWD system memorization procedure (see **SH-AWD Differential Clutch Torque Memorization**), then go to step 3.

3. Check for DTCs in the VSA system with the HDS.

Are any steering angle sensor DTCs indicated?

YES -Go to the indicated DTCs troubleshooting.

NO -Go to step 4.

4. Start the engine.
5. Check the SH-AWD indicator value with the HDS.

Is the SH-AWD indicator value OFF?

YES -Go to the gauge control system DTC troubleshooting (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

NO -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit**).

Replacement).**THE SH-AWD INDICATOR DOES NOT COME ON**

NOTE: Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Make sure the HDS communicates with vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
3. Check the SH-AWD indicator.

Does the SH-AWD indicator come on and go off?

YES -Intermittent failure, the system is OK at this time.

NO -Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Disconnect SH-AWD control unit connector A (20P) and connector B (8P).
6. Turn the ignition switch to ON (II).
7. Check the SH-AWD indicator.

Does the SH-AWD indicator come on?

YES -Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT**), or substitute a known-good SH-AWD control unit (see **SH-AWD Control Unit Replacement**) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD Control Unit Replacement**).

NO -Go to the gauge control system DTC troubleshooting (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

SH-AWD FUNCTION TEST**Special Tools Required**

Adapter, torque wrench 070AJ-SJAA101

DIRECT ELECTROMAGNETIC CLUTCH TEST

NOTE: • No DTC was detected.

- The shift lever is in N.
 - The SH-AWD control unit had been initialized.
 - The tire pressures are at the specified value.
 - Tire size and wear are the same between the left and right tires.
1. Check that the differential fluid temperature is over 68°F (20°C) with the HDS. If it is below 68°F (20°C), raise the temperature by driving the vehicle in circles or by constantly turning.
 2. Raise the vehicle, and make sure it is securely supported.
 3. Remove the rear wheels.
 4. Connect the HDS to the DLC.
 5. Do the direct electromagnetic clutch test with the HDS.
 6. Install the torque wrench adapter on the rear wheel hub.

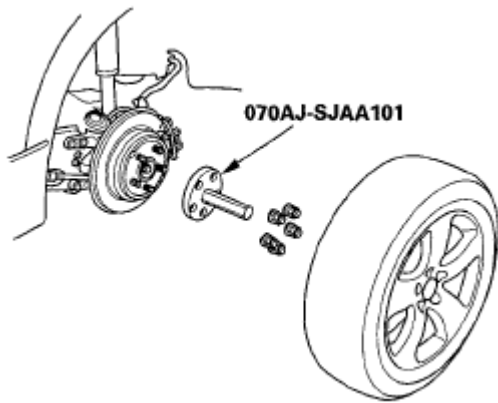


Fig. 92: Identifying Special Tool (070AJ-SJAA101)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install a torque wrench on the special tool as shown on the HDS. Write down the torque value while slowly rotating the rear hub with the torque wrench as shown. (Turn the hub no more than 90 degrees in 7 to 10 seconds).

NOTE: Use a torque wrench capable of measuring up to 80 kgf.m (580 lbf.ft) such as a commercially available Snap-on torque wrench TE352FUE.

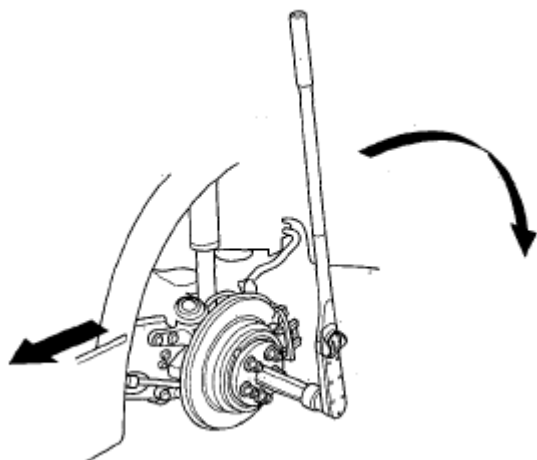


Fig. 93: Identifying Rear Hub Rotating Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Enter the torque value into the HDS, and wait for the test to finish.
 - If the result shows the clutch driving force is normal, the clutch assembly is OK.
 - If the result shows the clutch driving force is abnormal, replace the differential fluid, and retest. If the result still shows the clutch driving force is abnormal, replace the right and left differential side case (see [SIDE CASE REPLACEMENT](#)).

REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT

INSPECTION

1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0).
2. Use solvent and a brush to wash any oil and dirt off the differential fluid inspection oil filler plugs.
3. Remove the filler plug (A) and the sealing washer (B), then check the condition of the fluid, and make sure the fluid is at the proper level (C).

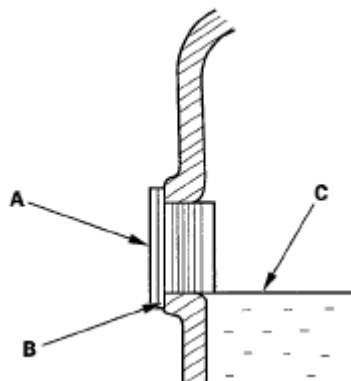


Fig. 94: Identifying Rear Differential Fluid Level
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. The fluid level must reach up the bottom of the filler plug hole. If it is below the hole, add the recommended fluid until it runs out, then reinstall the filler plug with a new sealing washer.

REPLACEMENT

1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0).
2. Remove the filler plug (A) and the sealing washer (B).

Fluid Capacity

2.53 L (2.67 US qt, 2.23 imp qt) at fluid change

2.77 L (2.93 US qt, 2.44 imp qt) at overhaul

Recommended fluid: Honda ATF-Z1

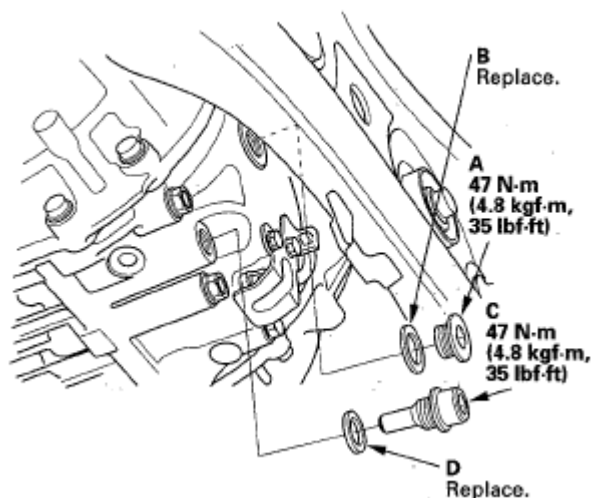


Fig. 95: Identifying Filler Plug, Drain Plug And Sealing Washer With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drain plug (C) and the sealing washer (D), and drain the fluid.
4. Reinstall the drain plug with a new sealing washer (D).
5. Add fluid until it reaches the bottom of the filler plug hole.
6. Reinstall the filler plug with a new sealing washer.

REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT

1. Drain the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
2. Remove the differential fluid temperature sensor cover (A) and the differential fluid temperature sensor harness stay (B), then disconnect the differential fluid temperature sensor connector (C).

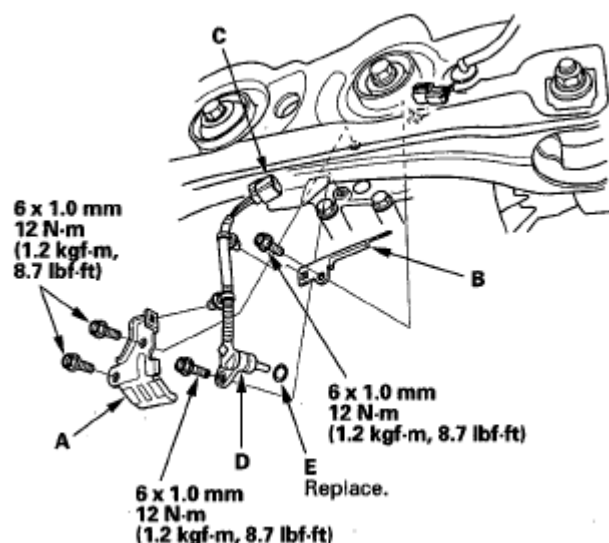


Fig. 96: Identifying Differential Fluid Temperature Sensor, Cover, Harness Stay And O-Ring With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the differential fluid temperature sensor (D).
4. Install the differential fluid temperature sensor with a new O-ring (E) in the reverse order of removal.
5. Refill the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).

SH-AWD CONTROL UNIT REPLACEMENT

NOTE: The SH-AWD control unit must be initialized (see **SH-AWD Control Unit Initialization**) after replacement, other wise the SH-AWD system will not function.

1. Remove the rear left side trim panel cover (see **TRIM REMOVAL/INSTALLATION - REAR SIDE AREA**).
2. Remove the cargo floor lid and the cargo box (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
3. Remove the SH-AWD control unit (A).

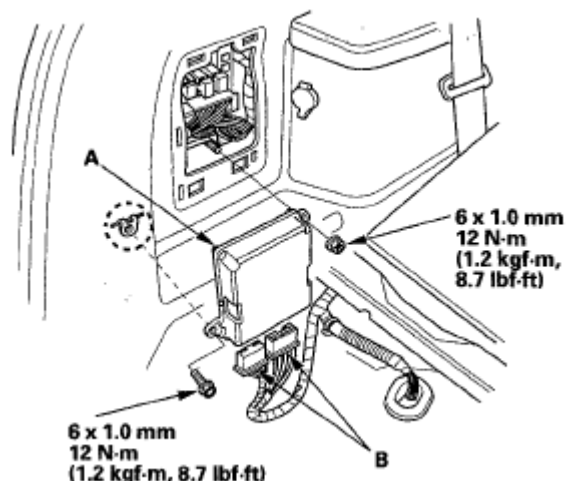
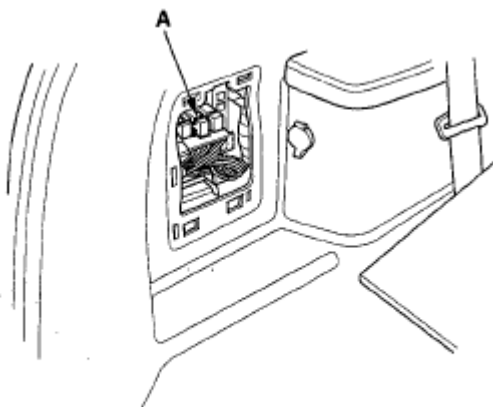


Fig. 97: Identifying SH-AWD Control Unit And Connectors With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the SH-AWD control unit connectors (B).
5. Install the SH-AWD control unit in the reverse order of removal.

SH-AWD RELAY REPLACEMENT

1. Remove the rear left side trim panel cover (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
2. Remove the SH-AWD relay (A).



3. Install the SH-AWD relay in the reverse order of removal.

Fig. 98: Identifying SH-AWD Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the SH-AWD relay in the reverse order of removal.

REAR DIFFERENTIAL MOUNT REPLACEMENT

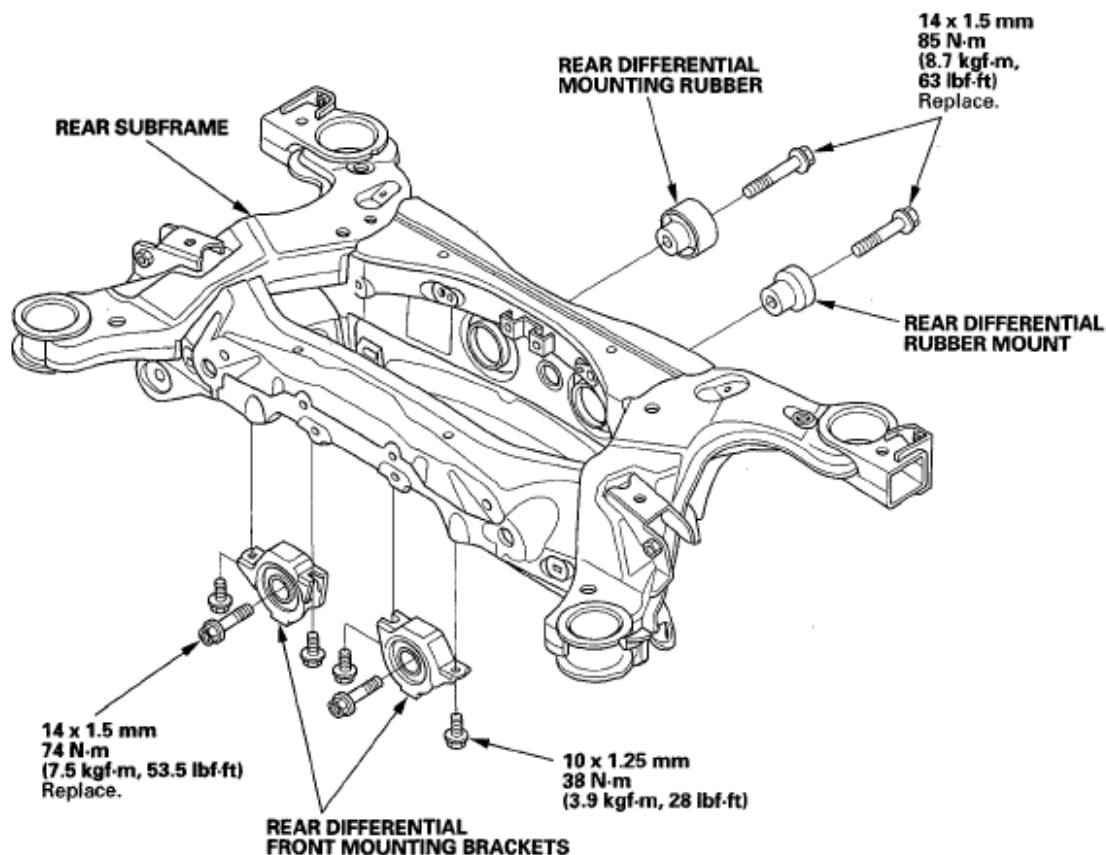


Fig. 99: Identifying Rear Differential Mount Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR DIFFERENTIAL BREATHER BOX AND HOSE REPLACEMENT

1. Remove the cargo floor lid and the cargo box (see TRIM REMOVAL/INSTALLATION - CARGO AREA).
2. Remove the breather hose clips (A), then disconnect the breather hoses (B).

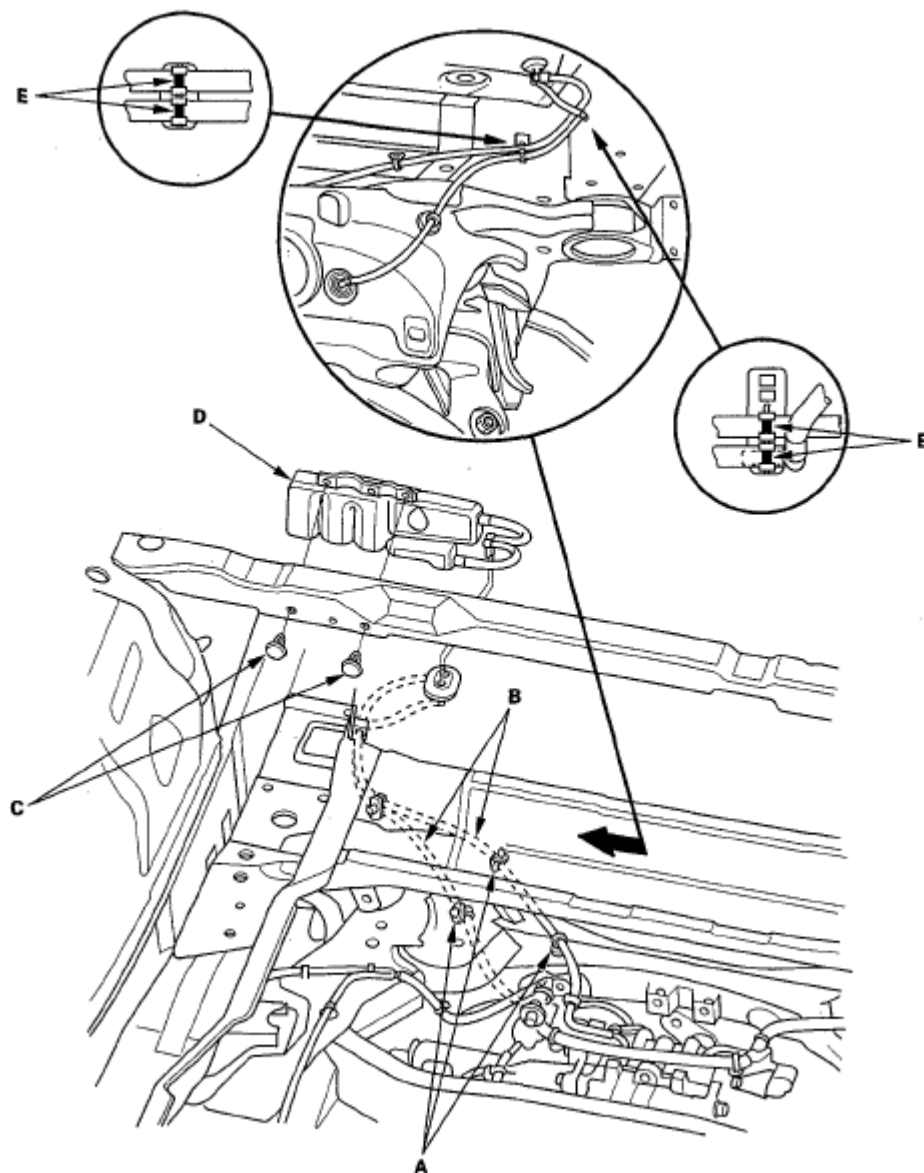


Fig. 100: Identifying Breather Hoses

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the breather box clips (C) and the breather box (D).
4. Install the breather box, then connect the breather hose and the breather hose clips.
5. Align the point marks (E) on the breather hose as shown.
6. Make sure that all the hoses are properly routed, clipped into place, and not pinched.
7. Install the cargo floor lid and the cargo box (see **TRIM REMOVAL/INSTALLATION - CARGO AREA**).

REAR DIFFERENTIAL REMOVAL

Special Tools Required

Driveshaft remover 07AAD-S3VA000

1. Drain the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
2. Remove the exhaust pipe (A).

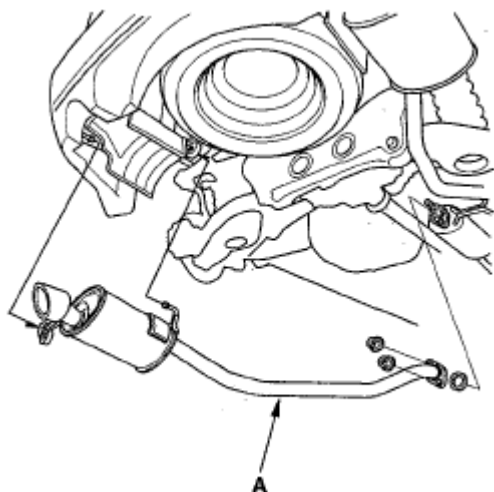


Fig. 101: Identifying Exhaust Pipe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the right rear driveshaft (see **REAR DRIVESHAFT REMOVAL**).
4. Make a reference mark (A) across the propeller shaft (B) and rear differential companion flange (C). Separate the propeller shaft from the rear differential.

NOTE: Suspend the propeller shaft with an appropriate size wire.

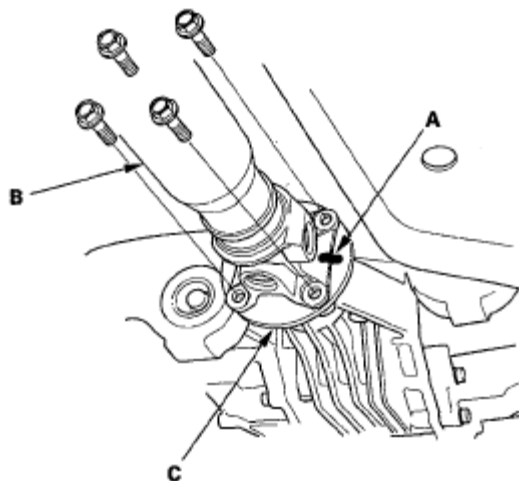


Fig. 102: Identifying Reference Marks On Propeller Shaft And Rear Differential Companion Flange

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Place the transmission jack (A) under the rear differential (B).

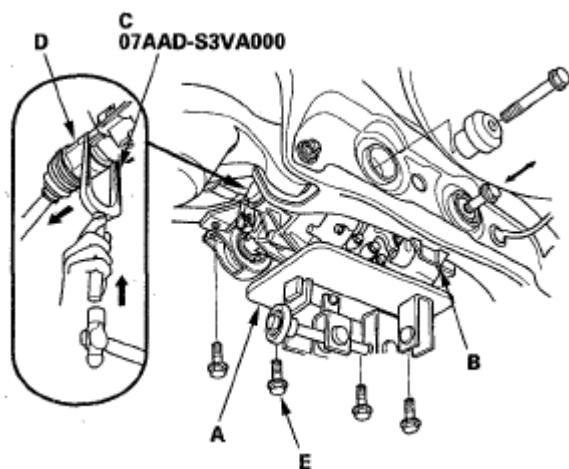


Fig. 103: Identifying Left Inboard Joint From Rear Differential

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Using the driveshaft remover (C) and the hammer, and disconnect the left rear inboard joint (D) from the rear differential.
7. Remove the rear differential mounting bolts (E).
8. Lower the rear differential a little on the transmission jack, then remove the left rear driveshaft inboard joint from the rear differential.

NOTE: Make sure not to over extend the harness and the tube.

9. Disconnect the right solenoid 4P connector (A) and the rear differential fluid temperature sensor 2P connector (B), then remove the harness clip (C).

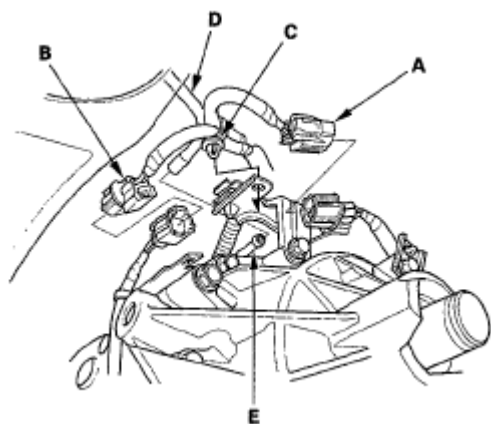


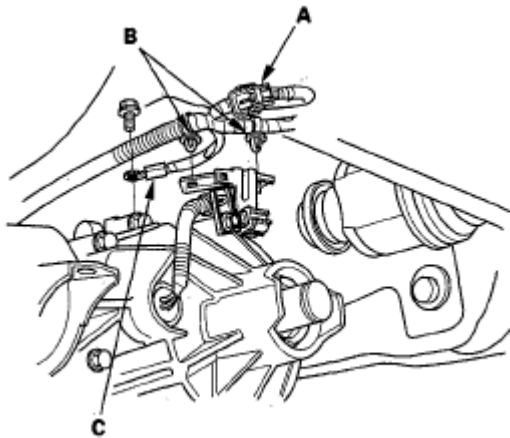
Fig. 104: Identifying Right Solenoid 4P And Rear Differential Fluid Temperature Sensor 2P Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the breather tube (D) from the breather pipe (E).
11. Slowly lower the rear differential a little on the transmission jack.

NOTE: Make sure not to over extend the harness.

12. Disconnect the left solenoid 4P connector (A), then remove the harness clips (B).

**Fig. 105: Identifying Left Solenoid 4P Connector And Harness Clips**
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Disconnect the ground cable (C) from the rear differential.
14. Lower the rear differential on the transmission jack.

REAR DIFFERENTIAL INSTALLATION

1. Raise the rear differential with the transmission jack.
2. If the original differential is being reinstalled, replace the set rings.
3. Raise the rear differential a little on the transmission jack.
4. Connect the ground cable (A) to the rear differential.

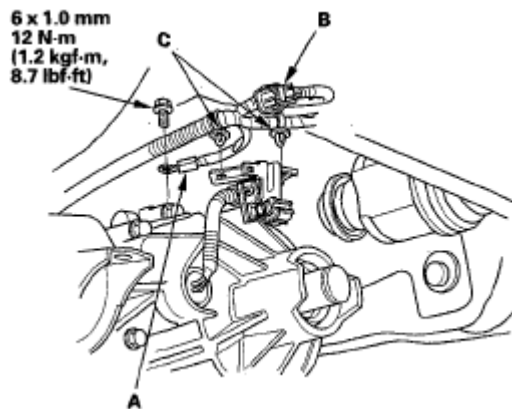


Fig. 106: Identifying Left Solenoid 4P Connector, Ground Cable And Harness Clips With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the left solenoid 4P connector (B), then install the harness clips (C).
6. Raise the rear differential a little on the transmission jack.
7. Connect the breather tube (A) to the breather pipe (B) and the clip (C).

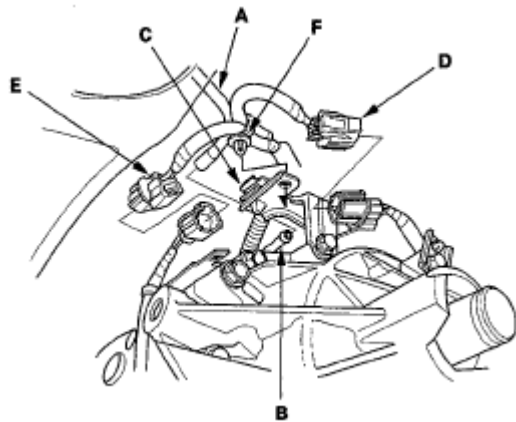


Fig. 107: Identifying Breather Tube, Breather Pipe, Right Solenoid 4P And Fluid Temperature Sensor 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Connect the right solenoid 4P connector (D) and the rear differential fluid temperature sensor 2P connector (E), then install the harness clip (F).
9. Install the left rear driveshaft inboard joint (A) to the rear differential.

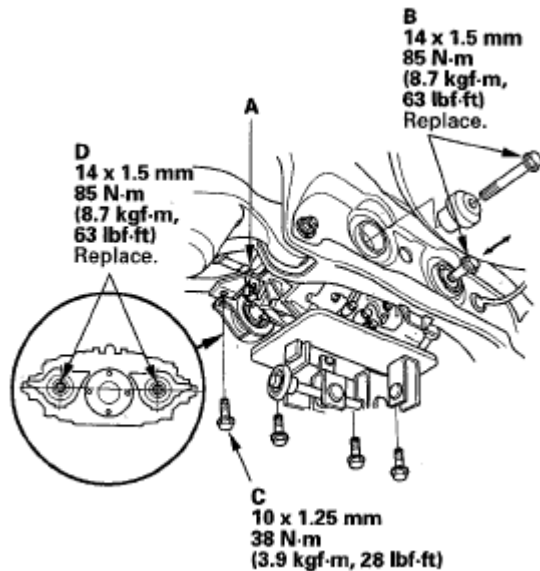


Fig. 108: Identifying Differential Front Mounting Bracket Bolts And Left Rear Driveshaft Inboard Joint With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Raise the rear differential to the mounting level, then hand tighten the new rear differential rear mounting bolts (B) and rear differential front mounting bracket bolts (C).
11. Loosen the rear differential front mounting bolts (D).
12. Tighten the new rear differential rear mounting bolt, then tighten the rear differential front mounting bracket bolts.
13. Tighten the new rear differential front mounting bolts.
14. Attach the propeller shaft (A) to the rear differential (B) by aligning the reference marks (C) you made during the removal procedure.

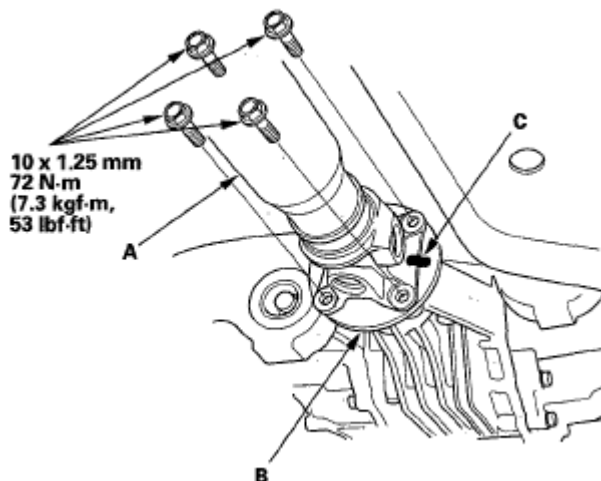


Fig. 109: Identifying Reference Marks On Propeller Shaft And Rear Differential Companion Flange With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the right rear driveshaft (see REAR DRIVESHAFT INSTALLATION).
16. Install the new exhaust pipe gasket (A) and exhaust pipe (B) with new nuts (C).

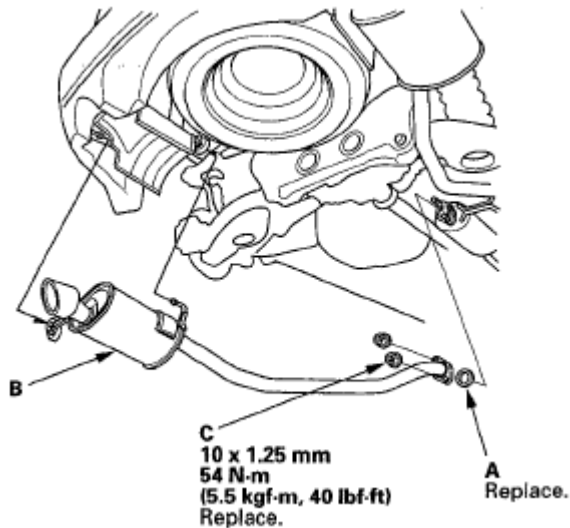


Fig. 110: Identifying Exhaust Pipe Gasket And Exhaust Pipe With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Refill the differential fluid (see REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT).
18. Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY

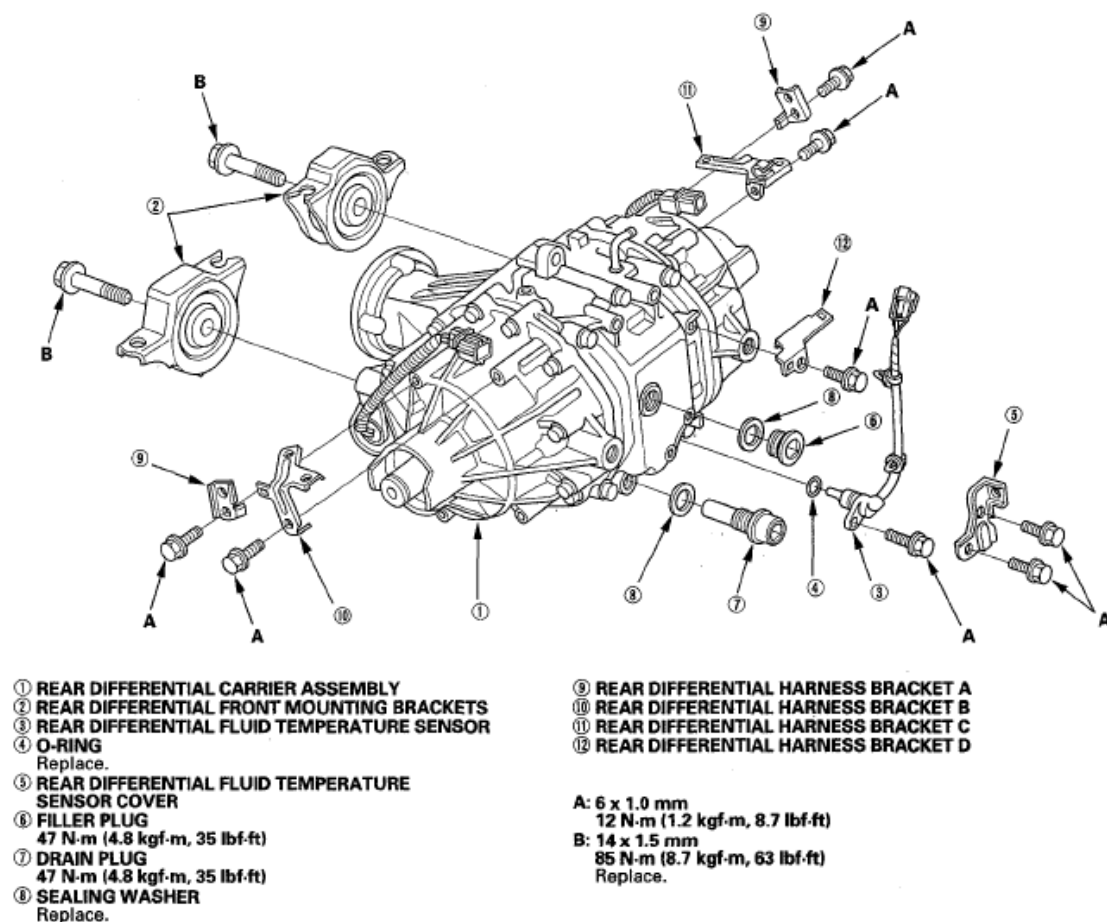


Fig. 111: Identifying Rear Differential Components With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CENTER CASE OIL SEAL REPLACEMENT

Special Tools Required

- Companion flange holder 07XAB-001A101
- Oil seal driver C 070AD-STK0130
- Fork seal driver weight 07747-0010100

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL**).
2. Remove the rear differential front mounting brackets (A) from the rear differential (B).

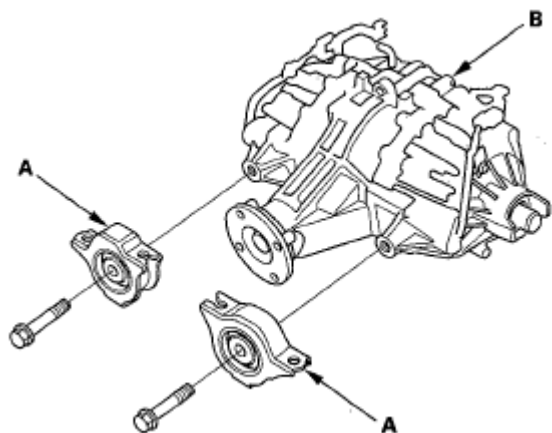


Fig. 112: Identifying Rear Differential Front Mounting Brackets And Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear differential fluid temperature sensor cover (A), rear differential fluid temperature sensor (B), O-ring (C), and rear differential harness bracket (D) with bolts.

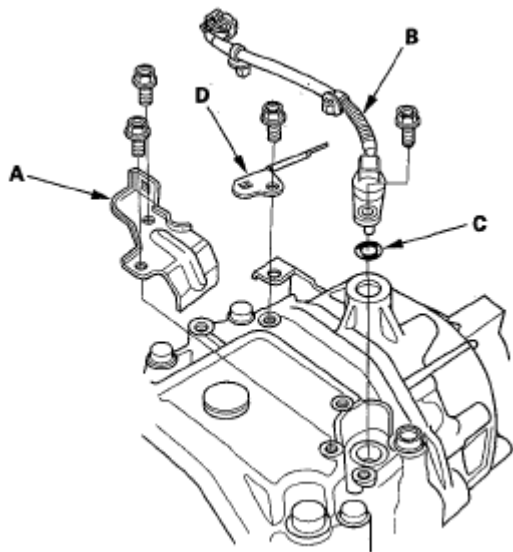


Fig. 113: Identifying Differential Fluid Temperature Sensor, Cover And Rear Differential Harness Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the left side case (A), the right side case (B), the four 10x12 mm dowel pins (C).

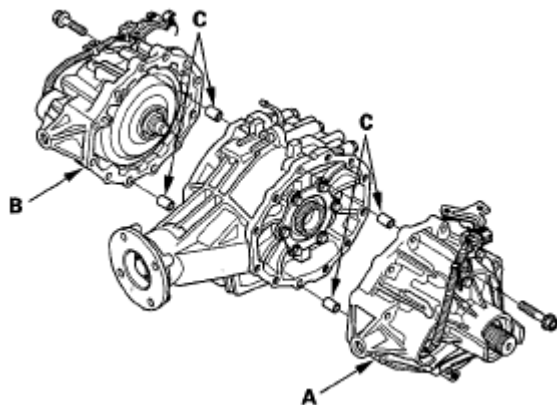


Fig. 114: Identifying Dowel Pins, Left And Right Side Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the mounting bolts (A) in a crisscross pattern in several steps, then remove the bearing set plate (B) and the 83 mm shim (C).

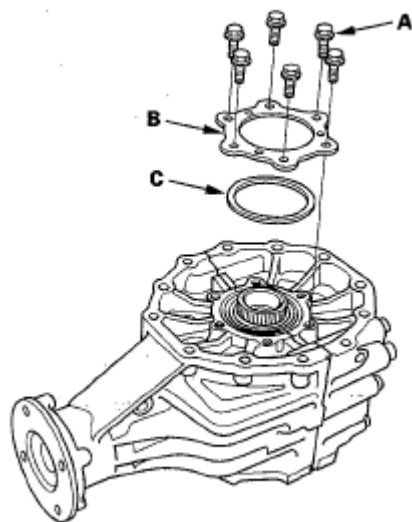


Fig. 115: Identifying Mounting Bolts, Bearing Set Plate And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the six mounting bolts (A) in a crisscross pattern in several steps, then remove the differential housing assembly (B) and dowel pins (C).

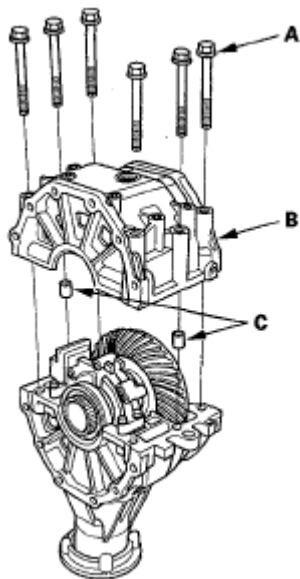


Fig. 116: Identifying Differential Housing Assembly, Mounting Bolts And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the ring gear assembly (A), bearing outer races (B), 75 mm shim (C), and the 8 x 14 mm dowel pins (D).

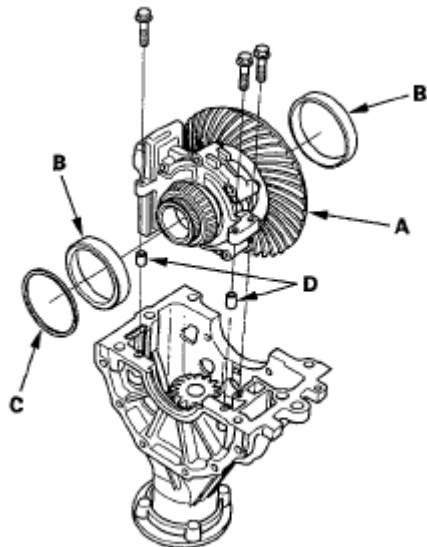


Fig. 117: Identifying Ring Gear Assembly, Bearing Outer Races, Shim And Dowel Pins
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Raise the locknut tab (A) from the groove of the input shaft, making sure that the tab completely clears the groove to prevent damaging the input shaft.

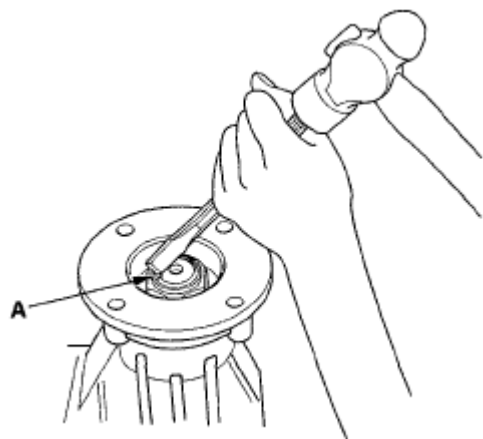


Fig. 118: Identifying Input Shaft Locknut Tab
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the companion flange holder (A) on the companion flange. Loosen the 27 mm locknut (left-hand threads).

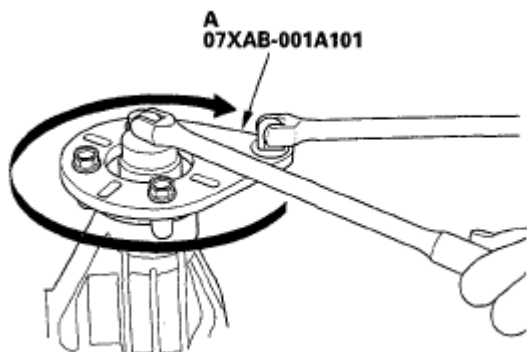


Fig. 119: Identifying Companion Flange Holder On Companion Flange
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Loosen the locknut (A) clockwise so that its tab (B) comes out from the groove (C) in the input shaft.

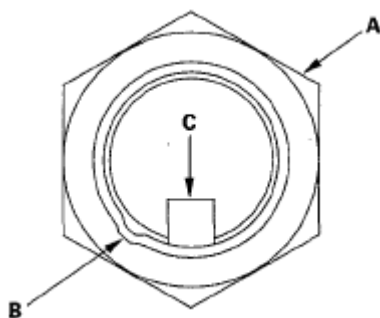


Fig. 120: Identifying Locknut Tab Position
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Tighten the locknut (A) until its tab (B) aligns with the groove (C).

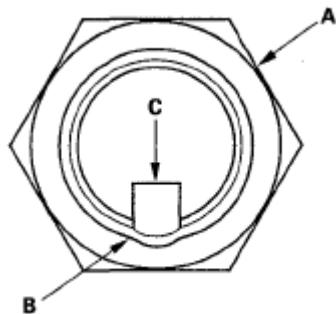


Fig. 121: Identifying Locknut Tab Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove any dirt from inside of the groove in the input shaft, then loosen the locknut.
13. Remove the 27 mm locknut (A), the 27 mm spring washer (B), the 28 mm back-up ring (C), and the 28 mm O-ring (D).

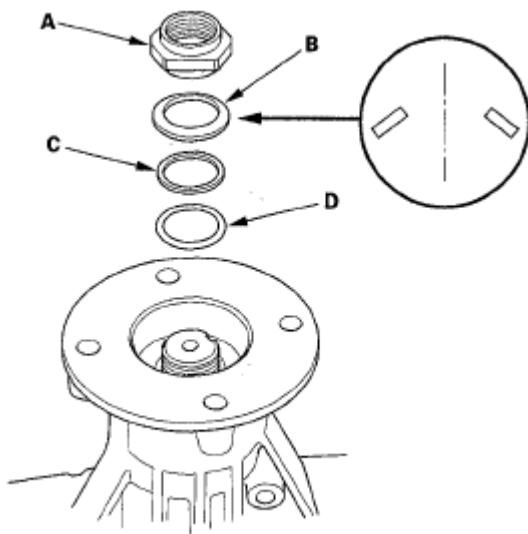


Fig. 122: Identifying Locknut, Spring Washer, O-Ring And Back-Up Ring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Make a reference mark (A) across the input shaft (B) and companion flange (C), then remove the companion flange.

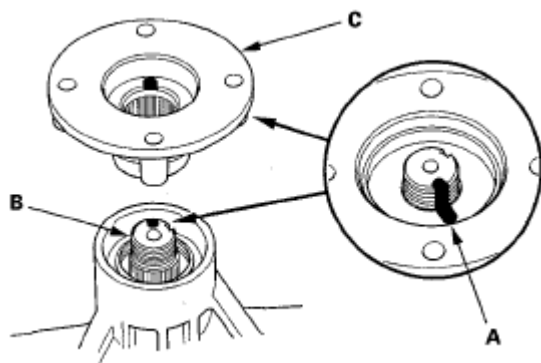


Fig. 123: Identifying Reference Mark On Input Shaft And Companion Flange
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the drive pinion (A), pinion spacer (B), and the thrust washer (C) by tapping on the drive pinion with a plastic hammer.

NOTE: Support it by wooden board not to damage the drive pinion.

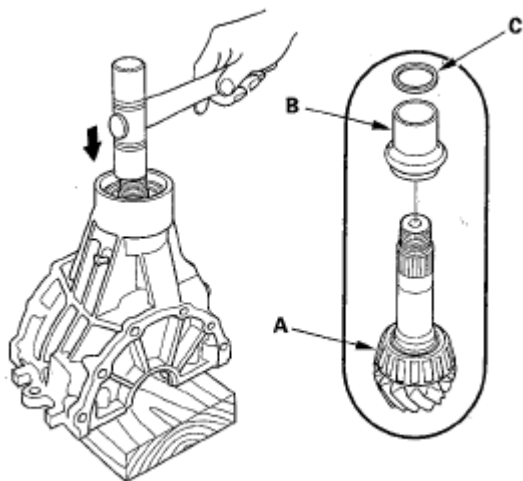


Fig. 124: Identifying Drive Pinion, Pinion Spacer And Thrust Washer
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Remove the front case oil seal (A) with a commercially available seal remover.

NOTE: Remove the oil seal with care so you do not damage the inside surface of the differential carrier seal surface.

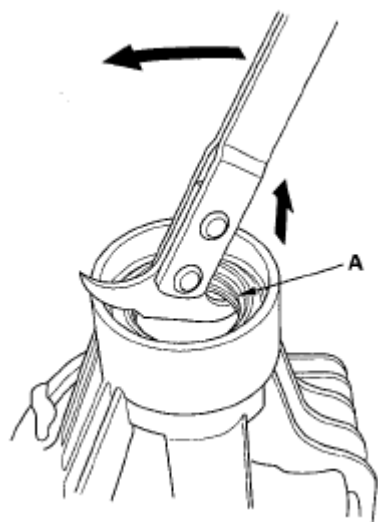


Fig. 125: Identifying Front Case Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Apply ATF to the tapered roller bearing (A), then install the new front case oil seal (B) with the oil seal driver C and fork seal driver weight (D).

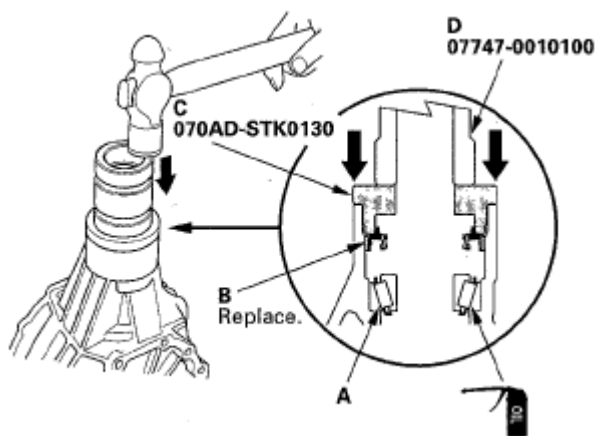


Fig. 126: Identifying Front Case Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

18. Apply ATF to the tapered roller bearing (A), then install the drive pinion (B), pinion spacer (C), and the thrust washer (D) into the differential carrier (E).

NOTE: Be sure to install the pinion spacer in the direction shown.

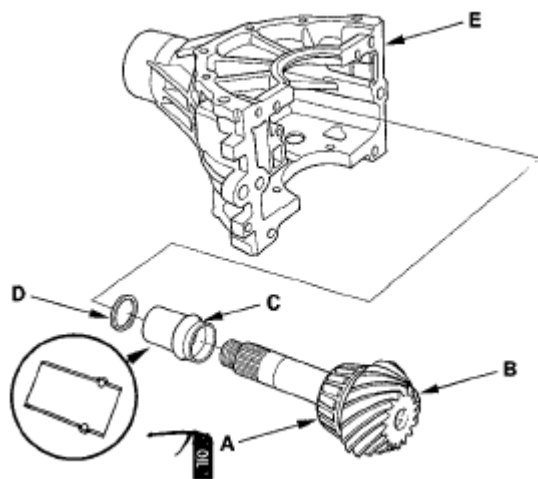


Fig. 127: Identifying Tapered Roller Bearing ATF Applying Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the companion flange (A) on the input shaft (B) by aligning the reference mark (C).

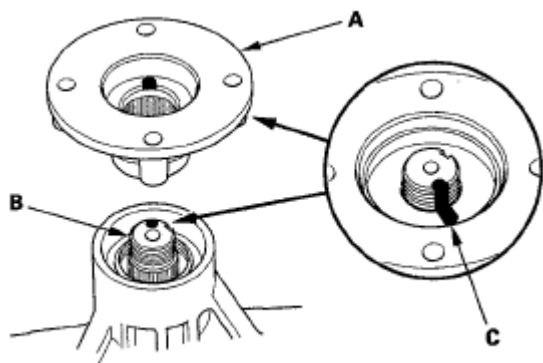


Fig. 128: Identifying Reference Mark On Input Shaft And Companion Flange
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Apply ATF to the new 28 mm O-ring (A), then install the new 28 mm O-ring, the 28 mm backup ring (B), the 27 mm spring washer (C), and the new 27 mm locknut (D).

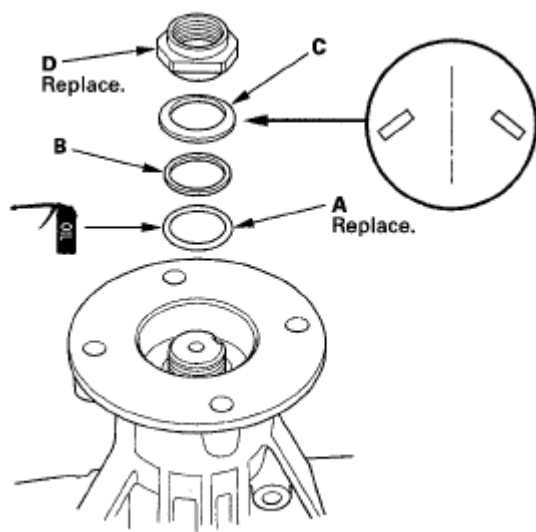


Fig. 129: Identifying O-Ring ATF Applying Area
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Install the companion flange holder (A) to the companion flange, then tighten the locknut (left-hand threads).

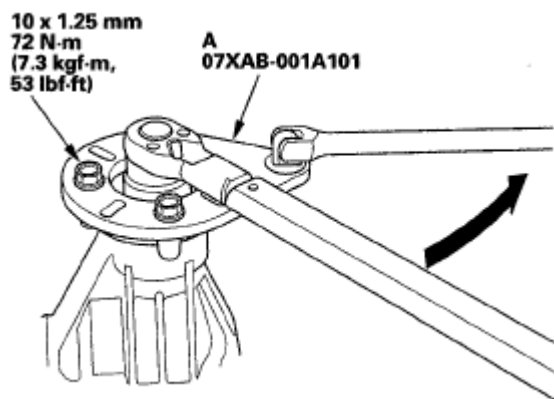


Fig. 130: Identifying Companion Flange Holder To Companion Flange
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Rotate the drive pinion several times to assure proper tapered roller bearing contact. Measure the drive pinion turning torque.
 - If the drive pinion turning torque exceeds the standard, replace the pinion spacer.
 - If the drive pinion turning torque is less than the standard, adjust by tightening the locknut a little at a time, but keep the torque within 186-353 N.m (19.0-36.0 kgf.m, 137-260 lbf.ft). If this is not possible, replace the pinion spacer.

Turning Torque:
93.2—181.4 N·m
(9.5—18.5 kgf·m, 69.0—134.0 lbf·ft)

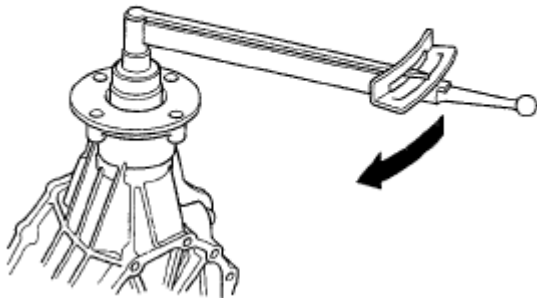


Fig. 131: Identifying Drive Pinion Turning Torque With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Stake the, locknut tab (A) into the groove in the input shaft.

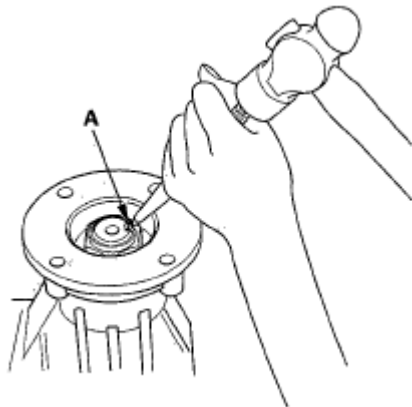


Fig. 132: Identifying Input Shaft Locknut Tab
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Apply ATF to the tapered roller bearings, then install the ring gear assembly (A), bearing outer races (B), 75 mm shim (C), and the 8 x 14 mm dowel pins (D).

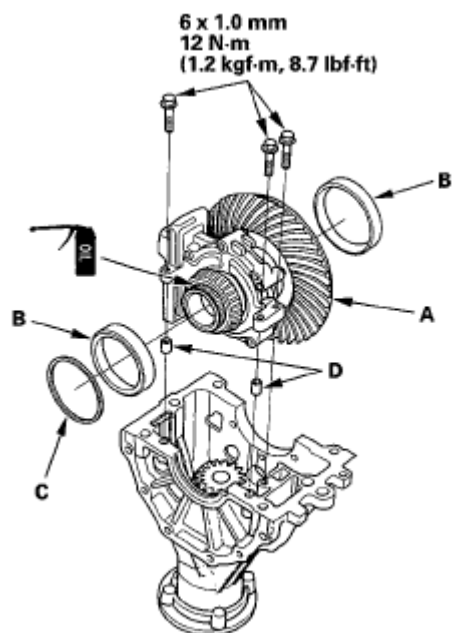
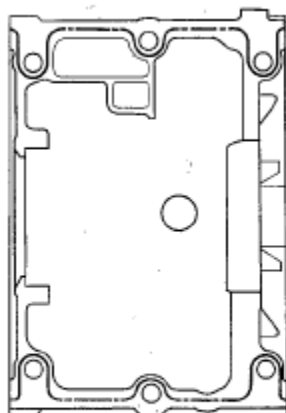


Fig. 133: Identifying Tapered Roller Bearings ATF Applying Area With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

NOTE:

- You must assemble the housings within 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.
- Remove the overflowing liquid gasket, when joining side case.



Apply liquid gasket along the broken line and around all bolt holes.

Fig. 134: Identifying Liquid Gasket Along Broken Line And Around Bolt Holes

Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the dowel pins (A), the differential housing assembly (B), and the six mounting bolts (C).

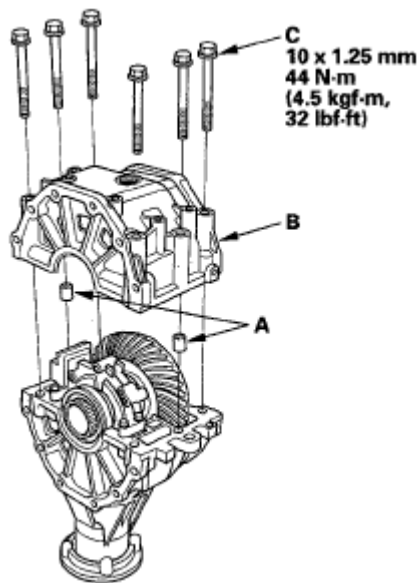


Fig. 135: Identifying Differential Housing Assembly, Dowel Pins And Mounting Bolts With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Tighten the six mounting bolts in a crisscross pattern in several steps.
 28. Install the 83 mm shim (A), the bearing set plate (B), and the six mounting bolts (C).

NOTE: Install the bearing set plate, check to identification marks (D).

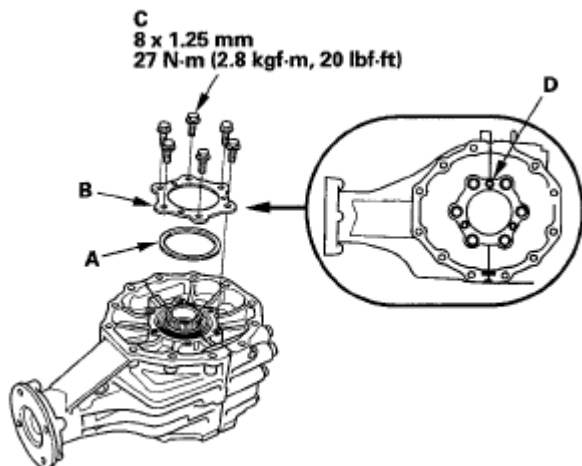


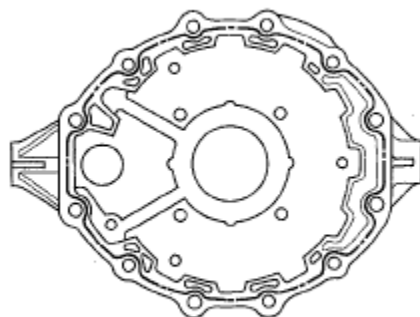
Fig. 136: Identifying Shim, Bearing Set Plate And Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

29. Tighten the six mounting bolts in a crisscross pattern in several steps.
30. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

NOTE:

- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

Left side case/right side case



Apply liquid gasket along the broken line and around all bolt holes.

Fig. 137: Identifying Liquid Gasket Along Broken Line And Around Bolt Holes
Courtesy of AMERICAN HONDA MOTOR CO., INC.

31. Install the 8 x 12 mm dowel pins (A), the rear differential right side case (B), the rear differential left side case (C), and the mounting bolts (D).

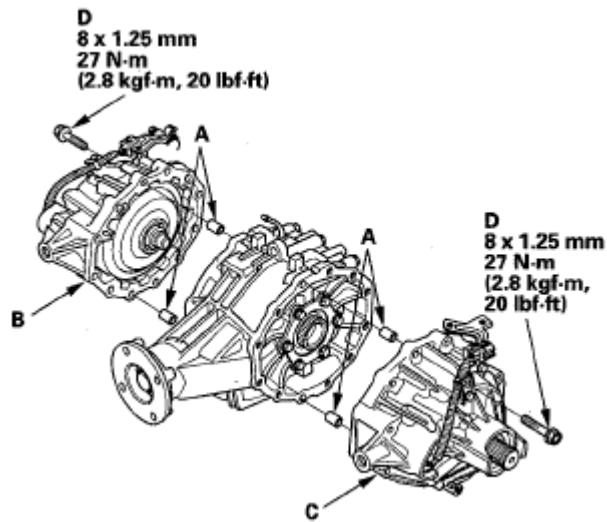


Fig. 138: Identifying Dowel Pins, Rear Differential Right And Left Side Case And Mounting Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

32. Tighten the mounting bolts in a crisscross pattern in several steps.
33. Install the rear differential fluid temperature sensor (A), new O-ring (B), rear differential harness bracket (C), and rear differential fluid temperature sensor cover (D) with bolts.

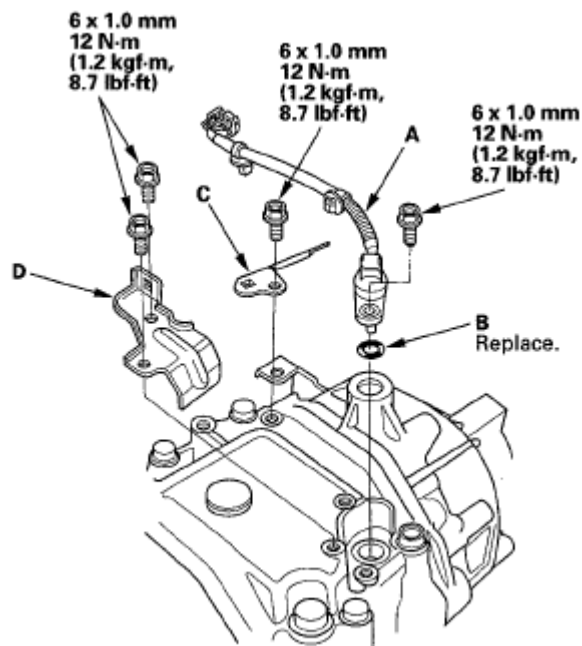


Fig. 139: Identifying Differential Fluid Temperature Sensor, Cover And Rear Differential Harness Bracket With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

34. Install the rear differential front mounting brackets (A) from the rear differential (B).

NOTE: Install a lower surface of the guides (C) horizontally as shown, then tighten the new rear differential front mounting bracket bolts (D).

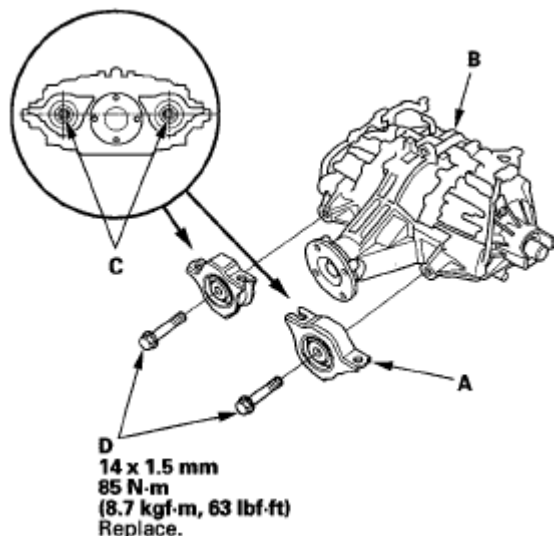


Fig. 140: Identifying Rear Differential Front Mounting Brackets, Guides And Rear Differential With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

35. Install the rear differential (see REAR DIFFERENTIAL INSTALLATION).
36. Refill the differential fluid (see REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT).

SIDE CASE OIL SEAL REPLACEMENT

Special Tools Required

- Oil seal driver A070AD-STK0110
- Oil seal driver B 070AD-STK0120
- Fork seal driver weight 07747-0010100

1. Remove the rear differential (see REAR DIFFERENTIAL REMOVAL).
2. Remove the 40 x 55 x 7.5 mm dust seal (A) with a commercially available tool.

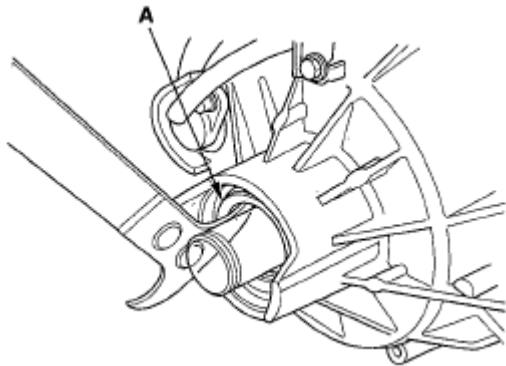


Fig. 141: Identifying Dust Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the thrust washer.
4. Cut a slit at each position (4 place, 90 degrees apart) (A) on the 34.7 x 54 x 9 mm oil seal (B), then install 6 mm screw (C) (P/N 93901-16580) into the oil seal at each location. Remove the oil seal with pliers (D) and screw driver (E) as shown.

NOTE: Do not thread the 6 mm screws into the oil seal more than 5 mm (0.197 in.).

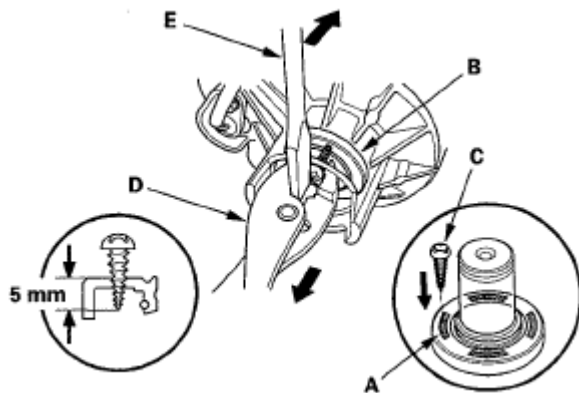


Fig. 142: Identifying Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new 34.7 x 54 x 9 mm oil seal (A) into the rear differential side case (B) with the fork seal driver weight (C) and oil seal driver A (D).

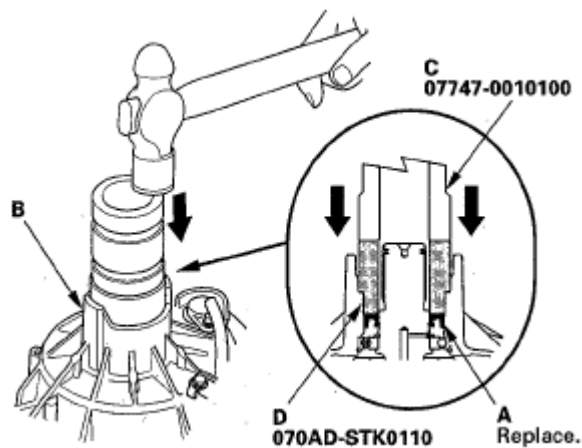


Fig. 143: Identifying Oil Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the thrust washer (A), then install the new 40 x 55 x 7.5 mm dust seal (B) with the fork seal driver (C) and oil seal driver B (D).

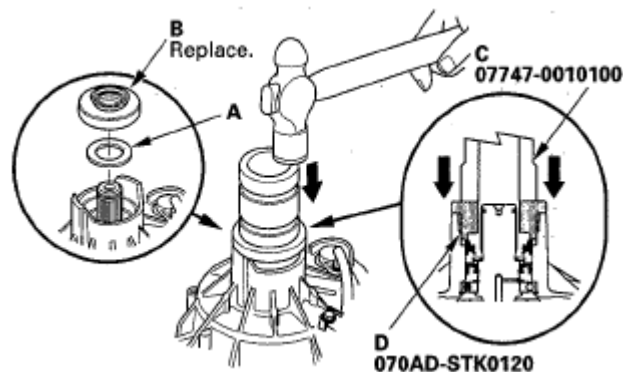


Fig. 144: Identifying Dust Seal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the rear differential (see REAR DIFFERENTIAL INSTALLATION).

CENTER CASE REPLACEMENT

1. Remove the rear differential (see REAR DIFFERENTIAL REMOVAL).
2. Remove the rear differential front mounting brackets (A) from the rear differential (B).

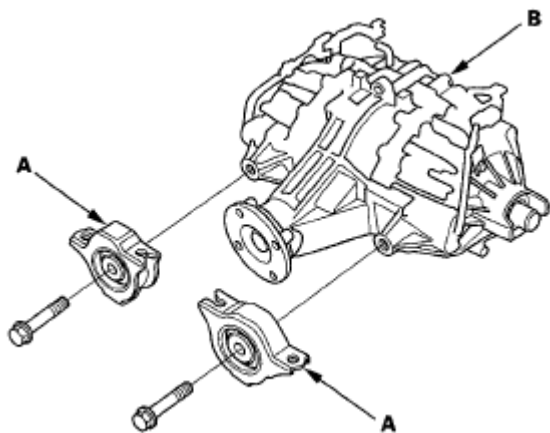


Fig. 145: Identifying Rear Differential Front Mounting Brackets And Rear Differential
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear differential fluid temperature sensor cover (A), rear differential fluid temperature sensor (B), O-ring (C), and rear differential harness bracket (D) with bolts.

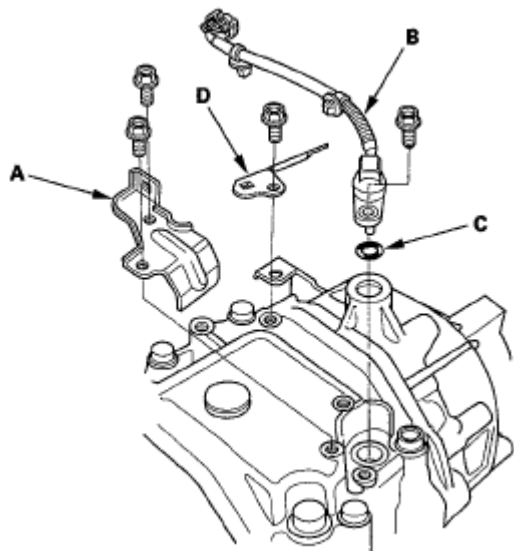


Fig. 146: Identifying Differential Fluid Temperature Sensor, Cover, O-Ring And Harness Bracket
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear differential left side case (A), the rear differential right side case (B), the 10x12 mm dowel pins (C) from the rear differential center case (D).

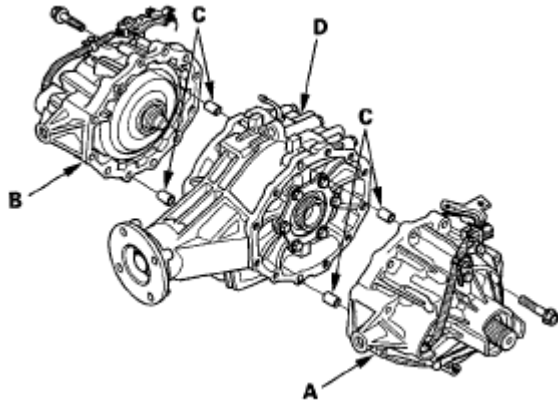


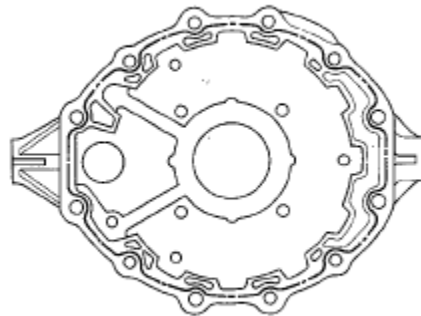
Fig. 147: Identifying Rear Differential Left And Right Side Case, Dowel Pins And Center Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Replace the rear differential center case.
6. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

NOTE:

- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

Left side case/right side case



Apply liquid gasket along the broken line and around all bolt holes.

Fig. 148: Identifying Liquid Gasket Along Broken Line And Around Bolt Holes

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the 8x12 mm dowel pins (A), the rear differential right side case (B), the rear differential left side case (C), and the mounting bolts (D) on to the rear differential center case (E).

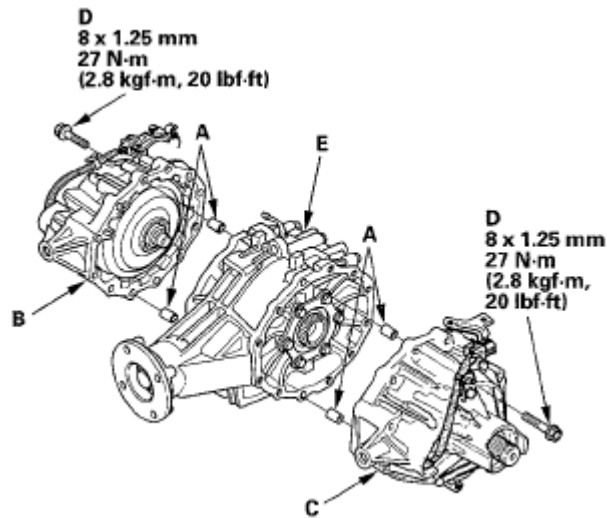


Fig. 149: Identifying Rear Differential Left And Right Side Case, Dowel Pins, Center Case And Mounting Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Tighten the mounting bolts in a crisscross pattern in several steps.
9. Install the rear differential fluid temperature sensor (A), new O-ring (B), rear differential harness bracket (C), and rear differential fluid temperature sensor cover (D) with bolts.

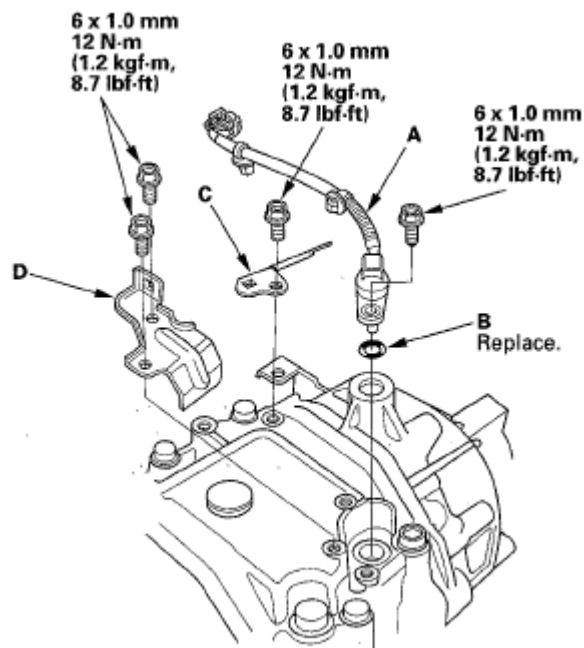


Fig. 150: Identifying Differential Fluid Temperature Sensor, Cover, O-Ring And Harness Bracket With torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the rear differential front mounting brackets (A) from the rear differential (B).

NOTE: Install a lower surface of the guides (C) horizontally as shown, then tighten the new rear differential front mounting bracket bolts (D).

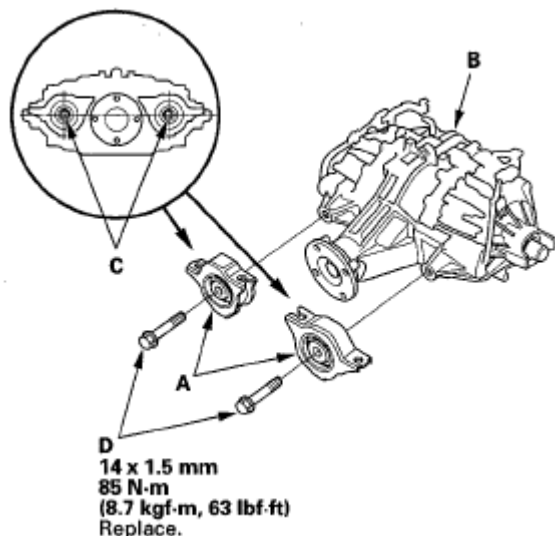


Fig. 151: Identifying Lower Surface Of Guides With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the rear differential (see REAR DIFFERENTIAL INSTALLATION).
12. Refill the differential fluid (see REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT).

SIDE CASE REPLACEMENT

1. Remove the rear differential (see REAR DIFFERENTIAL REMOVAL).
2. Remove the rear differential front mounting brackets (A) from the rear differential (B).

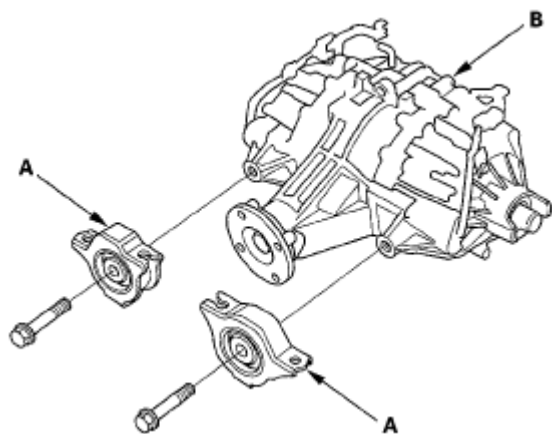


Fig. 152: Identifying Rear Differential Front Mounting Brackets And Rear Differential
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the rear differential fluid temperature sensor cover (A), rear differential fluid temperature sensor (B), O-ring (C), and rear differential harness bracket (D) with bolts.

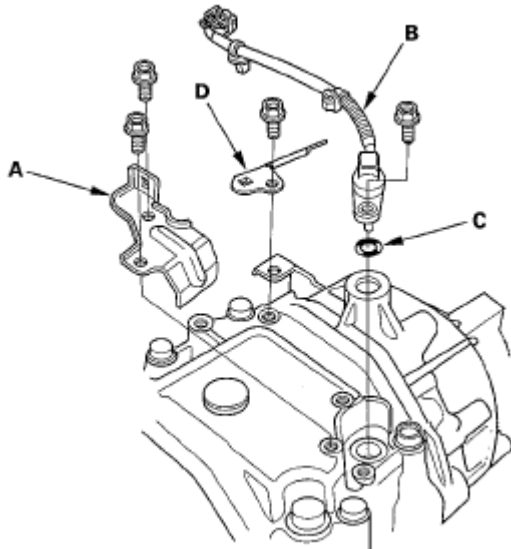


Fig. 153: Identifying Rear Differential Fluid Temperature Sensor, O-Ring And Harness Bracket
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the rear differential left side case (A) or the rear differential right side case (B), the 10x12 mm dowel pins (C) from the rear differential center case (D).

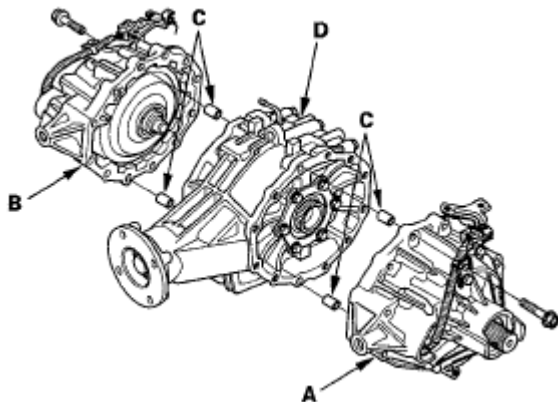


Fig. 154: Identifying Rear Differential Left And Right Side Case, Dowel Pins And Center Case
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Replace the rear differential left side case or the differential right side case.
6. Remove the ring gear (A), needle bearing (B), and the 60.2 mm shim (C) from the rear differential side case (D).

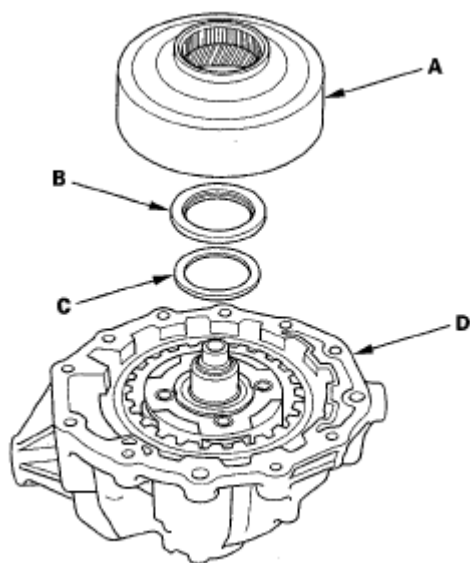


Fig. 155: Identifying Ring Gear, Needle Bearing And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Measure distance © between the end of the rear differential side case (A) and 60.2 mm shim contact area of planetary gear (B) with a straight edge (C) and depth gauge (D). Measure at three locations, and average the reading.

NOTE:

- Carry out the measurement at normal room temperature.
- Clean all the parts thoroughly before measure.

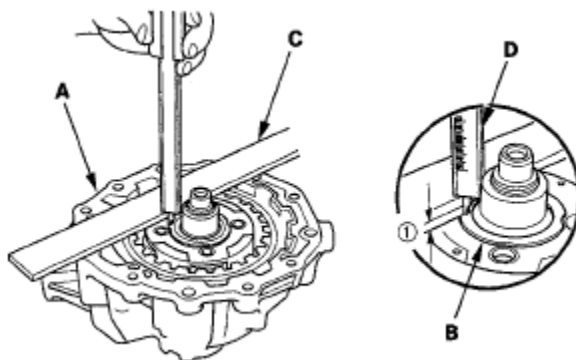


Fig. 156: Identifying Distance Between Rear Differential Side Case End And Planetary Gear Shim Contact Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Measure distance (D) between the end of the rear differential center case (A) and ring gear contact area of taper roller bearing (B) with a straight edge (C) and depth gauge (D). Measure at three locations, and average the reading.

NOTE:

- Carry out the measurement at normal room temperature.
- Clean all the parts thoroughly before measure.

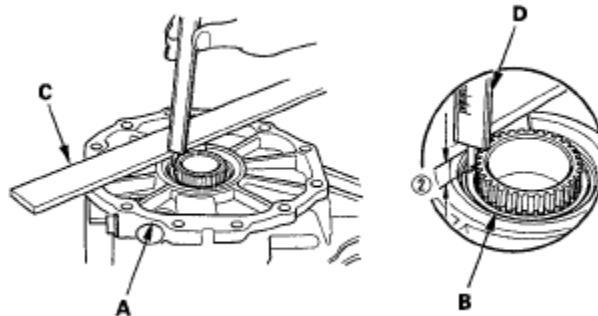


Fig. 157: Identifying Distance Between Rear Differential Center Case End And Tapper Roller Bearing Ring Gear Contact Area
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure the distance (3) between the needle bearing (A) and taper roller bearing contact area of ring gear (B) with a depth gauge (C). Measure at three locations, and average the reading.

NOTE:

- Carry out the measurement at normal room temperature.
- Clean all the parts thoroughly before measure.

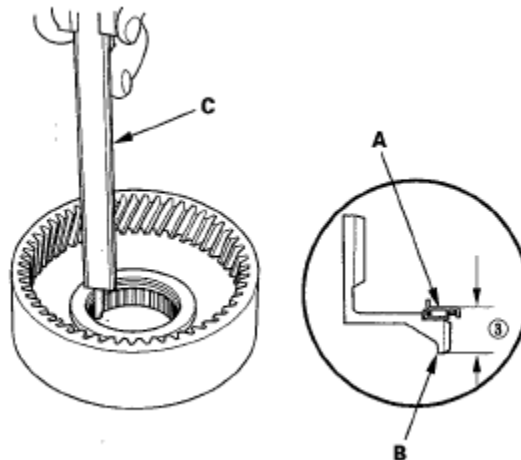


Fig. 158: Identifying Distance Between Needle Bearing And Tapper Roller Bearing Contact Area Of Ring Gear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Shim Selection Formula

10. Select the proper 60.2 mm shim from the table. Follow the example below, and use the measurements you made in steps 7 to 9.

2008 Acura MDX

2007-09 DRIVELINE/AXLES Rear Differential - MDX

(Basic Formula)

$$(1)+(2)-(3) + 0.19 = \text{shim thickness}$$

0.19 mm (0.007 in.): middle of the clearance standard.

Clearance Standard: 0.14-0.24 mm (0.006-0.009 in.)

(For example)

$$(1) = 6.12 \text{ mm (0.241 in.)}$$

$$(2) = 15.3 \text{ mm (0.602 in.)}$$

$$(3) = 19.5 \text{ mm (0.770 in.)}$$

$$6.12 + 15.3 - (19.5 + 0.19) = 1.73 \text{ mm}$$

Select the 1.70 mm shim from the table.

60.2 mm shim

SHIM THICKNESS CHART

No.	Part Number	Thickness
A	48701-RWG-000	1.10 mm (0.043 in.)
B	48702-RWG-000	1.20 mm (0.047 in.)
C	48703-RWG-000	1.30 mm (0.051 in.)
D	48704-RWG-000	1.40 mm (0.055 in.)
E	48705-RWG-000	1.50 mm (0.059 in.)
F	48706-RWG-000	1.60 mm (0.063 in.)
G	48707-RWG-000	1.70 mm (0.067 in.)
H	487Q8-RWG-000	1.80 mm (0.071 in.)
I	48709-RWG-000	1.90 mm (0.075 in.)
J	48710-RWG-000	2.00 mm (0.079 in.)
K	48711-RWG-000	2.10 mm (0.083 in.)
L	48712-RWG-000	2.20 mm (0.087 in.)

11. Place one strip of plastigage (A) on 60.2 mm shim contact area of planetary gear (B). Install the 60.2 mm shim (C), needle bearing (D), and the ring gear (E). Measure at three locations, and average the reading.

NOTE:

- Carry out the measurement at normal room temperature.
- Clean all the parts thoroughly before measure.

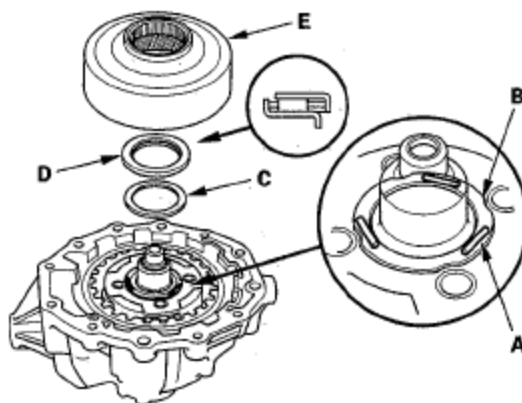


Fig. 159: Identifying Planetary Gear, Needle Bearing, Ring Gear And Shim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the 8x12 mm dowel pins (A), the rear differential right side case (B) or the rear differential left side case (C) and the mounting bolts (D).

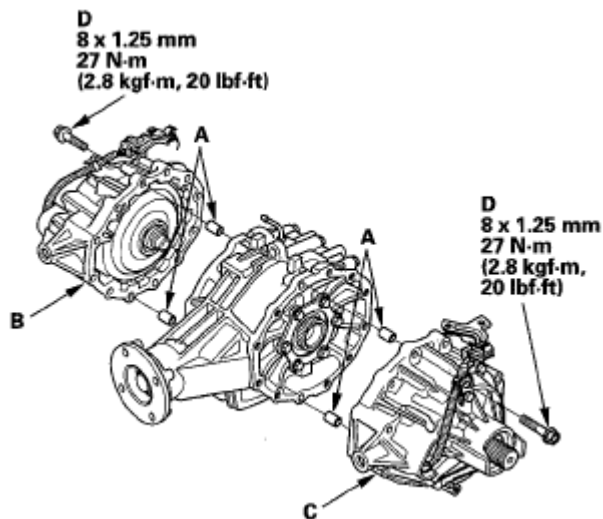


Fig. 160: Identifying Rear Differential Right And Left Side Case, Dowel Pins And Mounting Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the mounting bolts in a crisscross pattern in several steps.
14. Remove the rear differential left side case (A) or the rear differential right side case (B), the 10x12 mm dowel pins (C) from the rear differential center case (D).

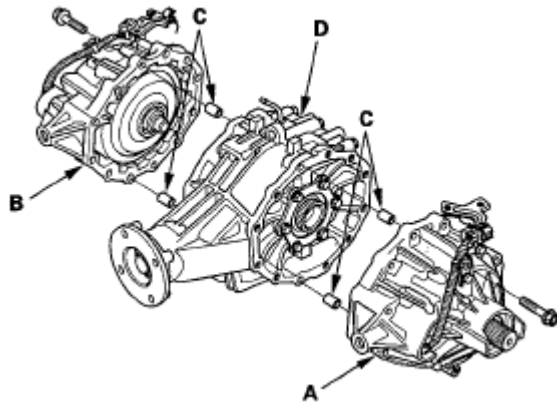


Fig. 161: Identifying Rear Differential Right And Left Side Case, Dowel Pins And Center Case
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the ring gear (A), needle bearing (B), and the 60.2 mm shim (C) from the rear differential side case (D).

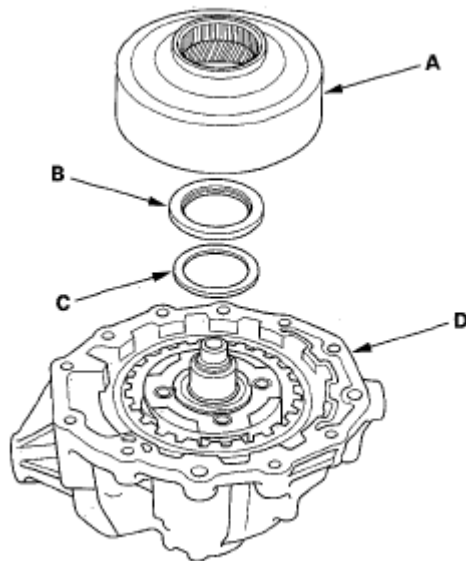


Fig. 162: Identifying Ring Gear, Needle Bearing, Rear Differential Side Case And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Measure the widest part of the plastigage.

Clearance Standard:
0.14—0.24 mm (0.006—0.009 in.)

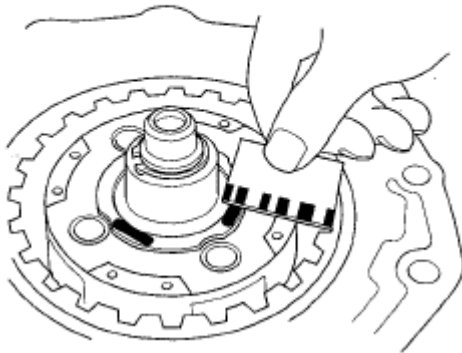


Fig. 163: Identifying Widest Part Of Plastigage
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. If the clearance is more than the standard, go to step 7. If the clearance measured in step 16 is within the standard, go to step 18.
18. Install the 60.2 mm shim (A), needle bearing (B), and the ring gear (C) onto the rear differential side case (D).

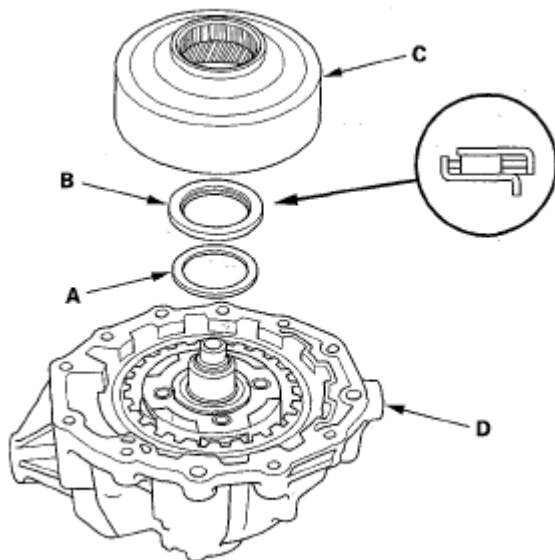


Fig. 164: Identifying Ring Gear, Needle Bearing, Rear Differential Side Case And Shim
Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

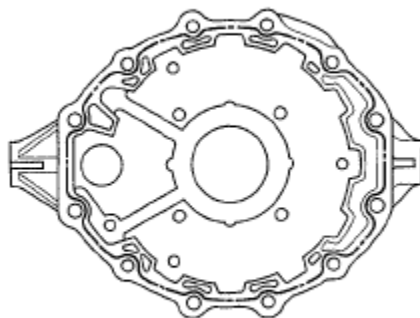
NOTE:

- You must assemble the housings within 5 minutes after applying the liquid gasket. If not, the sealing surface must be

cleaned, and the liquid gasket reapplied.

- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

Left side case/right side case



Apply liquid gasket along the broken line and around all bolt holes.

Fig. 165: Identifying Liquid Gasket Along Broken Line And Around Bolt Holes

Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the 8x12 mm dowel pins (A), the rear differential right side case (B) or the rear differential left side case (C), and the mounting bolts (D) onto the rear differential center case (E).

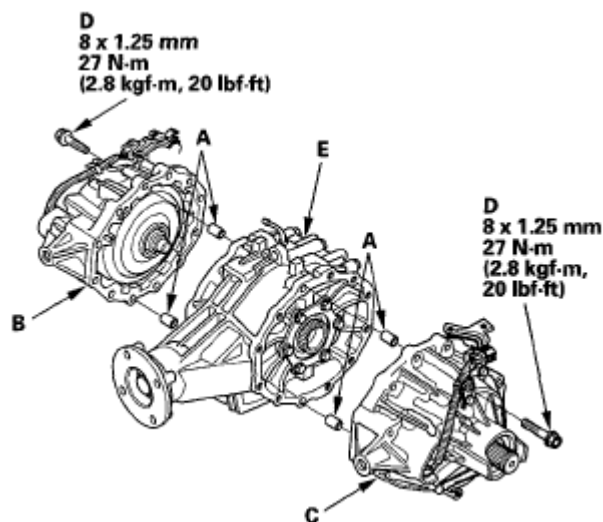


Fig. 166: Identifying Rear Differential Right And Left Side Case, Dowel Pins And Center Case With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Tighten the mounting bolts in a crisscross pattern in several steps.
22. Install the rear differential fluid temperature sensor (A), new O-ring (B), rear differential harness bracket (C), and rear differential fluid temperature sensor cover (D) with bolts.

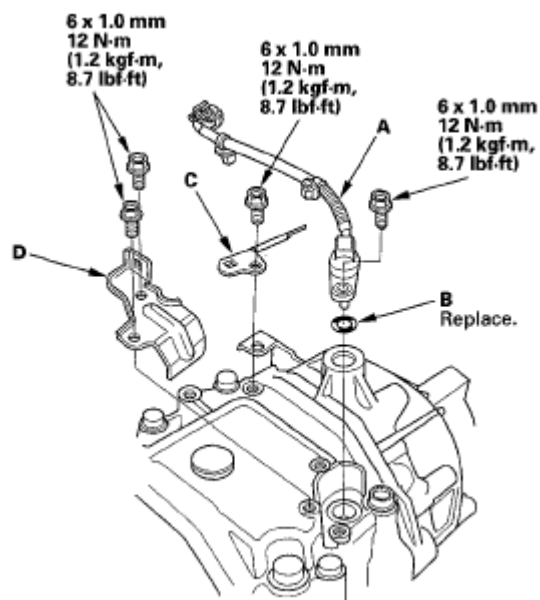


Fig. 167: Identifying Differential Fluid Temperature Sensor, O-Ring, Cover And Harness Bracket With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Install the rear differential front mounting brackets (A) from the rear differential (B).

NOTE: Install a lower surface of the guides (C) horizontally as shown, then tighten the new rear differential front mounting bracket bolts (D).

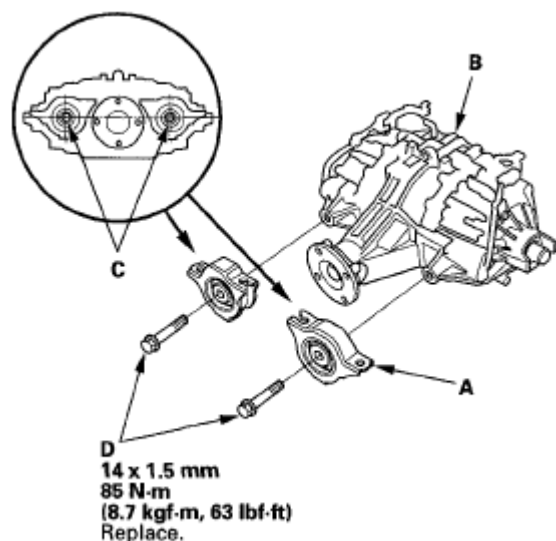


Fig. 168: Identifying Rear Differential Front Mounting Brackets, Rear Differential And Guides With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2007-09 DRIVELINE/AXLES Rear Differential - MDX

24. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION**).
25. Refill the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT**).
26. Do the SH-AWD differential clutch torque memorization (see **SH-AWD Differential Clutch Torque Memorization**).

2007-09 ACCESSORIES AND EQUIPMENT

Rear Entertainment System - MDX

COMPONENT LOCATION INDEX

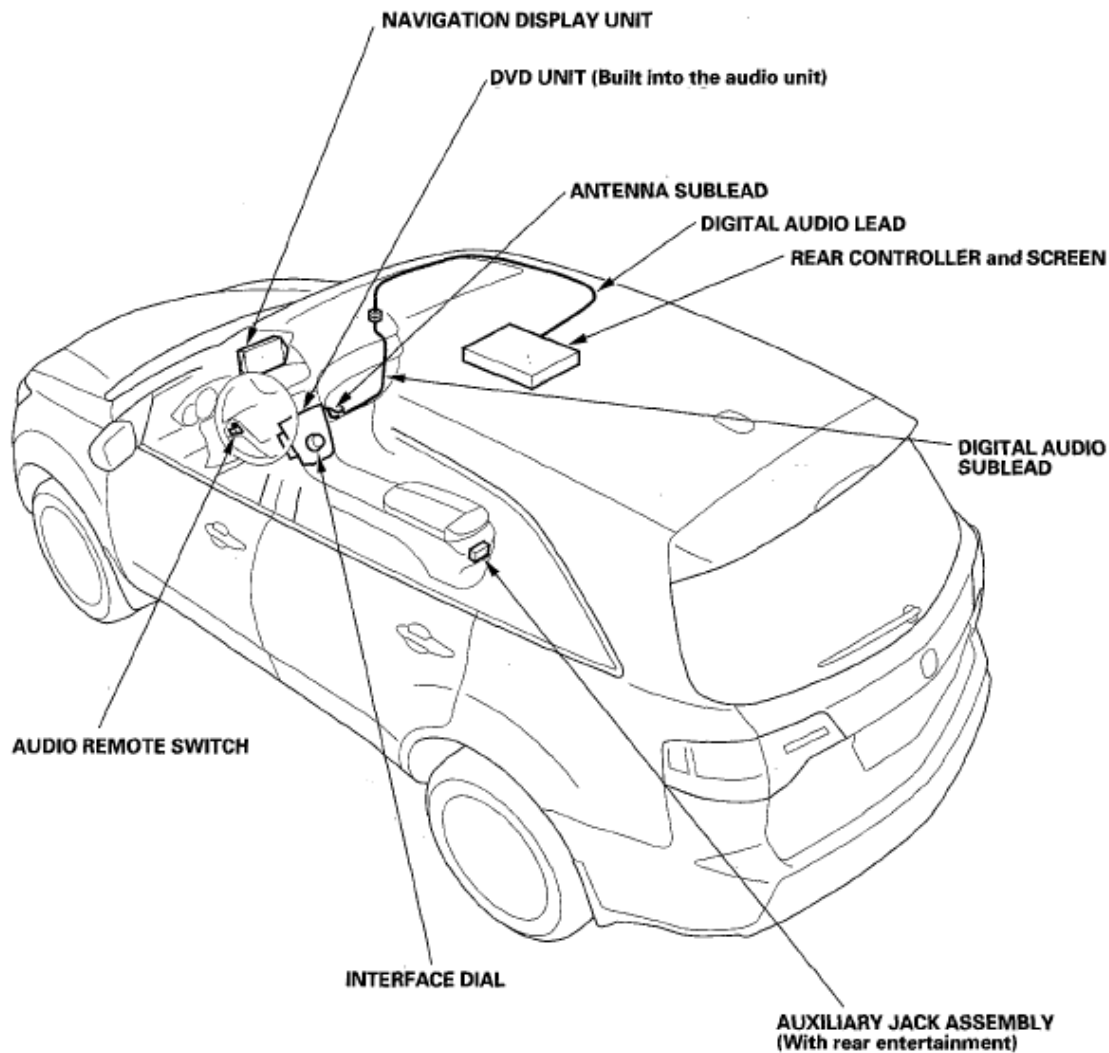


Fig. 1: Identifying Rear Entertainment System Components (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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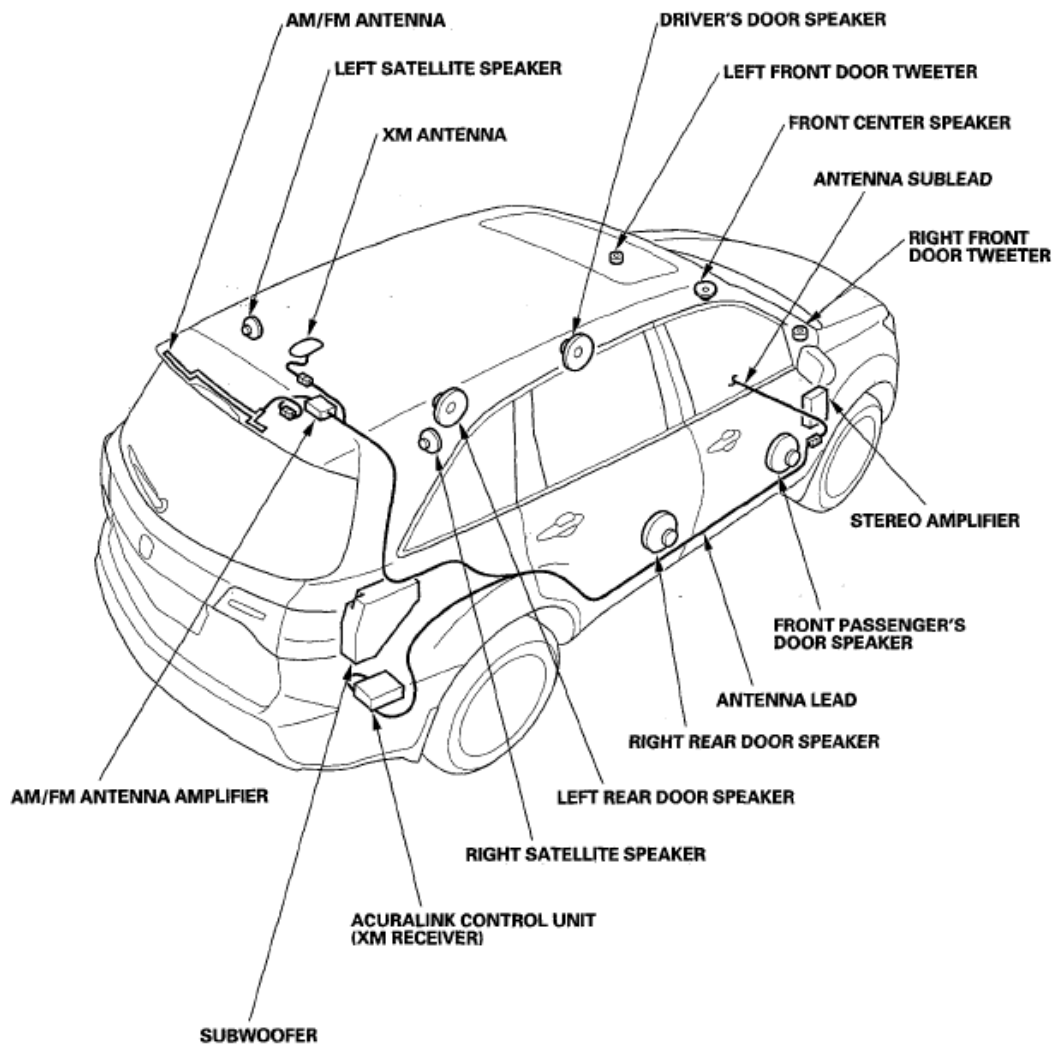


Fig. 2: Identifying Rear Entertainment System Components (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX

SYMPTOM TROUBLESHOOTING CHART

Symptom	Diagnostic procedure	Also check for
RES disc does not load	Symptom Troubleshooting (see <u>RES DISC DOES NOT LOAD</u>)	• Peeled label stuck in player • Wrong type disc
RES disc does not eject	Symptom Troubleshooting (see <u>RES DISC DOES NOT EJECT</u>)	• Peeled label stuck in player • Wrong type disc
	Symptom Troubleshooting (see <u>RES DISC</u>)	• Peeled label stuck in

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2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

RES disc does not play	<u>DOES NOT PLAY)</u>	player • Wrong type disc
RES disc skips	Symptom Troubleshooting (see <u>RES DISC SKIPS)</u>)	• Peeled label stuck in player • Wrong type disc
Black picture is shown on the display	Symptom Troubleshooting (see <u>BLACK PICTURE IS SHOWN ON THE DISPLAY)</u>)	
White picture is shown on the display/display lock	Symptom Troubleshooting (see <u>WHITE PICTURE IS SHOWN ON THE DISPLAY/ DISPLAY LOCK)</u>)	
Display area picture has lines or has shifted	Symptom Troubleshooting (see <u>DISPLAY AREA PICTURE HAS LINES OR HAS SHIFTED)</u>)	
Display does not go off when screen is closed	Symptom Troubleshooting (see <u>DISPLAY DOES NOT GO OFF WHEN SCREEN IS CLOSED)</u>)	
No display appears on the rear controller indicator	Symptom Troubleshooting (see <u>NO DISPLAY APPEARS ON THE REAR CONTROLLER INDICATOR)</u>)	
No sound/no display with auxiliary video unit inputs	Symptom Troubleshooting (see <u>NO SOUND/NO DISPLAY WITH AUXILIARY VIDEO UNIT INPUTS)</u>)	• Poor connections or disconnect device • Low batteries in accessory device, or disconnected from power source
Wired headphone sound is weak, distorted, volume does not change, or there is no sound	Symptom Troubleshooting (see <u>WIRED HEADPHONE SOUND IS WEAK, DISTORTED, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND)</u>)	
Wireless headphones do not work or there is static in DVD mode	Symptom Troubleshooting (see <u>WIRELESS HEADPHONES DO NOT WORK OR THERE IS STATIC IN DVD MODE)</u>)	
Wireless headphone sound is weak, sound is distorted, there is static, volume does not change, or there is no sound in all modes	Symptom Troubleshooting (see <u>WIRELESS HEADPHONE SOUND IS WEAK, SOUND DISTORTED, THERE IS STATIC, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND IN ALL MODES)</u>)	Wireless headphone batteries (see <u>WIRELESS HEADPHONE BATTERY REPLACEMENT)</u>)
Wireless remote control does not work (all buttons)	Symptom Troubleshooting (see <u>WIRELESS REMOTE CONTROL DOES NOT WORK (ALL BUTTONS))</u>)	Wireless remote control batteries (see <u>WIRELESS REMOTE CONTROL BATTERY</u>)

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

		<u>REPLACEMENT)</u>
Wireless remote control does not work (source select buttons)	Symptom Troubleshooting (see <u>WIRELESS REMOTE CONTROL DOES NOT WORK (SOURCE SELECT BUTTONS))</u>	Wireless remote control batteries (see <u>WIRELESS REMOTE CONTROL BATTERY REPLACEMENT)</u>
Wireless remote control does not work (rear power button)	Symptom Troubleshooting (see <u>WIRELESS REMOTE CONTROL DOES NOT WORK (REAR POWER BUTTON))</u>	Wireless remote control batteries (see <u>WIRELESS REMOTE CONTROL BATTERY REPLACEMENT)</u>
Screen backlight does not dim/ remains dim	Symptom Troubleshooting (see <u>SCREEN BACKLIGHT DOES NOT DIM/REMAINS DIM)</u>	
An error code is displayed	Enter the self-diagnostic function with the wireless remote control (see <u>SELF-DIAGNOSTIC FUNCTION)</u> , then scroll to function 3.	
DVD player unit DISC IN indicator or DISC DISTINCTION indicator does not come on/does not go off	Symptom Troubleshooting (see <u>DVD PLAYER UNIT DISC IN INDICATOR OR DISC DISTINCTION INDICATOR DOES NOT COME ON/ DOES NOT GO OFF)</u>	
Wireless remote control illumination does not come on	Symptom Troubleshooting (see <u>WIRELESS REMOTE CONTROL ILLUMINATION DOES NOT COME ON)</u>	Wireless remote control batteries (see <u>WIRELESS REMOTE CONTROL BATTERY REPLACEMENT)</u>

SYSTEM DESCRIPTION

The rear entertainment system is composed of a special DVD player unit built into the audio unit, a rear controller, and screen wireless headphones, wireless remote control, and auxiliary jack assembly.

SYSTEM COMPONENTS

Audio Unit

- Provides rear system power
- Provides control for the rear functions
- Allows the rear display to show information about the rear system status
- Provides a method to stop the rear passenger's from having control of the rear system
- Built into the DVD player

Rear Screen

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2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

- Has a flip down 9" display
- Displays information on the LCD
- Display does not work when pushed beyond the detent
- Provides output for infrared (IR) headphones

Wireless Headphone

- Has automatic ON/OFF control
- Has volume control
- Works only in the second and third row seats, not outside the vehicle or in the front seats

Wireless Remote Control

Allows remote operation of the audio functions.

Auxiliary Jack Assembly

- Allows input from standard video game and video equipment using RCA connectors
- Provides three headphone connectors and separate volume controls

Audio Remote Switch

Allows operation of the audio functions from the steering wheel.

Voice Control Switch

Allows operation of the audio functions through the navigation system.

Navigation Display

Allows operation of the audio functions through the navigation system.

OPERATING METHOD

NOTE: Refer to the Owner's Service Information for full operation details.

Audio Unit

1. Turn the rear entertainment system ON.

After the main power switch VOL PUSH PWR (A) is turned ON, push REAR PWR switch (B) to turn the rear system ON. To turn the rear system OFF, push REAR PWR, and to turn the whole system OFF, push VOL PUSH PWR.

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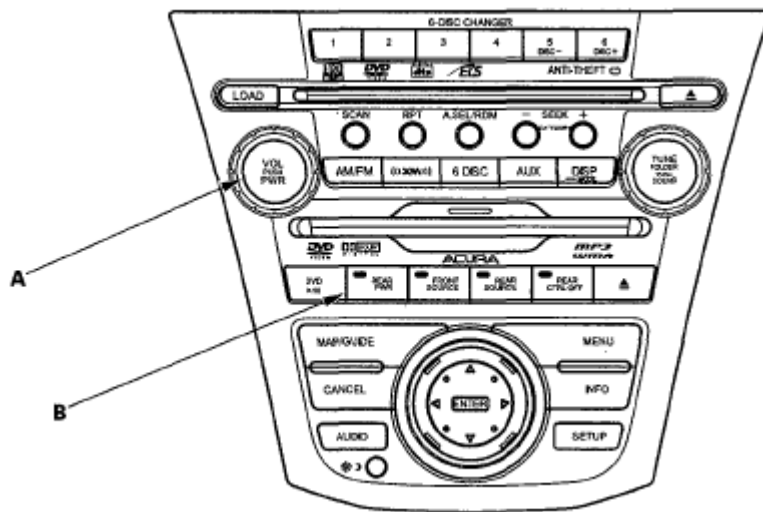


Fig. 3: Identifying Audio Unit Main Power Switch VOL PUSH PWR And REAR PWR Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Using the select button.
 - Front source button, indicator light ON: control of front source from audio unit.
 - Rear source button, indicator light ON: control of rear source from audio unit.
 - The rear source will automatically revert back to front source after 10 seconds if no operation is done.

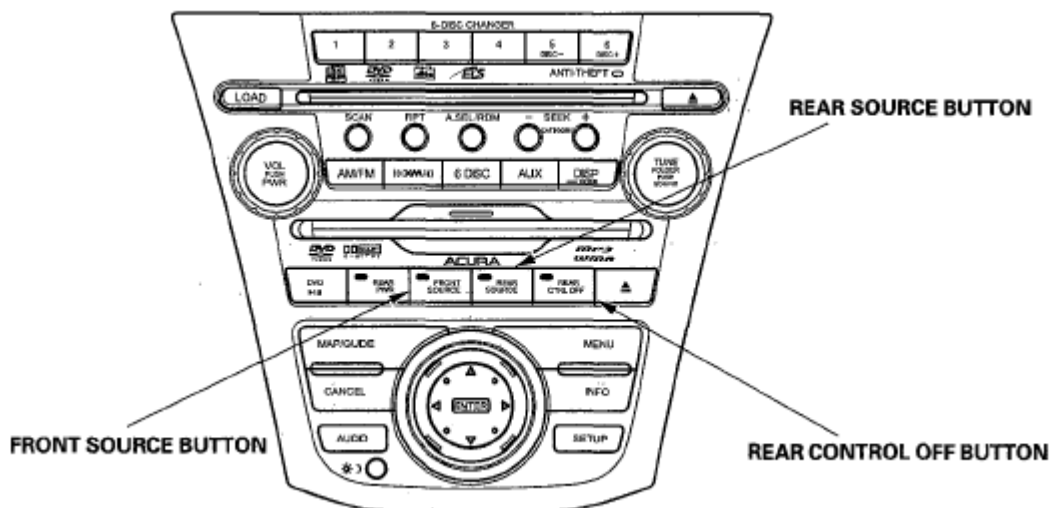


Fig. 4: Identifying Rear And Front Source, And Rear Control Off Buttons
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Rear Control Enable/Disable.

By pushing the REAR CTRL OFF button the LED indicator will be ON and the rear seat passenger's will not be able to control the system from the remote. The rear display will show rear control OFF. Press

button again to enable.

4. Viewing the display.

The display (A) (built into the climate control unit) indicates the status of the front and rear systems.

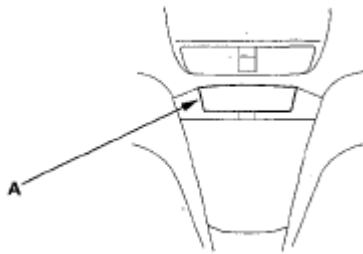


Fig. 5: Identifying Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Rear speaker automatic OFF Function.

By turning the rear speaker OFF you can reduce the interference between the front source and the rear source (Headphone). The speaker will be turned ON/OFF automatically when the front and rear have different sources selected. When the rear speaker is in the OFF mode, the LCD display on the audio unit displays the rear speaker icon shown.



Fig. 6: Identifying Rear Speaker Automatic OFF

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Wireless Remote Control

Remote control switch use and function.

- With Rear Power ON and rear control enabled, the rear passengers can control the functions with the remote, except volume.
- Rear passenger can control the functions, unless the rear control has been turned off by the front user.

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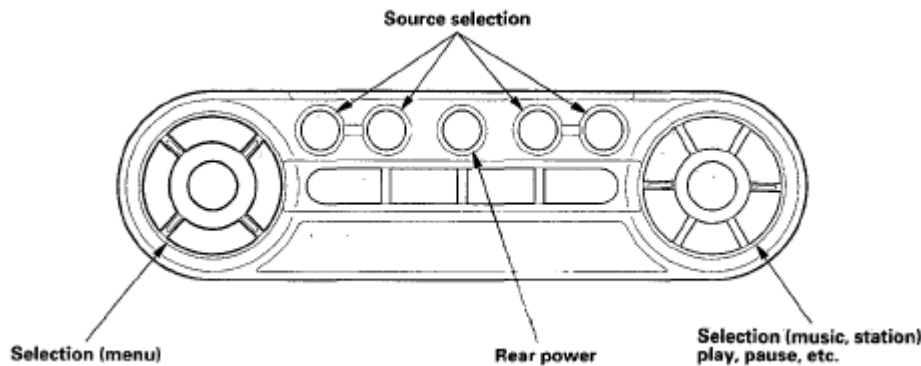


Fig. 7: Identifying Source Selection, Rear Power, Selection (Menu) And Selection (Music, Station)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR CONTROLLER AND SCREEN CONNECTOR FOR INPUTS AND OUTPUTS

When replacing a rear controller and screen connector, match the wires to the cavities listed in the following table.

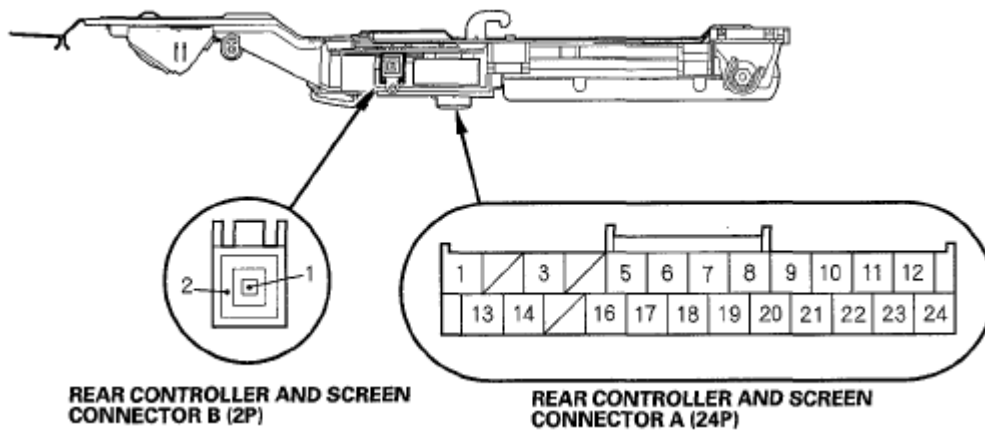


Fig. 8: Identifying Rear Controller And Screen Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)

REAR CONTROLLER AND SCREEN CONNECTOR A (24P) TERMINAL REFERENCE

Cavity	Wire	Connect to
A1	GRN	Rear controller and screen (+B)
A3	LT BLU	Audio unit (RR BUS+)
A5	PNK	Audio unit (RR NTSC GND)
A6	WHT	Audio unit (RES AUDIO OUT GND)
A7	BRN ⁽¹⁾	Audio unit (RES AUDIO OUT SH)
A8	PNK	Auxiliary jack assembly (HP R/L OUT GND)

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX**

A9	BRN ⁽¹⁾	Auxiliary jack assembly (HP R/L OUT SH)
A10	LTGRN	Audio unit (SCTY4)
A11	LT BLU	Lights-on signal
A12	YEL	Audio unit (SYSTEM ACC)
A13	BRN ⁽¹⁾	Audio unit (RR BUS SH)
A14	PUR	Audio unit (RR BUS-)
A16	BLU	Audio unit (RR NTCS)
A17	BRN ⁽¹⁾	Audio unit (RR NTSC SH)
A18	RED	Audio unit (RES AUDIO OUT L)
A19	BLK	Audio unit (RES AUDIO OUT R)
A20	BLU	Auxiliary jack assembly (HP R OUT)
A21	GRN	Auxiliary jack assembly (HP L OUT)
A22	PNK	Navigation (SCTY3)
A23	RED	Dash lights brightness controller
A24	BLK	Ground (G506)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the schematic.

REAR CONTROLLER AND SCREEN CONNECTOR B (2P)**REAR CONTROLLER AND SCREEN CONNECTOR B (2P) TERMINAL REFERENCE**

Cavity	Wire	Connect to
B1	--	Audio unit (DIG AUDIO SIG)
B2	--	Audio unit (DIG AUDIO SH)

AUXILIARY JACK ASSEMBLY CONNECTOR FOR INPUTS AND OUTPUTS (WITH REAR ENTERTAINMENT)

When replacing an auxiliary jack assembly connector, match the wires to the cavities listed in the following table.

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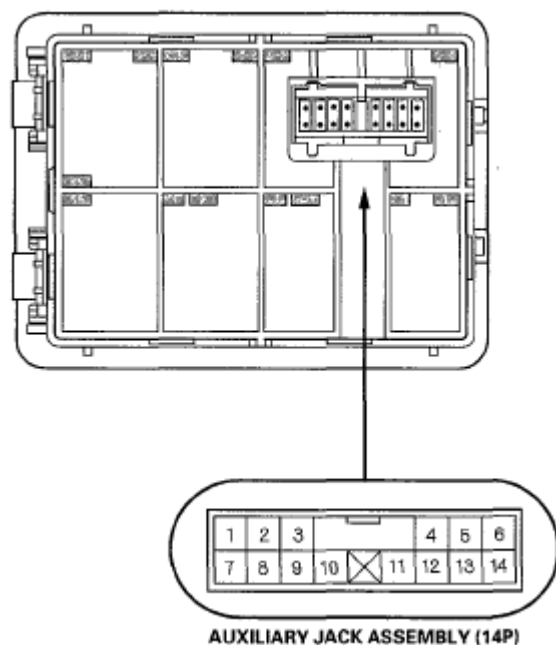


Fig. 9: Identifying Auxiliary Jack Assembly Connector (14P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

AUXILIARY JACK ASSEMBLY CONNECTOR (14P)

(with rear entertainment)

AUXILIARY JACK ASSEMBLY CONNECTOR (14P) TERMINAL REFERENCE

Cavity	Wire	Connect to
1	RED	Dash lights brightness controller
2	LT BLU	Lights-on signal
3	BRN ⁽¹⁾	Rear controller and screen (HP R/L OUT SH)
4	LT BLU	Audio unit (AUX VIDEO IN GND)
5	BRN ⁽¹⁾	Audio unit (AUX AUDIO R/L SH)
6	WHT	Audio unit (COMN CHK)
7	PNK	Audio unit (HP R/L OUT GND)
8	BRN ⁽¹⁾	Audio unit (AUX VIDEO IN SH)
9	PUR	Audio unit (AUX VIDEO IN)
10	GRN	Audio unit (AUX VIDEO L)
11	PNK	Audio unit (AUX AUDIO R/L GND)
12	BLU	Audio unit (AUX AUDIO R)
13	GRN	Audio unit (HP LOUT)
14	BLU	Audio unit (HP ROUT)

(1) The shielded wires have a heat-shrunk tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire listed on the

schematic.

CIRCUIT DIAGRAM

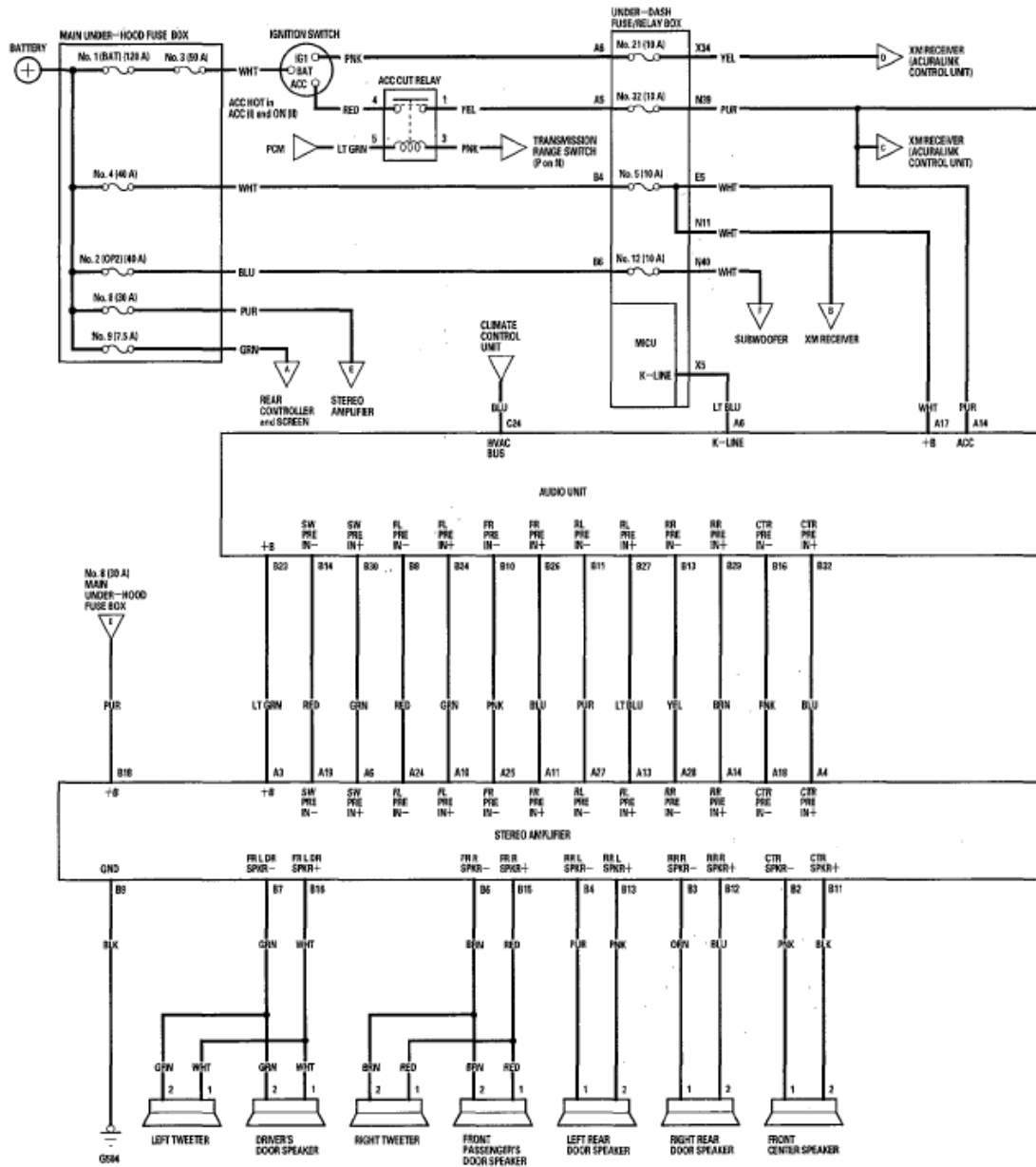


Fig. 10: Rear Entertainment System Circuit Diagram (1 Of 4)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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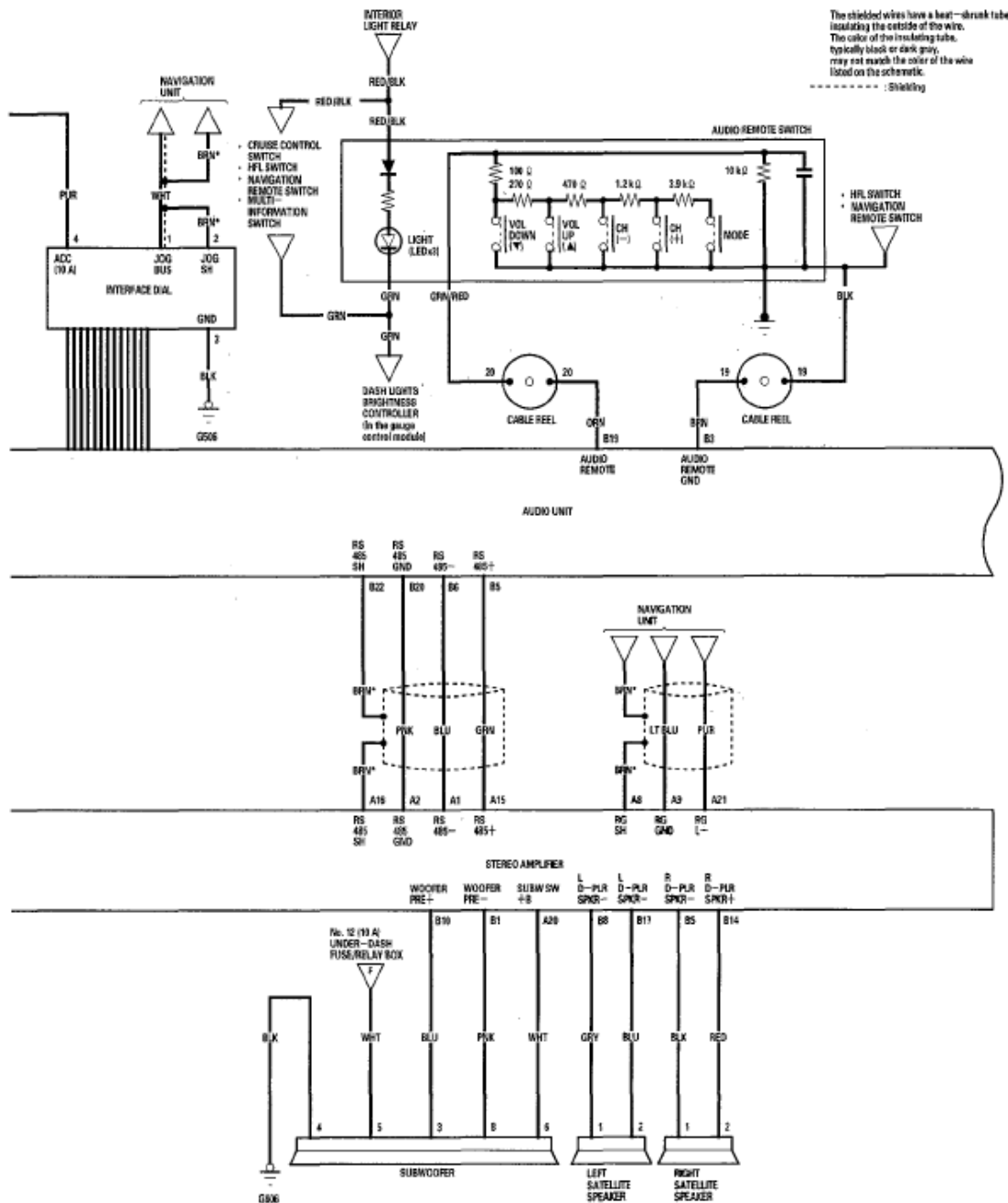


Fig. 11: Rear Entertainment System Circuit Diagram (2 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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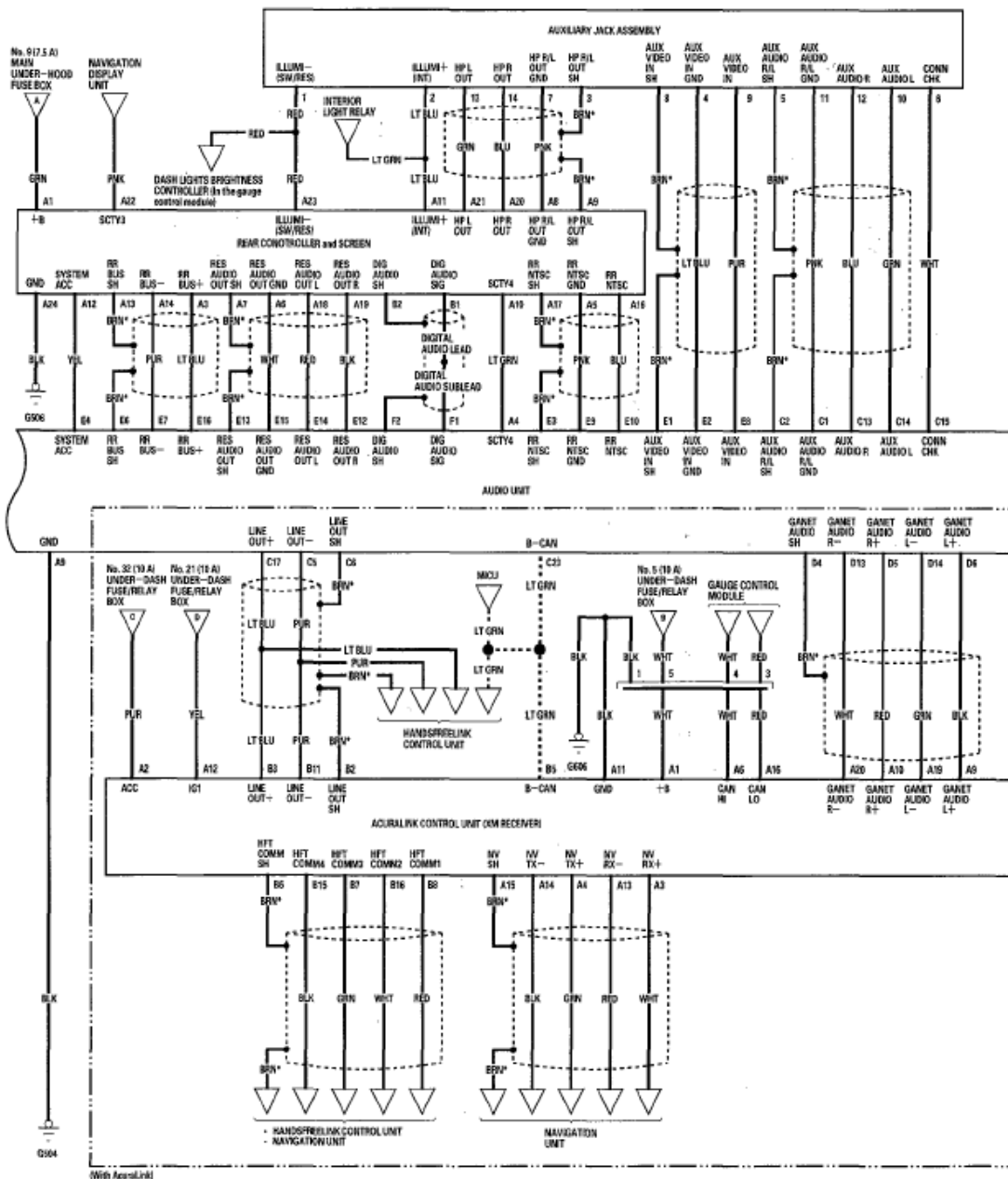
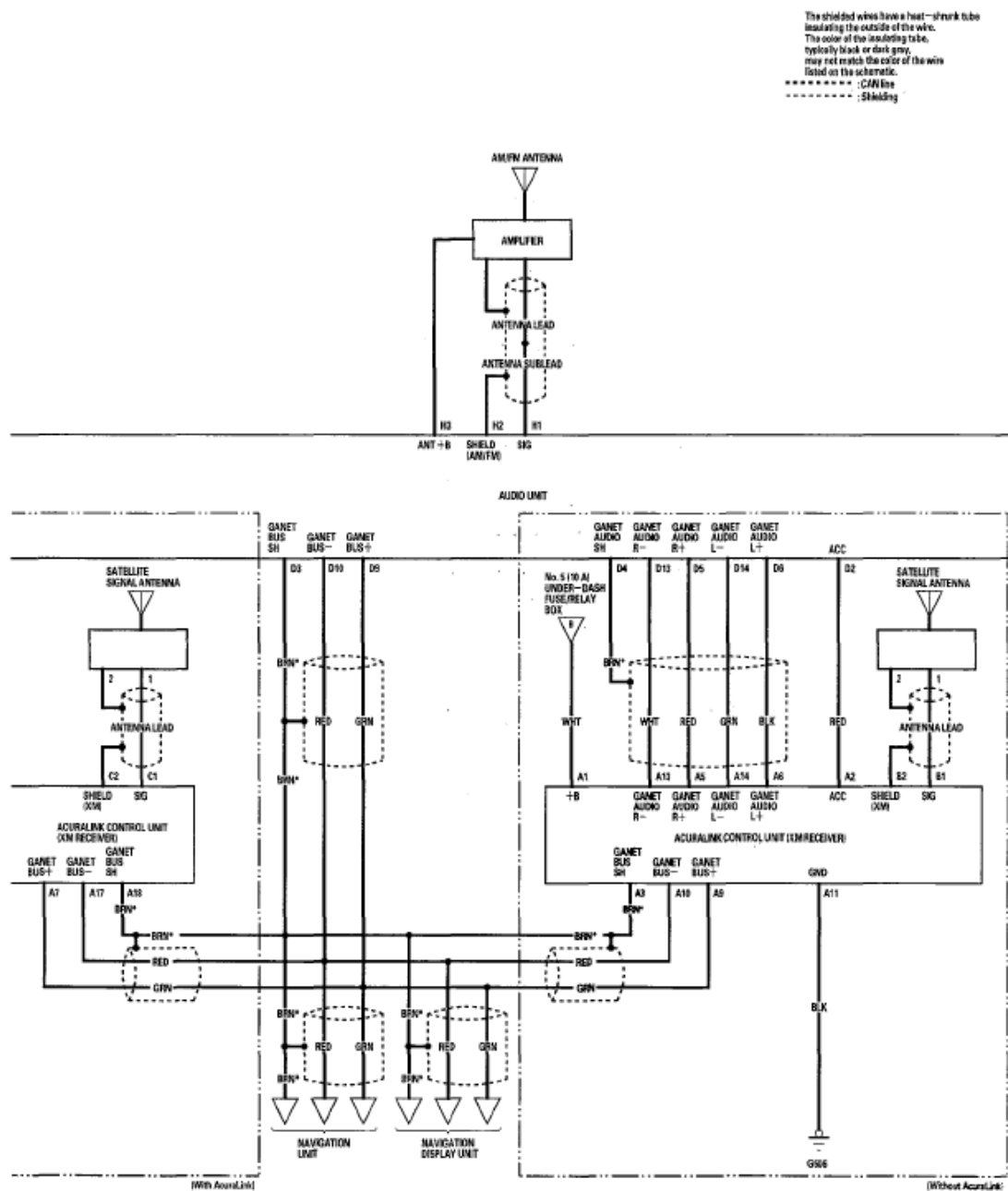


Fig. 12: Rear Entertainment System Circuit Diagram (3 Of 4)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Fig. 13: Rear Entertainment System Circuit Diagram (4 Of 4)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SELF-DIAGNOSTIC FUNCTION

The rear entertainment system has a self-diagnostic function that shows on the display. To run the self-diagnostic function, do the following:

HOW TO ENTER THE SELF-DIAGNOSTIC FUNCTION WITH THE AUDIO UNIT

1. Turn the ignition switch to ON (II).
2. To run the self-diagnostic, press the REAR PWR button four times within 3 seconds and hold the REAR PWR button in on the fourth time until the diagnostic screen appears.

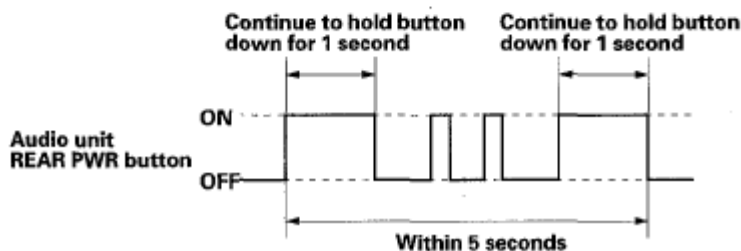
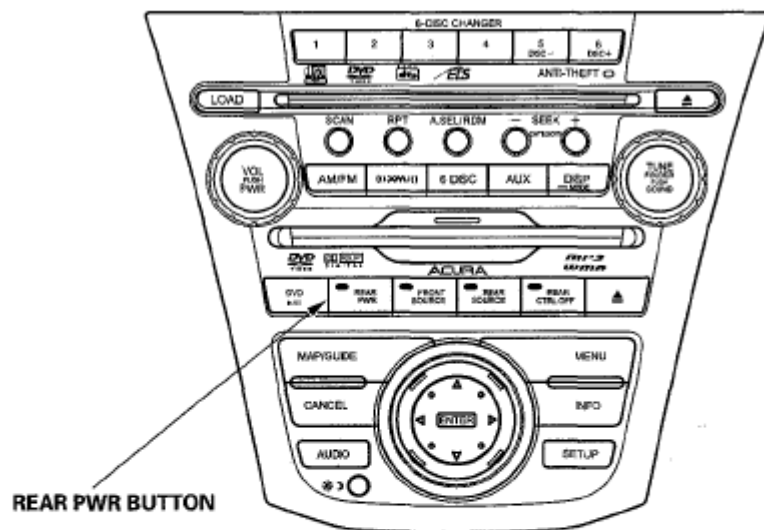


Fig. 14: Audio Unit Blinking Pattern

Courtesy of AMERICAN HONDA MOTOR CO., INC.

HOW TO ENTER FOR SELF-DIAGNOSTIC FUNCTION WITH THE WIRELESS REMOTE CONTROL

1. Turn the ignition switch to ON (II).
2. To run the self-diagnostic, press the DVD/AUX button, the AM/FM button, the FORWARD (double right arrows) button, and then the AM/FM button again. The buttons must be pressed in that order, and within 2 seconds of each other (see table), and the self-diagnostic will begin.

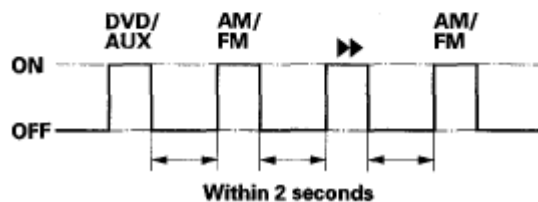
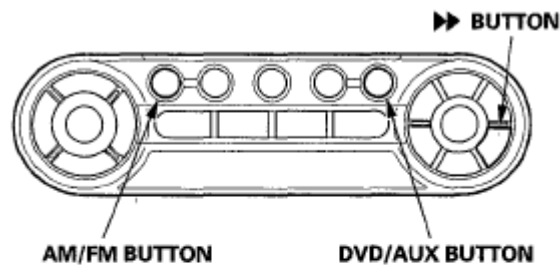


Fig. 15: Wireless Remote Control Blinking Pattern
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CANCELING THE SELF-DIAGNOSTIC FUNCTION

Turn the ignition switch to LOCK (0) to cancel the self-diagnostic function. After completing repair work, run the self-diagnostic function again to make sure that there are no other malfunctions.

SELF-DIAGNOSTIC FUNCTION MODE SELECT

Use the wireless, remote control to navigate within the self-diagnostic function.

LEFT/RIGHT button: Change the function mode

UP/DOWN button: Change the detection

ENTER button: Select the detection point

2008 Acura MDX

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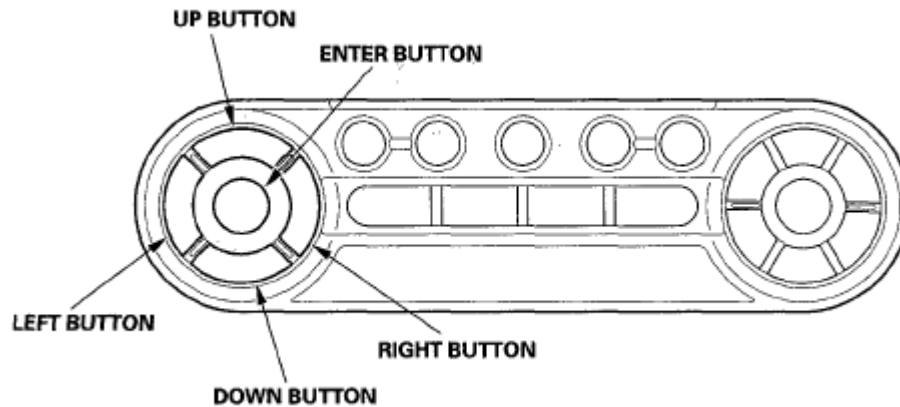


Fig. 16: Identifying LEFT/RIGHT, UP/DOWN And ENTER Buttons
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

MODE SELECT SELF-DIAGNOSTIC FUNCTION CHART

Function No.	Category		Check item or information	Judge display
1	CONNECT	RR DISP	Rear controller and screen connection check	OK or NG with GRN or RED
		H/U	Audio unit connection check	OK or NG with GRN or RED
		AUX	Auxiliary jack assembly connection check	OK or NG with GRN or RED
		XM	XM receiver connection check	OK or NG with GRN or RED
		DIGITAL LINE	Digital line connection check	OK or NG with GRN or RED
2	UNIT CHECK	DISPLAY VER	Rear controller and screen version and soft release day information	--
		SUB-M VER	Rear controller and screen sub u-com version and soft release day information	--
		COSD VER	Rear controller and screen COSD version and soft release day information	--
		OSD VER	Rear controller and screen COSD version and soft release day information	--
		RAM CHECK	Rear controller and screen RAM check	OK or NG
		DISP PANEL	Screen open or close condition	OPEN or NG
		+B VOLT	+B voltage	* * V or Err
		TEMP.	Screen temperature	* * h or Err

SELF-DIAGNOSTIC FUNCTION MODE DISPLAY

1. CONNECT

The screen will display connection check status for each device while in this self-diagnostic mode.

- If the RAM condition for the RR DISP (rear controller and screen) is faulty, the screen will display NG (red color).
- If the connection for the H/U (audio unit) is XM (XM receiver), or AUX (auxiliary jack assembly) is faulty, the screen will display NG (red color).
- If the digital line connection between the rear controller and screen and audio unit is faulty, the screen will display NG (red color).

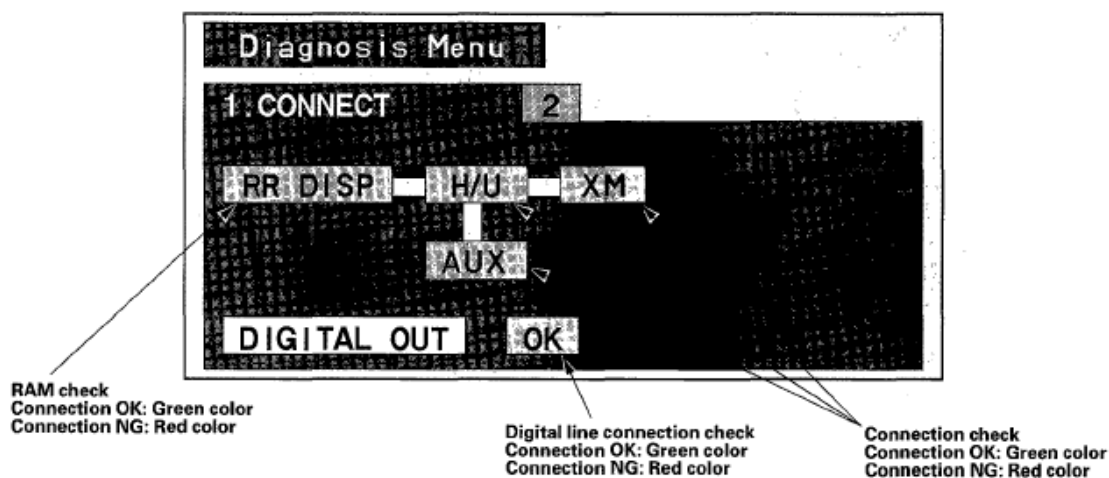


Fig. 17: Diagnosis Screen Display - Connection Check Status
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. UNIT CHECK

The screen will display device version, self-diagnostic status and screen status while in this self-diagnostic mode.

- If a connection to a device is no-good, the screen will display--.
- If there is a change (analog to digital) of signal error for the categories +B VOLT or TEMP, the screen will display Err.
- The screen indicates open or closed condition of the screen.

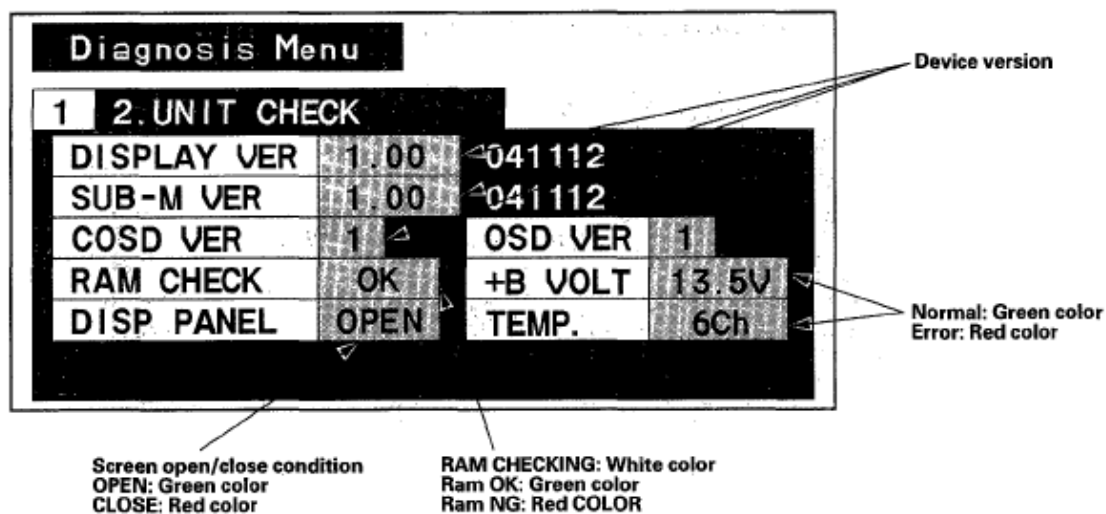


Fig. 18: Diagnosis Screen Display - Device Version
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING

RES DISC DOES NOT LOAD

NOTE:

- Discs with labels should not be used in the DVD player unit (built into the audio unit). They may damage the player mechanism.
- Make sure the CD or DVD disc is compatible with the system (refer to the Owner's service Information for more information).

1. Turn the ignition switch to ON (II).
2. Try loading a disc.

Does the disc load?

YES - Intermittent failure, the DVD player unit is OK at this time.

NO - Go to step 3.

3. Insert a known-good disc.

Does the disc load?

YES - The original disc is faulty.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

RES DISC DOES NOT EJECT

NOTE: Discs with labels should not be used in the DVD player unit (built into the audio unit). They may damage the player mechanism.

1. Turn the ignition switch to ON (II).
2. Try ejecting a disc.

Does the disc eject?

YES - Intermittent failure, the DVD player unit (built into the audio unit) is OK at this time.

NO - Replace the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

RES DISC DOES NOT PLAY

NOTE:

- CD-R/RWs and DVD-R/RWs will not work in the DVD player unit (built into the audio unit).
- Damaged or contaminated discs may not always play properly.
- Discs with labels should not be used in the DVD player unit (built into the audio unit). They may damage the player mechanism.
- You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.

1. Turn the ignition switch to ON (II).
2. Try loading a DVD.

Does the DVD play (display and sound)?

YES - Intermittent failure, the DVD player unit (built into the audio unit) is OK at this time.

NO - Go to step 3.

3. Insert a known-good DVD.

Does the DVD play (display and sound)?

YES - The original DVD is faulty or is an unreadable format.

NO - Go to step 4.

4. Do the self-diagnostic function (see **HOW TO ENTER FOR SELF-DIAGNOSTIC FUNCTION WITH THE WIRELESS REMOTE CONTROL**), then select function number 1 for Connect of the rear entertainment system (see **SELF-DIAGNOSTIC FUNCTION MODE SELECT**).

Is the audio unit connect condition OK?

YES - Go to step 5.

NO - Repair the poor connection in the audio unit connectors.

5. Substitute a known-good audio unit, then test the audio unit.

Is the sound normal?

YES - Replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Check for loose wires or poor connections at audio unit connectors, and recheck.

RES DISC SKIPS

NOTE:

- **Copy protected material on a CD-R/RW or DVD-R/RW disc will skip or not play.**
- **Check for scratches, smudges, and fingerprints on the disc.**

1. Turn the ignition switch to ON (II).
2. Try playing a disc.

Does the disc skip ?

YES - Go to step 3.

NO - Intermittent failure, the DVD player unit (built into the audio unit) is OK at this time.

3. Clean the disc, and recheck.

Does the disc play properly ?

YES - The original disc was dirty.

NO - Go to step 4.

4. Insert a known-good disc.

Does the disc play properly?

YES - The original disc is dirty or the wrong type.

NO - Go to step 5.

5. Compare the disc skipping to a known-good vehicle under the same conditions.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

Does the known-good vehicle's disc skip under the same conditions (over the same bumps and on the same rough roads)?

YES - Operation is normal.

NO - Substitute a known-good audio unit, and recheck. If the symptom/indication goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

BLACK PICTURE IS SHOWN ON THE DISPLAY

NOTE:

- If the navigation system, or XM radio do not function properly, troubleshoot and resolve those problems first.
- You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.

1. With the ignition switch to ON (II), push the rear power switch ON to see if the screen turns ON.

Does the screen come ON?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Check for brightness settings in the display set up (refer to the Owner's Service Information for more information).

Are the display setting set properly?

YES - Go to step 3.

NO - Adjust the display setting and recheck the function.

3. Check the No. 9 (7.5 A) fuse in the main under-hood fuse box.

Is the fuse OK?

YES - Go to step 4.

NO - Replace the fuse, and recheck.

4. Remove the display cover (see **SPEAKER TEST/REPLACEMENT**). Then check that the rear controller and screen is properly connected.

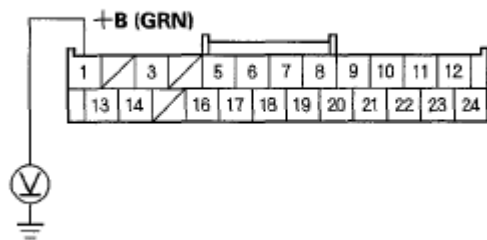
Is the rear controller and screen connected properly?

YES - Go to step 5.

NO - Reconnect the connector, and recheck the function.

5. Disconnect the rear controller and screen connector A (24P).
6. Measure the voltage between the No. 1 terminal of the rear controller and screen connector A (24P) and body ground.

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)



Wire side of female terminals

Fig. 19: Identifying Voltage Between Rear Controller And Screen Connector A (24P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

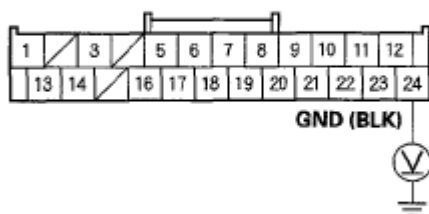
Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire(s) between the No. 9 (7.5 A) fuse in the main under-hood fuse box and the rear controller and screen.

7. Reconnect the rear controller and screen connector A (24P).
8. Measure the voltage between the rear controller and screen connector A (24P) No. 24 terminal and body ground.

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)



Wire side of female terminals

Fig. 20: Identifying Voltage Between Rear Controller And Screen Connector A (24P) Terminal 24 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

Is there less than 0.1 V?

YES - Replace the rear controller and screen.

NO - Repair open in the wire between the rear controller and screen connector A (24P) No. 24 terminal and body ground (G506).

WHITE PICTURE IS SHOWN ON THE DISPLAY/ DISPLAY LOCK

1. With the ignition switch to ON (II), push the rear power switch ON to see if the screen turns ON,

Is it normal?

YES - Operation is normal.

NO - Go to step 2.

2. Run the rear entertainment system self-diagnostic (see **SELF-DIAGNOSTIC FUNCTION**).

Is it normal?

YES - Operation is normal.

NO - Substitute a known-good rear controller and screen, and recheck. If the symptom/indication goes away, replace the original rear controller and screen.

DISPLAY AREA PICTURE HAS LINES OR HAS SHIFTED

1. With the ignition switch to ON (II), push the rear power switch ON to see if the screen turns ON.

Does the screen come have lines or has the image shifted?

YES - Go to step 2.

NO - Operation is normal at this time.

2. Check the screen mode set up (refer to the Owner's Service Information for more information).

Are the settings set properly?

YES - Substitute a known-good rear controller and screen, and recheck. If the symptom/indication goes away, replace the original rear controller and screen.

NO - Adjust the display settings, and recheck the function.

DISPLAY DOES NOT GO OFF WHEN SCREEN IS CLOSED

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

1. With the ignition switch to ON (II) and screen open, push the rear power switch ON. Then close the screen by pivoting it up.

Does the screen go off?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Check the lock switch.

Does the screen close securely?

YES - If the screen securely closes and the screen does not go off, replace it.

NO - Relock the screen, and recheck. If the screen will not securely lock into position, replace it.

NO DISPLAY APPEARS ON THE REAR CONTROLLER INDICATOR

NOTE: **You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.**

1. With the ignition switch to ON (II), push the rear power switch ON to see if the screen turns ON.

Does the screen come on?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Check the operation and display of the screen, the wireless remote control and the wireless headphone.

Are the operation and display normal?

YES - Faulty rear indicator.

NO -

- Screen faulty: Go to the **BLACK PICTURE IS SHOWN ON THE DISPLAY TROUBLESHOOTING** .
- Wireless remote control faulty. Go to the **WIRELESS REMOTE CONTROL DOES NOT WORK (ALL BUTTONS) TROUBLESHOOTING** .
- Wireless headphone faulty: Go to the **WIRELESS HEADPHONE SOUND IS WEAK, DISTORTED, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND IN ALL MODES TROUBLESHOOTING** .

NO SOUND/NO DISPLAY WITH AUXILIARY VIDEO UNIT INPUTS

NOTE:

- Check that the auxiliary device is properly connected, and has fresh batteries or power source connected.
- Do not connect an RCA type shorting plug with the auxiliary jack assembly 14P connector, or system damage may occur.
- You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.

1. Connect an auxiliary video source, and check the volume/display operation.

Does the display operate properly and does the audio sound normal?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Substitute a known-good auxiliary video unit and recheck.

Does the auxiliary video unit operate properly?

YES - Original auxiliary video unit faulty.

NO - Go to step 3.

3. Do the self-diagnostic function (see **HOW TO ENTER FOR SELF-DIAGNOSTIC FUNCTION WITH THE WIRELESS REMOTE CONTROL**), then select function number 1 for Connect of the rear entertainment system (see **SELF-DIAGNOSTIC FUNCTION MODE SELECT**).

Is the auxiliary jack assembly connect condition OK?

YES - Go to step 8.

NO - Go to step 4.

4. Remove the auxiliary jack assembly (see **AUXILIARY JACK ASSEMBLY REPLACEMENT**). Check that the auxiliary jack assembly is properly connected.

Is the auxiliary jack assembly connected properly?

YES - Go to step 5.

NO - Reconnect the connector, and recheck the function.

5. Turn the ignition switch to LOCK (0).

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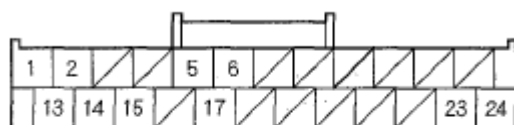
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- Disconnect the audio unit connector C (24P), E (16P), and the auxiliary jack assembly 14P connector.
- Check for continuity between audio unit connector C(24P), E (16P)and body ground according to the table. Then check same terminals for continuity to the harness shield terminals C2 and E1.

CONNECTOR TERMINAL REFERENCE

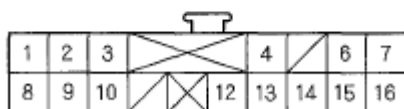
Audio unit connector	Wire color
C1	PNK
C13	BLU
C14	GRN
E2	LTBLU
E8	PUR

AUDIO UNIT CONNECTOR C (24P)



Wire side of female terminals

AUDIO UNIT CONNECTOR E (16P)



Wire side of female terminals

Fig. 21: Identifying Audio Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Short in the wire between the audio unit and the auxiliary jack assembly. Replace the appropriate shielded harness.

NO - Go to step 8.

- Check for continuity between the terminal of audio unit connector C (24P) and E (16P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
C2	C1, C13, C14
C1	C13, C14
C13	C14
E1	E2, E8

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

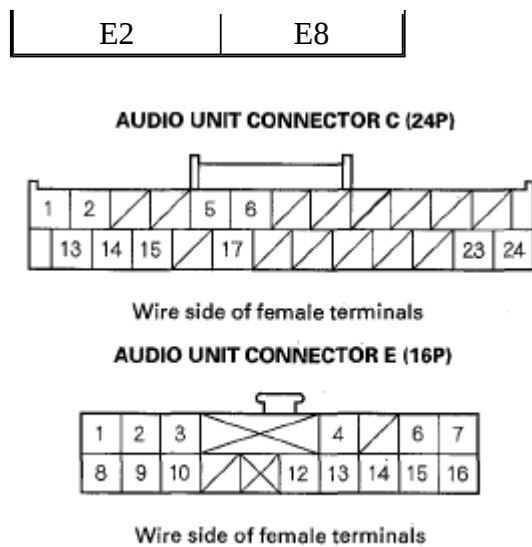


Fig. 22: Identifying Audio Unit Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the audio unit and auxiliary jack assembly (replace the appropriate shielded harness).

NO - Go to step 9.

9. Check for continuity between the audio unit connector C (24P), E (16P) and auxiliary jack assembly 14P connector according to the table.

CONNECTOR TERMINAL REFERENCE

Audio unit connector	Auxiliary jack assembly connector	Wire color
C1	11	PNK
C13	12	BLU
C14	10	GRIM
E2	4	LTBLU
E8	9	PUR

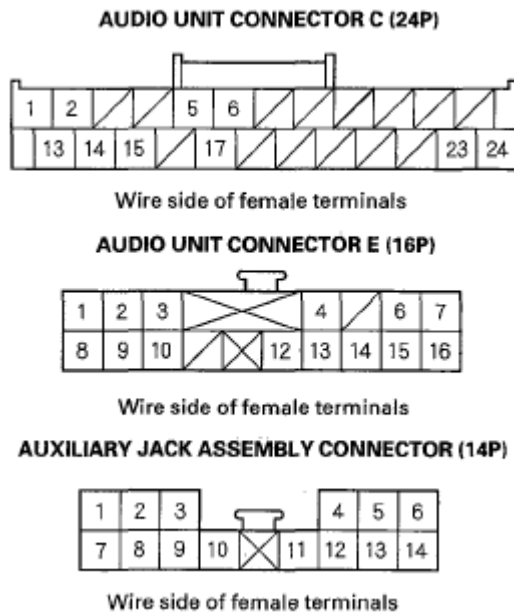


Fig. 23: Identifying Audio Unit And Auxiliary Jack Assembly Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Open in the wire between the audio unit and the auxiliary jack assembly. Replace the appropriate shielded harness.

10. Connect an RCA type shorting plug to each audio input (R and L).

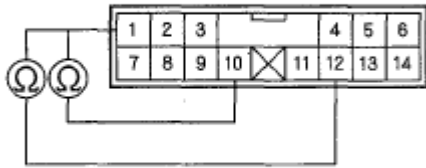
NOTE: Do not connect the RCA type shorting plug with the auxiliary jack assembly 14P connected, or system damage may occur.

11. Check for continuity between the following terminals of the auxiliary jack assembly.

No. 10 <--> No. 1

No. 12 <--> No. 1

AUXILIARY JACK ASSEMBLY



Terminal side of male terminals

Fig. 24: Identifying Continuity Between Auxiliary Jack Assembly Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - Faulty auxiliary jack assembly.

12. Remove the RCA type shorting plug(s) and check the same terminals again for continuity.

Is there continuity?

YES - Faulty auxiliary jack assembly.

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**). If the symptom is still present, substitute a known-good rear controller and screen and recheck. If the symptom/indicated goes away, replace the original rear controller and screen.

WIRED HEADPHONE SOUND IS WEAK, DISTORTED, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND

NOTE: You need to switch the audio unit **REAR PWR** button on for the rear display, remote controls, and sound to operate.

1. Substitute a known-good wired headphone set and recheck.

Does the symptom go away?

YES - Original wired headphone set is faulty.

NO - Go to step 2.

2. Plug the wired headphones into the other ports of the auxiliary jack assembly to check their condition.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

Do all the ports have the same symptom?

YES - Go to step 3.

NO - Faulty auxiliary jack assembly.

3. Check that the wired headphone jack is properly connected.

Is the headphone jack connected properly?

YES - Go to step 4.

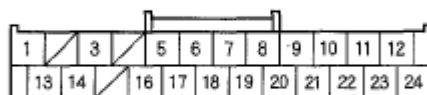
NO - Reconnect the wired headphone connector, and recheck the function.

4. Disconnect the auxiliary jack assembly 14P connector and rear controller and screen 24P connector.
5. Check for continuity between rear controller and screen connector A (24P) and body ground according to the table. Then check same terminals for continuity to the harness shield terminal A9.

CONNECTOR TERMINAL REFERENCE

Rear controller and screen connector	Wire color
A20	BLU
A21	GRN
A8	PNK

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)



Wire side of female terminals

Fig. 25: Identifying Rear Controller And Screen Connector A (24P) Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Short in the wire between the rear controller and screen and the auxiliary jack assembly. Replace the appropriate shielded harness.

NO - Go to step 6.

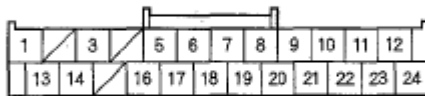
6. Check for continuity between the terminal of rear controller and screen connector A (24P) according to

the table.

CONNECTOR TERMINAL REFERENCE

From terminal.	To terminals
A9	A8, A20, A21
A8	A20, A21
A20	A21

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)



Wire side of female terminals

Fig. 26: Identifying Rear Controller And Screen Connector A (24P) Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity between any of the terminals?

YES - Repair short in the wire(s) between the rear controller and screen and the auxiliary jack assembly. Replace the appropriate shielded harness.

NO - Go to step 7.

7. Check for continuity between the rear controller and screen connector A (24P) and auxiliary jack assembly 14P connector according to the table:

CONNECTOR TERMINAL REFERENCE

Audio unit connector	Auxiliary jack assembly connector	Wire color
A21	13	GRN
A20	14	BLU
A8	7	PNK

AUDIO UNIT CONNECTOR A (17P)



Wire side of female terminals

AUXILIARY JACK ASSEMBLY CONNECTOR (14P)



Wire side of female terminals

Fig. 27: Identifying Audio Unit And Auxiliary Jack Assembly Connector Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty auxiliary jack assembly.

NO - Open in the wire between the rear controller and screen and the auxiliary jack assembly. Replace the appropriate shielded harness.

WIRELESS HEADPHONES DO NOT WORK OR THERE IS STATIC IN DVD MODE

NOTE: Check the battery condition first.

1. Check the diagnosis menu 1. CONNECT and 2. UNIT CHECK of the rear entertainment system self-diagnostic (see **SELF-DIAGNOSTIC FUNCTION**).

If the self-diagnostic status indicator OK (Green color)?

YES - Go to the **WIRELESS HEADPHONE SOUND IS WEAK, DISTORTED, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND IN ALL MODES** (see).

NO - Go to step 2.

2. Remove the audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).
3. Check that the digital audio lead at audio unit connector F (2P) is properly connected to the audio unit.

Is the digital audio lead at audio unit connector F (2P) connected properly?

YES - Go to step 4.

NO - Reconnect the audio unit connector F (2P) and recheck the wireless headphone function.

4. Remove the rear controller and screen (see **REAR CONTROLLER AND SCREEN REMOVAL/INSTALLATION**).

5. Check the digital audio lead at rear controller and screen connector B (2P) is properly connected to the rear controller and screen.

Is the lead at screen connector B (2P) properly?

YES - Go to step 6.

NO - Reconnect the audio unit connector F (2P) and recheck the wireless headphone function.

6. Disconnect the audio unit connector F (2P) from the audio unit and the rear controller and screen.
7. Check for continuity in the digital audio lead between the audio unit connector F (2P) No. 1 terminal and the rear controller and screen connector B (2P) No. 1 terminal.

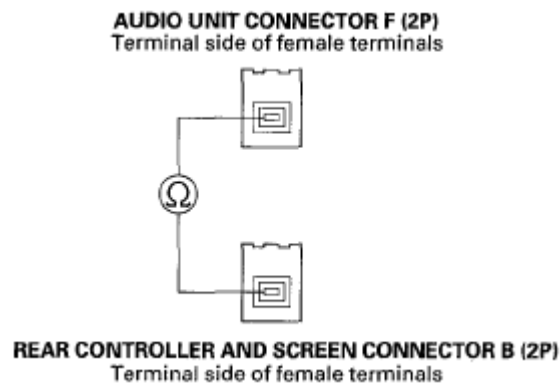


Fig. 28: Identifying Continuity Between Audio Unit F (2P) And Rear Controller And Screen Connector B (2P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

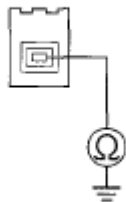
Is there continuity?

YES - Go to step 8.

NO - Replace the digital audio lead.

8. Check for continuity in the digital audio lead between the audio unit connector F (2P) No. 1 terminal and body ground.

AUDIO UNIT CONNECTOR F (2P)



Terminal side of female terminals

Fig. 29: Identifying Continuity Between Audio Unit Connector F (2P) Terminal 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

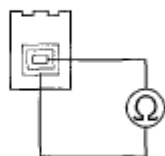
Is there continuity?

YES - Replace the digital audio lead and/or sublead.

NO - Go to step 9.

9. Check for continuity in the digital audio lead between the audio unit connector F (2P) No. 1 terminal and No. 2 terminal.

AUDIO UNIT CONNECTOR F (2P)



Terminal side of female terminals

Fig. 30: Identifying Continuity Between Audio Unit Connector F (2P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Replace the digital audio lead.

NO - Go to step 10.

10. Substitute a known-good audio unit and recheck the wireless headphone function.

Do the wireless headphones work in DVD mode?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

YES - Replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Replace the rear controller and screen.

WIRELESS HEADPHONE SOUND IS WEAK, SOUND DISTORTED, THERE IS STATIC, VOLUME DOES NOT CHANGE, OR THERE IS NO SOUND IN ALL MODES

NOTE: **Check the battery condition first.**

1. Substitute a known-good wireless headphone and recheck.

Does the symptom go away?

YES - Replace the original wireless headphones.

NO - Go to step 2.

2. Check the lens on the rear edge of the rear screen for dirt or damage.

Does the rear screen appear to be in good condition?

YES - Go to step 3.

NO - Substitute a known-good rear controller and screen and recheck.

3. Substitute a known-good audio unit and recheck.

Does the symptom go away?

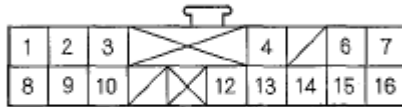
YES - Replace the original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

NO - Go to step 4.

4. Disconnect the audio unit connector E (16P), and the rear controller and screen connector A (24P).
5. Check for continuity between audio unit connector E (16P) and body ground according to the table. Then check the same terminals for continuity to the harness shield terminal E13.

CONNECTOR TERMINAL REFERENCE

Audio unit connector	Wire color
E12	BLK
E14	RED
E15	WHT

AUDIO UNIT CONNETCTOR E (16P)*Wire side of female terminals***Fig. 31: Identifying Audio Unit Connector E (16P) Terminals****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?*

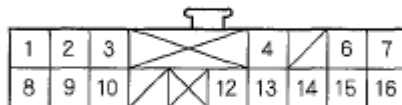
YES - Short in the wire between the audio unit and the rear controller and screen. Replace the appropriate shielded harness.

NO - Go to step 6.

6. Check for continuity between the terminal of audio unit connector E (16P) according to the table.

CONNECTOR TERMINAL REFERENCE

From terminal	To terminals
E13	E12, E14, E15
E15	E12, E14
E12	E14

AUDIO UNIT CONNETCTOR E (16P)*Wire side of female terminals***Fig. 32: Identifying Audio Unit Connector E (16P) Terminals****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity between any of the terminals?*

YES - Repair short in the wire(s) between the audio unit and rear controller and screen. Replace the appropriate shielded harness.

2008 Acura MDX

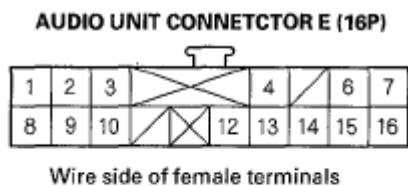
2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

NO - Go to step 7.

7. Check for continuity between the audio unit connector E (16P) and rear controller and screen connector A (24P) according to the table.

CONNECTOR TERMINAL REFERENCE

Audio unit connector	Rear controller and screen connector	Wire color
E12	A19	BLK
E14	A18	RED
E15	A6	WHT



REAR CONTROLLER AND SCREEN CONNECTOR A (24P)

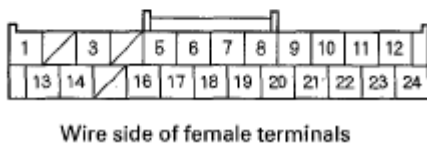


Fig. 33: Identifying Audio Unit And Rear Controller And Screen Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Rear controller and screen faulty.

NO - Repair open in the wire between the audio unit and rear controller and screen.

WIRELESS REMOTE CONTROL DOES NOT WORK (ALL BUTTONS)

NOTE:

- Check the wireless remote control battery condition first.
- Make sure that the rear power and rear control are on (refer to the Owner's Service Information for more information).
- You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.

1. Check the wireless remote control operation.

Does the wireless remote control operate normally?

YES - Operation is normal at this time.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Rear Entertainment System - MDX

NO - Go to step 2.

2. Substitute a known-good wireless remote control and recheck.

Does the wireless remote control operate normally?

YES - Replace the original wireless remote control.

NO - Go to step 3.

3. Check the audio unit operation.

Does the audio unit operate normally?

YES - Go to step 4.

NO - Go to the audio unit power switch will not turn ON (No information display and no sound) troubleshooting (see **POWER SWITCH WILL NOT TURN ON (NO INFORMATION DISPLAY AND NO SOUND)**).

4. Check the rear controller display.

Does the display operate normally?

YES - Replace the rear indicator sub-printed circuit board (see **REAR CONTROLLER AND SCREEN REMOVAL/INSTALLATION**).

NO - Go to the **NO DISPLAY APPEARS ON THE REAR INDICATOR TROUBLESHOOTING** .

WIRELESS REMOTE CONTROL DOES NOT WORK (SOURCE SELECT BUTTONS)

NOTE:

- Check the wireless remote control battery condition first.
- You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.

1. Check the wireless remote control operation.

Does the source select button operate?

YES -Operation is normal at this time.

NO -Go to step 2.

2. Check the diagnosis menu 1. CONNECT status of the rear entertainment system self-diagnostic (see **HOW TO ENTER FOR SELF-DIAGNOSTIC FUNCTION WITH THE WIRELESS REMOTE CONTROL**).

Is the device connect condition OK?

YES - Replace the wireless remote control.

NO - Repair the connection for the device that has a connection error indicated.

WIRELESS REMOTE CONTROL DOES NOT WORK (REAR POWER BUTTON)

NOTE:

- **Check the wireless remote control battery condition first.**
- **The audio unit main and rear pwr must be ON before the wireless remote control power button will operate.**
- **You need to switch the audio unit REAR PWR button on for the rear display, remote controls, and sound to operate.**

1. Check the wireless remote control operation.

Does the audio unit indicate REAR PWR?

YES - Replace the wireless remote control.

NO - Go to step 2.

2. Press the REAR PWR button on the audio unit.

Is the rear power button on ?

YES - Operation is normal at this time.

NO - Replace the wireless remote control.

SCREEN BACKLIGHT DOES NOT DIM/REMAINS DIM

1. Turn the ignition switch to ON (II).
2. Turn the combination light switch ON and OFF.

Does the screen backlight dim with the combination light switch in the ON position?

YES - Operation is normal at this time.

NO - Go to step 3.

3. Check the backlight settings in the display set up (refer to the Owner's Service Information for more information).

Are the display settings set properly?

YES - Go to step 4.

NO - Adjust the display settings, and recheck the function.

4. Turn the ignition switch to LOCK (0).
5. Check that the rear controller and screen and audio unit are properly connected.

Are the connections OK?

YES - Go to step 6.

NO - Reconnect the connector, and recheck the function.

6. Disconnect the rear controller and screen connector A (24P).
7. Turn the ignition switch to ON (II).
8. Measure the voltage between the rear controller and screen connector A (24P) No. 11 terminal and body ground. Turn the combination light switch on and off to see if the voltage changes.

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)

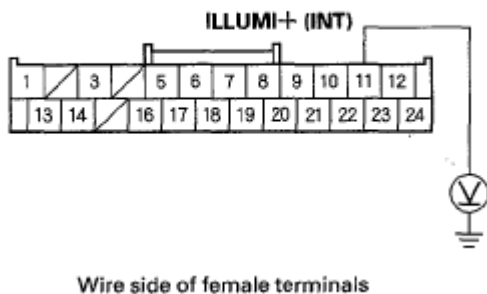


Fig. 34: Identifying Voltage Between Rear Controller And Screen Connector A (24P) Terminal 11 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage with the combination light switch ON?

YES - Go to step 10.

NO - Go to step 9.

9. Check the illumination of several other unit/ switches not related to the rear entertainment system.

Are the buttons illuminated?

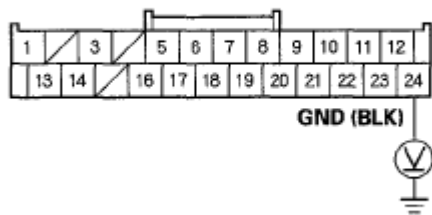
YES - Repair open in the wire(s) between the interior light relay in the auxiliary under-hood relay box and the rear controller and screen.

NO - Troubleshoot the interior lights. Start by checking the interior light relay in the auxiliary under-hood

relay box. If the relay is OK, check the No. 22 (7.5 A) fuse in the under-hood fuse/relay box. If there is OK, check for open in the wire between the under-hood fuse/relay box and the interior light relay.

10. Reconnect the rear controller and screen connector A(24P).
11. Measure the voltage between the rear controller and screen connector A (24P) No. 24 terminal and body ground.

REAR CONTROLLER AND SCREEN CONNECTOR A (24P)



Wire side of female terminals

Fig. 35: Identifying Voltage Between Rear Controller And Screen Connector A (24P) Terminal 24 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there less than 0.1 V?

YES - Replace the rear controller and screen.

NO - Repair open in the wire between rear controller and screen connector A (24P) No. 24 terminal and body ground (G506).

DVD PLAYER UNIT DISC IN INDICATOR OR DISC DISTINCTION INDICATOR DOES NOT COME ON/ DOES NOT GO OFF

1. Check the DVD player unit operation.

Does the DVD player unit operate normally?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Substitute a known-good disc and recheck.

Is it normal?

YES - Original disc is faulty.

NO - Substitute a known-good audio unit and recheck. If the symptom/indicated goes away, replace the

original audio unit (see **AUDIO UNIT REMOVAL/INSTALLATION**).

WIRELESS REMOTE CONTROL ILLUMINATION DOES NOT COME ON

1. Check the wireless remote control operation.

Does the illumination for all the buttons come on (10 seconds)?

YES - Operation is normal at this time.

NO - Go to step 2.

2. Replace the batteries in the wireless remote control and recheck (see **WIRELESS REMOTE CONTROL BATTERY REPLACEMENT**).

Does the wireless control illumination come on?

YES - The original batteries were faulty.

NO - Replace the wireless remote control.

REAR CONTROLLER AND SCREEN REMOVAL/INSTALLATION

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the headliner and display cover.

1. Remove the display cover.

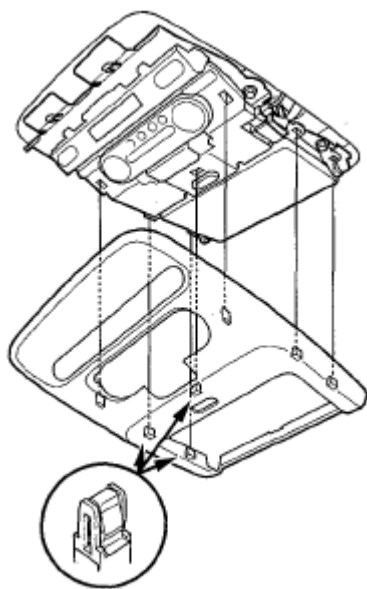


Fig. 36: Identifying Display Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the mounting bolts, disconnect the connectors (A) from the rear controller and screen.

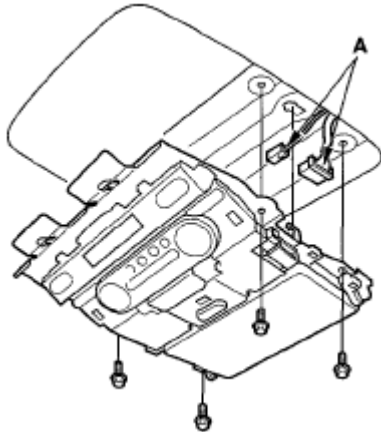


Fig. 37: Identifying Rear Controller And Screen Connectors

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the wireless remote control (A).

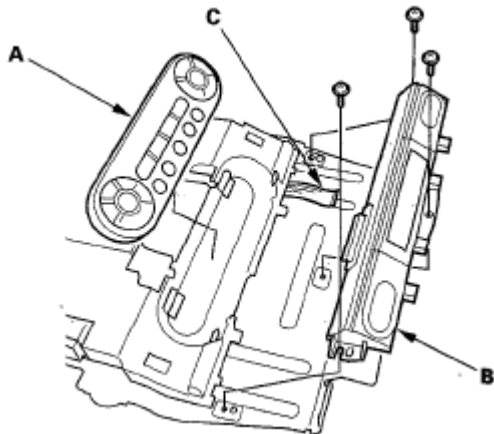


Fig. 38: Identifying Wireless Remote Control, Cable And Rear Indicator

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws from the rear indicator (B).
5. Disconnect the cable (C) from the rear indicator.
6. Remove the screws, then remove the rear indicator sub printed circuit board (A).

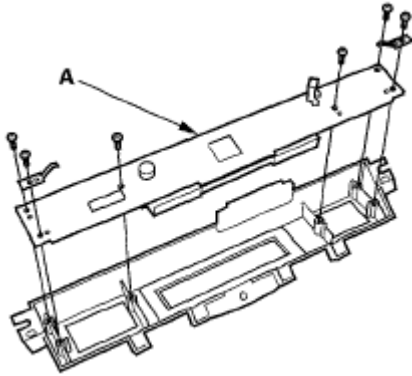


Fig. 39: Identifying Rear Indicator Sub Printed Circuit Board
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screws, then remove the screen (A) and base (B). Disconnect the cable (C).

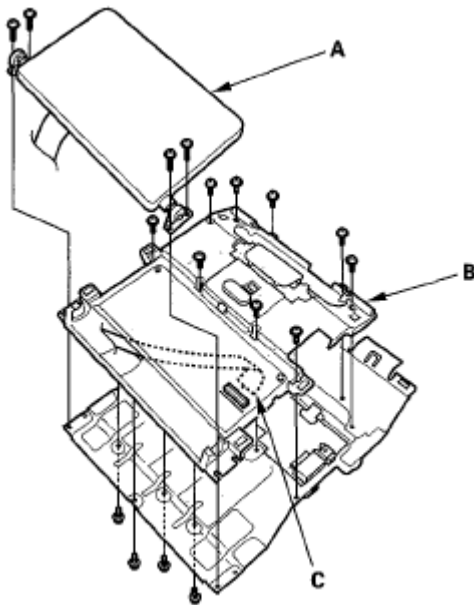


Fig. 40: Identifying Screen, Base And Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the screws and lock switches (A),

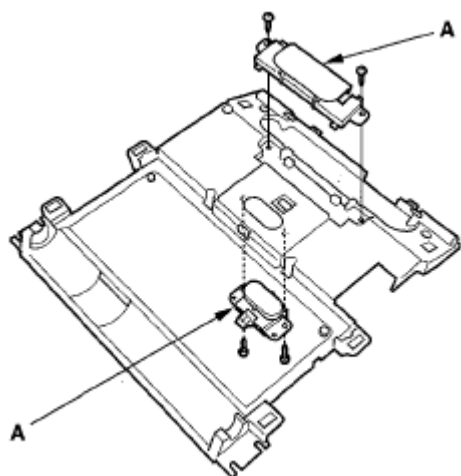


Fig. 41: Identifying Lock Switches

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Disconnect the cable (A), then remove the screws and the rear control main printed circuit board (B).

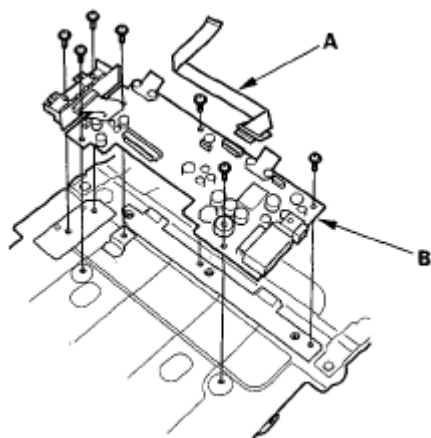


Fig. 42: Identifying Rear Control Main Printed Circuit Board And Cable

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the parts in the reverse order of removal, and make sure the rear controller and screen connector are plugged in properly.

AUXILIARY JACK ASSEMBLY REPLACEMENT

WITH REAR ENTERTAINMENT

1. Gently pull out the console rear trim (A).

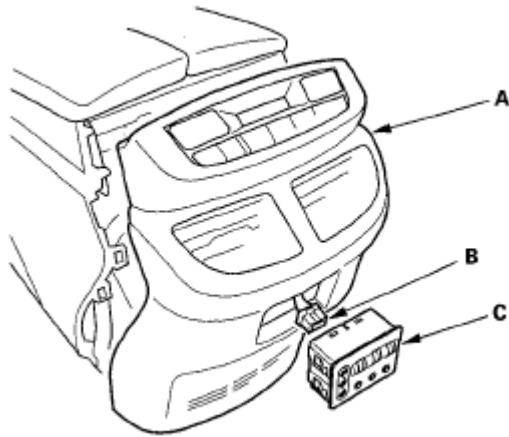


Fig. 43: Identifying Console Rear Trim And Auxiliary Jack Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Disconnect the 14P connector (B), and remove the auxiliary jack assembly (C).
3. Carefully pry out the auxiliary jack assembly.

WIRELESS HEADPHONE BATTERY REPLACEMENT

1. Remove the battery cover (A) from the wireless headphone and lift the cover.

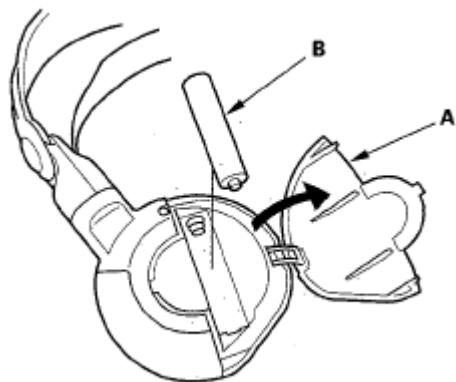


Fig. 44: Identifying Battery Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the battery (B) from the wireless headphone.

Replacement Battery Size: AAA

3. Turn the left earpiece (A), and confirm that the indicator (B) comes on after the battery is replaced.

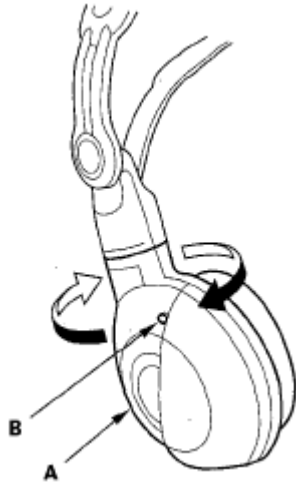


Fig. 45: Identifying Left Earpiece

Courtesy of AMERICAN HONDA MOTOR CO., INC.

WIRELESS REMOTE CONTROL BATTERY REPLACEMENT

1. Remove the cover (A) from the remote control.

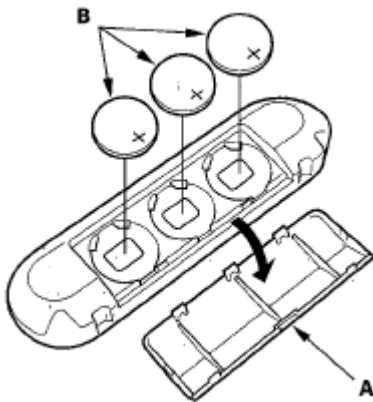


Fig. 46: Identifying Cover From Remote Control

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the batteries (B).

Replacement Battery: BR3032

3. Confirm that each operation works normally after replacing the batteries.

2007-09 ELECTRICAL

Relay and Control Unit Locations-MDX

ENGINE COMPARTMENT

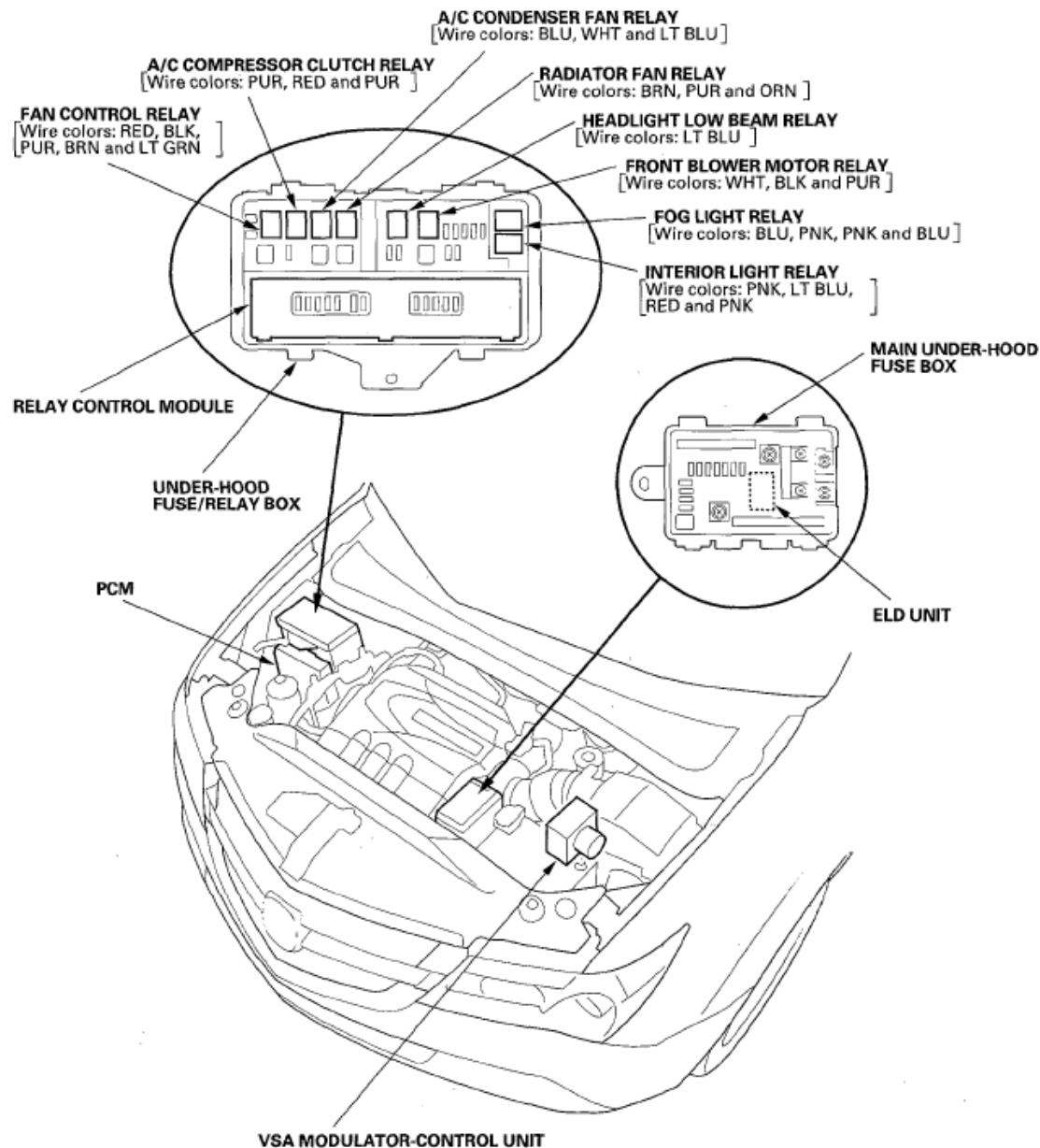


Fig. 1: Identifying Relay And Control Unit Locations (Engine Compartment)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DASHBOARD

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX

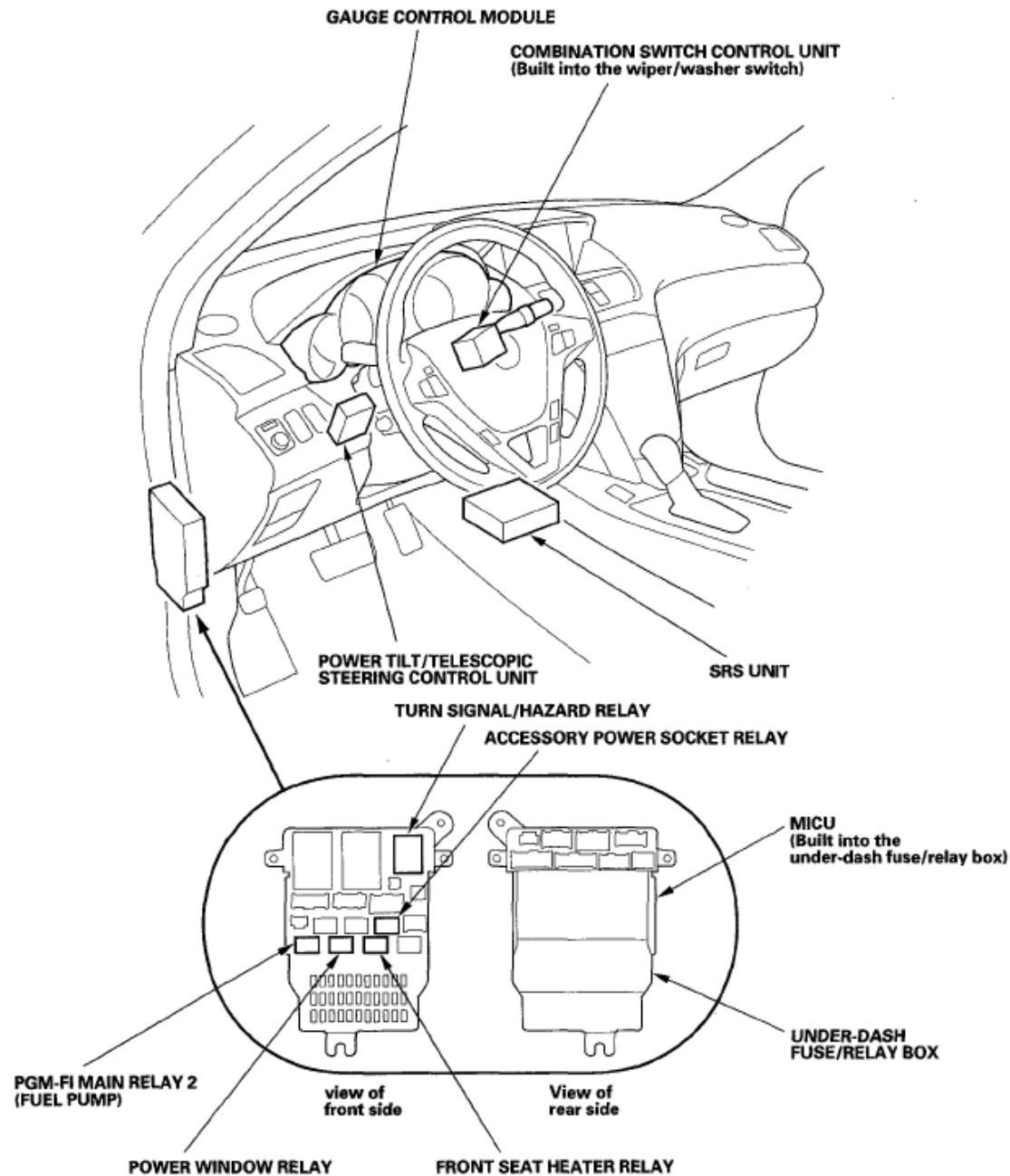


Fig. 2: Identifying Relay And Control Unit Locations (Dashboard) (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX

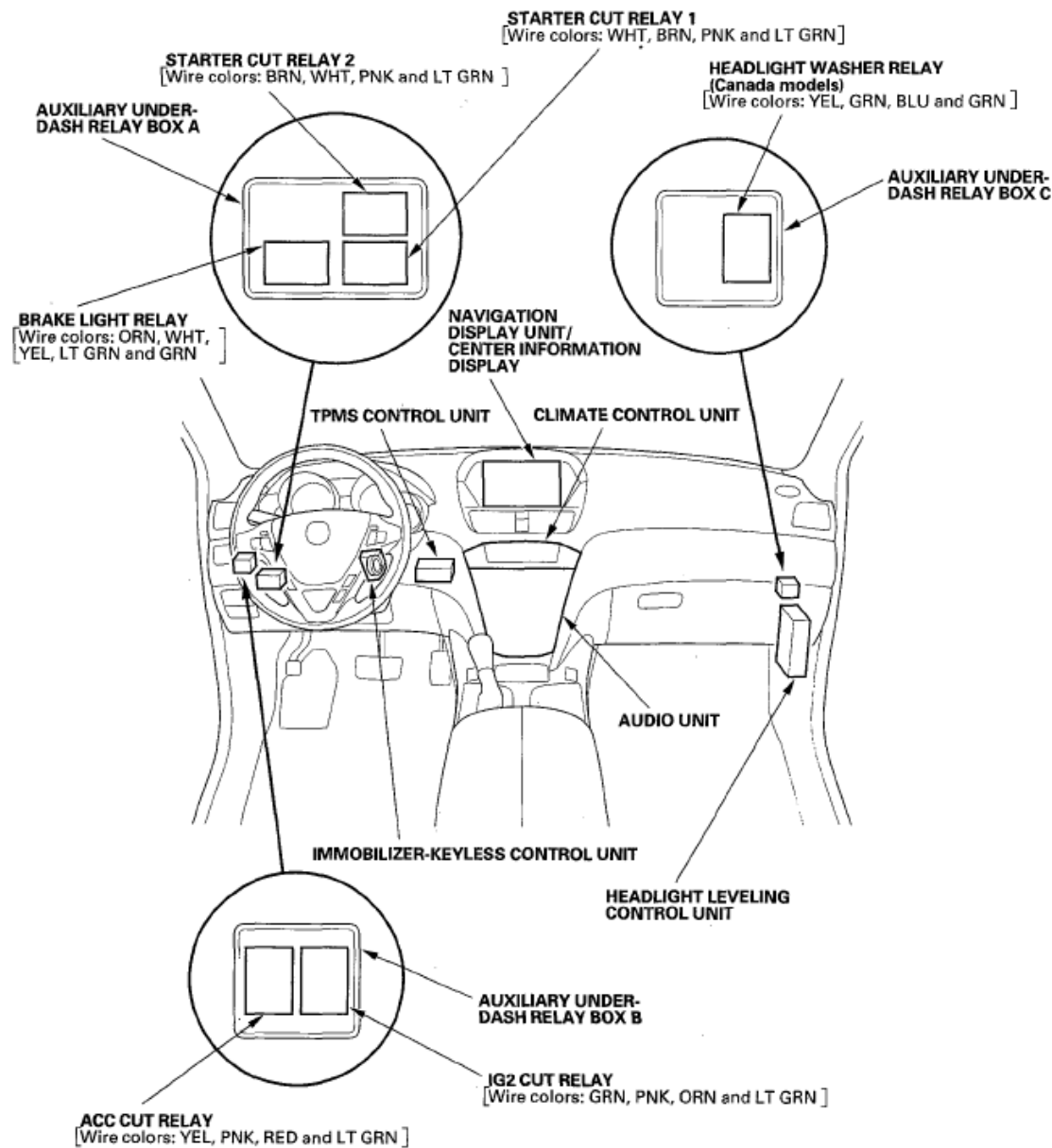
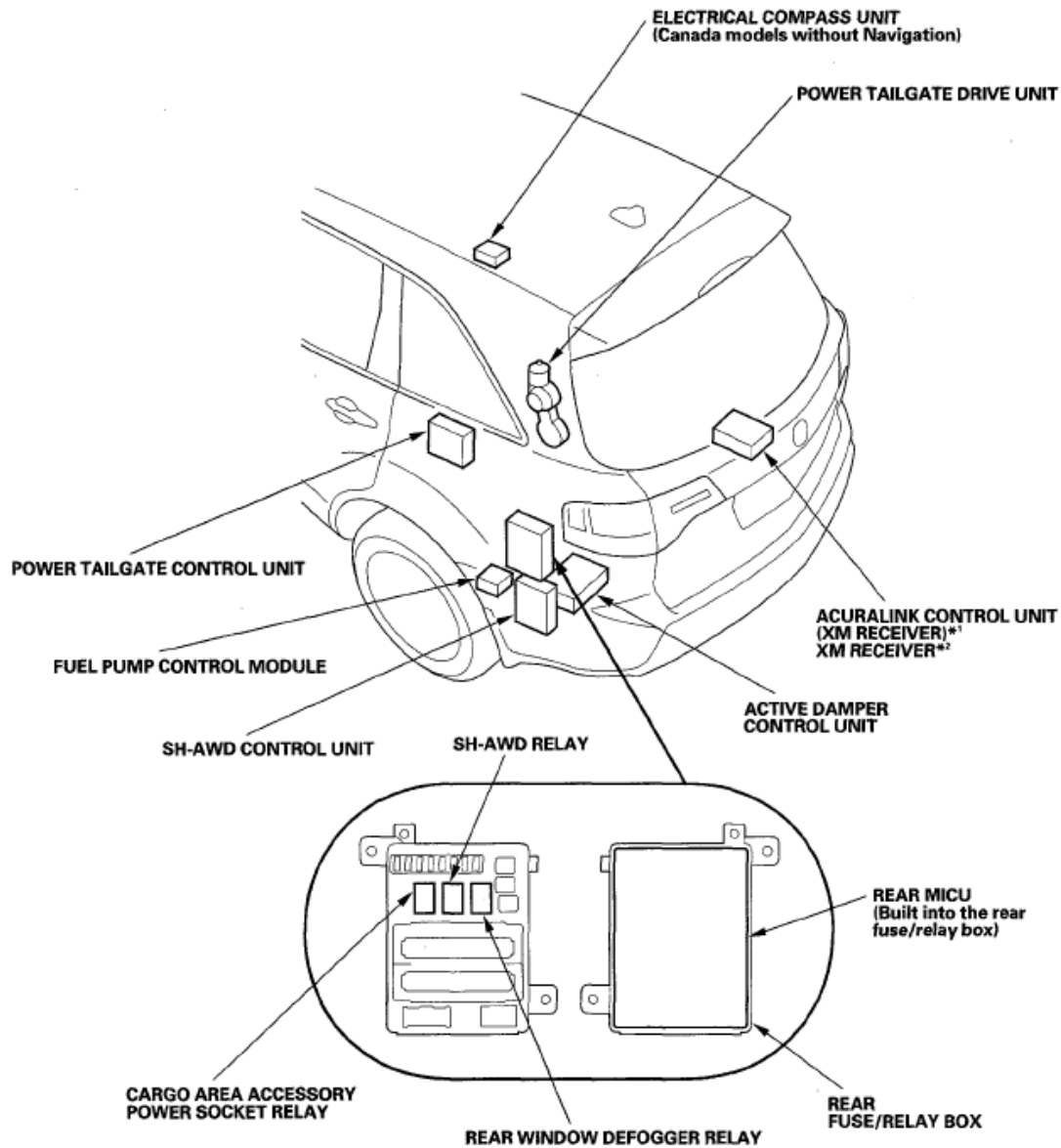


Fig. 3: Identifying Relay And Control Unit Locations (Dashboard) (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX



*¹ : USA models

*² : Canada models and USA models without Acuralink

Fig. 4: Identifying Relay And Control Unit Locations (Rear)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROOF AND CONSOLE

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX

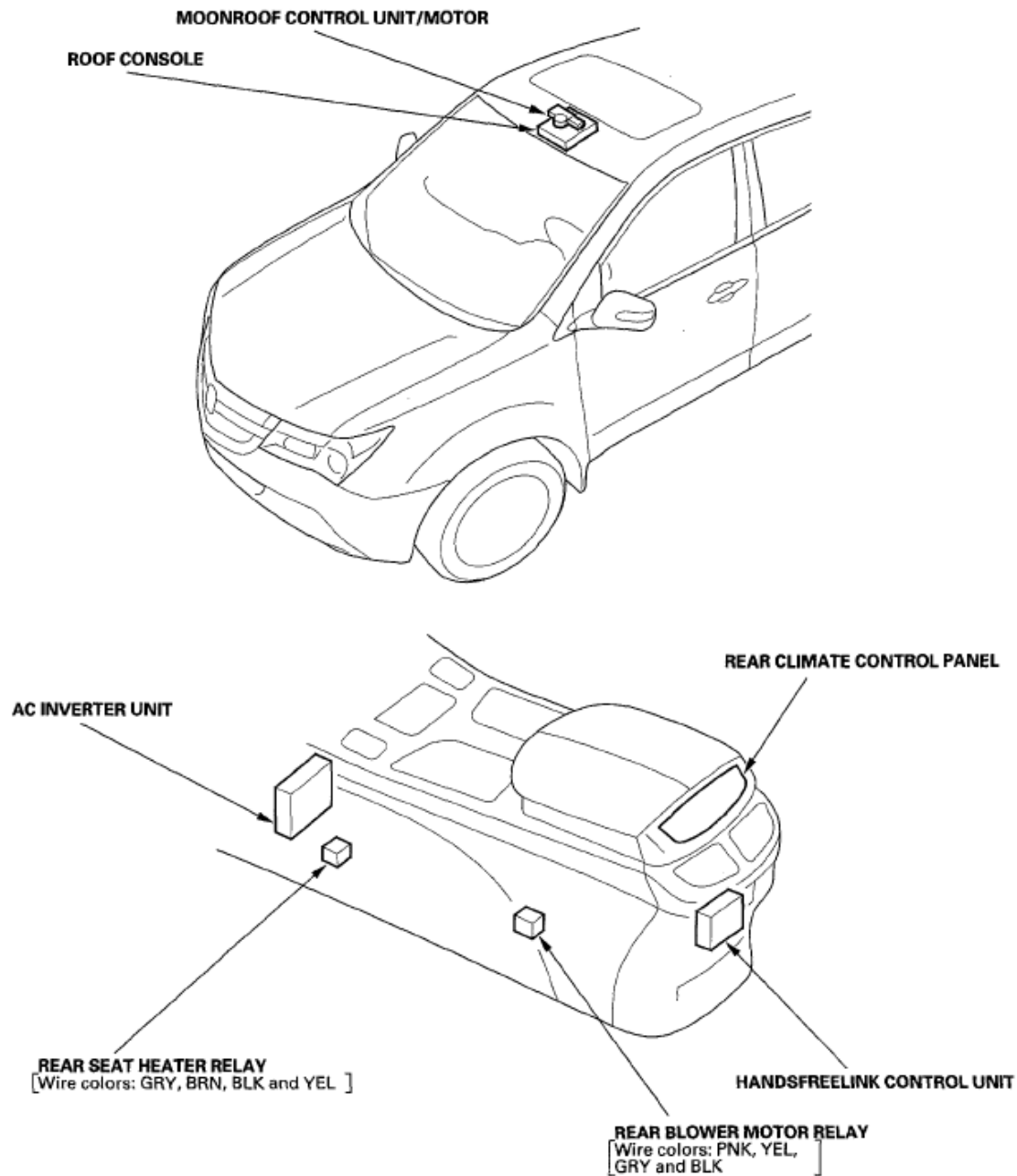


Fig. 5: Identifying Relay And Control Unit Locations (Roof And Console)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DOOR

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX

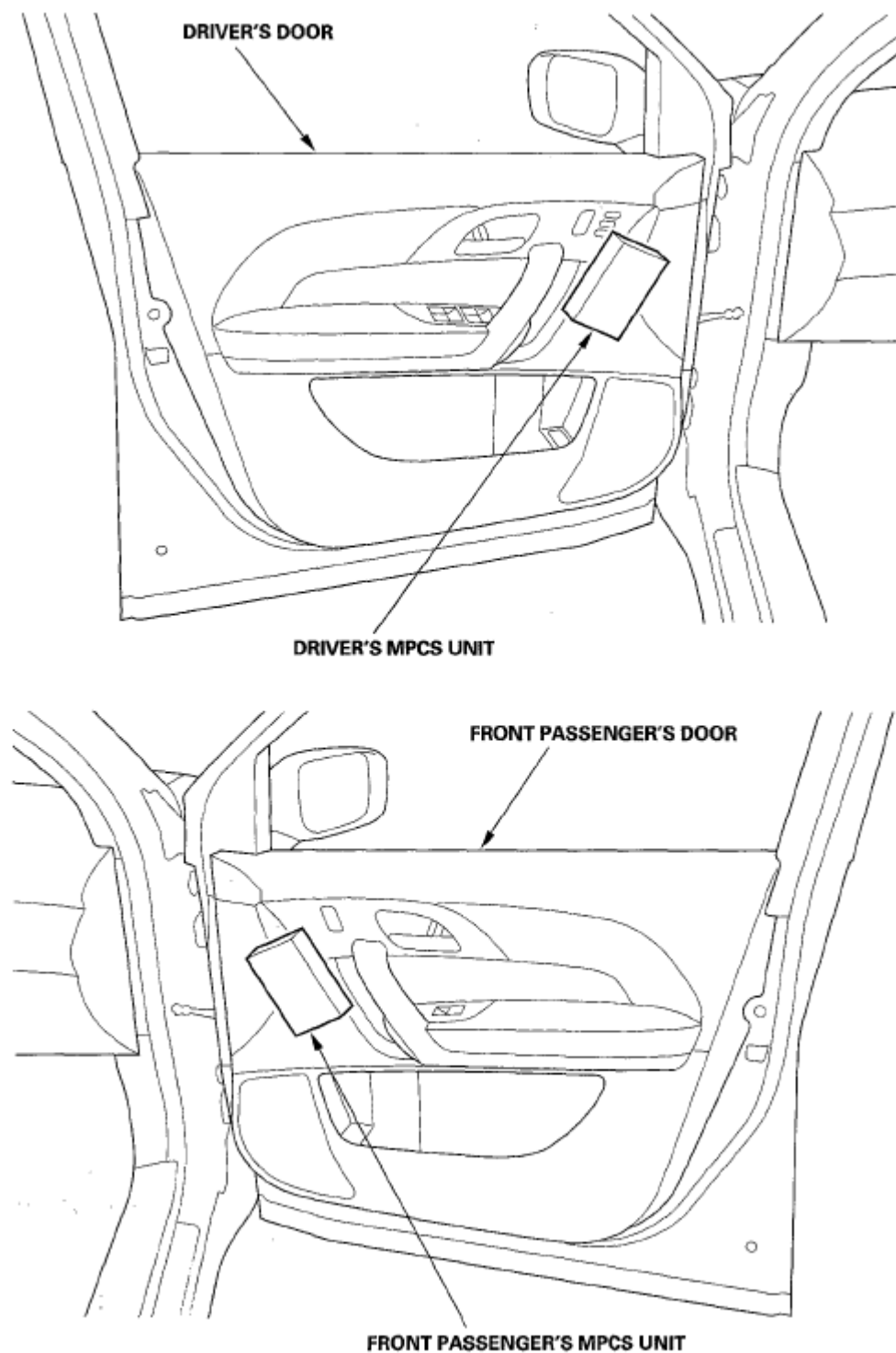


Fig. 6: Identifying Relay And Control Unit Locations (Door)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT

2008 Acura MDX

2007-09 ELECTRICAL Relay and Control Unit Locations-MDX

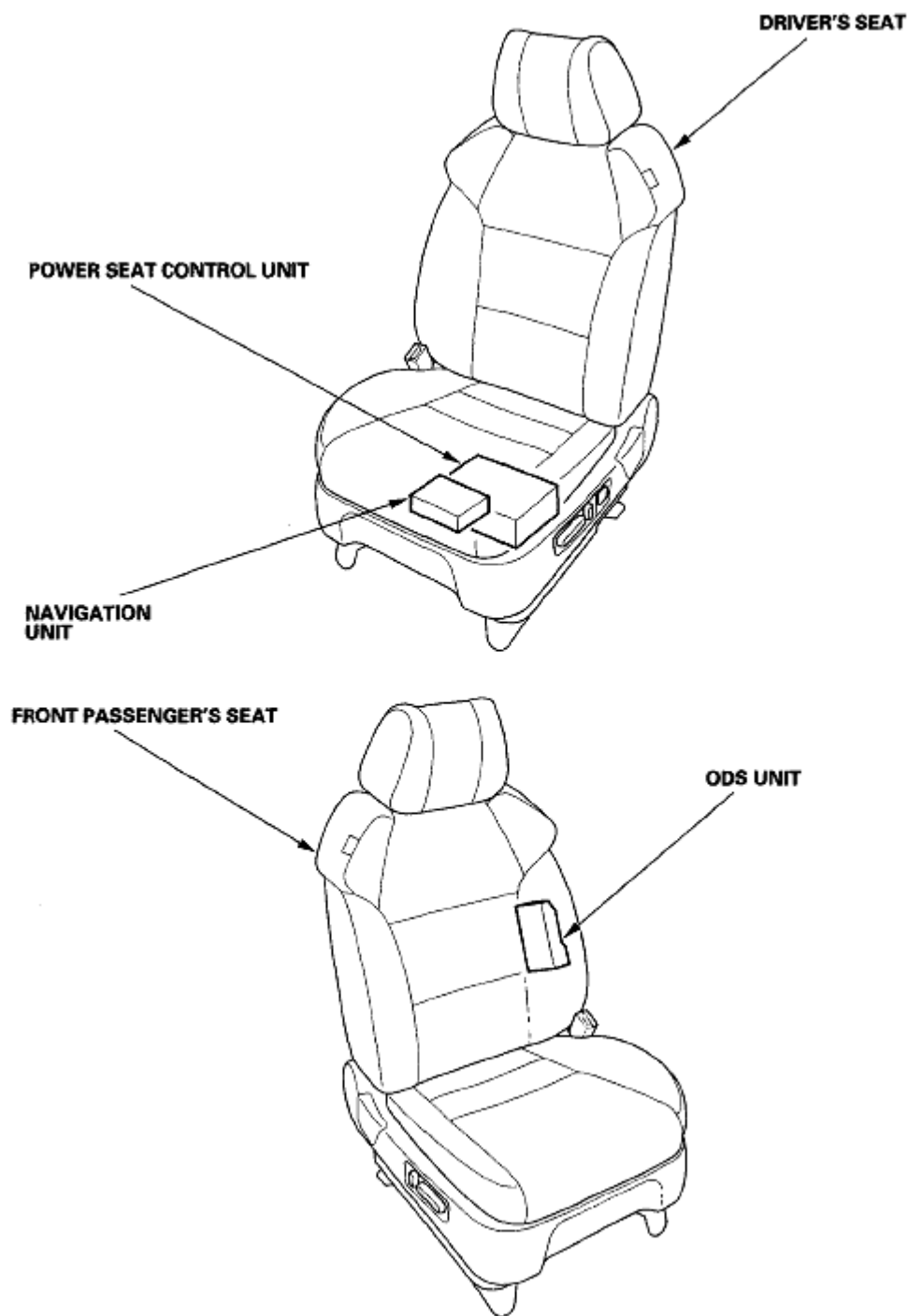


Fig. 7: Identifying Relay And Control Unit Locations (Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 RESTRAINTS

Seat Belts - MDX

COMPONENT LOCATION INDEX

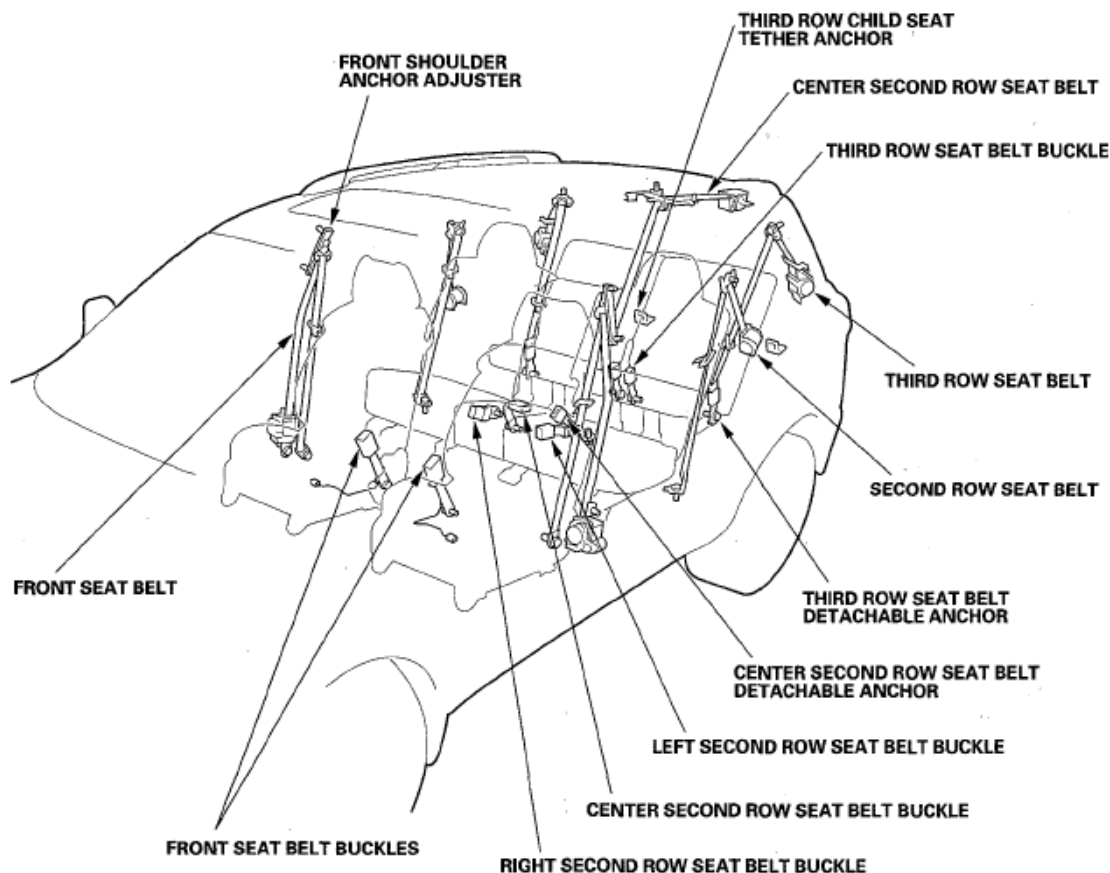


Fig. 1: Identifying Seat Belts Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT BELT REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see COMPONENT LOCATION INDEX) and the precautions and procedures (see PRECAUTIONS AND PROCEDURES) before doing repairs or service.

NOTE: Check the front seat belts for damage (see SEAT BELT BUCKLE/SEAT BELT DETACHABLE ANCHOR), and replace them if necessary.

FRONT SEAT BELT

1. Slide the front seat all the way forward, and adjust the seat to its maximum height. Carefully pry up on the bottom of the anchor cover (A) to release the tab (B) with a small flat-tip screwdriver from below inside the recline cover (C), then remove it.

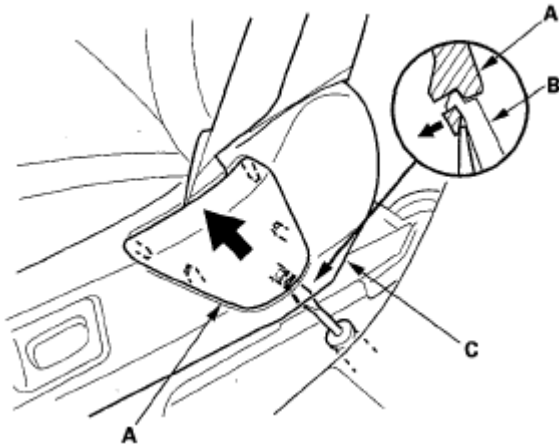


Fig. 2: Identifying Anchor Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Adjust the seat to its minimum height, then remove the lower anchor bolt (A).

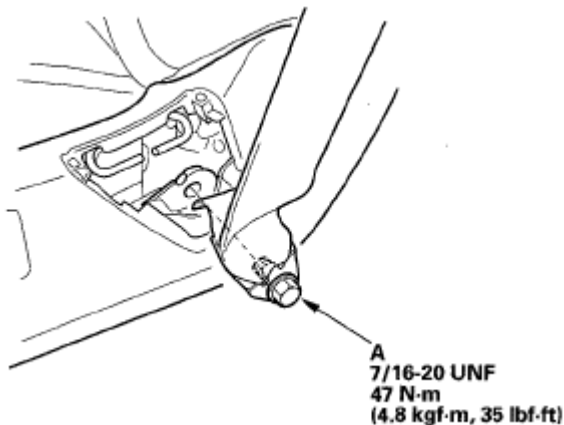


Fig. 3: Identifying Lower Anchor Bolt Tightening Torque

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Do the battery terminal disconnection procedure (see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and wait at least 3 minutes before removing the front seat belt.
4. Remove the B-pillar lower trim (see **B-PILLAR UPPER/LOWER TRIM**).
5. Remove the B-pillar upper trim (see **B-PILLAR UPPER/LOWER TRIM**).
6. Remove the upper anchor bolt (A).

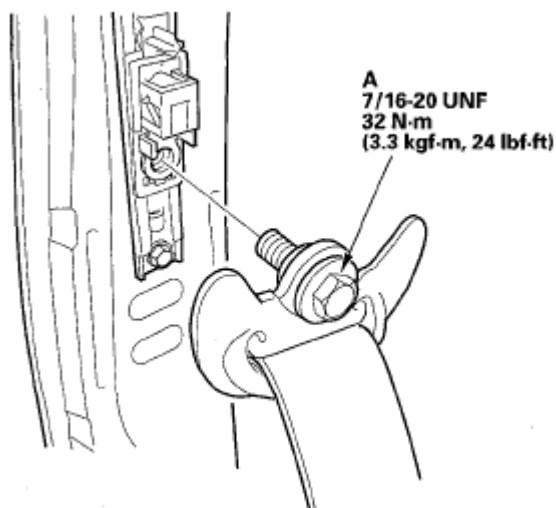


Fig. 4: Identifying Upper Anchor Bolt Tightening Torque
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the seat belt tensioner connector (A). Remove the upper retractor mounting bolt (B) and the lower retractor bolt (C), then remove the front seat belt (D) and retractor (E).

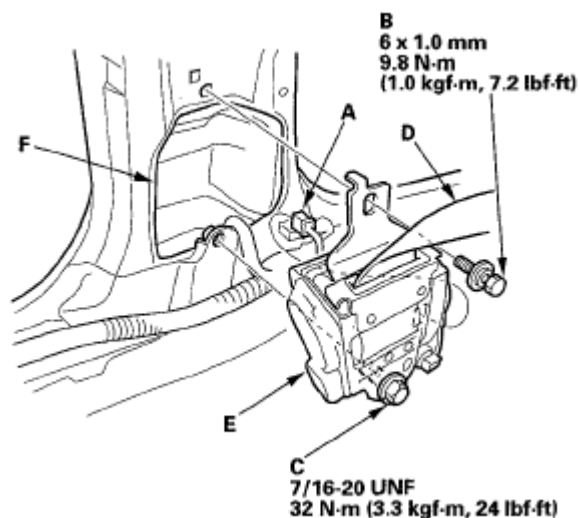


Fig. 5: Identifying Retractor And Bolts With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. If necessary, remove the front seat belt protector (F).
9. Remove the shoulder anchor adjuster (A).

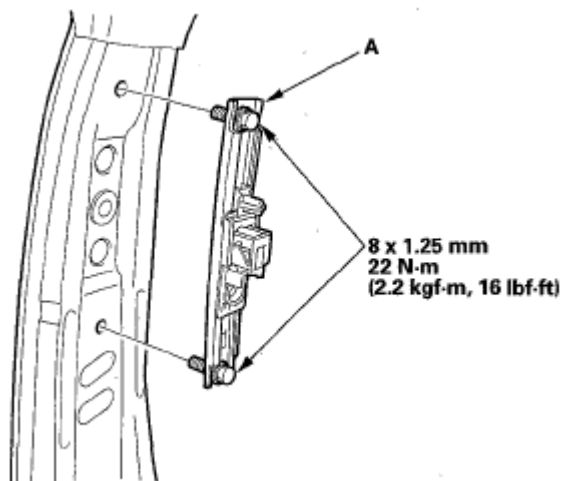


Fig. 6: Identifying Shoulder Anchor Adjuster And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the seat belt in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the anchor bolts before reinstallation.
 - Tighten the bolts by hand first, then tighten to the specified torque.
 - Check that the retractor locking mechanism functions as described (see **RETRACTOR**).
 - Assemble the washer, collar, and bushing on the upper anchor bolt as shown.
 - If the seat belt tensioner has been deployed, replace the front seat belt protector with a new one.
 - Before installing the anchor bolts, make sure there are no twists or kinks in the seat belt.
 - Make sure the seat belt tensioner connector is properly plugged in.
 - Do the battery terminal reconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**).
 - Check for any DTCs that may have been set during repairs, and clear them.

SEAT BELT BUCKLE

1. Do the battery terminal disconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and wait at least 3 minutes before beginning work.
2. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
3. Remove the center cover (see step 4 on **CENTER CONSOLE REMOVAL/INSTALLATION**).
4. Lift up the front seat, then disconnect the seat belt buckle switch connector (A) and detach the harness clip (B). The driver's seat is shown; the passenger's seat is similar.

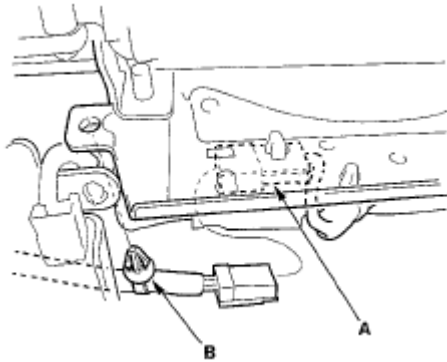


Fig. 7: Identifying Seat Belt Buckle Switch Connector And Harness Clip
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the center anchor bolt (A) and detach the harness clips (B), then remove the seat belt buckle (C).

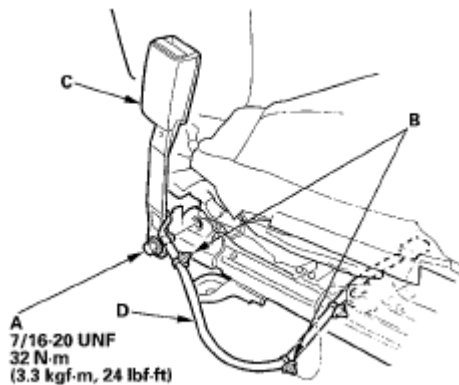


Fig. 8: Identifying Center Anchor Bolt, Harness Clips And Seat Belt Buckle With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Pull the seat belt buckle switch harness (D) out through the space between the seat cushion and the seat linkage.
7. Install the buckle in the reverse order of removal, and note these items:
 - Assemble the washers on the center anchor bolt as shown.
 - Apply medium strength type liquid thread lock to the center anchor bolt before reinstallation.
 - Tighten the bolts by hand first, then tighten to specification with a torque wrench.
 - Make sure the seat belt buckle switch connector is plugged in properly.
 - Do the battery terminal disconnection procedure(see **BATTERY TERMINAL DISCONNECTION AND RECONNECTION**), and wait at least 3 minutes before beginning work.
 - Check for any DTCs that may have been set during repairs, and clear them.

Center anchor bolt installation

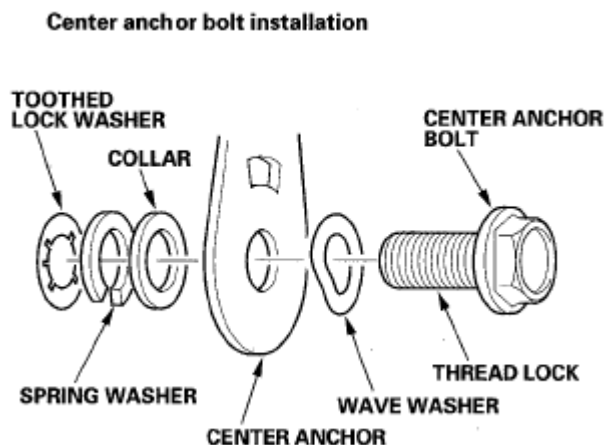


Fig. 9: Identifying Center Anchor Bolt Installation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT BELT REPLACEMENT

NOTE: Check the second row seat belts for damage (see SEAT BELT BUCKLE/SEAT BELT DETACHABLE ANCHOR), and replace them if necessary.

SECOND ROW SEAT BELT

1. Slide the second row seat forward fully.
2. Remove the rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
3. Pull the carpet (A) back, and remove the lower anchor bolt (B).

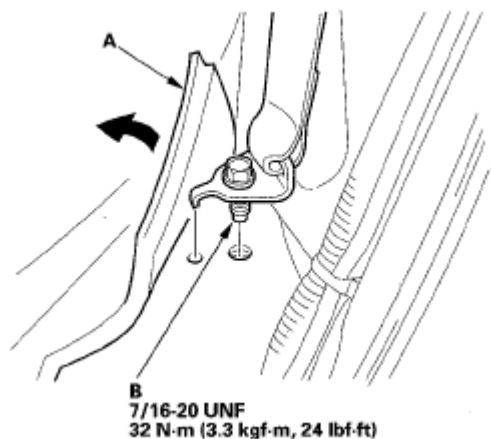


Fig. 10: Identifying Lower Anchor Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the seat belt exit C-pillar cap (A).
 1. Pull out the rear upper corner of the cap to release the upper hook (B) and the rear hook (C).

2. Release the front hook (D) and lower hook (E) together by pulling the cap upward and rearward.
3. Take the cap off the second row seat belt (F).

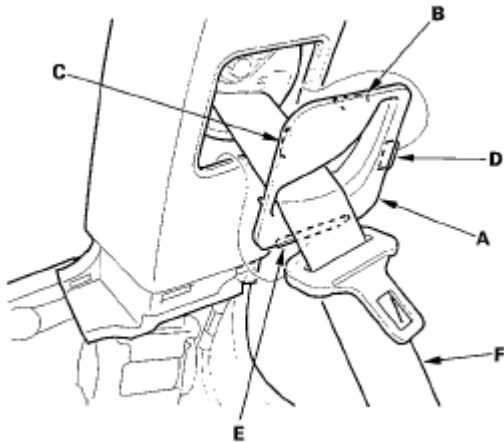


Fig. 11: Identifying Seat Belt Exit C-Pillar Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the upper anchor bolt (A).

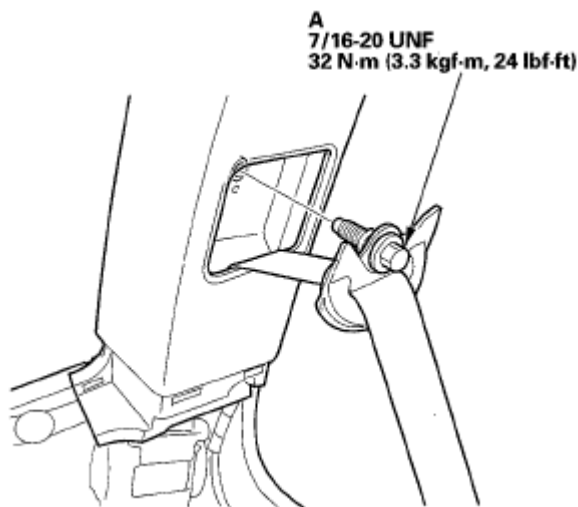


Fig. 12: Identifying Upper Anchor Bolt With torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Detach the clip (A) by pulling the bottom of the quarter pillar trim (B) back. While holding the trim away from the C-pillar, pull the second row seat belt, upper anchor (C), tongue plate (D), and the lower anchor (E) into the trim, and pull the entire second row seat belt down.

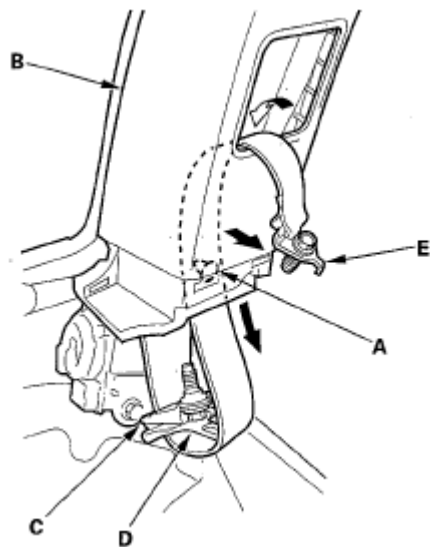


Fig. 13: Identifying Second Row Seat Belt, Upper Anchor, Tongue Plate And Lower Anchor
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the upper retractor mounting bolt (A) and the lower retractor bolt (B), then remove the front seat belt (C) and retractor (D). The left second row seat belt is shown; the right second row seat belt is similar.

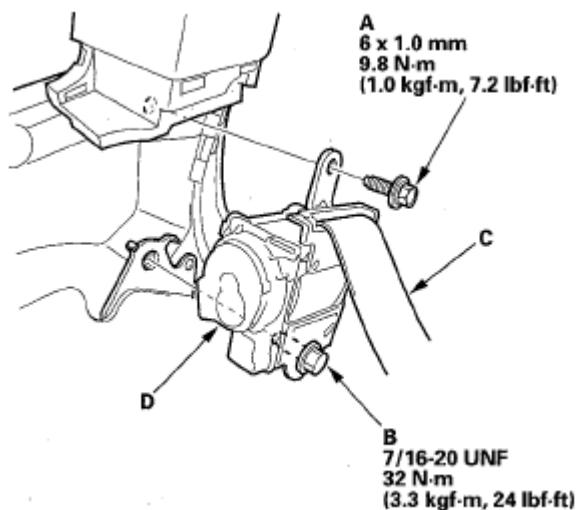


Fig. 14: Identifying Retractor And Bolt With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the seat belt in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the anchor bolts before reinstallation.
 - Tighten the bolts by hand first, then tighten to the specified torque.
 - Check that the retractor locking mechanism functions (see **RETRACTOR**).
 - Assemble the washers, collar, and bushing on the upper anchor bolt as shown.

- Before installing the anchor bolts, make sure there are no twists or kinks in the second row seat belt.

Upper anchor bolt installation

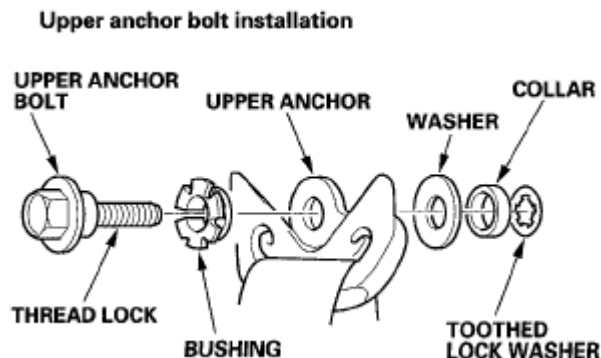


Fig. 15: Identifying Upper Anchor Bolt Installation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SEAT BELT BUCKLE

NOTE: Take care not to tear the seams or damage the seat covers.

1. Remove the left second row seat (see SECOND ROW SEAT REMOVAL/INSTALLATION).
2. From under the seat cushion, release the hooks of the back cover carpet from the seat cushion frame, then pull the carpet back (see step 2 on LEFT SECOND ROW SEAT).
3. With seat heater: Disconnect the seat cushion heater connector, and remove the wire ties (see step 3 on LEFT SECOND ROW SEAT).
4. Remove these items:
 - Recline outer cover (see step 5 on RIGHT SECOND ROW SEAT)
 - ISO-FIX bracket outer cover (see step 6 on LEFT SECOND ROW SEAT)
5. Remove the seat cushion from the left second row seat (see step 10 on LEFT SECOND ROW SEAT).
6. Remove the center anchor bolt (A), and remove the seat belt buckle (B).

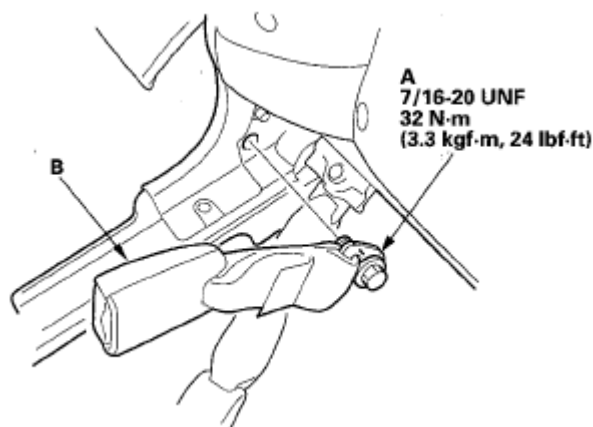


Fig. 16: Identifying Center Anchor Bolt And Seat Belt Buckle With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the buckle in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the anchor bolt before reinstallation.
 - Assemble the washers, collar and bushing on the center anchor bolt as shown.

Center anchor bolt installation

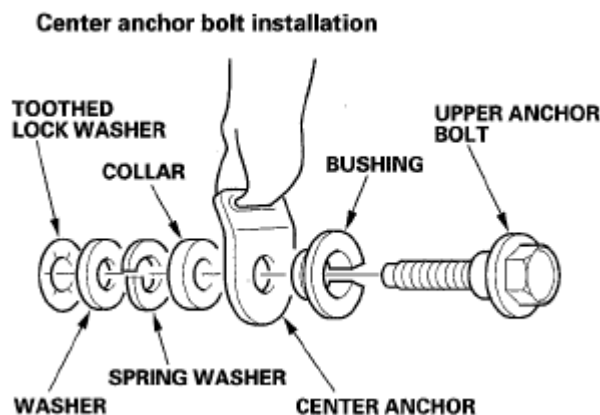


Fig. 17: Identifying Center Anchor Bolt Installation
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

RIGHT SEAT BELT BUCKLE

NOTE: Take care not to tear the seams or damage the seat covers.

1. Remove the right second row seat (see [SECOND ROW SEAT REMOVAL/INSTALLATION](#)).
2. Remove these items:
 - Recline outer cover (see step 5 on [RIGHT SECOND ROW SEAT](#))
 - Center outer cover (see step 7 on [RIGHT SECOND ROW SEAT](#))

3. Using a TORX T30 bit, remove the pivot bolts (A), then carefully lift the seat cushion (B) up as needed.

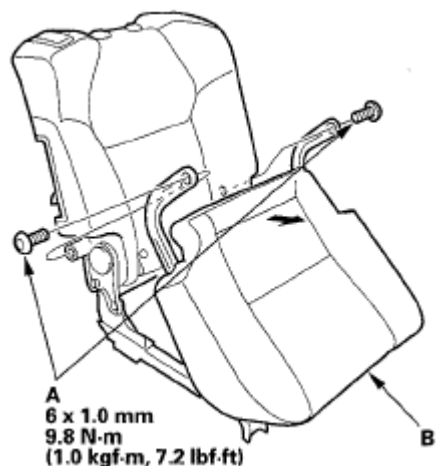


Fig. 18: Identifying Pivot Bolts And Seat Cushion With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the center anchor bolt (A), and remove the seat belt buckle (B).

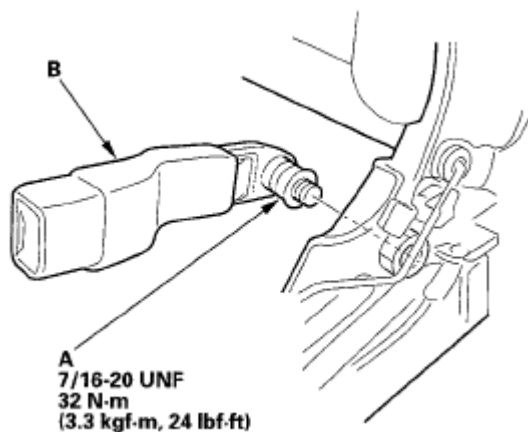


Fig. 19: Identifying Center Anchor Bolt And Seat Belt Buckle With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the buckle in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the anchor bolt before reinstallation.
 - Assemble the washers, collar, and bushing on the center anchor bolt as shown.

Center anchor bolt installation

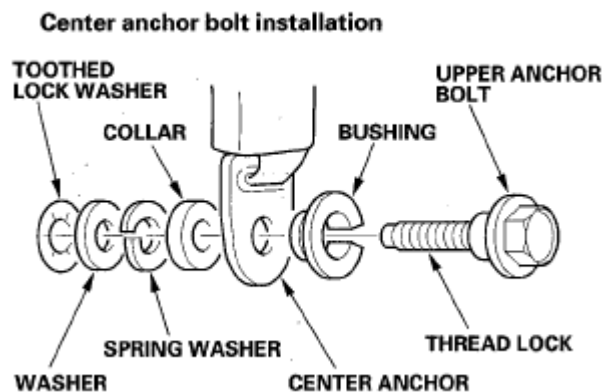


Fig. 20: Identifying Center Anchor Bolt Installation
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CENTER SECOND ROW SEAT BELT

1. Detach the clips, and remove the seat belt cover (A).

Fastener Locations

▷ : Clip, 4
 (Green)

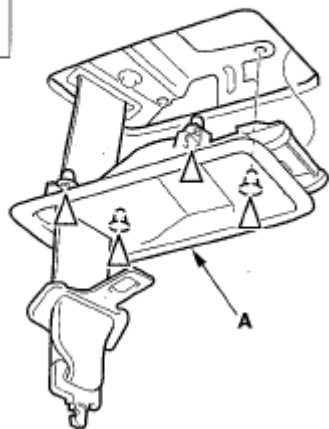


Fig. 21: Identifying Seat Belt Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the headliner(see [HEADLINER REMOVAL/INSTALLATION](#)).
3. Remove the upper anchor mounting bolt (A) and upper anchor bolts (B), then remove the upper anchor (C).

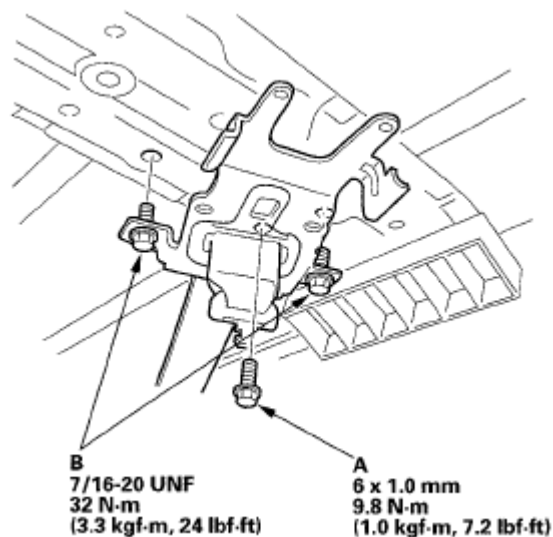


Fig. 22: Identifying Upper Anchor Mounting Bolt And Upper Anchor Bolts Tightening Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the retractor mounting bolt (A) and retractor bolt (B), then remove the retractor (C).

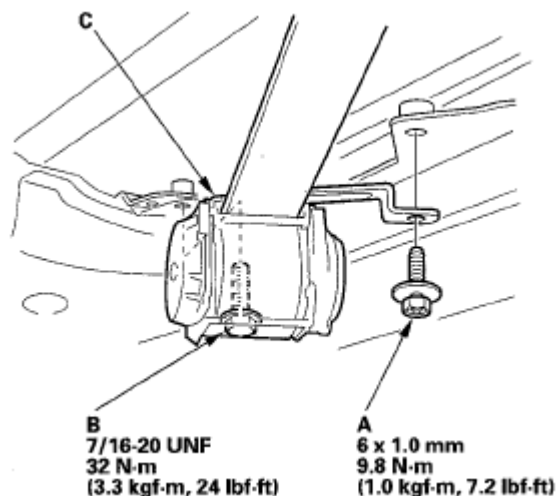


Fig. 23: Identifying Retractor Mounting Bolt And Retractor Bolt Tightening Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the center second row seat belt and retractor in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Apply medium strength type liquid thread lock to the anchor bolts before reinstallation.
 - Check that the retractor locking mechanism functions (see **RETRACTOR**).
 - Before installing the upper anchor bolt, make sure there are no twists or kinks in the seat belt.

NOTE: Take care not to tear the seams or damage the seat covers.

1. Slide the right second row seat fully forward.
2. Remove the ISO-FIX bracket outer cover (see step 6 on **LEFT SECOND ROW SEAT**).
3. Remove the center anchor bolt (A), and remove the seat belt buckle (B) from the elastic strap (C), then remove it through the space between the link bracket and seat cushion.

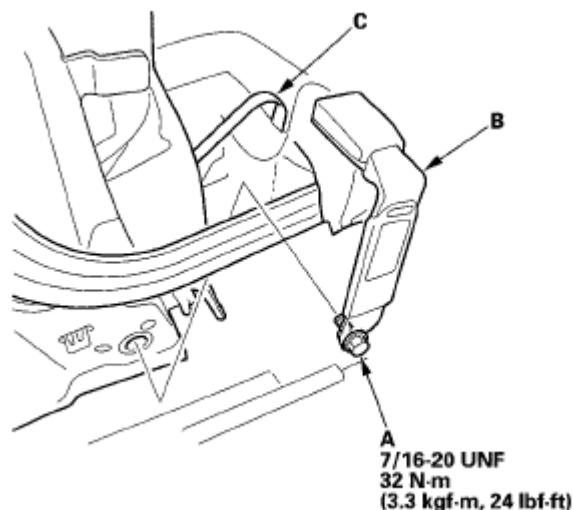


Fig. 24: Identifying Center Anchor Bolt, Seat Belt Buckle And Elastic Strap With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the buckle in the reverse order of removal, and apply medium strength type liquid thread lock to the anchor bolt before reinstallation.

CENTER SECOND ROW SEAT BELT DETACHABLE ANCHOR

NOTE: Take care not to tear the seams or damage the seat covers.

1. Remove the left second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the seat belt detachable anchor (A) from the elastic strap (B).

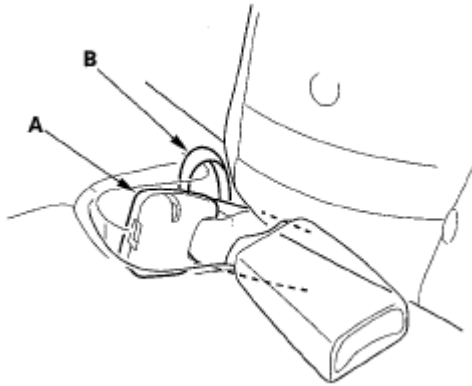


Fig. 25: Identifying Seat Belt Detachable Anchor And Elastic Strap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the lower anchor bolt (A).

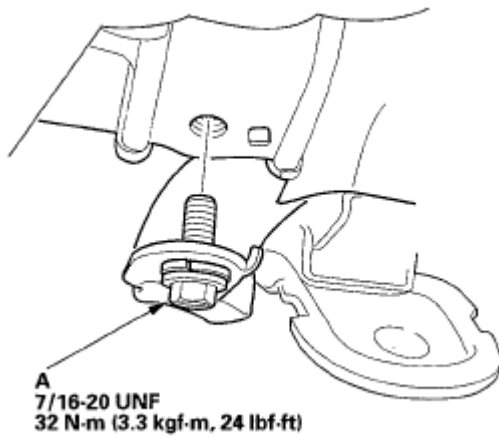


Fig. 26: Identifying Lower Anchor Bolt Tightening Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the seat belt detachable anchor (A).

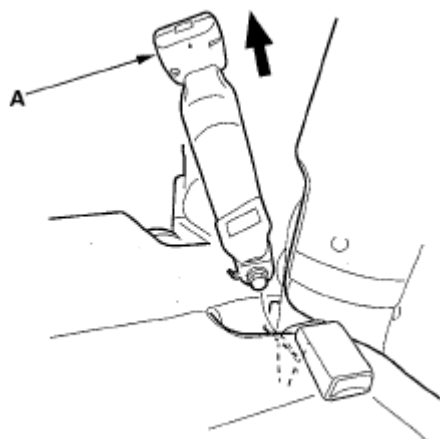


Fig. 27: Identifying Seat Belt Detachable Anchor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the detachable anchor in the reverse order of removal, and apply medium strength type liquid thread lock to the anchor bolt before reinstallation.

THIRD ROW SEAT BELT REPLACEMENT

THIRD ROW SEAT BELT

NOTE: Check the third row seat belts for damage (see SEAT BELT BUCKLE/SEAT BELT DETACHABLE ANCHOR), and replace them if necessary.

1. Detach the third row seat belt lower anchor.
2. Remove the rear side trim panel (see TRIM REMOVAL/INSTALLATION - REAR SIDE AREA).
3. Remove the seat belt exit D-pillar cap (A).
 1. Pull out the top of the cap to release the hooks (B).
 2. Release the lower hook (C) by pulling the cap upward.
 3. Take the cap off the third row seat belt (D).

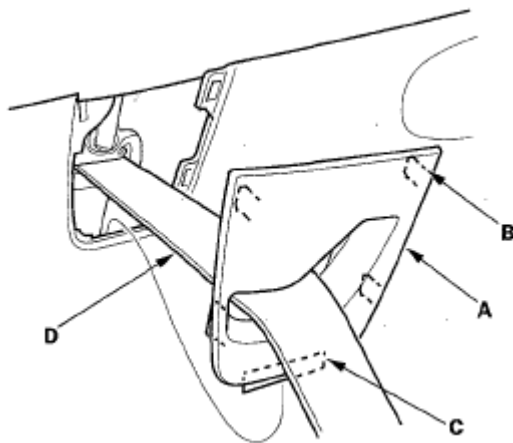


Fig. 28: Identifying Seat Belt Exit D-Pillar Cap
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the quarter pillar trim (see **QUARTER PILLAR TRIM**).
5. Remove the bolts (A) and the seat belt guide (B).

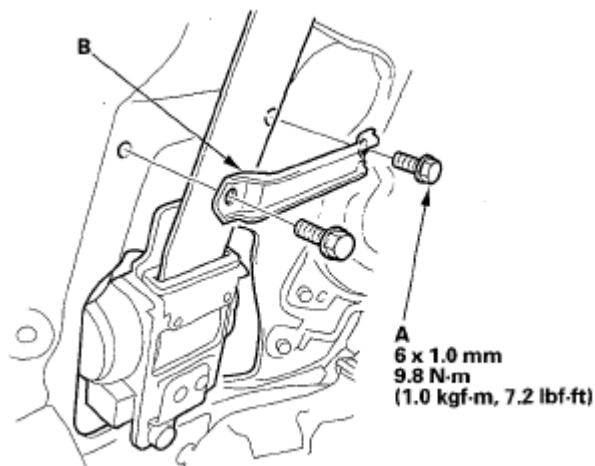


Fig. 29: Identifying Bolts And Seat Belt Guide With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the upper anchor bolt (A).

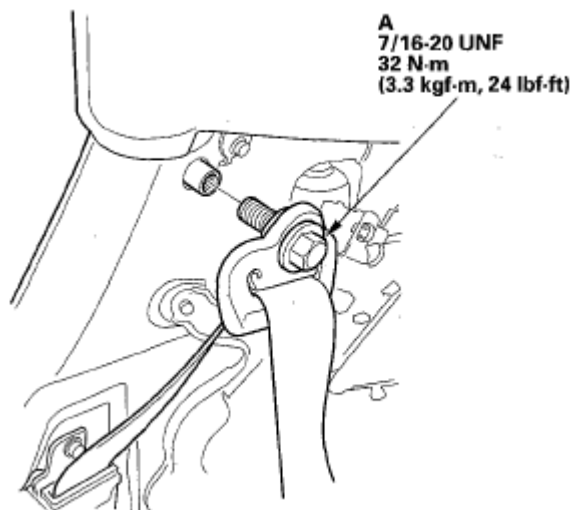


Fig. 30: Identifying Upper Anchor Bolt Tightening Torque
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the retractor mounting bolt (A) and the retractor bolt (B), then remove the third row seat belt (C) and retractor (D).

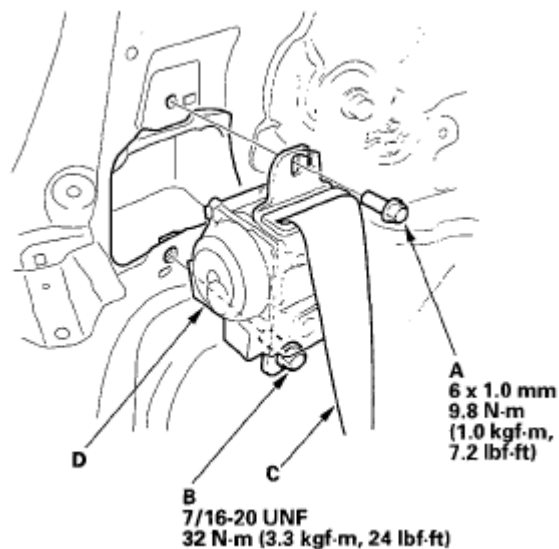


Fig. 31: Identifying Retractor And Bolt With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the seat belt in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the anchor bolts before reinstallation.
 - Tighten the bolts by hand first, then tighten to the specified torque.
 - Check that the retractor locking mechanism functions as described (see **RETRACTOR**).
 - Assemble the washers and bushing on the upper anchor bolt as shown.

- Before installing the anchor bolt, make sure there are no twists or kinks in the seat belt.

Upper anchor bolt installation

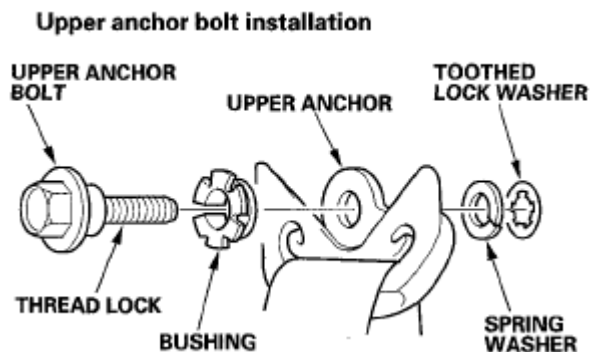


Fig. 32: Identifying Upper Anchor Bolt Installation
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT BELT BUCKLE/SEAT BELT DETACHABLE ANCHOR

NOTE: The seat belt buckle is shown, and the seat belt detachable anchor is similar.

1. Remove the third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the screw (A), and release the hook (B), then remove the bracket cover (C).

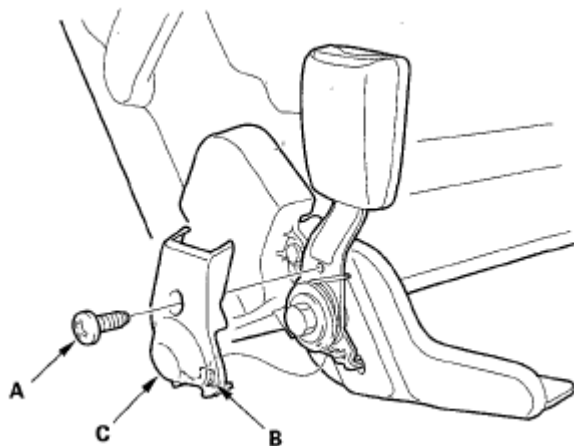


Fig. 33: Identifying Screw, Hook And Bracket Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the center anchor bolt (A), then remove the seat belt buckle (B).

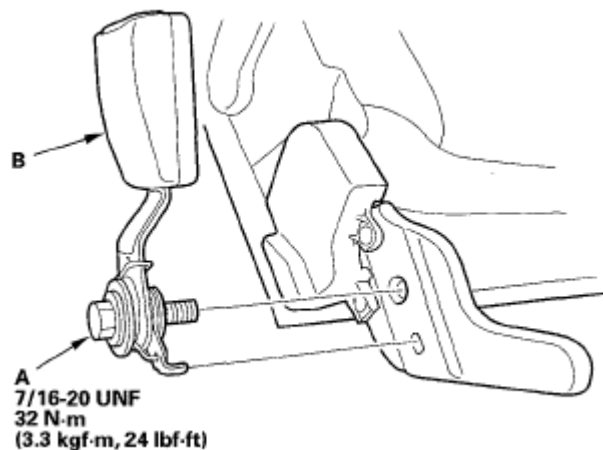


Fig. 34: Identifying Center Anchor Bolt And Seat Belt Buckle With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the buckle in the reverse order of removal, and note these items:
 - Assemble the washers, spring, bushing, bracket, and collar on the center anchor bolt as shown.
 - Apply medium strength type liquid thread lock to the center anchor bolt before reinstallation.

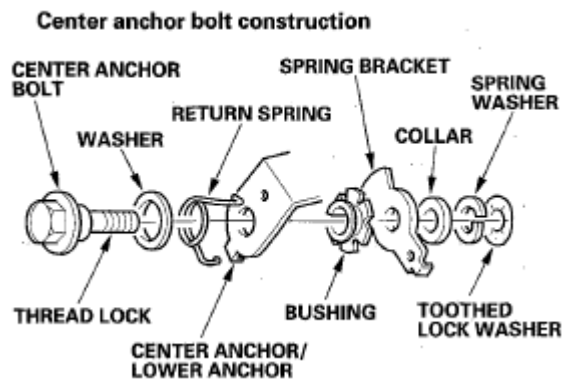


Fig. 35: Identifying Washers, Spring, Bushing, Bracket, Collar And Center Anchor Bolt
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSPECTION

OUT OF VEHICLE

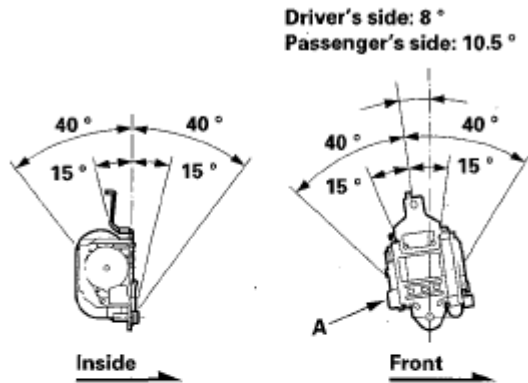
For front seat belt retractor with seat belt tensioner, review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

RETRACTOR

1. Before installing the retractor, check that the seat belt can be pulled out freely.

2. Make sure that the seat belt does not lock when the retractor (A) is leaned slowly up to 15° from the mounted position. The seat belt should lock when the retractor is leaned over 40° . Do not attempt to disassemble the retractor.

Front



Second row

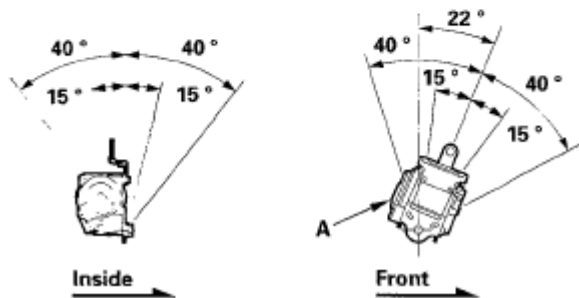


Fig. 36: Identifying Seat Belt Retractor Movement (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

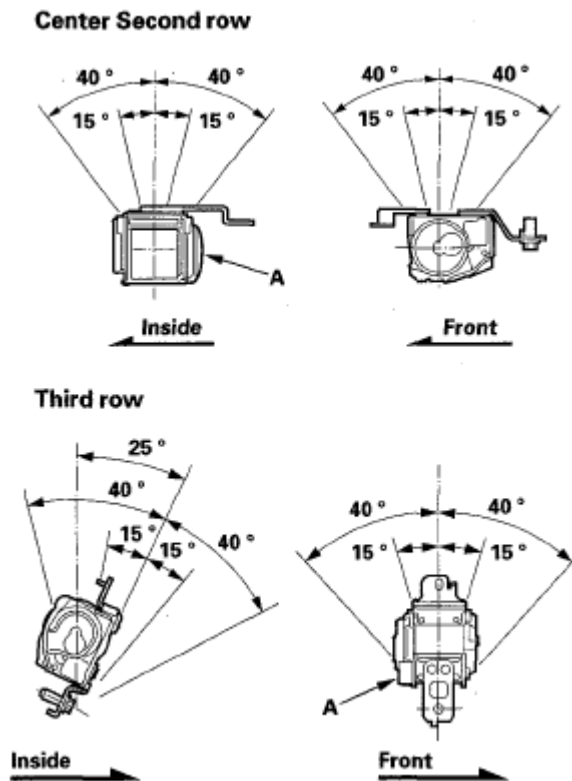


Fig. 37: Identifying Seat Belt Retractor Movement (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

IN-VEHICLE

1. Check that the seat belt is not twisted or caught on anything.
2. After installing the anchors, check for free movement on the anchor bolts. If necessary, remove the anchor bolts and check that the washers and other parts are not damaged or improperly installed.
3. Check the seat belts for damage or discoloration. Clean with a shop towel if necessary. Use only soap and water to clean.

NOTE: Dirt build up in the loops of the upper anchors can cause the seat belts to retract slowly. Wipe the inside of the loops with a clean cloth dampened in isopropyl alcohol.

4. Check that the seat belt does not lock when pulled out slowly. The seat belt is designed to lock only during a sudden stop or impact.
5. Make sure that the seat belt will retract automatically when released.
6. For each passenger's seat belt, check the seat belt retractor locking mechanism ALR (automatic locking retractor). This function is for securing child seats.

1. Pull the seat belt all the way out to engage the ALR. The seat belt should retract, but not extend. This is normal.
2. To disengage the ALR, release the seat belt and allow it to fully retract, then pull the seat belt out part-way. The seat belt should retract and extend normally.
7. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

THIRD ROW CHILD SEAT TETHER ANCHOR REPLACEMENT

1. Remove the rear trim panel (see step 2 on **TRIM REMOVAL/INSTALLATION - CARGO AREA**).
2. Remove the screws (A), and remove the third row child seat tether anchors (B).

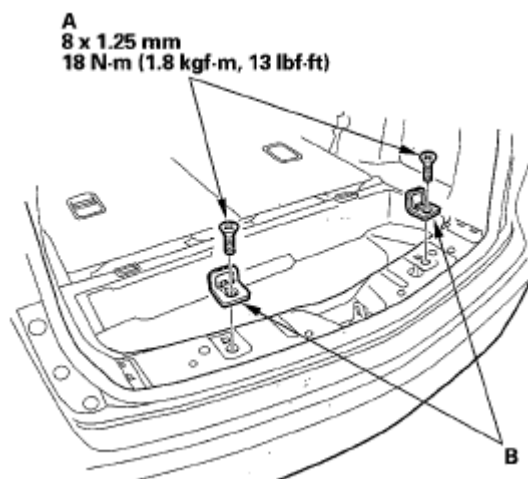


Fig. 38: Identifying Screws And Third Row Child Seat Tether Anchors With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the anchor in the reverse order of removal, and apply medium strength type liquid thread lock to the threads of the child seat tether anchor screws.

2007-09 ACCESSORIES AND EQUIPMENT

Seats - MDX

COMPONENT LOCATION INDEX

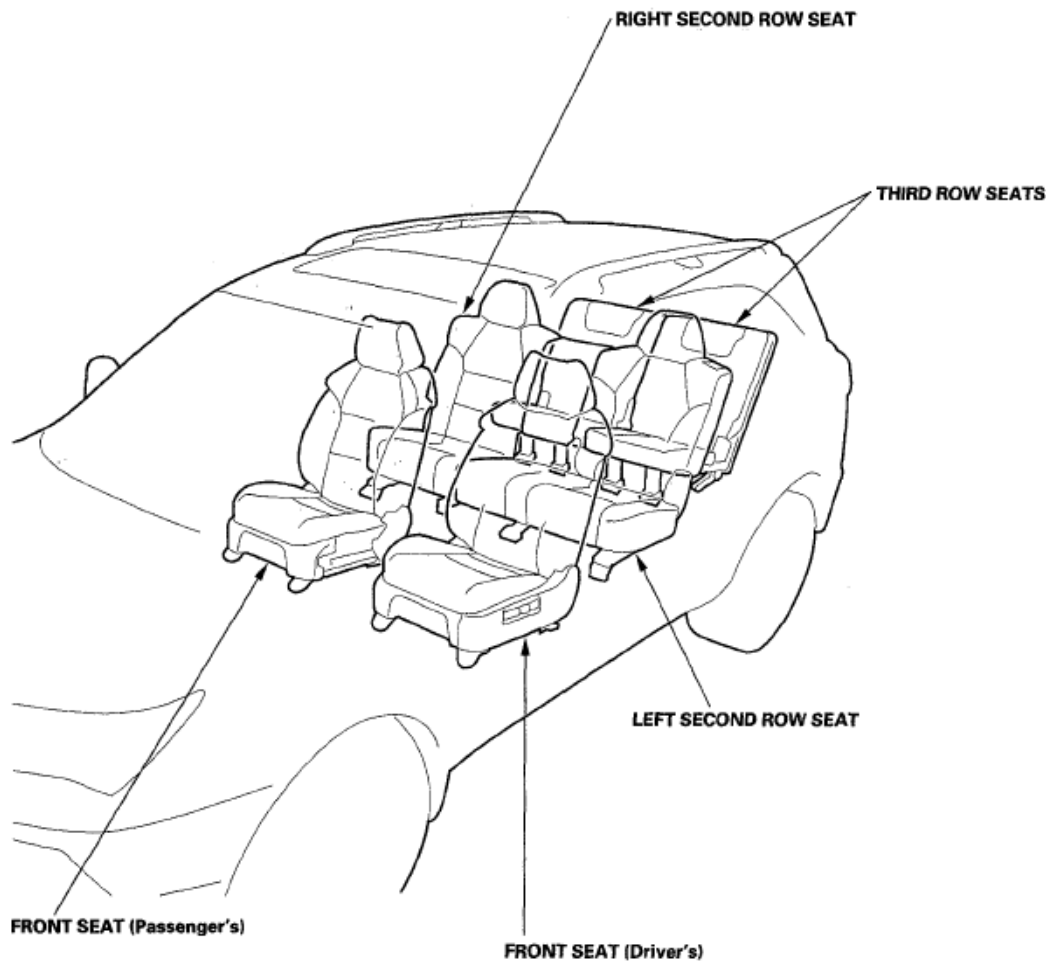


Fig. 1: Identifying Seats Components Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT ACTIVE HEAD RESTRAINT INSPECTION

NOTE: If the vehicle has been in a collision, always inspect the active head restraint, even if they appear reusable, by doing the following procedure.

RESETTING HEAD RESTRAINT POSITION

1. Push the head restraint (A) forward fully from the locked position to return the inside inertia lock (B).

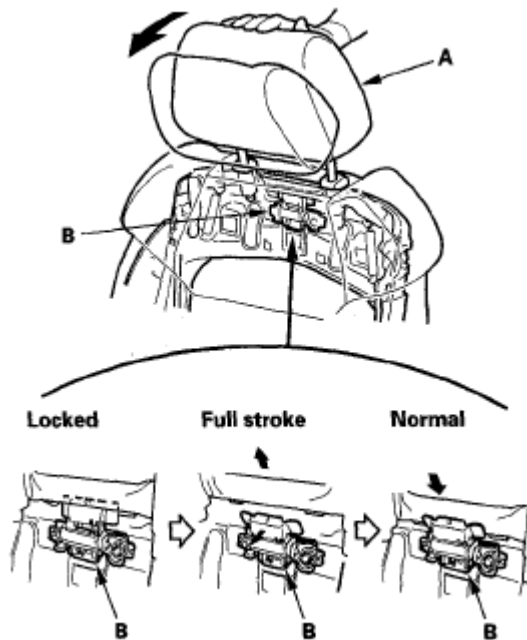


Fig. 2: Identifying Head Restraint And Inertia Lock
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Slowly raise the head restraint into the normal position.

Inspection

3. Fold the seat-back forward, then recline the seat-back to the first lock position, and adjust the head restraint to the highest position.
4. Apply masking tape on the top of the head restraint.
5. Make marks (A) on both sides at 285 mm (11.2 in.) upward from the roots of the head restraint frame (B) along the back of the head restraint (C) surface. Make a center of these points as a datum point (D).

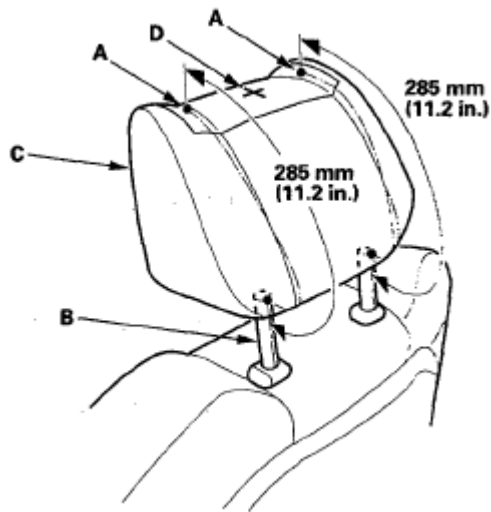


Fig. 3: Identifying Marks On Head Restraint Frame And Head Restraint
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Push the head restraint (A) forward, and check: With a scale, measure the level amount of the head restraint movement. The head restraint should move more than 50 mm (2.0 in.) without resistance. If it is less than 50 mm (2.0 in.), or the head restraint doesn't move smoothly, replace the seat-back frame (see **FRONT SEAT-BACK COVER REPLACEMENT**).

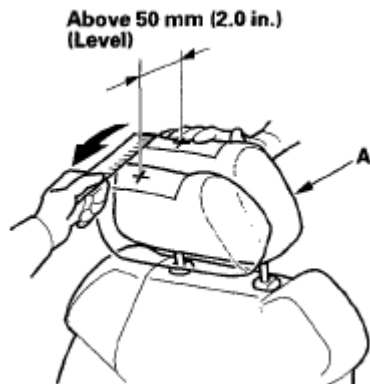


Fig. 4: Identifying Head Restraint
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT**

LOCATION INDEX) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to scratch the body or tear the seat covers.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Make sure you have the anti-theft codes for the audio system and the navigation system (if equipped).
2. Tilt the steering wheel all the way up, and telescope it all the way in.
3. Slide the front seat all the way forward, and adjust the seat to its maximum height. Carefully pry up on the bottom of the anchor cover (A) to release the tab (B) with a small flat-tip screwdriver from below inside the recline cover (C), then remove it.

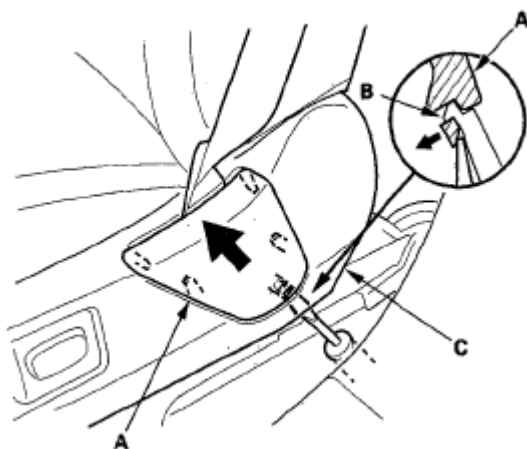


Fig. 5: Identifying Anchor Cover And Recline Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Adjust the seat to its minimum height, then remove the lower anchor bolt (A).

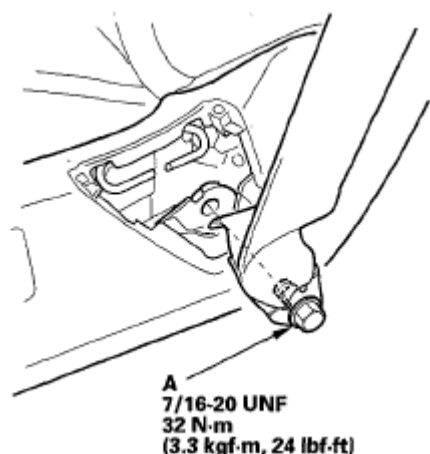


Fig. 6: Identifying Lower Anchor Bolt With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Driver's side with navigation system: Gently pull the navigation unit cover (A) up to detach the clips, then remove the cover.

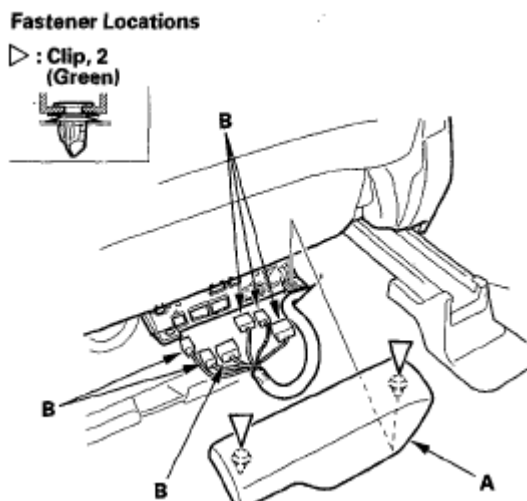


Fig. 7: Identifying Navigation Unit Cover And Navigation Unit Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Driver's side with navigation system: Disconnect the navigation unit connectors (B).
7. Slide the seat all the way forward and remove the rear outer seat track end cover (A) and the rear inner seat track end cover (B).

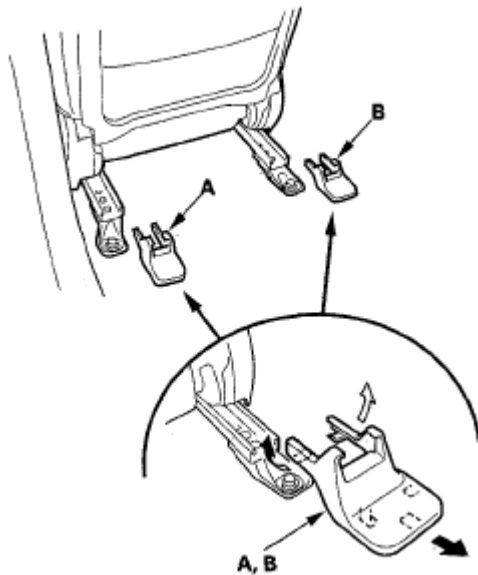


Fig. 8: Identifying Navigation Unit Connectors And Rear Outer Seat Track End Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts.

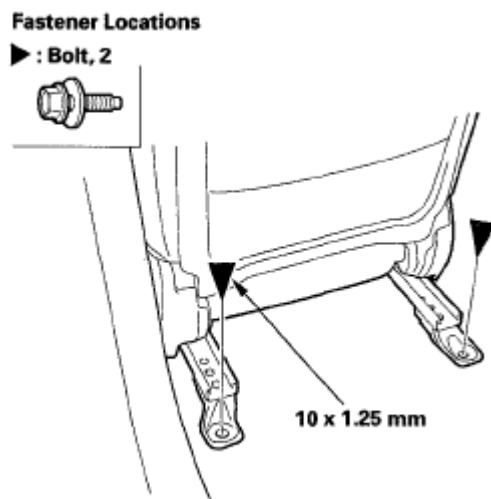


Fig. 9: Identifying Rear Outer Seat Track End Cover Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Slide the seat all the way back, and remove the front outer seat track end cover (A) and the front inner seat track end cover (B).

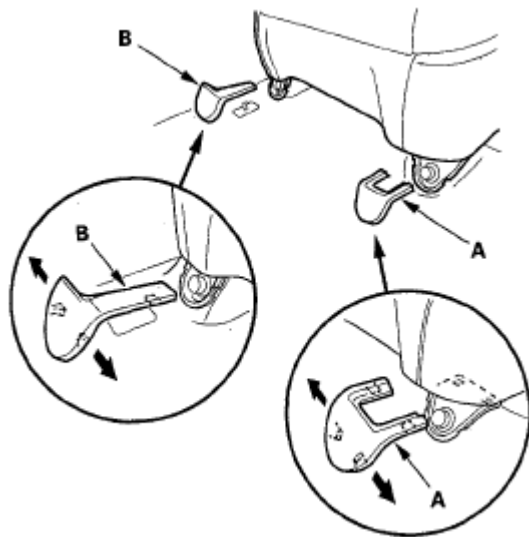


Fig. 10: Identifying Front Outer Seat Track End Cover And Front Inner Seat Track End Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the bolts.

Fastener Locations

► : Bolt, 2

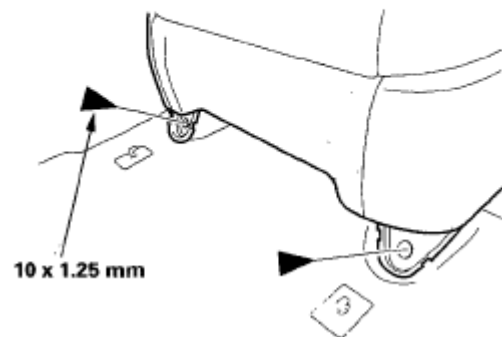


Fig. 11: Identifying Front Inner Seat Track End Cover Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Disconnect the negative cable from the battery, and wait at least 3 minutes before removing the seat.
12. Lift up the front seat, then disconnect the power seat harness connector (A) and the side airbag connector (B). Disconnect the ODS unit connector (C) on the passenger's seat.

Driver's seat

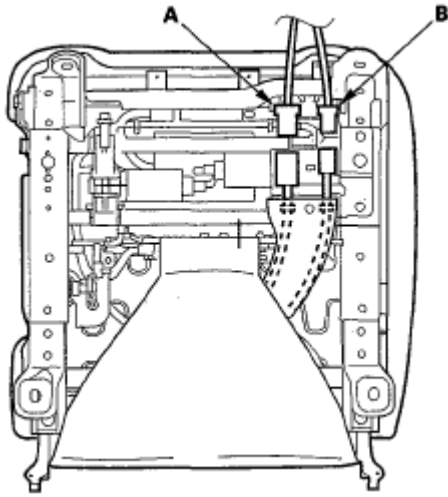


Fig. 12: Identifying Power Seat Harness Connector And Side Airbag Connector (Driver'S Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

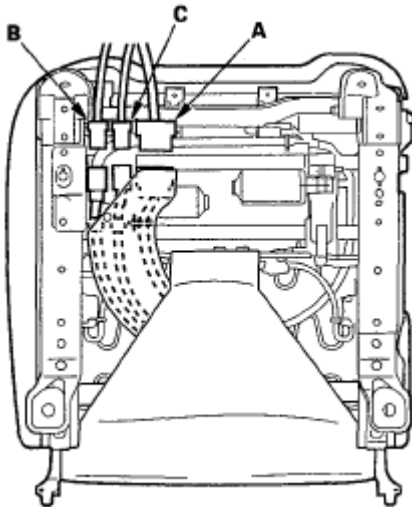


Fig. 13: Identifying Power Seat Harness Connector And Side Airbag Connector (Passenger's Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the head restraint.
14. With the help of an assistant, carefully remove the front seat through the front door opening.
15. Install the seat in the reverse order of removal, and note these items:
 - Make sure the seat harnesses (A) are routed correctly.
 - Apply medium strength type liquid thread lock to the seat mounting bolts before reinstallation.
 - Tighten the seat mounting bolts to the specified torque in the sequence shown. Slide the seat all the way back and tighten (1) and (2), then slide it forward and tighten (3) and (4). The driver's seat is shown; the passenger's seat is symmetrical.

- Make sure each connector is plugged in properly.
- Tighten the bolts by hand first, then tighten them to specification with a torque wrench.
- Reconnect the negative cable to the battery.
- Enter the anti-theft codes for the audio system and the navigation system (if equipped).
- Set the clock (on vehicles without navigation).
- Check for any DTCs that may have been set during repairs, and clear them.
- Do the steering column position memorization (see **STEERING COLUMN POSITION MEMORIZATION**).

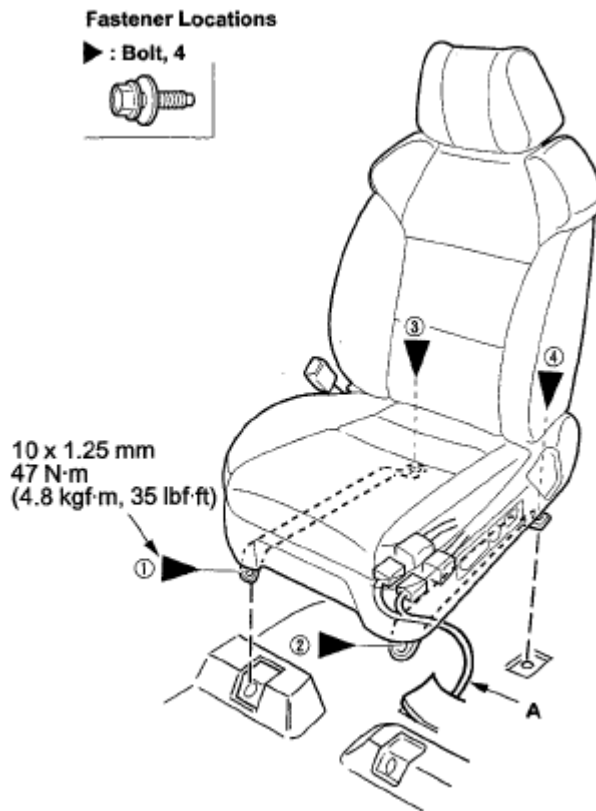


Fig. 14: Identifying Seat Harnesses And Bolt With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT DISASSEMBLY/REASSEMBLY

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT**

LOCATION INDEX) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to tear the seams or damage the seat covers.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- DTC codes will set if the ignition is turned ON (II) with the seats removed.

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the screws and release the hook (A), tabs (B), then remove the front cover (C).

Fastener Locations

► : Screw, 3

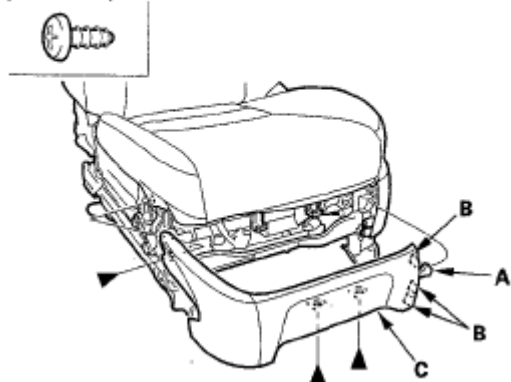


Fig. 15: Identifying Front Cover, Hook And Screws
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the recline cover (A).
 1. Remove the screw (B) and detach the clip (C) and hooks (D).
 2. Pull up the cover, then detach the hooks (E, F).
 3. Disconnect the recline switch and up-down switch connector (G), and on the driver's seat, lumbar support switch connector (H).
 4. Remove the wire harness (I) from the hook (J).

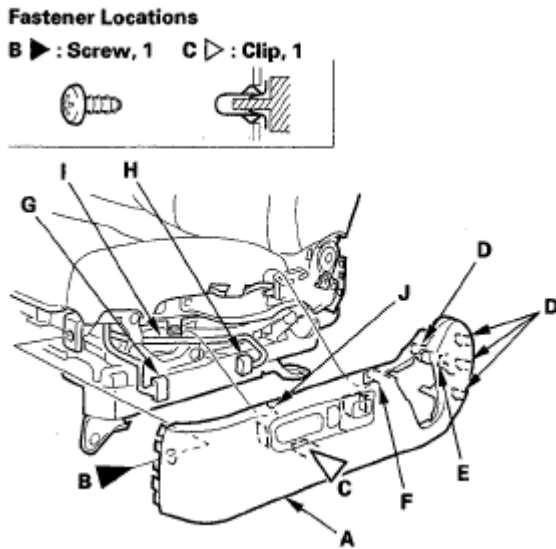


Fig. 16: Identifying Recline Cover, Wire Harness, Hook And Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the center cover (A).
 1. Release the hooks (B).
 2. Pull up the cover, then detach the hook (C).

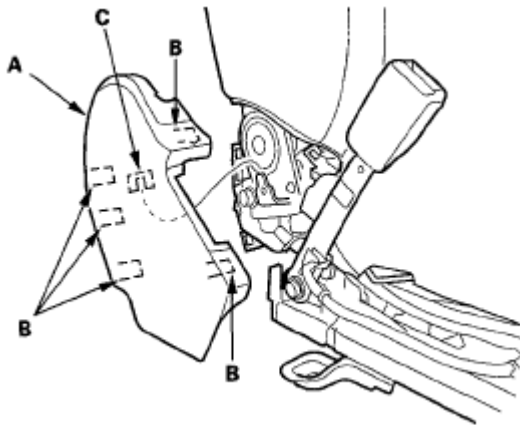


Fig. 17: Identifying Center Cover And Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. From under the seat cushion, release the hook strips (A) and pull the seat cushion cover (B) back. Detach the clip fastening the harness sock (C). Disconnect or detach the connectors, detach the harness clips (D), release the wire ties (E), then pull out the harness(es) out through the harness sock.
 - Driver's seat
 - Side airbag connector (F)
 - Seat-back heater harness connector (G)

- Recline motor/lumbar support motor harness connector (H)
- Passenger's seat
 - Side airbag connector (F)
 - ODS unit harness connector (I)
 - Recline motor harness connector (J)

Driver's seat

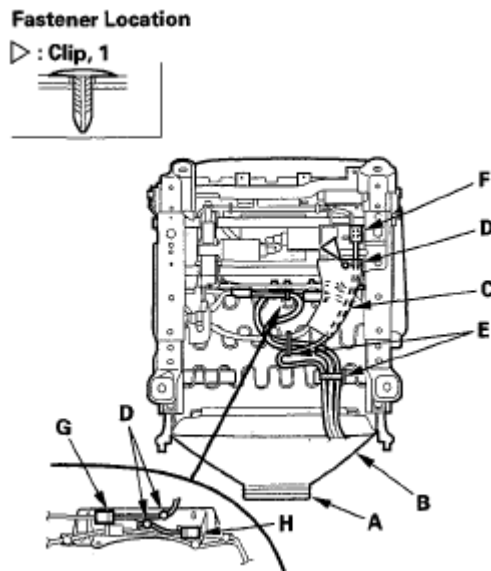


Fig. 18: Identifying Driver'S Seat Clip (Fastener Location)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

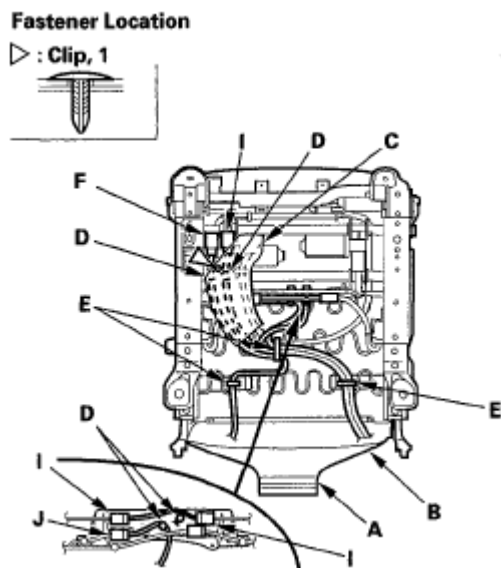


Fig. 19: Identifying Passenger'S Seat Clip (Fastener Location)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove bolts, then remove the seat-back (A).

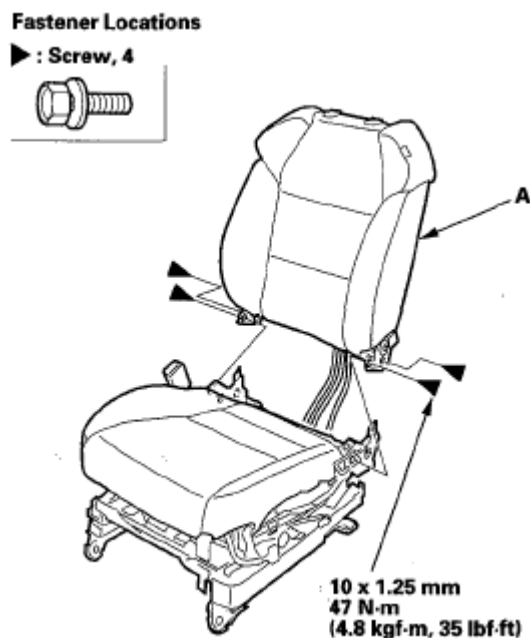


Fig. 20: Identifying Seat-Back Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Assemble the seat-back and seat cushion in the reverse order of disassembly, and note these items:
 - Passenger's seat: Calibrate the ODS unit (see **ODS UNIT OPERATION CHECK**).
 - Check if the clips are damaged, and if necessary, replace it with new ones.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Seats - MDX

- Push the clip and hooks on the covers into place securely.
- Apply multipurpose grease to the moving parts of the seat track.
- Replace the wire ties you removed with new ones.
- Make sure each connector is plugged in properly.
- To prevent wrinkles in the seat cushion cover, stretch the material evenly over the pad before securing the hook strips.

FRONT SEAT LINKAGE DISASSEMBLY/REASSEMBLY

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

DRIVER'S SEAT CUSHION FRAME DISASSEMBLY/REASSEMBLY

- Check the operation of the driver's seat position sensor after any of these actions (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**):
 - Driver's seat position sensor replacement
 - Cover plate (front side of driver's seat slide rail) replacement

NOTE:

- Put on gloves to protect your hands.
- Apply multipurpose grease to the sliding portions and pivot portions of the seat tracks.

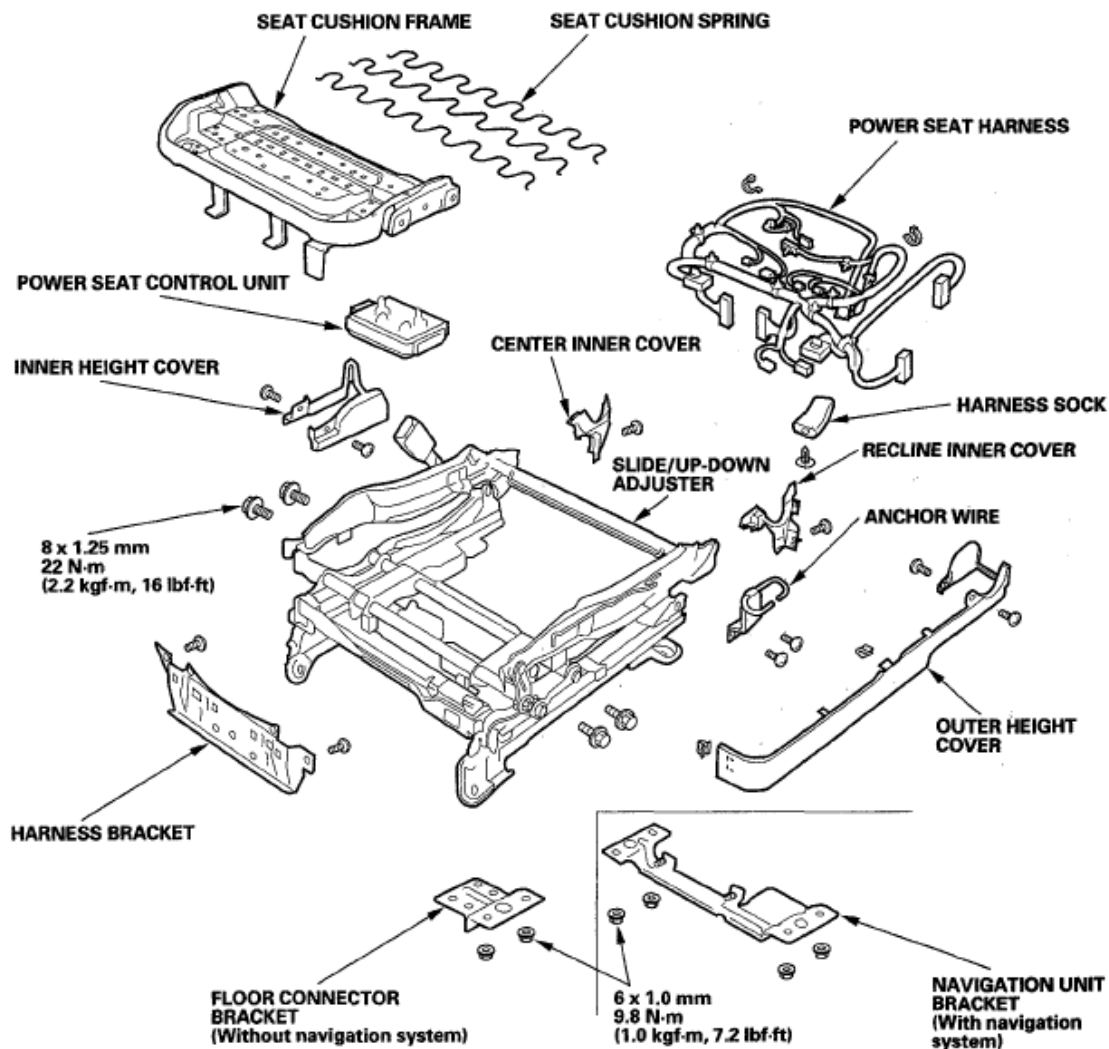


Fig. 21: Exploded View Of Front Seat Linkage With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

PASSENGER'S SEAT CUSHION FRAME DISASSEMBLY/REASSEMBLY

- Calibrate the ODS unit after any of these actions (see **ODS UNIT CALIBRATION**):
 - Front passenger's seat replacement (including any seat components)
 - Replacement of the seat weight sensors
 - Replacement of the ODS unit

NOTE:

- Put on gloves to protect your hands.
- Apply multipurpose grease to the sliding portions of the seat tracks.

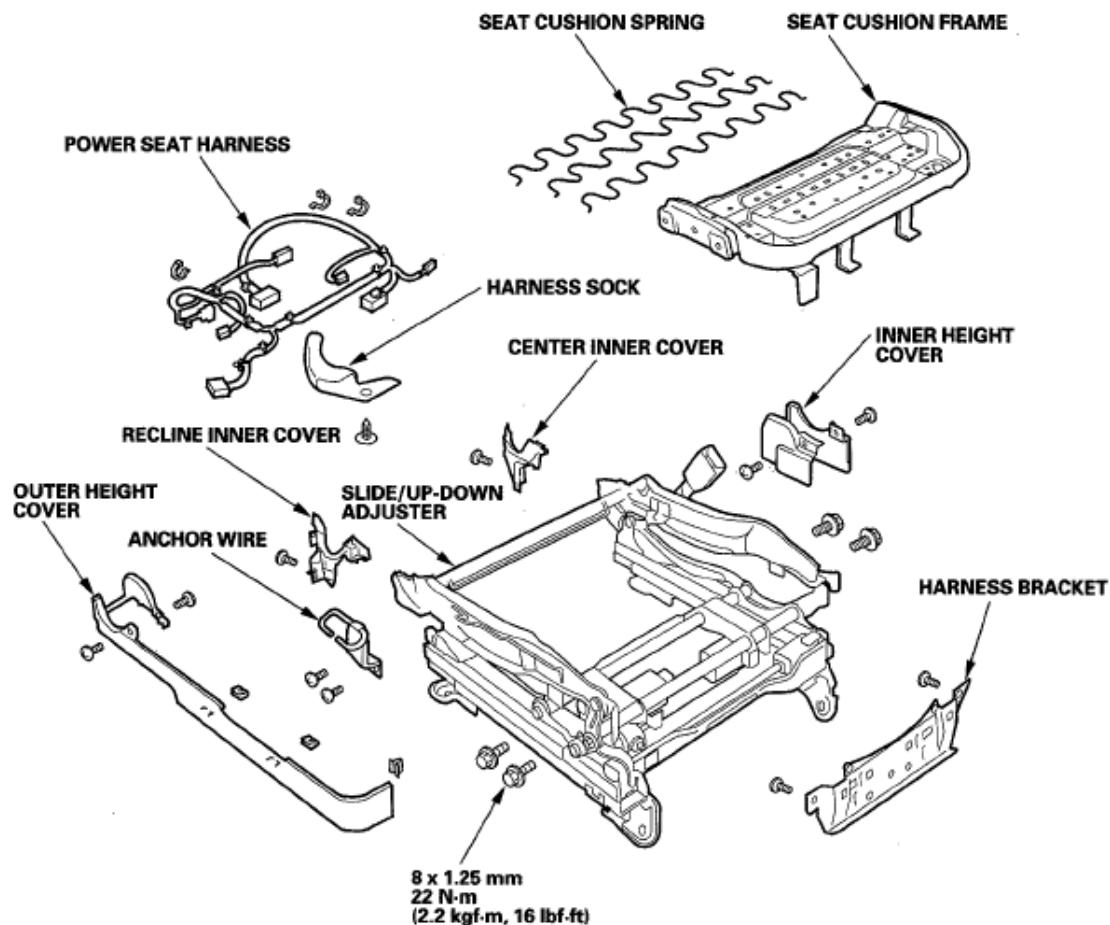


Fig. 22: Exploded View Of Passenger'S Seat Cushion frame With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

LEFT SEAT TRACK/SLIDE MOTOR, RIGHT SEAT TRACK/SLIDE GEARBOX, SLIDE JOINT CABLE, AND UP-DOWN MOTORS REMOVAL/INSTALLATION

- Check the operation of the driver's seat position sensor after any of these actions (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**):
 - Driver's seat position sensor replacement
 - Cover plate (front side of driver's seat slide rail) replacement
- Calibrate the ODS unit after any of these actions (see **ODS UNIT CALIBRATION**):
 - Front passenger's seat replacement (including any seat components)
 - Replacement of the seat weight sensors
 - After a vehicle collision

NOTE: Put on gloves to protect your hands.

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back (see **FRONT SEAT DISASSEMBLY/REASSEMBLY**).
3. Remove the seat cushion cover/pad from the seat cushion frame (see **FRONT SEAT CUSHION COVER REPLACEMENT**).
4. Disconnect each motor connector, then remove these items from the slide/up-down adjuster:
 - Outer height cover
 - Inner height cover
 - Recline inner cover
 - Center inner cover
 - Anchor wire
 - Power seat control unit, driver's seat
 - Harness sock
 - Power seat harness
 - Seat cushion frame
 - Seat cushion springs
 - Harness bracket
 - Floor connector bracket, driver's seat, without navigation system
 - Navigation unit bracket, driver's seat, with navigation system
 - Seat belt buckle (see **SEAT BELT BUCKLE**)
5. Remove the screws, then remove the protector (A).

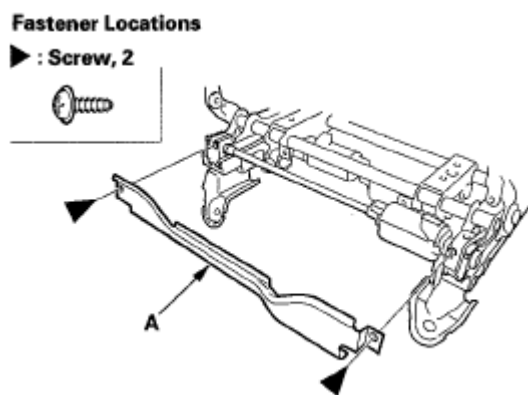


Fig. 23: Identifying Protector And Screw
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the front bracket mounting nuts (A) and rear pivot bolts (B), then remove the left seat track/ slide motor (C) and right seat track/slide gearbox (D) from the up-down adjuster (E).

Fastener Locations

A ● : Nut, 4 B ► : Bolt, 2

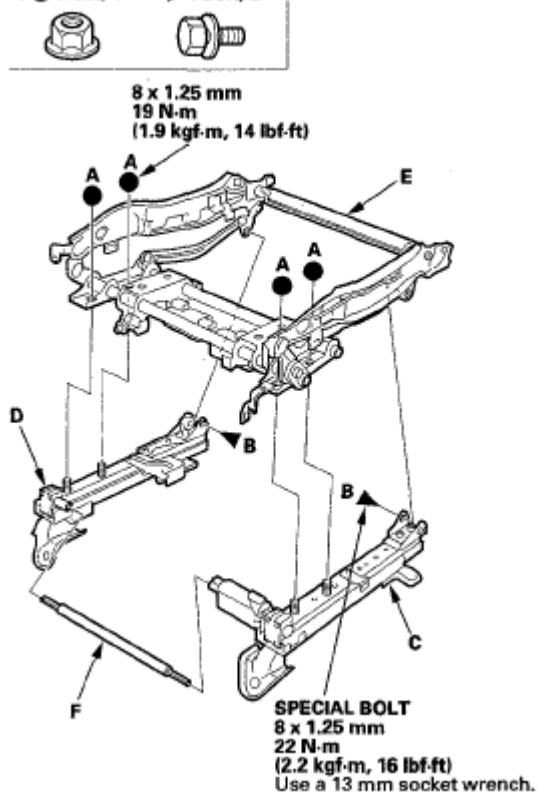


Fig. 24: Identifying Front Bracket Mounting Nuts And Rear Pivot Bolts With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect each end of the slide joint cable (F) from the slide gearbox and slide motor.
8. Remove the nuts, then remove the rear bracket (A) and anchorage bracket (B) from the left seat track (C).

Driver's seat

Fastener Locations

● : Nut, 2

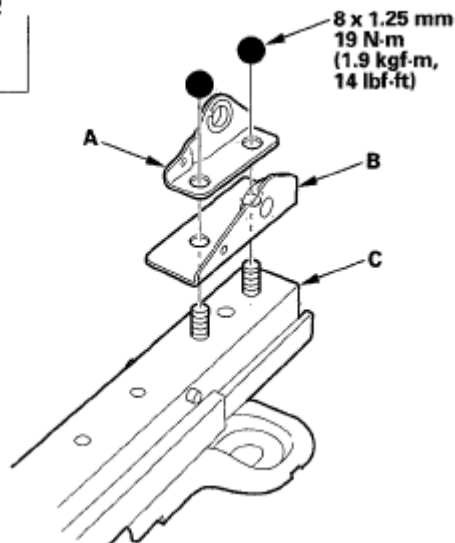


Fig. 25: Identifying Rear Bracket, Anchorage Bracket And Left Seat Track (Driver's Seat) With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

Fastener Locations

● :Nut, 2

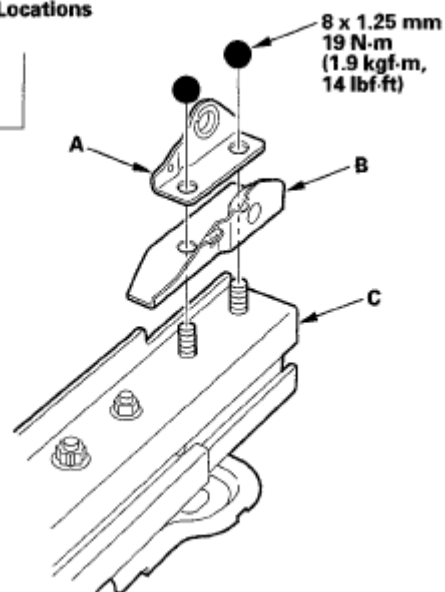


Fig. 26: Identifying Rear Bracket, Anchorage Bracket And Left Seat Track (Passenger's Seat) With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the nuts, then remove the rear bracket (A) on each side and anchorage bracket (B) on the passenger's seat from the right seat track (C).

Driver's seat

Fastener Locations

● : Nut, 2

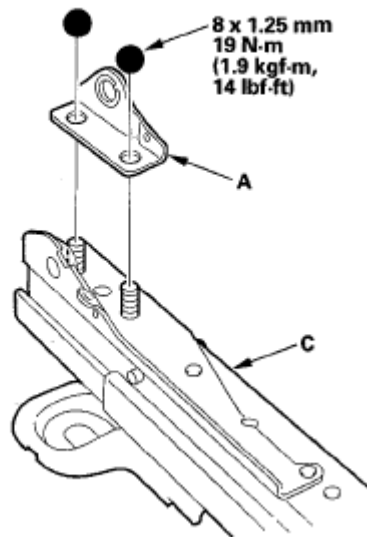


Fig. 27: Identifying Rear Bracket, Anchorage Bracket, Passenger'S Seat And Seat Track (Driver's Seat) With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat

Fastener Locations

● : Nut, 2

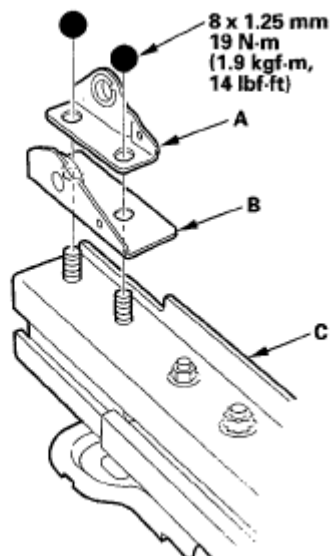


Fig. 28: Identifying Rear Bracket, Anchorage Bracket, Passenger'S Seat And Seat Track (Passenger's Seat) With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the retainer (A) and washer (B) from the up-down screw (C). The front up-down motor is shown; the rear up-down motor is similar.

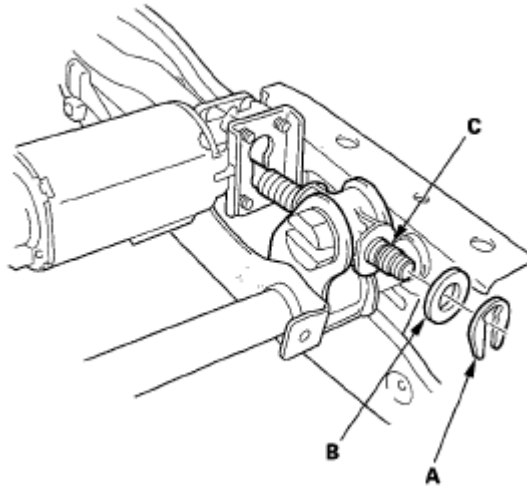


Fig. 29: Identifying Retainer, Washer And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the spring pin (A) from the bracket (B) and up-down motor (C). The front up-down motor is shown; the rear up-down motor is similar.

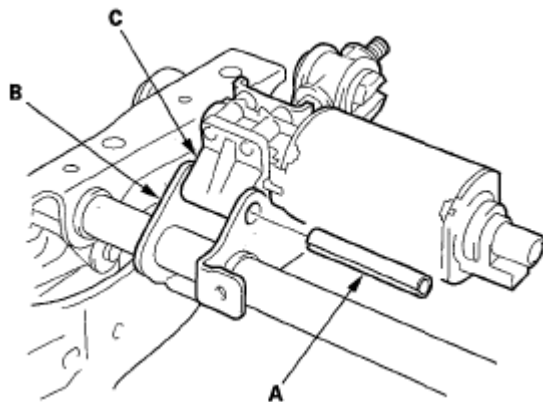


Fig. 30: Identifying Spring Pin, Bracket And Up-Down Motor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Pull the up-down motor (A) up, and remove the motor by turning it clockwise. The front up-down motor is shown; the rear up-down motor is similar.

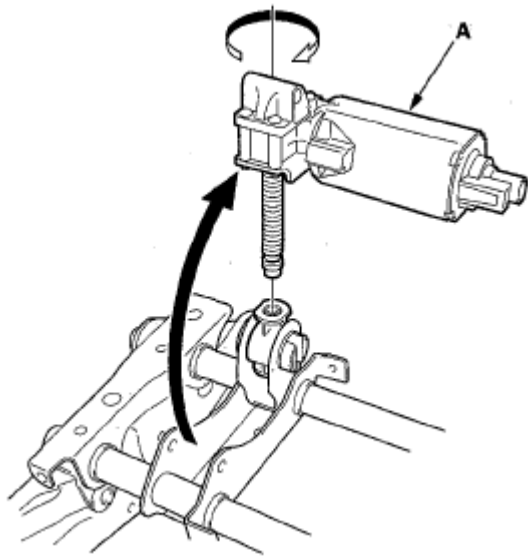


Fig. 31: Identifying Up-Down Motor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the nut (A), stopper (B), and bushings (C) from the link (D).

Front up-down motor

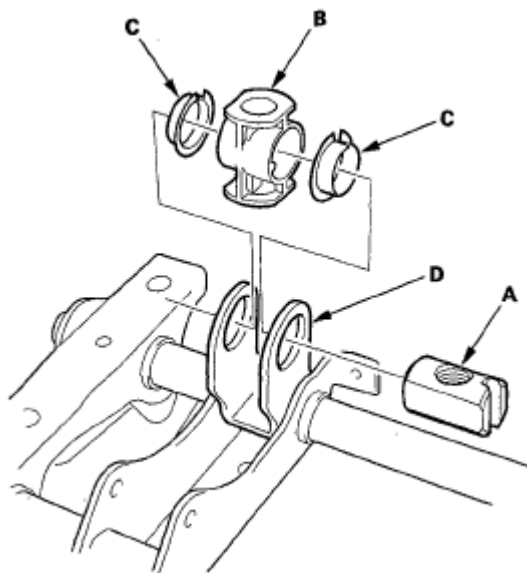


Fig. 32: Identifying Stopper, Bushings, Link And Nut (Front Up-Down Motor)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Rear up-down motor

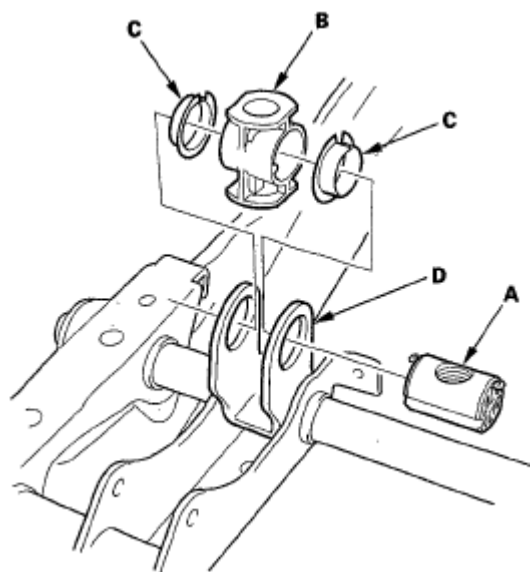


Fig. 33: Identifying Stopper, Bushings, Link And Nut (Rear Up-Down Motor)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Install the parts in the reverse order of removal, and note these items:

- Before installing the seat tracks (A) to the up-down adjuster, positions of both seat tracks should be aligned:
 - Connect the slide joint cable (B) to the right slide gearbox (C).
 - Manually slide the right seat track fully rearward by rotating the inner cable (D).
 - Disconnect the slide joint cable.
 - Connect the slide joint cable to the slide motor, then slide the left seat track fully rearward in the same way as the right side.
- Apply medium strength type liquid thread lock to the pivot bolts before reinstallation.
- Apply multipurpose grease to the sliding portions and pivot portions of the seat tracks and up-down adjuster.
- Check operations of the slide adjuster and the up-down adjuster.

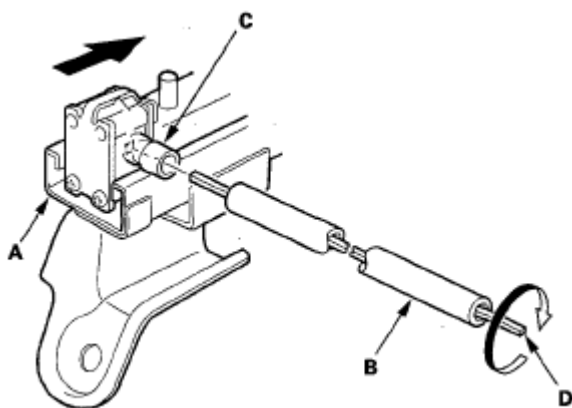


Fig. 34: Identifying Slide Joint Cable And Right Slide Gearbox
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT RECLINE MOTOR REPLACEMENT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE: Put on gloves to protect your hands.

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove these items:
 - Seat-back cover (see **FRONT SEAT-BACK COVER REPLACEMENT**)
 - Lumbar support motor cover (see step 5 on)
3. Driver's seat: Disconnect the lumbar support motor connector (A), and remove the wire ties (B).

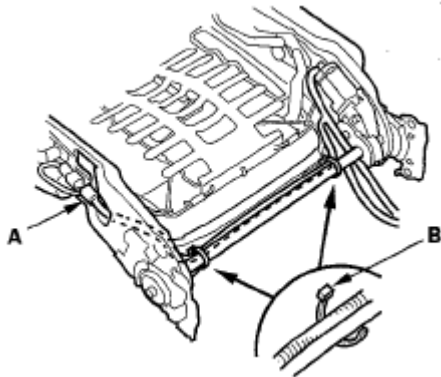


Fig. 35: Identifying Lumbar Support Motor Connector And Wire Ties
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the push nut (A) from the motor side end of the connecting rod (B), gently tap on the motor side of the connecting rod to remove it from the recline motor (C) and both recline adjusters (D).

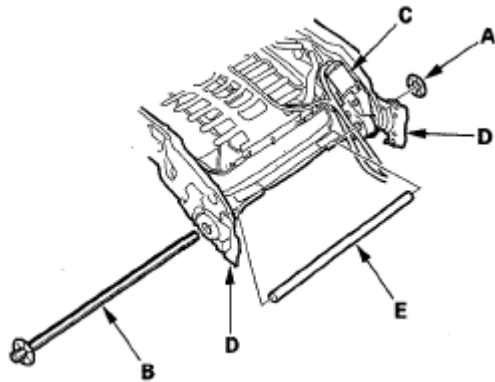


Fig. 36: Identifying Push Nut, Connecting Rod, Recline Motor And Recline Adjusters
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the rod cover (E).
6. Remove the bolt, then remove the recline motor (A).

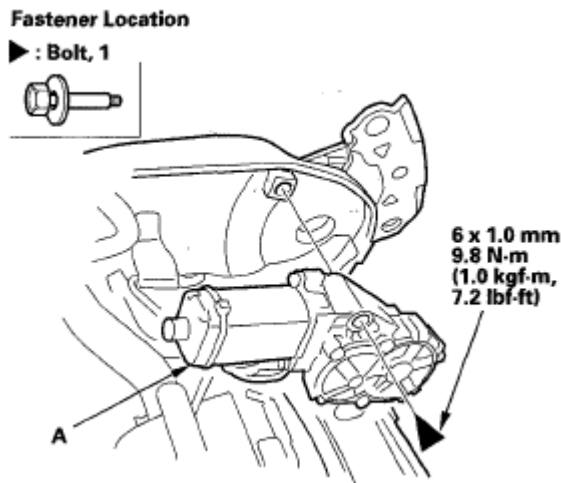


Fig. 37: Identifying Recline Motor And Rod Cover With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the motor in the reverse order of removal, and note these items:
 - Passenger's seat: Calibrate the ODS unit (see **ODS UNIT CALIBRATION**).
 - Replace the wire ties you removed with new ones.
 - Replace the push nut with a new one. Make sure the push nut is installed correctly.
 - Apply medium strength type liquid thread lock to the mounting bolt before reinstallation.

FRONT SEAT LUMBAR SUPPORT REPLACEMENT

DRIVER'S SEAT

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend the cable.
- Take care not to tear the seams or damage the seat covers.

1. Remove the back panel (see step 3).
2. Release the hook of the yoke spring (A) from the top of the basket (B) to loosen the lumbar support cable (C), then disconnect it.

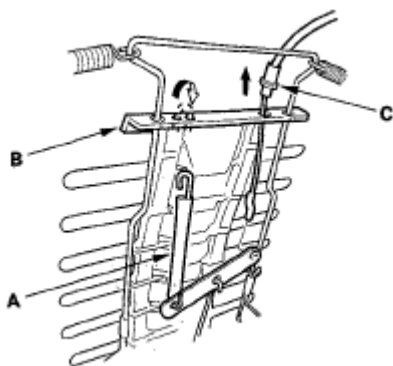


Fig. 38: Identifying Hook Of Yoke Spring

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release both lower springs (A) from inside the seat-back. Release the lumbar support from both upper springs (B).

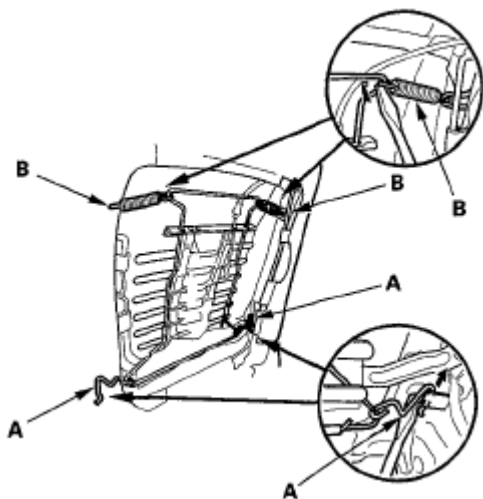


Fig. 39: Identifying Lower Springs And Upper Springs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the hook strips (A), then turn over the seat-back cover (B).

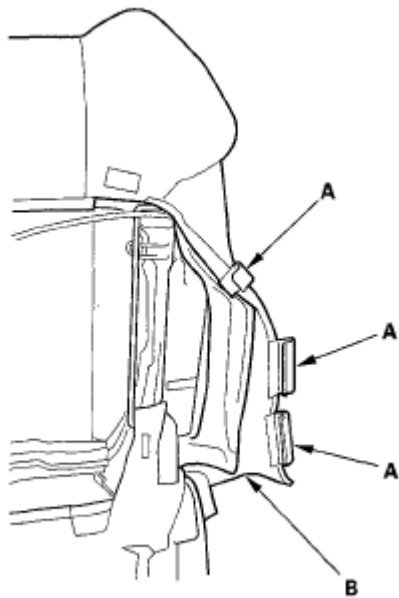


Fig. 40: Identifying Hook Strips And Seat-Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Release the hooks (A), then remove the lumbar support motor cover (B).

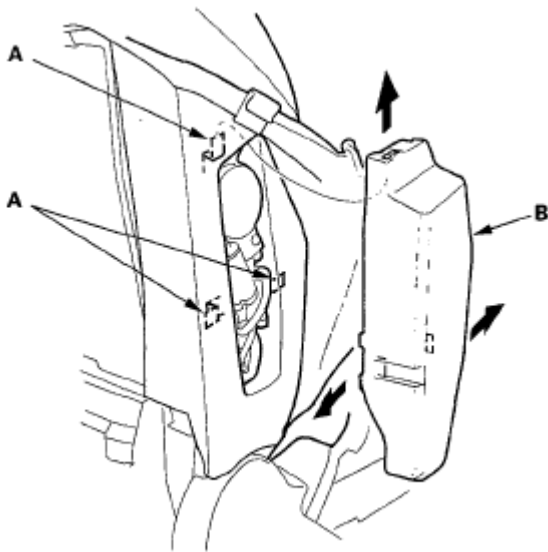


Fig. 41: Identifying Lumbar Support Motor Cover And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the power lumbar support motor connector (A) and remove the nuts, then remove the lumbar support motor (B).

Fastener Locations

● : Nut, 2

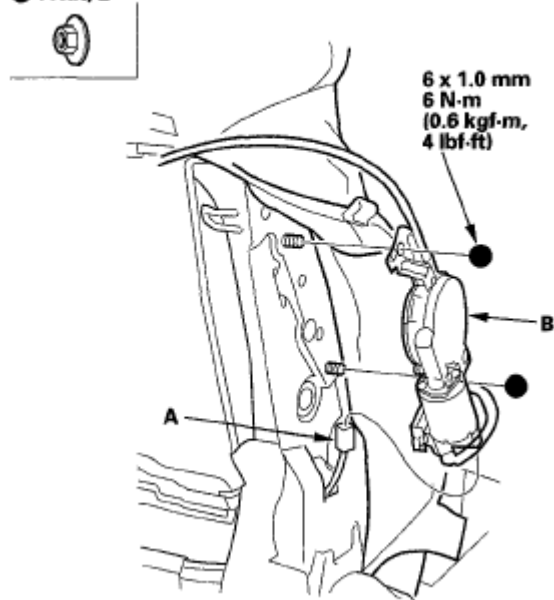


Fig. 42: Identifying Lumbar Support Motor And Power Lumbar Support Motor Connector With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the lumbar support in the reverse order of removal, and note these items:
 - Make sure the connector is plugged in properly, and the cable is connected securely.
 - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hook strips.
 - Replace the back panel clips with new ones.

FRONT SEAT-BACK COVER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before doing repairs or service.

- Check the operation of the driver's seat position sensor after any of these actions (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**).
 - Driver's seat position sensor replacement
 - Cover plate (front side of driver's seat slide rail) replacement

- Calibrate the ODS unit after any of the these actions (see ODS UNIT CALIBRATION).
 - Front passenger's seat replacement (including any seat components)
 - Replacement of the seat weight sensors
 - After a vehicle collision

NOTE:

- Put on gloves to protect your hands.
- Take care not to tear the seams or damage the seat covers.
- On the passenger's seat, do not touch the OPDS sensor in the seat-back pad, and keep it away from oil. Oil can corrode the sensor causing it to fail.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the front seat (see FRONT SEAT REMOVAL/INSTALLATION).
2. Remove the seat-back (see FRONT SEAT DISASSEMBLY/REASSEMBLY).
3. Detach the clips, release the hooks (A) by pulling the bottom of the back panel (B) back, then gently pull down the panel to release the hooks (C) from the seat-back frame, and remove the panel.

NOTE: Detach the clips and hooks in the numbered sequence as shown.

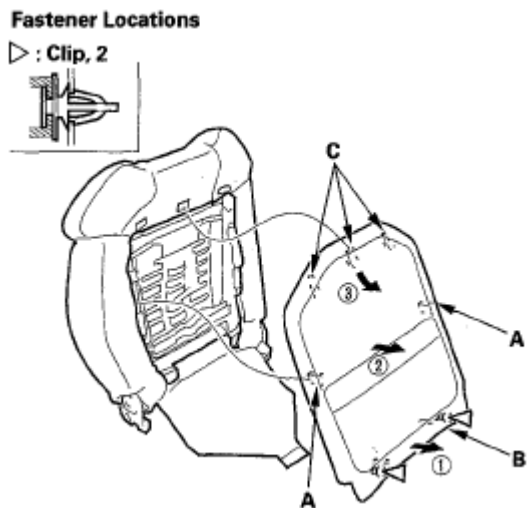


Fig. 43: Identifying Back Panel And Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the hooks (A), then loosen the seat-back cover (B). Remove the wire ties (C).

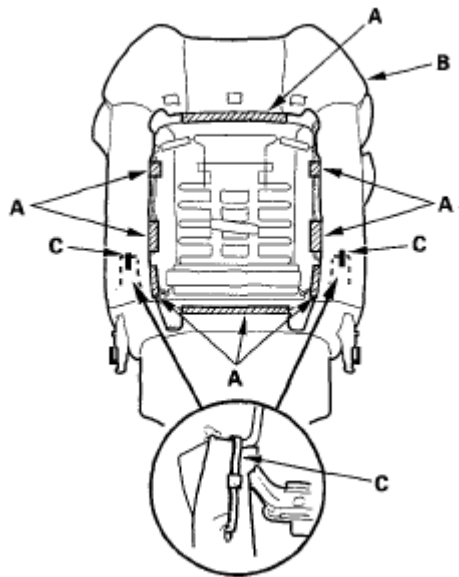


Fig. 44: Identifying Hooks And Seat-Back Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull the recline motor harness/lumbar support motor harness (A) (driver's seat) or recline motor harness (B) (passenger's seat), seat-back heater harness (C), side airbag harness (D) and the ODS unit harness (E) (passenger's seat) out through the holes (F) in the seat-back cover.

Driver's seat-back

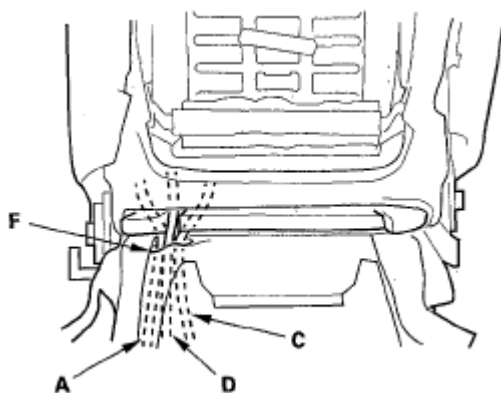


Fig. 45: Identifying Recline Motor Harness And Lumbar Support Motor Harness (Driver'S Seat-Back)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Passenger's seat-back

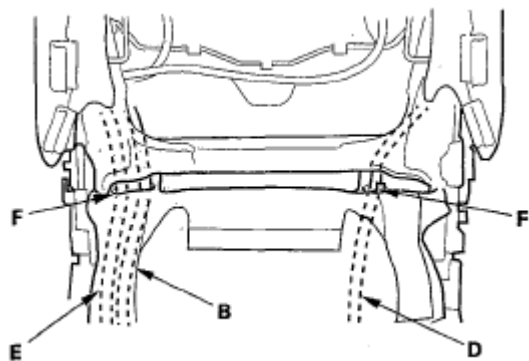


Fig. 46: Identifying Recline Motor Harness And Lumbar Support Motor Harness (Passenger'S Seat-Back)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Passenger's seat: Turn over the seat-back cover (A), detach the hooks (B), then remove the ODS unit cover (C). Disconnect the OPDS sensor connectors (D), then detach the harness clips (E).

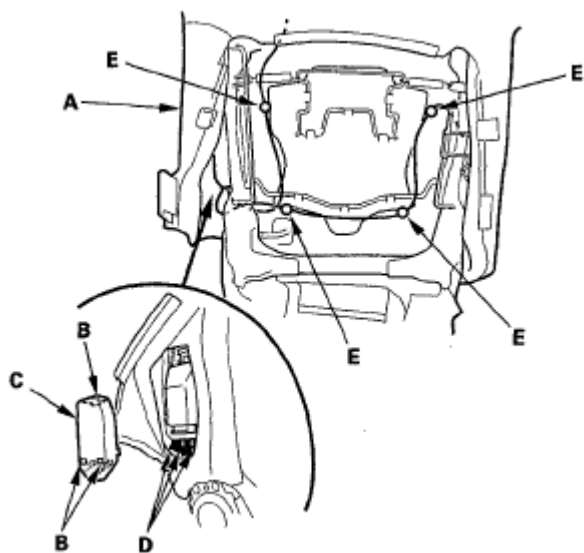


Fig. 47: Identifying Seat-Back Cover, Hooks And ODS Unit Cover

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Release the front hook (A) and rear hook (B) of the reinforcing cloth (C) from seat-back frame (D).

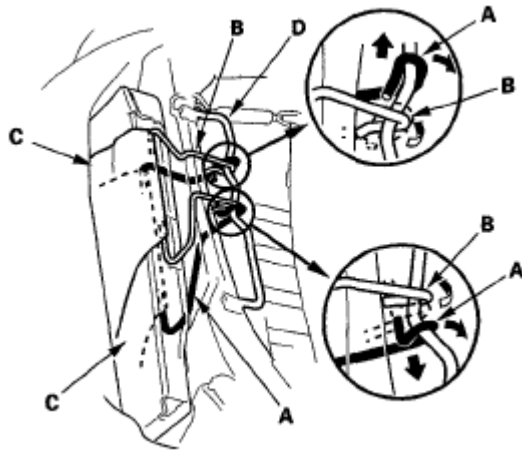


Fig. 48: Identifying Front Hook, Rear Hook And Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pull out the head restraint guides (A) while pinching the tabs on the end of the guides, and remove them.

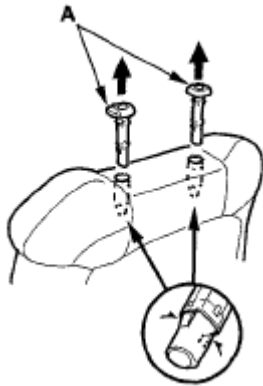


Fig. 49: Identifying Head Restraint Guides
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the seat-back cover (A) and seat-back pad (B) from the seat-back frame (C).

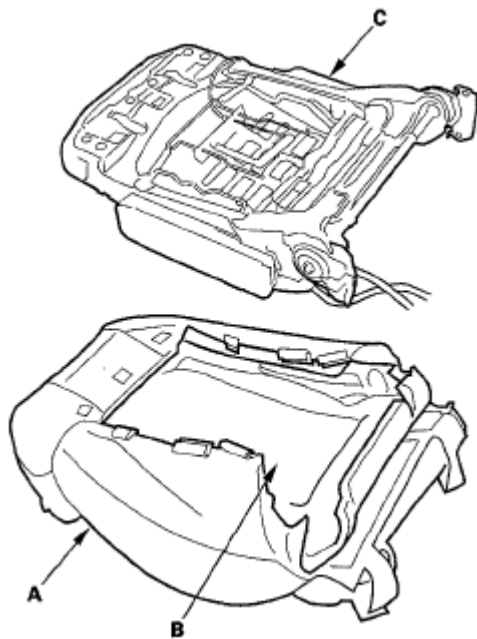


Fig. 50: Identifying Seat-Back Cover, Seat-Back Pad And Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull back the edge of the seat-back cover all the way around, and release the clips (A), then remove the seat-back cover.

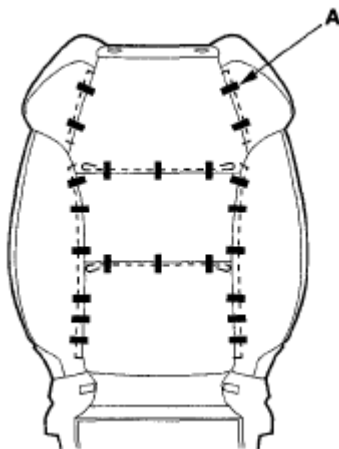


Fig. 51: Identifying Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the cover in the reverse order of removal, and note these items:
 - Reinitialize the ODS unit (see **ODS UNIT INITIALIZATION**).
 - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the clips, hooks, and hook strips.
 - Replace any clips you removed with new ones (A). Install them with commercially available

upholstery ring pliers (B).

- Reinstall the front hook (C) and rear hook (D) of the reinforcing cloth (E) securely.
- Use only original Acura replacement seat-back covers.
- Make sure the recline motor harness/lumbar support motor harness (driver's seat) or recline motor harness (passenger's seat), side airbag harness, seat-back heater harness, and ODS unit harness (passenger's seat) are routed properly.
- Replace the back panel clips with new ones.

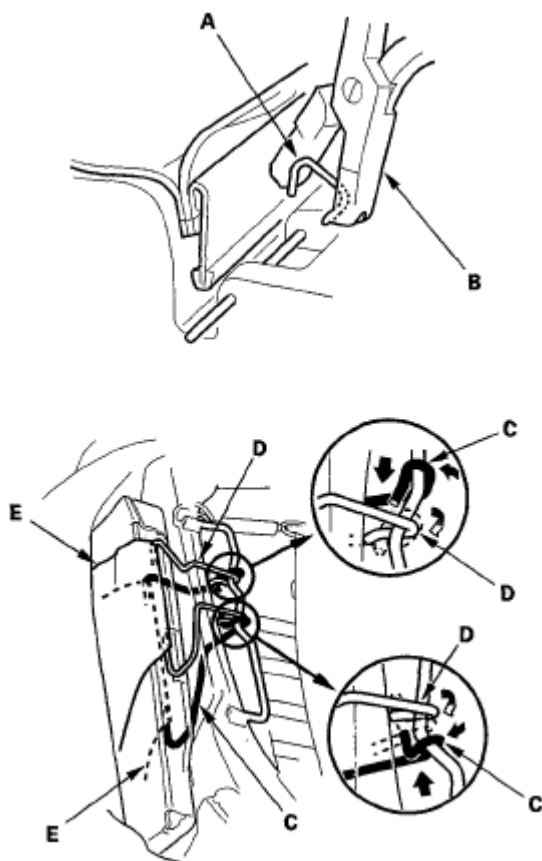


Fig. 52: Identifying Front Hook And Rear Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FRONT SEAT CUSHION COVER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**)

before doing repairs or service.

- Check the operation of the driver's seat position sensor after any of these actions (see **DRIVER'S SEAT POSITION SENSOR OPERATION CHECK**):
 - Driver's seat position sensor replacement
 - Cover plate (front side of driver's seat slide rail) replacement
- Calibrate the ODS unit after any of the these actions (see **ODS UNIT CALIBRATION**):
 - Front passenger's seat replacement (including any seat components)
 - Replacement of the seat weight sensors
 - After a vehicle collision

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to tear the seams of damage the seat covers.

1. Remove the front seat (see **FRONT SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back (see **FRONT SEAT DISASSEMBLY/REASSEMBLY**).
3. From under the seat cushion, disconnect the seat cushion heater connector (A).

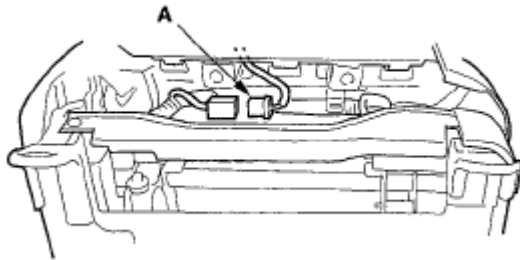


Fig. 53: Identifying Seat Cushion Heater Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the clips and wire tie (A) and release the hook strips (B) from both sides of the seat cushion.

Outside

Fastener Location

▷ : Clip, 1

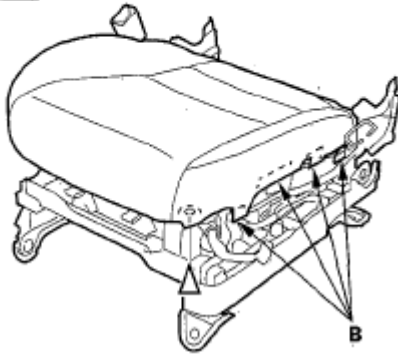


Fig. 54: Identifying Wire Tie And Hook Strips (Outside)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Inside

Fastener Location

▷ : Clip, 1

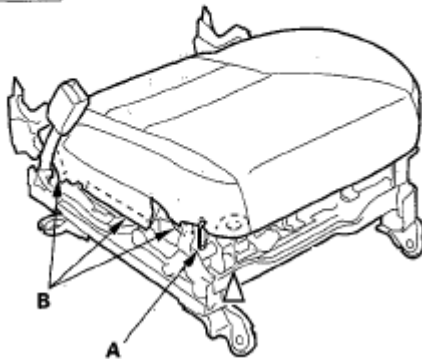


Fig. 55: Identifying Wire Tie And Hook Strips (Inside)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. From under the seat cushion, release the hook strips (A) and clips (B), then pull back the seat cushion cover (C).

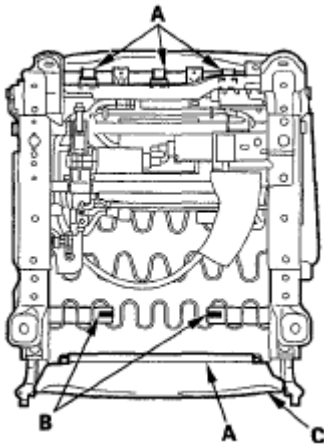


Fig. 56: Identifying Hook Strips, Clips And Seat Cushion Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the silencer (A) and seat cushion pad (B) from the seat cushion frame (C).

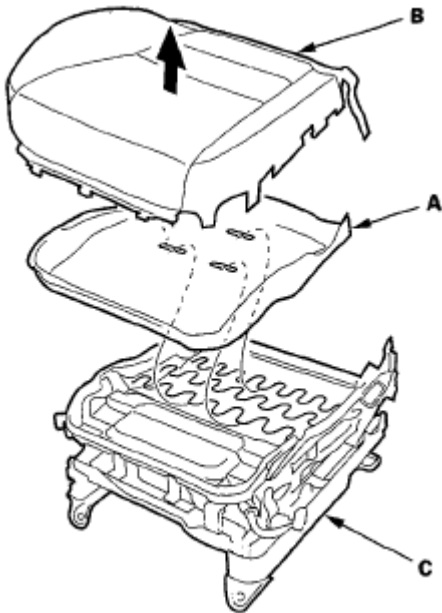
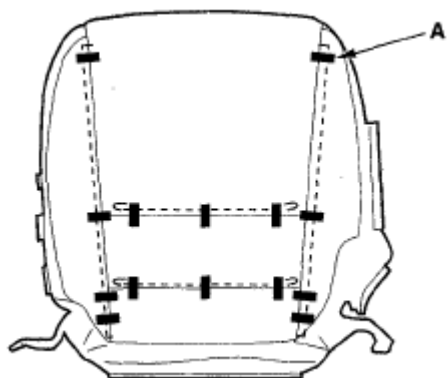


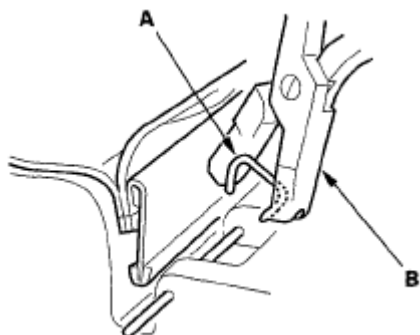
Fig. 57: Identifying Silencer, Seat Cushion Pad And Seat Cushion Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pull back the edge of the seat cushion cover all the way around, and release the clips (A), then remove the seat cushion cover.

**Fig. 58: Identifying Seat Clips**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the cover in the reverse order of removal, and note these items:
- To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips and hook strips.
 - Replace any clips you removed with new ones (A). Install them with commercially available upholstery ring pliers (B).

**Fig. 59: Identifying Clips**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

- **Take care not to scratch the body or tear the seat covers.**

1. Raise the seat-back.
2. Remove the front foot inner cover (A) and front foot outer cover (B) from the front of the seat tracks.

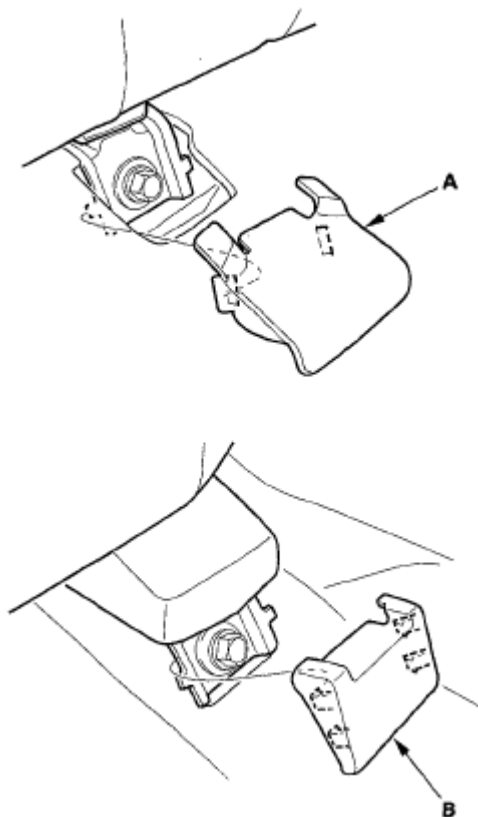


Fig. 60: Identifying Front Foot Inner Cover And Front Foot Outer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Fold the seat-back forward.
4. Remove the rear ISO-FIX bracket cover cap (A) (left second row seat), rear foot inner cover (B), and rear foot outer cover (C) from the back of the seat tracks.

Left second row seat

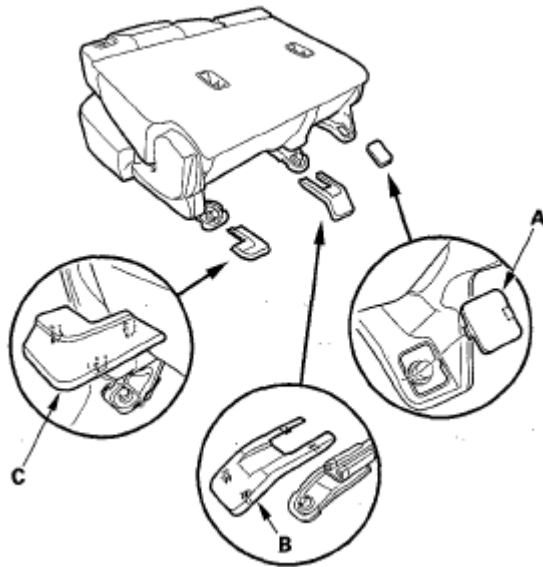


Fig. 61: Identifying ISO-FIX Bracket Cover Cap, Rear Foot Inner Cover And Rear Foot Outer Cover (Left Second Row Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right second row seat

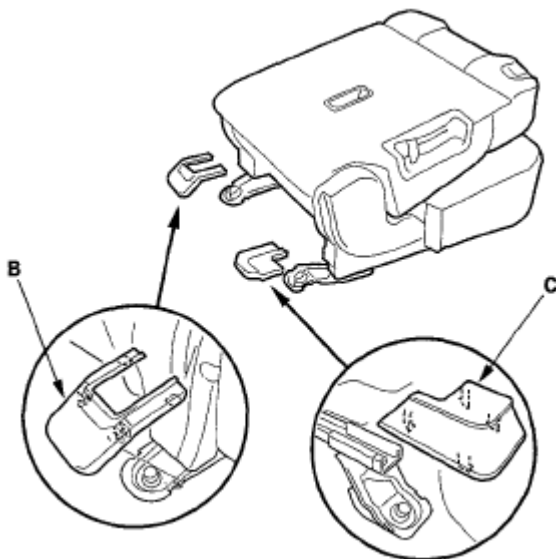


Fig. 62: Identifying ISO-FIX Bracket Cover Cap, Rear Foot Inner Cover And Rear Foot Outer Cover (Right Second Row Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. From the front of the seat tracks, remove the bolts securing the second row seat (A).

Fastener Locations

► : Bolt, 2

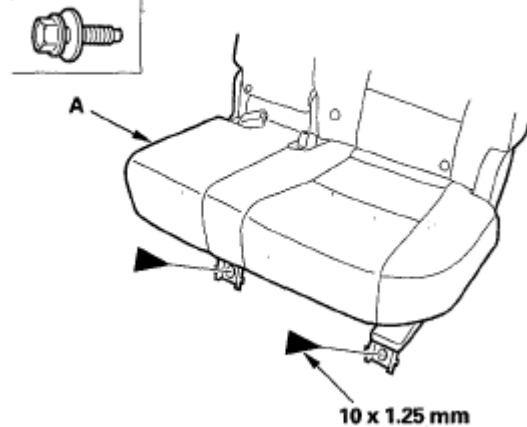


Fig. 63: Identifying Second Row Seat Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. From the back of the seat tracks, remove the bolts securing the second row seat (A).

Fastener Locations

► : Bolt,
Left second row seat, 3
Right second row seat, 2

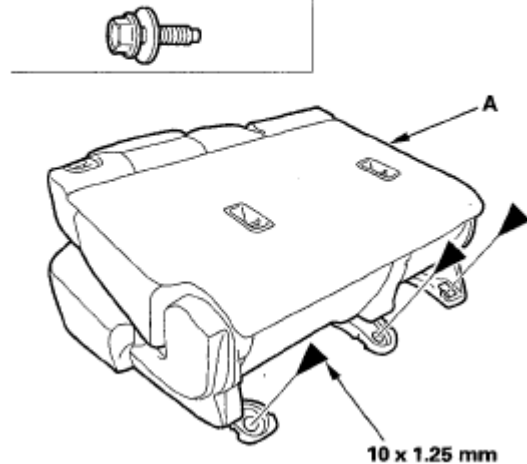


Fig. 64: Identifying Second Row Seat Bolts

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. With seat heater: Lift up the front seat, then detach the harness clip (A), and disconnect the seat-back heater connector (B).

Left second row seat

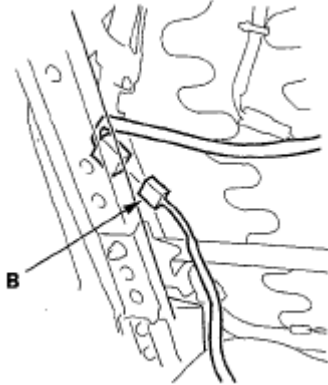


Fig. 65: Identifying Harness Clip And Seat-Back Heater Connector (Left Second Row Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right second row seat

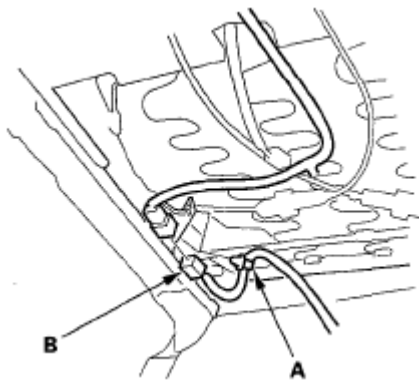


Fig. 66: Identifying Harness Clip And Seat-Back Heater Connector (Right Second Row Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. With the help of an assistant, carefully remove the second row seat through the rear door opening.
9. Install the seat in the reverse order of removal, and note these items:
 - Apply medium strength type liquid thread lock to the seat mounting bolts before reinstallation.
 - Tighten the seat mounting bolts to the specified torque in the sequence shown. Tighten (1) and (2), then tighten (3) and (4), and on the left second row seat, also tighten (5).
 - If equipped, make sure the seat heater connector is plugged in properly.
 - Tighten the bolts by hand first, then tighten them to specification with a torque wrench.

Fastener Locations

► : Bolt,
Left second row seat, 5
Right second row seat, 4



Fig. 67: Identifying Second Row Seat Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT DISASSEMBLY/ REASSEMBLY

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

LEFT SECOND ROW SEAT

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the body or tear the seat covers.

1. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. From under the seat cushion, release the hooks (A) of the back cover carpet (B) from the seat cushion frame, then pull then carpet back.

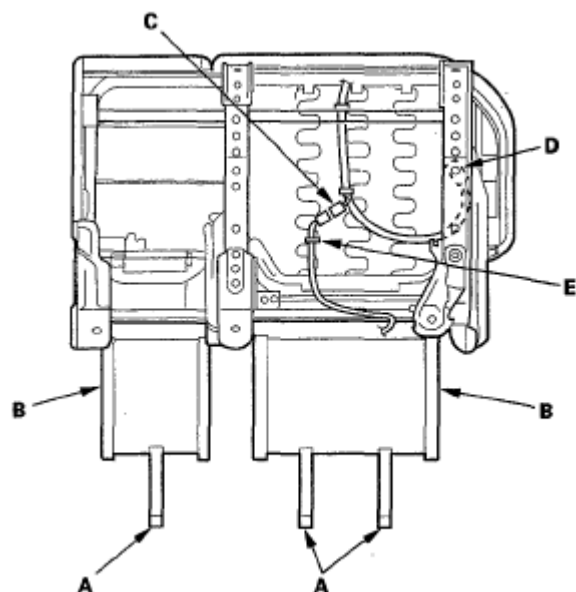


Fig. 68: Identifying Back Cover Carpet And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. With seat heater: Disconnect the seat-back heater connector (C), detach the seat heater connector (D), and remove the wire tie (E).
4. Gently pull out the recline outer cover (A) to detach the clips and to release the hooks (B) of the recline inner cover (C), then remove the cover while releasing the inside edge of the cover from the recline adjuster (D).

Fastener Locations

▷ : Clip, 2

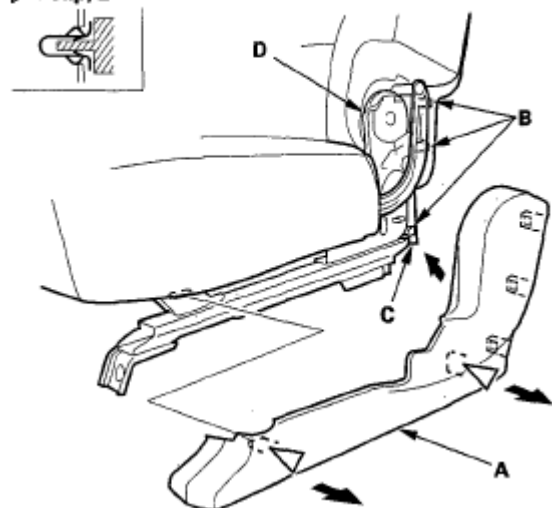


Fig. 69: Identifying Recline Outer Cover, Hooks And Recline Adjuster
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the screw (A), gently pull out the recline inner cover (B) to detach the clip (C), then remove it.

Fastener Locations

A ► : Screw, 1 C ► : Clip, 1

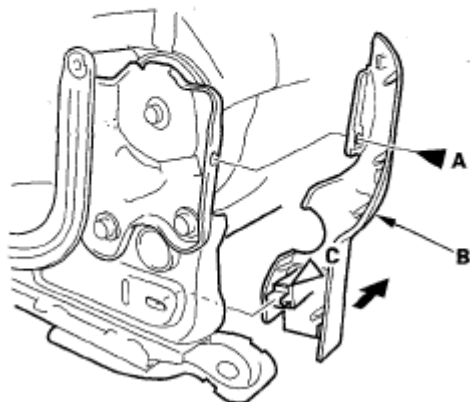


Fig. 70: Identifying Recline Inner Cover And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Gently pull out the ISO-FIX bracket outer cover (A) to detach the clip. Release the hooks (B) from the ISO-FIX bracket inner cover (C), and release the hook (D) of the inner cover from the outer cover, then remove the cover while releasing the inside edge of it from the ISO-FIX bracket (E).

Fastener Location

► : Clip, 1

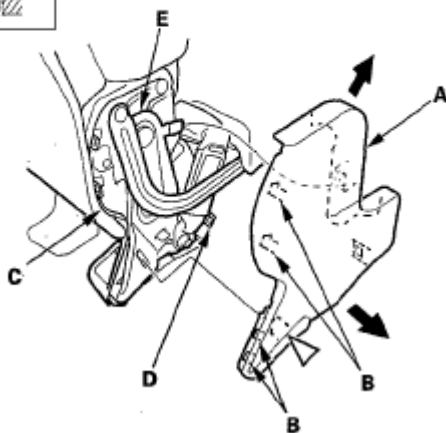


Fig. 71: Identifying ISO-FIX Bracket Outer Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the screw (A) gently pull out the ISO-FIX bracket inner cover (B) to detach the clips (C), then remove it.

Fastener Locations

A ► : Screw, 1 C ► : Clip, 2

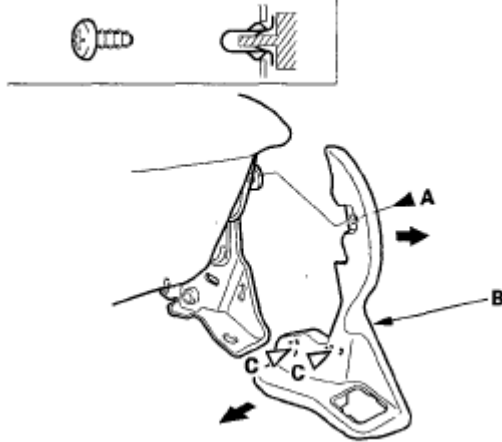


Fig. 72: Identifying ISO-FIX Bracket Inner Cover And Clips
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the screw, gently pull out the rear center outer cover (A) to release the hooks (B) from the center inner cover (C), and to release the hooks (D) of the inner cover from the outer cover, then remove it.

Fastener Location

► : Screw, 1

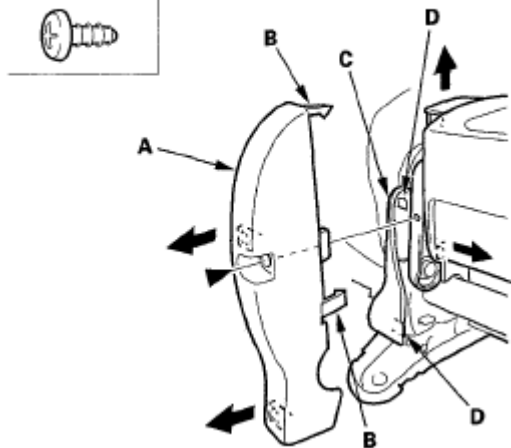


Fig. 73: Identifying Rear Center Outer Cover, Hooks And Center Inner Cover
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Gently pull out the center inner cover (A) to detach the clip, then remove it.

Fastener Location

▷ : Clip, 1

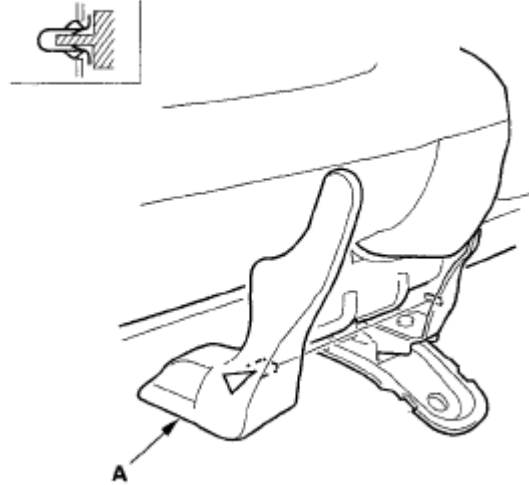


Fig. 74: Identifying Center Inner Cover And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the seat cushion (A).
 1. Remove the seat belt buckles (B) and seat belt detachable anchor (C) from the elastic straps (D).
 2. Remove the nuts (E). Using a TORX T30 bit, remove the bolts (F).

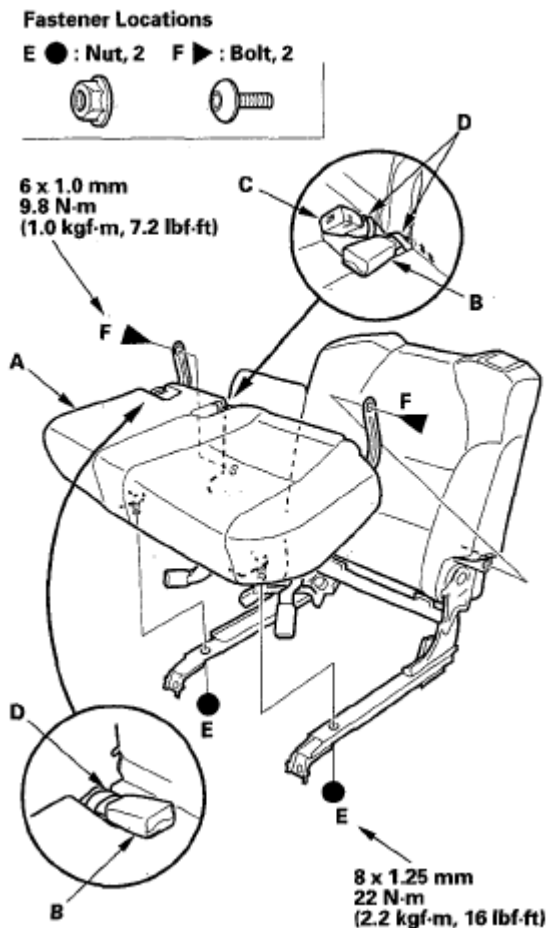


Fig. 75: Identifying Seat Cushion, Seat Belt Buckles And Seat Belt Detachable Anchor
Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the screw, then remove the front center outer cover (A).

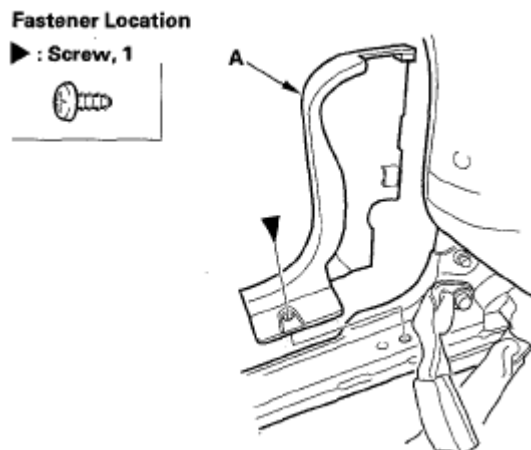


Fig. 76: Identifying Front Center Outer Cover And Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Using a TORX T40 bit, remove the bolts (A, B), then remove the seat-back (C) and bushing (D).

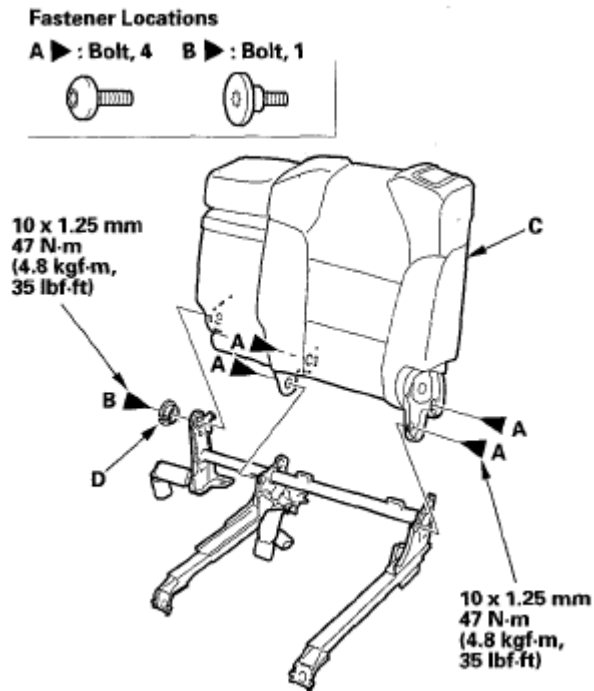


Fig. 77: Identifying Seat-Back, Bushing And Bolts Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Assemble the seat-back and seat cushion in the reverse order of disassembly, and note these items:
- If the bushing is damaged or stress-whitened, replace it with a new one.
 - Replace any damaged clips with new ones.
 - Push the clips and hooks into place securely.
 - With seat heater: Replace the wire tie you removed with a new one.
 - With seat heater: Make sure the seat-back heater connector is plugged in properly.

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

RIGHT SECOND ROW SEAT

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when

removing components.

- Take care not to scratch the body or tear the seat covers.

1. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. From under the seat cushion, release the hook (A) of the back cover carpet from the seat cushion frame, then pull the carpet (B) back.

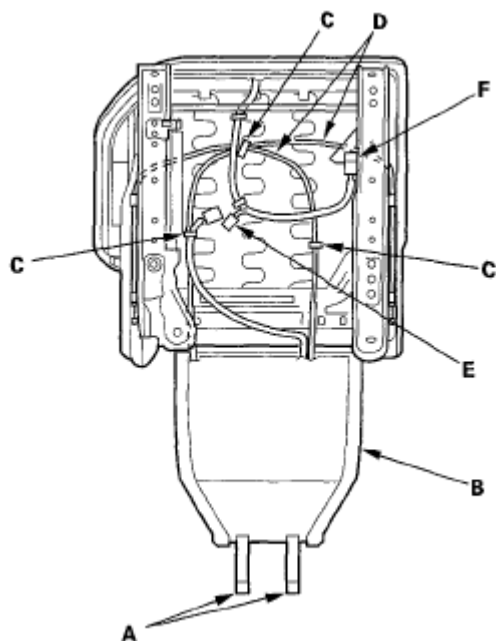


Fig. 78: Identifying Second Row Seat Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Release the wire ties (C) fastening the recline cables (D).
4. With seat heater: Disconnect the seat-back heater connector (E) and detach the seat heater connector (F).
5. Gently pull out the recline outer cover (A) to detach the clips and to release the hooks (B) of the recline inner cover (C), then remove the cover while releasing the inside edge of the cover from the recline adjuster (D).

Fastener Locations

▷ : Clip, 2

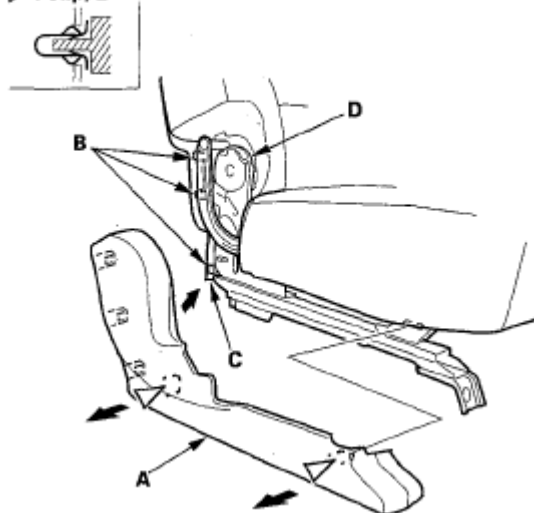


Fig. 79: Identifying Recline Outer Cover, Clips And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the screw (A), gently pull out the recline inner cover (B) to detach the clip (C), then remove it.

Fastener Locations

A ▶ : Screw, 1 C ▷ : Clip, 1

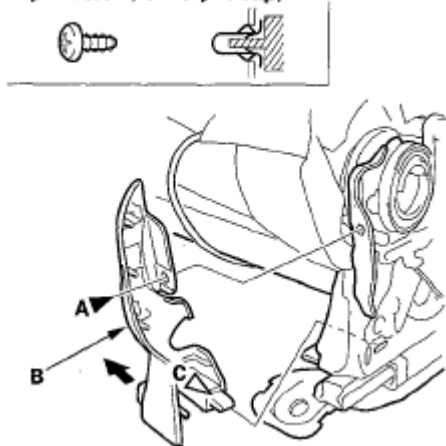


Fig. 80: Identifying Recline Inner Cover, Clip And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Gently pull out the center outer cover (A) to remove the screw and to release the hooks (B) from the center inner cover (C), then remove the cover while releasing the inside edge of it from the recline adjuster (D).

Fastener Location

► : Screw, 1

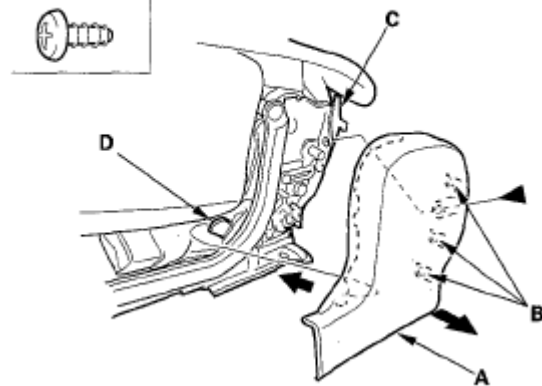


Fig. 81: Identifying Center Outer Cover, Hooks And Recline Adjuster
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Gently pull out the center inner cover (A) to detach the clip, then remove it.

Fastener Location

▷ : Clip, 1

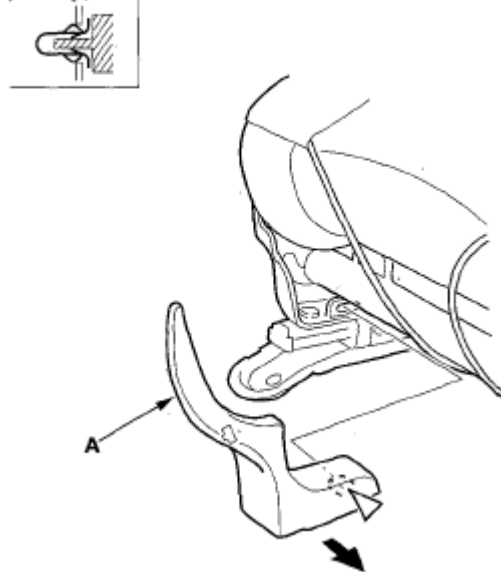


Fig. 82: Identifying Center Inner Cover And Clip
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the nuts (A). Using a TORX T30 bit, remove the bolts (B), then remove the seat cushion (C).

Fastener Locations

A ● : Nut, 4 B ► : Bolt, 2

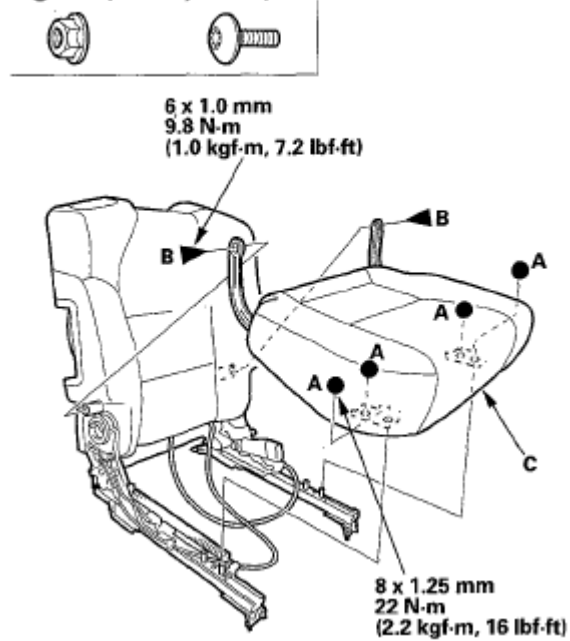


Fig. 83: Identifying Seat Cushion, Bolts And Nuts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Disconnect the recliner cables (A) and the third row seat access rods (B) on both sides, then remove the cables from the clips (C).

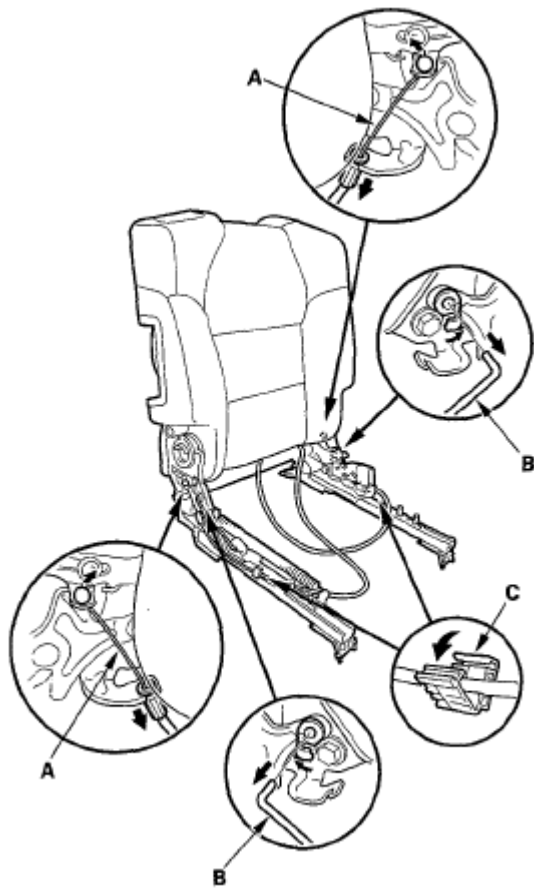


Fig. 84: Identifying Recliner Cables, Third Row Seat Access Rods And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Using a TORX T40 bit, remove the bolts, then remove the seat-back (A).

Fastener Locations

► : Bolt, 4

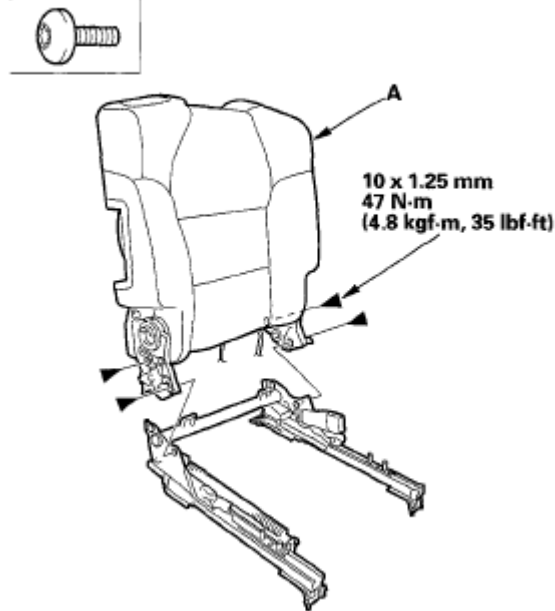


Fig. 85: Identifying Seat-Back And Bolts With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Assemble the seat-back and seat cushion in the reverse order of disassembly, and note these items:
- If the cable clips and rod fasteners are damaged or stress-whitened, replace them with new ones.
 - Replace any damaged clips with new ones.
 - Push the clips and hooks into place securely.
 - Apply multipurpose grease to the moving parts of the seat track.
 - Replace the wire ties you removed with new ones.
 - Make sure each cable is connected securely.
 - With seat heater: Make sure the seat-back heater connector is plugged in properly.

SECOND ROW SEAT-BACK RECLINE LEVER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

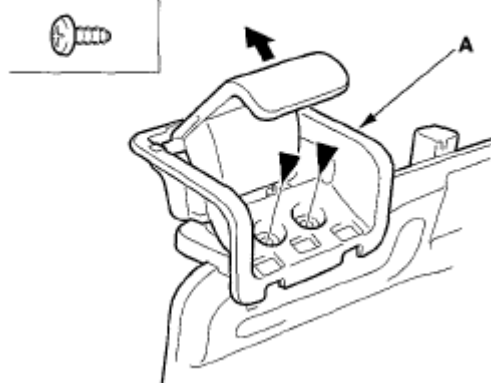
- Put on gloves to protect your hands.
- Take care not to tear the seams or damage the seat covers.
- Take care not to kink the cables.
- Use the appropriate tool from the KTC trim tool set to avoid damage when

removing components.

1. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back cover/pad from the seat-back frame (see **SECOND ROW SEAT COVER REPLACEMENT**).
3. Right second row seat: Remove these items:
 - Recline outer cover (see step 4)
 - Center outer cover (see step 6)
4. Remove the screws securing the recline lever (A).

Fastener Locations

► : Screw, 2

**Fig. 86: Identifying Recline Lever**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Left second row seat: Detach the clips (A) and disconnect the recline outer cable (B) and the recline inner cable (C).

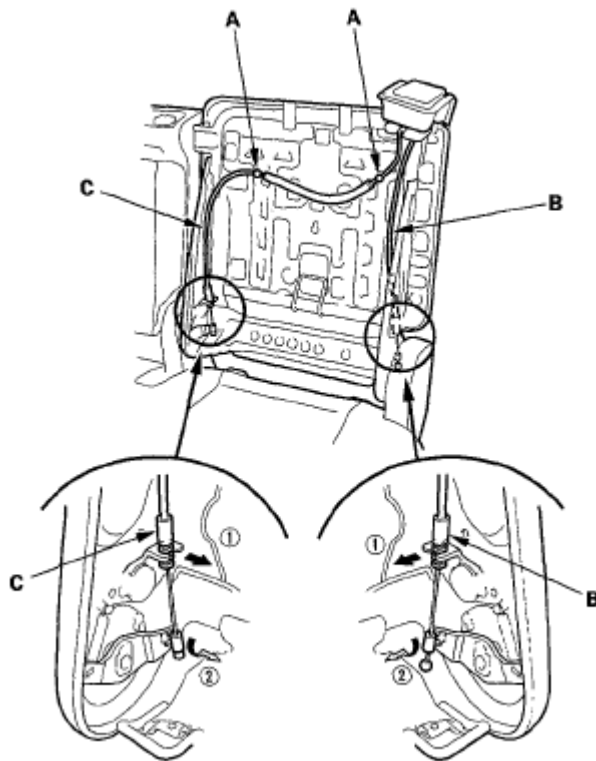


Fig. 87: Identifying Second Row Seat Clips And Recline Inner Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Right second row seat: remove the wire ties (A) and detach the clips (B), disconnect the recline outer cable (C) and the recline inner cable (D), then remove the cables from the clips (E).

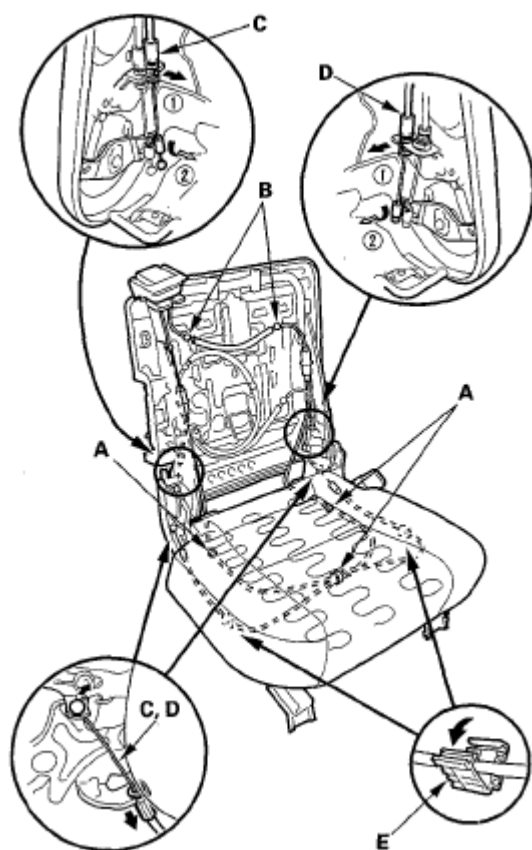


Fig. 88: Identifying Second Row Seat Back Clip And Outer Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the recline lever in the reverse order of removal, and note these items:
- Make sure each cable is connected securely.
 - Fix at the middle groove in the end of the recline inner cable (A) securely to obtain no clearance between the cable end and the recline lever fitting.
 - Fix at the middle groove in the end of the recline outer cable (B) securely to obtain a clearance between the cable end and the recline lever fitting.
 - Check the seat-back fold down operation:
 - Left second row seat: When operating the recline lever, the inner recline adjuster is unlocked first, the outer recline adjuster is unlocked next, then the seat-back is folded down fully.
 - Right second row seat: When operating the recline lever, the inner recline adjuster is unlocked first, the outer recline adjuster is unlocked next, then the seat-back is folded down fully without any interference in movement, but the seat doesn't slide forward.
 - The right second row seat is shown; the left second row seat is similar.

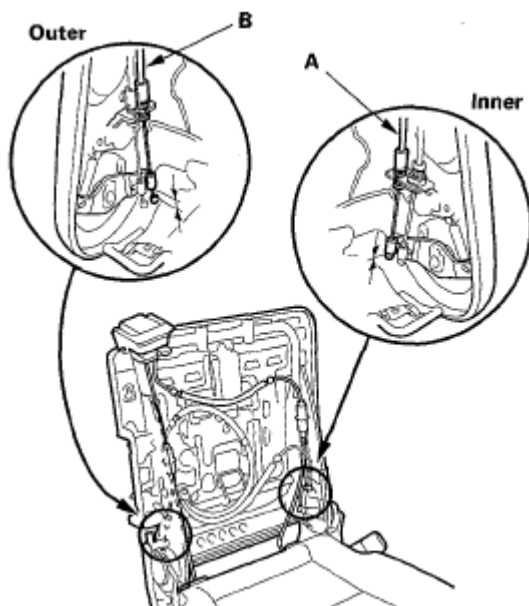


Fig. 89: Identifying Inner Cable And Outer Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT-BACK RECLINE CABLE REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to bend the cable.

1. Remove the seat-back recline lever (see **SECOND ROW SEAT-BACK RECLINE LEVER REPLACEMENT**).
2. Carefully pry out the cover (A) with a flat-tip screwdriver at the gap while holding the lever fully open. Release the tabs (B), then remove the cover.

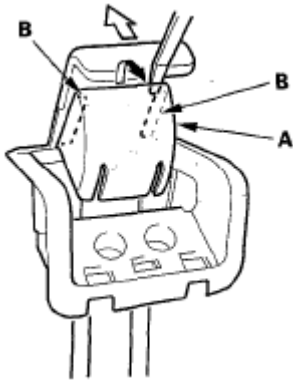


Fig. 90: Identifying Second Row Seat-Back Cover And Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the recline cables (A).

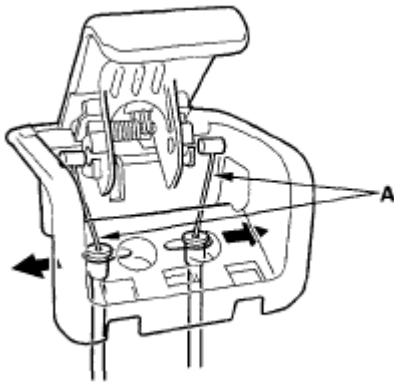


Fig. 91: Identifying Recline Cables
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the second row seat-back recline cables in the reverse order of removal, and make sure the cables are connected securely.

THIRD ROW SEAT ACCESS CABLE REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend the cable.

1. Remove the right second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the right second row seat-back cover/pad from the seat-back frame (see **SECOND ROW SEAT COVER REPLACEMENT**).
3. Disconnect the third row seat access cables (A) and detach the clips (B), then remove the cable by pinching the hooks (C) of the holder.

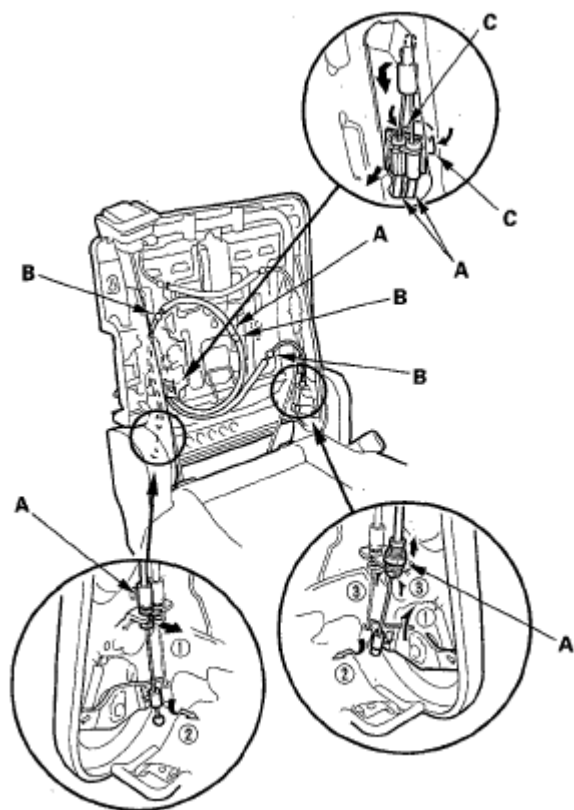


Fig. 92: Identifying Third Row Seat Access Cables And Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the cable in the reverse order of removal, and note these items:
 - Make sure each cable is connected securely.
 - If necessary, remove the clip (A), then adjust the inner side end of the third row seat access cables (B) to obtain no clearance between the cable end and the recline lever fitting.
 - Fix at the middle groove in the outer side end of the third row seat access cable to obtain a clearance between the cable end and the recline lever fitting.
 - Check the third row seat access operation: When operating the third row seat access knob, the inner recline adjuster is unlocked first, the outer recline adjuster is unlocked next, then the seat-back is tilted forward and the seat is allowed to slide forward.

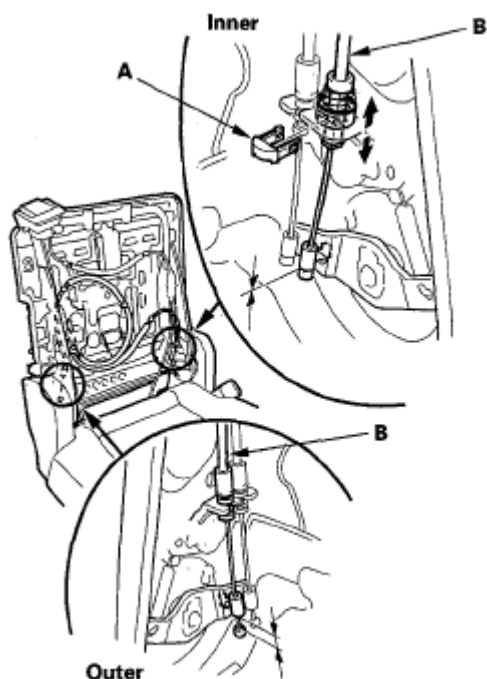


Fig. 93: Identifying Third Row Seat Clip And Cable
Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT ARMREST REPLACEMENT

NOTE: Take care not to tear the seams or damage the seat covers.

1. Remove the ISO-FIX bracket outer cover (see step 6 on).
2. Using a TORX T30 bit, remove the bolt, then remove the washer (A) and wave washer (B).

Fastener Location

► : Bolt, 1

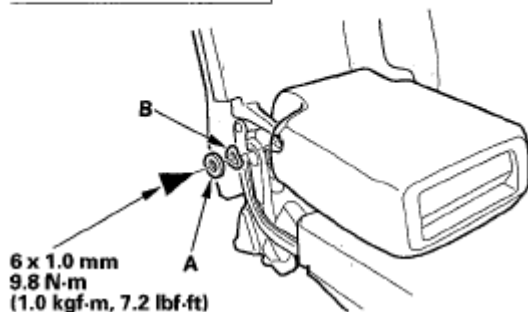


Fig. 94: Identifying Second Row Seat Wave Washer And Washer With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the armrest.

1. Slide the armrest (A) toward the left side of the vehicle.
2. Remove the pivot shaft (B) from the bushings (C) on the passenger's side of the vehicle by pulling up on the armrest, and remove the pivot shaft from the bushing (D) by pulling up on the armrest.

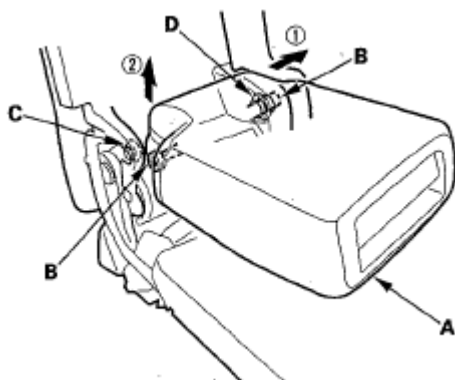


Fig. 95: Identifying Armrest, Pivot Shaft And Bushings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the armrest (A) and bushings (B).

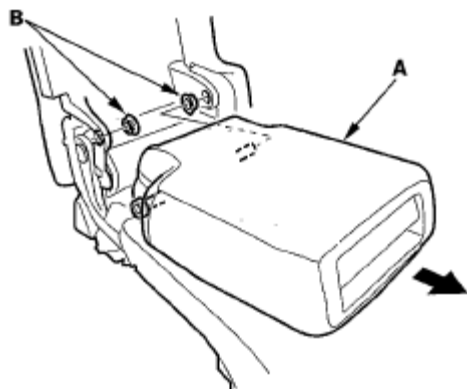


Fig. 96: Identifying Armrest And Bushings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the armrest in the reverse order of removal, and check if the bushing are damaged or stress-whitened, and if necessary, replace them with new ones.

SECOND ROW SEAT ARMREST BEVERAGE HOLDER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Take care not to tear the seams or damage the seat covers.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components. :

1. Detach the hooks (A), then remove the beverage holder cover (B).

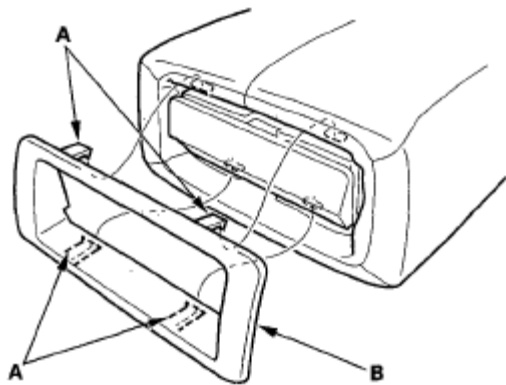


Fig. 97: Identifying Hooks And Beverage Holder Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the screws, then pull out on the beverage holder (A) to release the hooks (B).

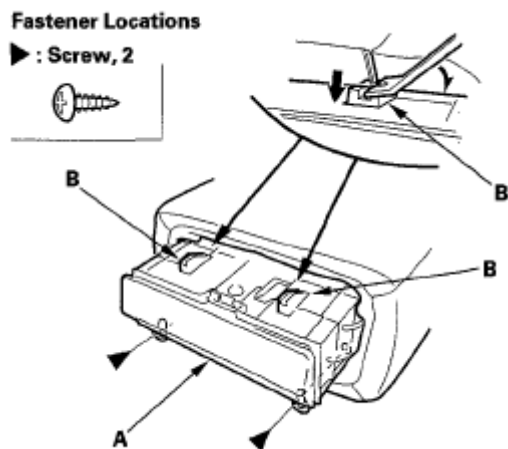


Fig. 98: Identifying Beverage Holder And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the beverage holder in the reverse order of removal.

SECOND ROW SEAT ARMREST PANEL REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to tear the seams or damage the seat covers.

1. Remove the armrest, (see SECOND ROW SEAT ARMREST REPLACEMENT).
2. Remove the center head restraint.
3. Pull out the head restraint guides (A) while pinching the end of the guides, and remove them.

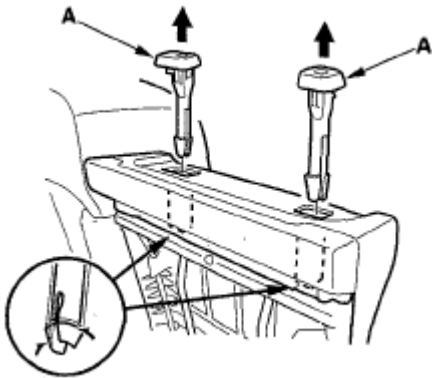


Fig. 99: Identifying Head Restraint Guides

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the screws, gently pull out the rear armrest cover (A) to release the hooks (B) of the armrest panel (C), then remove the cover.

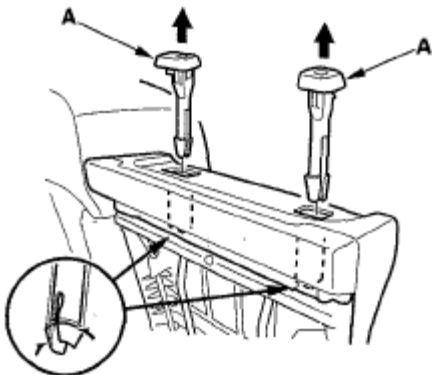


Fig. 100: Identifying Rear Armrest Cover, Hooks And Armrest Panel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull back the ISO-FIX trim (A).

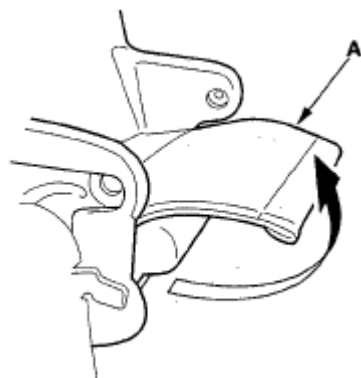


Fig. 101: Identifying ISO-FIX Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the armrest panel (A).
 1. Remove the screws (B).
 2. Gently pull out the armrest panel to detach the clip (C) and to release the hooks (D).

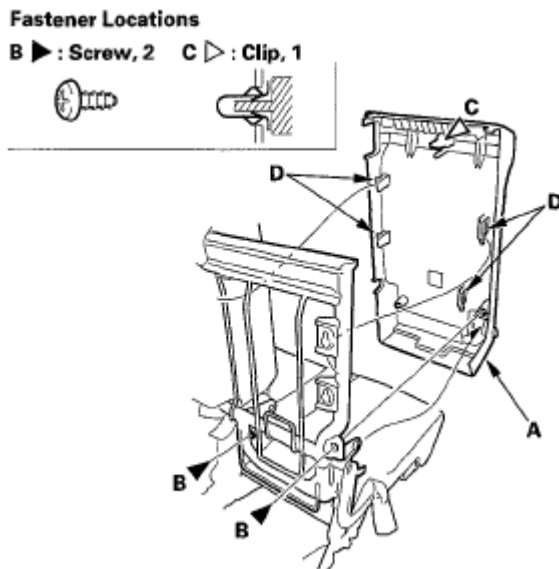


Fig. 102: Identifying Armrest Panel And Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the armrest panel in the reverse order of removal, and note these items:
 - Replace the clip if it's damaged.
 - Push the clip and hooks on the panel into place securely.

SECOND ROW SEAT COVER REPLACEMENT

NOTE:

- Put on gloves to protect your hands.

- Take care not to tear the seams or damage the seat covers.

SEAT-BACK COVER

1. Remove the second row seat (see **SECOND ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the head restraint.
3. From under the seat cushion, release the hooks (A) of the back cover carpet (B) from the seat cushion frame, then pull the carpet back.

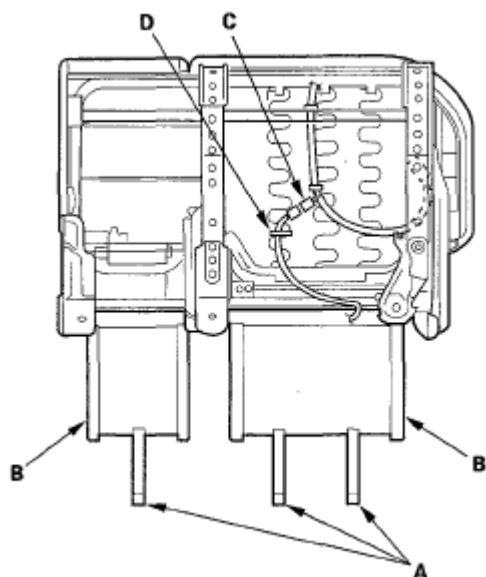
Left second row seat

Fig. 103: Identifying Seat-Back Cover Parts (Left Second Row Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right second row seat

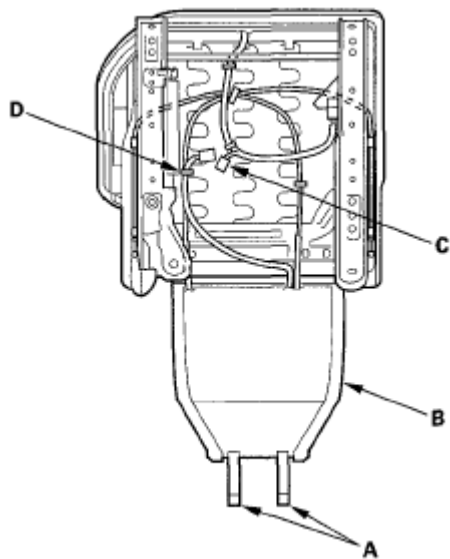


Fig. 104: Identifying Seat-Back Cover Parts (Right Second Row Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With seat heater: Disconnect the seat cushion heater connector (C) and remove the wire tie (D).
5. Remove the third row seat access knob (A). Peel off the label (B) and remove the screw (C), then remove the third row seat access trim (D) by detaching the clips (E).

Fastener Locations

C ► : Screw, 1 E ► : Clip, 2

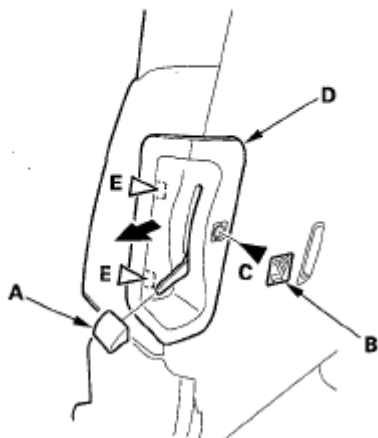


Fig. 105: Identifying Third Row Seat Access Knob

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Fold the seat-back forward fully, detach the clips, and remove the back cover (A).

Left seat-back

Fastener Locations

▷ : Clip, 14

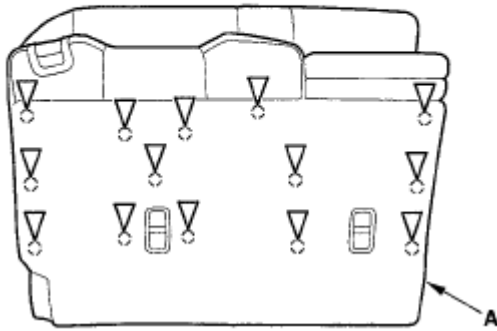


Fig. 106: Identifying Seat-Back Cover (Left Seat-Back)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right seat-back

Fastener Locations

▷ : Clip, 9

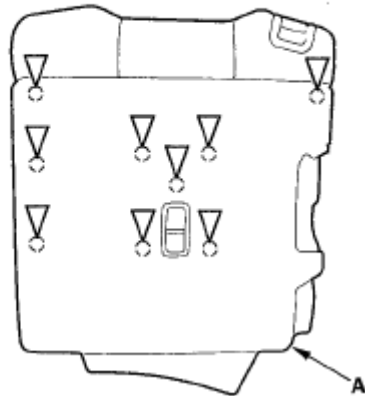


Fig. 107: Identifying Seat-Back Cover (Right Seat-Back)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Release all of the hooks (A) from the back of the seat-back, then pull back the seat-back cover. If equipped, detach the seat-back heater harness clip (B) from the seat-back frame.

Left seat-back

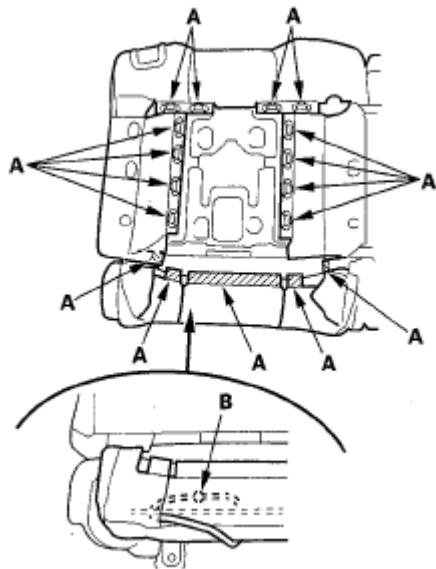


Fig. 108: Identifying Seat-Back Cover Hooks, Heater Harness Clip And Frame (Left Seat-Back)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right seat-back

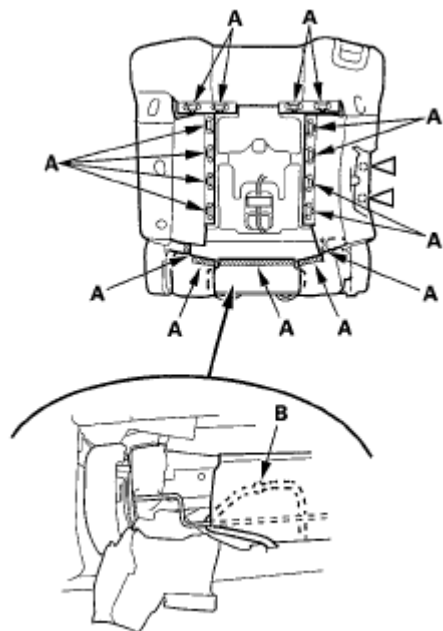


Fig. 109: Identifying Seat-Back Cover Hooks, Heater Harness Clip And Frame (Right Seat-Back)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. While pulling the recline lever (A), gently pull out the recliner lever upper housing (B) to release the hooks (C), then remove it.

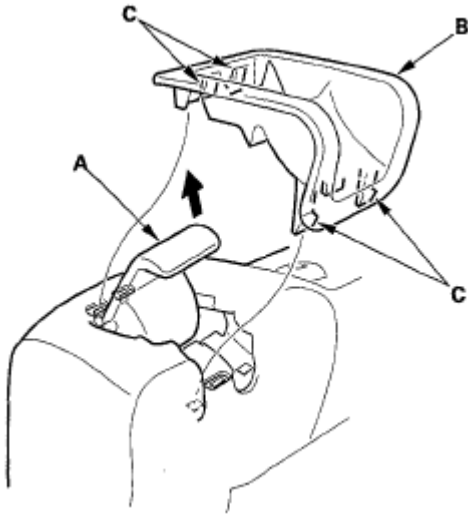


Fig. 110: Identifying Recline Lever

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Release the hook strips (A).

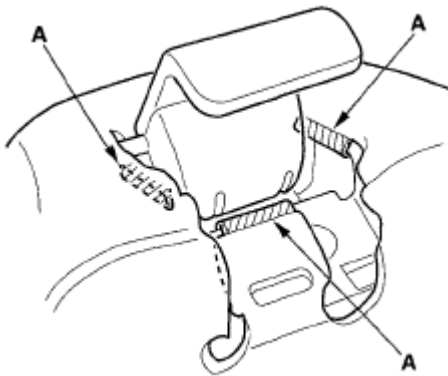


Fig. 111: Identifying Hook Strips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Pull out the seat-back pad (A) from the seat-back frame (B), then pinch the end of the head restraint guides (C) to remove them.

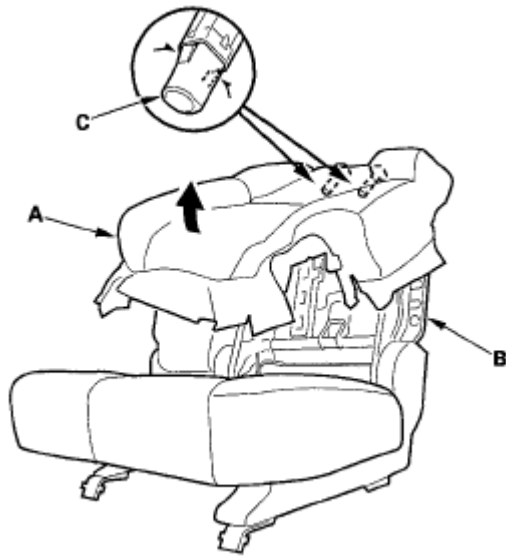


Fig. 112: Identifying Seat-Back Pad

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Pull out the head restraint guides (A).

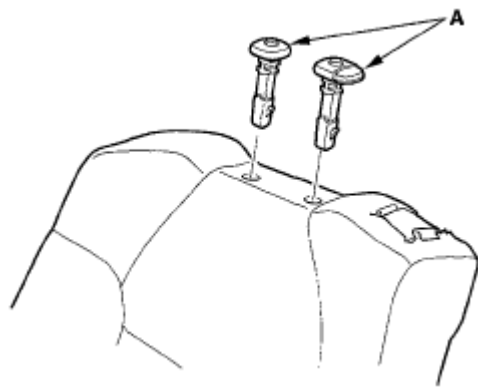


Fig. 113: Identifying Head Restraint Guides

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Remove the seat-back cover/pad (A) from the seat-back frame (B).

Left seat-back

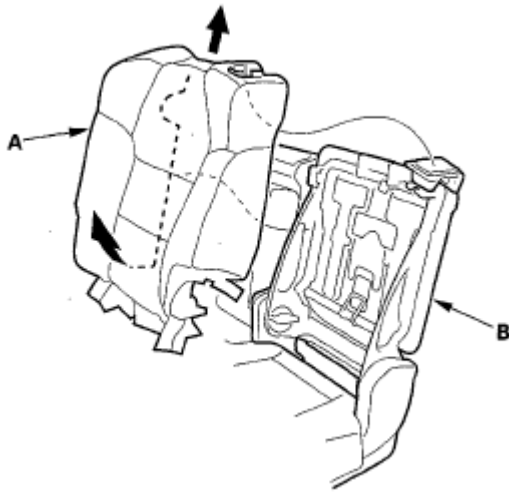


Fig. 114: Identifying Seat-Back Cover, Pad And Seat-Back Frame (Left Seat-Back)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right seat-back

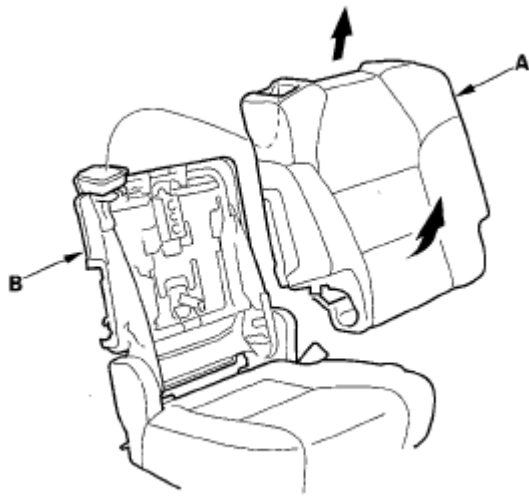


Fig. 115: Identifying Seat-Back Cover, Pad And Seat-Back Frame (Right Seat-Back)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Pull back the edge of the seat-back cover all the way around, and release the clips (A), then remove the seat-back cover.

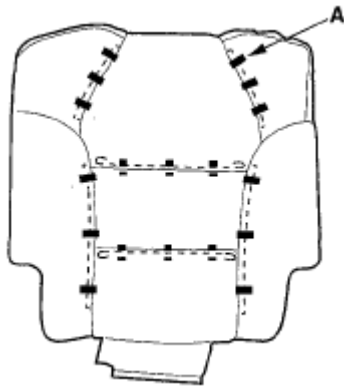


Fig. 116: Identifying Seat-Back Cover And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Right second row seat: If necessary, remove the seat-back damper (A) from the seat-back frame.

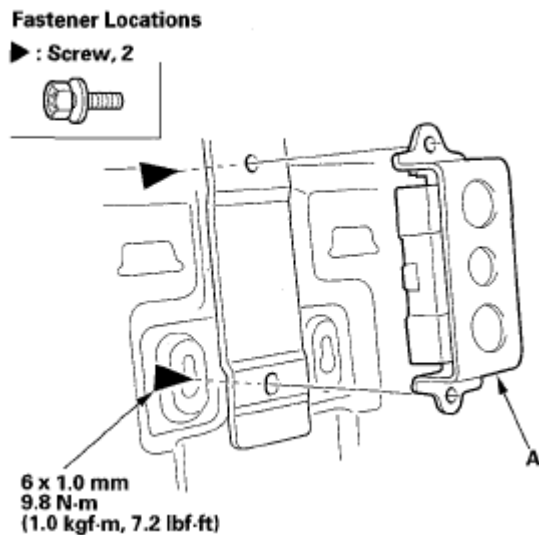


Fig. 117: Identifying Seat-Back Damper With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the seat-back cover in the reverse order of removal, and note these items:
- To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hooks, hook strips, and clips.
 - Replace any clips (A) you removed with new ones using commercially available upholstery ring pliers (B).
 - Replace the wire ties you removed with new ones.
 - With seat heater: Make sure the seat heater connector is plugged in properly.

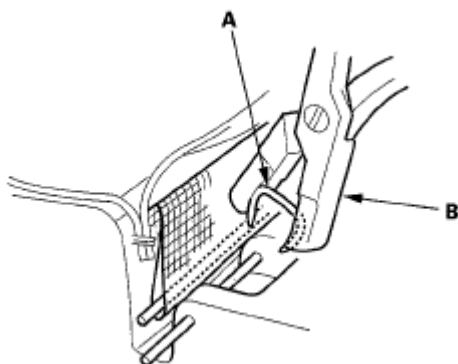


Fig. 118: Identifying Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT CUSHION COVER

1. Remove the second row seat (see SECOND ROW SEAT REMOVAL/INSTALLATION).
2. Remove the recline outer cover:
 - Left second row seat (see step 4 on)
 - Right second row seat (see step 5 on)
3. From under the seat cushion, release the hooks (A) of the back cover carpet (B) from the seat cushion frame, then pull the carpet back.

Left second row seat

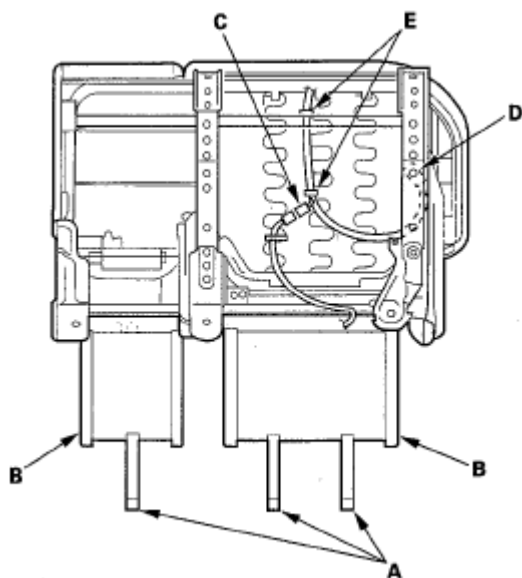


Fig. 119: Identifying Hooks And Back Cover Carpet (Left Second Row Seat)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right second row seat

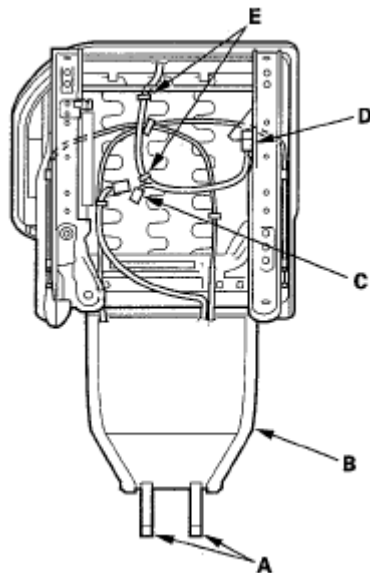


Fig. 120: Identifying Hooks And Back Cover Carpet (Right Second Row Seat)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. With seat heater: Disconnect the seat-back heater connector (C), detach the seat heater connector (D), and remove the wire ties (E).
5. Release all of the clip (A) and hook strips (B) from under the seat cushion (C).

Left seat cushion

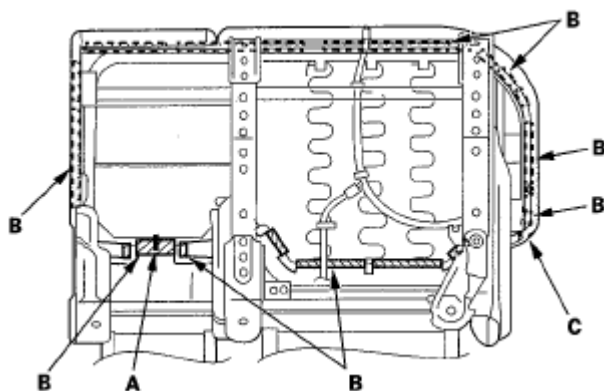


Fig. 121: Identifying Clip, Hook Strips And Seat Cushion (Left Seat Cushion)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right seat cushion

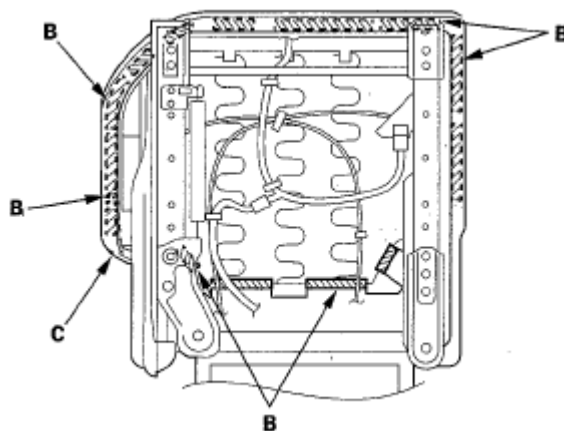


Fig. 122: Identifying Clip, Hook Strips And Seat Cushion (Right Seat Cushion)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the seat cushion cover/pad (A) from the seat cushion frame (B).

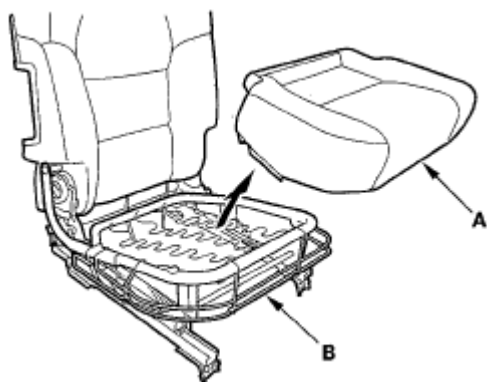


Fig. 123: Identifying Seat Cushion Cover, Pad And Seat Cushion Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Pass the retainers (A) through the slots in the seat-back pad (left seat cushion). Pull back the edge of the seat cushion cover all the way around, and release the clips (B), then remove the seat cushion cover.

Left seat cushion

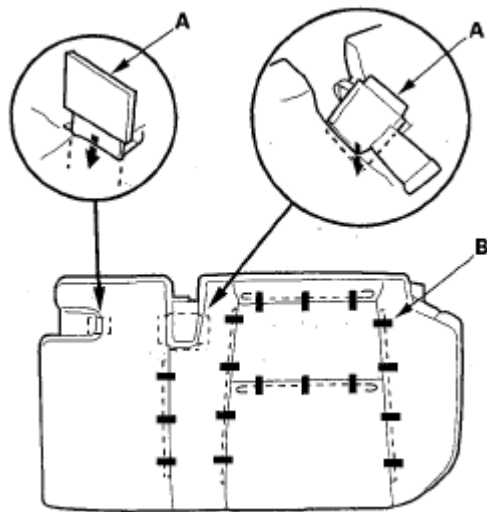


Fig. 124: Identifying Retainers And Clips (Left Seat Cushion)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Right seat cushion

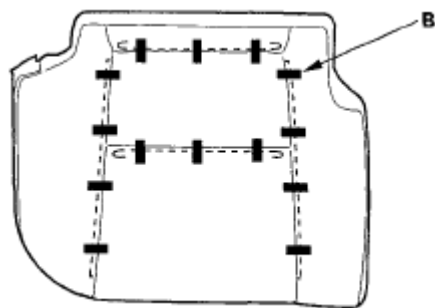


Fig. 125: Identifying Retainers And Clips (Right Seat Cushion)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the seat-back cover in the reverse order of removal, and note these items:
 - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hooks, hook strips, and clips.
 - Replace any clips (A) you removed with new ones using commercially available upholstery ring pliers (B).
 - Replace the wire ties you removed with new ones.
 - With seat heater: Make sure the seat-back heater connector is plugged in properly.

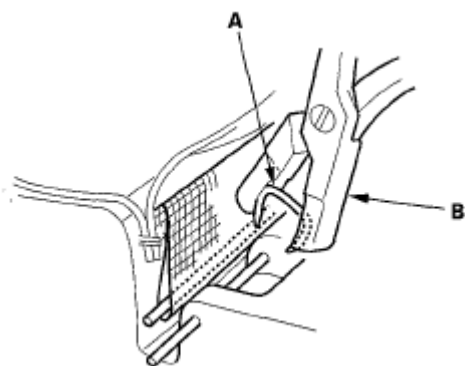


Fig. 126: Identifying Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SECOND ROW SEAT ARMREST COVER REPLACEMENT

NOTE: Take care not to tear the seams or damage the seat covers.

1. Remove the armrest (see SECOND ROW SEAT ARMREST REPLACEMENT).
2. Remove the armrest beverage holder from the armrest (see SECOND ROW SEAT ARMREST BEVERAGE HOLDER REPLACEMENT).
3. Unzip the arm rest cover (A).

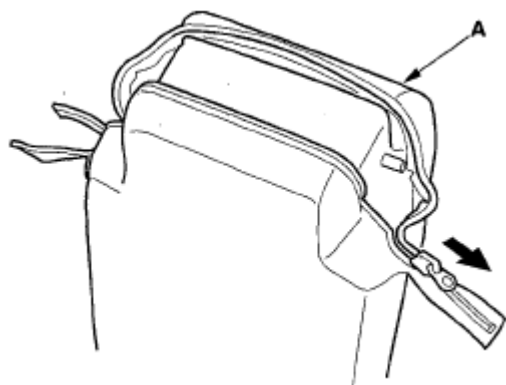
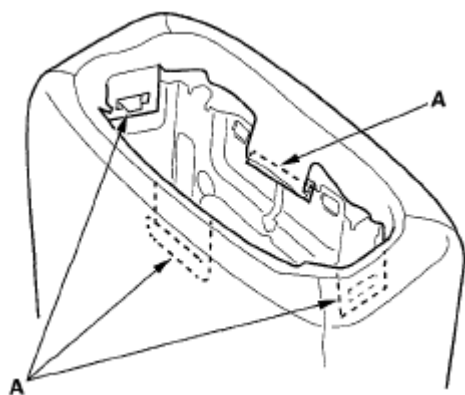


Fig. 127: Identifying Arm Rest Cover

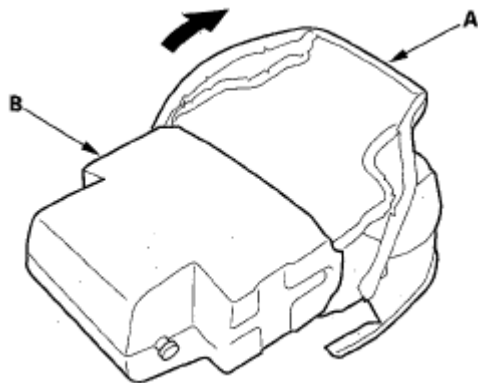
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Release the hooks (A).

**Fig. 128: Identifying Hooks**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Pull back the armrest cover (A) all the way around, then separate the armrest cover and pad (B).

**Fig. 129: Identifying Armrest Cover And Pad**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the cover in the reverse order of removal, and to prevent wrinkles, make sure the material is stretched evenly over the pad before securing the hooks.

THIRD ROW SEAT REMOVAL/INSTALLATION

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the body or tear the seat covers.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Seats - MDX

1. Detach the third row seat-belt from the detachable anchor.
2. Remove the front mounting bolt covers (A) from both front links.

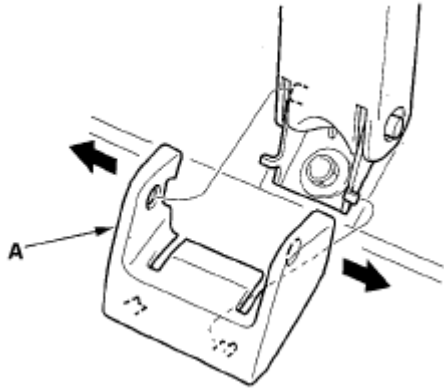


Fig. 130: Identifying Front Mounting Bolt Covers And Front Links
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the front mounting bolts.

Fastener Locations

► : Bolt, 2



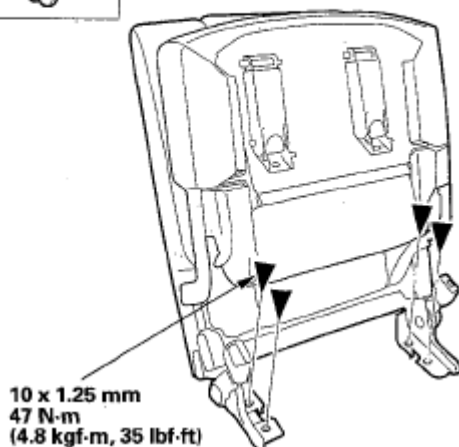
10 x 1.25 mm
47 N·m
(4.8 kgf·m, 35 lbf·ft)

Fig. 131: Identifying Front Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Lift the seat cushion up.
5. Remove the rear mounting bolts while holding the seat cushion.

Fastener Locations

► : Bolt, 4



10 x 1.25 mm
47 N·m
(4.8 kgf·m, 35 lbf·ft)

Fig. 132: Identifying Rear Mounting Bolts And Seat Cushion With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With the help of an assistant, remove the third row seat through the tailgate opening.
7. Install the seat in the reverse order of removal, and apply medium strength type liquid thread lock to the seat mounting bolts before reinstallation.

THIRD ROW SEAT DISASSEMBLY/REASSEMBLY

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the body or tear the seat covers.

1. Remove the third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Release the hook (A) from under the seat cushion, and pull back the seat cushion cover (B) as needed. Remove the screw and Release the hooks (C), then remove the pivot bolt cover (D) from both sides of the seat.

Fastener Location

► : Screw, 1

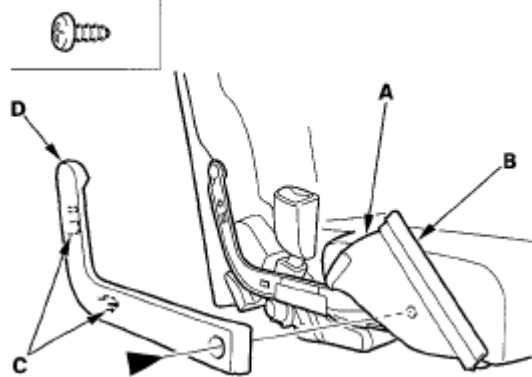


Fig. 133: Identifying Hook And Pivot Bolt Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Using a TORX T30 bit, remove the pivot bolt securing the seat-back (A) and sat cushion (B), then separate them.

Fastener Locations

► : Bolt, 2

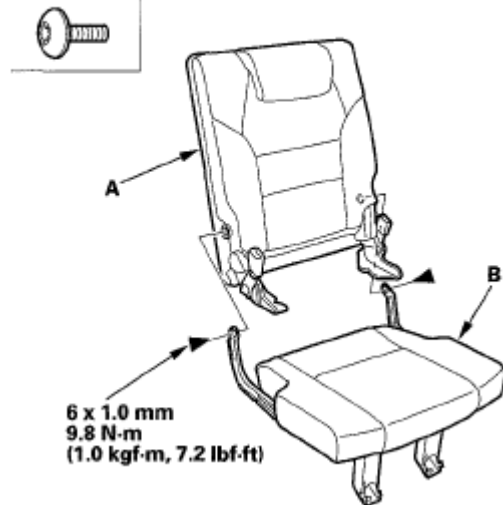


Fig. 134: Identifying Pivot Bolt And Cushion With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If necessary, remove the front link cover (A) by releasing the hooks (B).

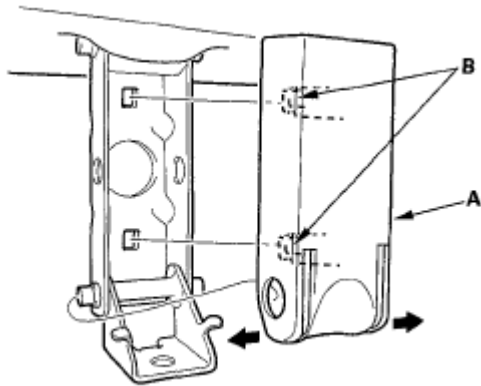


Fig. 135: Identifying Front Link Cover And Hooks
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the seat-back in the reverse order of removal, and note these items:
 - To prevent wrinkles in the seat cushion cover, make sure the material is stretched evenly over the pad before securing the hook strip.
 - Push the hooks into place securely.

THIRD ROW SEAT LATCH REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend the seat-back recline cable.
- The left third row seat is shown, the right third row seat is similar.

1. Remove the left third row seat or right third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back (see **THIRD ROW SEAT DISASSEMBLY/REASSEMBLY**).
3. Remove the screws securing the seat-back recline lever (see step 3).
4. Remove the back cover (see step 4), then release the hooks from behind the seat-back, as needed (see step 5).
5. Remove the screw and release the hook (A), then remove the outer latch cover (B).

Fastener Locations

► : Screw, 2

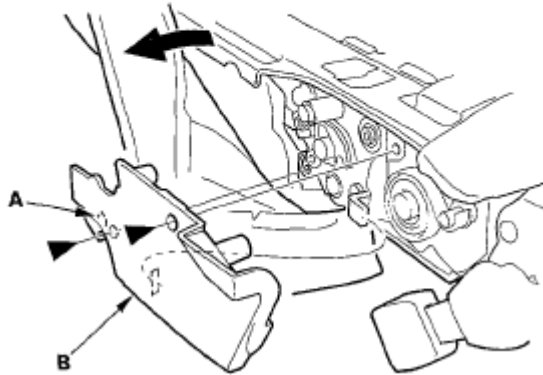
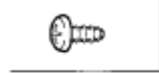


Fig. 136: Identifying Outer Latch Cover And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If necessary, remove the screws, then remove the inner latch cover (A).

Fastener Locations

► : Screw, 2

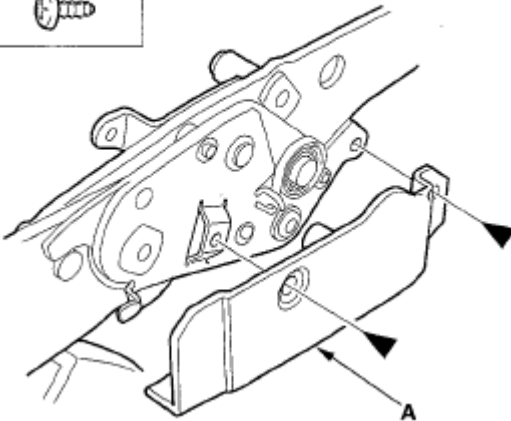


Fig. 137: Identifying Inner Latch Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Disconnect the seat-back recline cable (A).

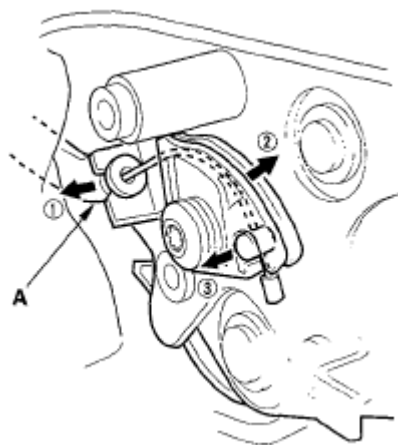


Fig. 138: Identifying Seat-Back Recline Cable
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the bolts, then remove the latch (A).

Fastener Locations

► : Bolt, 2

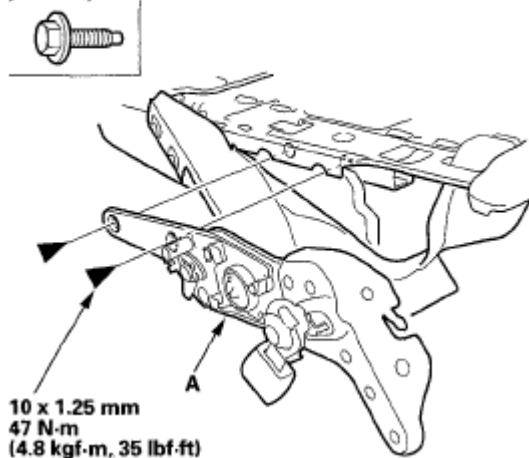


Fig. 139: Identifying Latch And Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Install the latch in the reverse order of removal, and note these items:
 - Make sure the seat-back recline cable is connected securely.
 - Make sure the seat unlatches properly and latches securely.

THIRD ROW SEAT PIVOT REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- The left third row seat is shown; the right third row seat is similar.

1. Remove the right third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back (see **THIRD ROW SEAT DISASSEMBLY/REASSEMBLY**).
3. Remove the screws securing the seat-back recline lever (see step 3).
4. Remove the back cover (see step 4), then release the hooks from behind the seat-back, as needed (see step 5).
5. If necessary, remove the screw, then remove the pivot cover (A).

Fastener Locations

► : Screw, 2

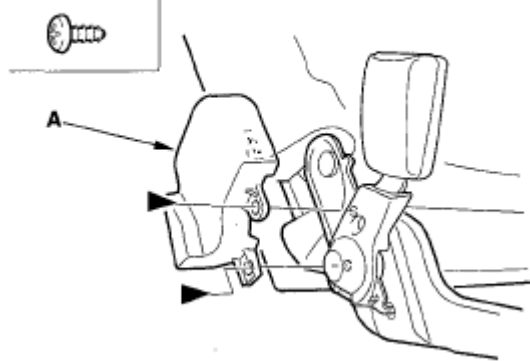


Fig. 140: Identifying Pivot Cover And Screw

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the bolts, then remove the seat pivot (A).

Fastener Locations

► : Bolt, 2

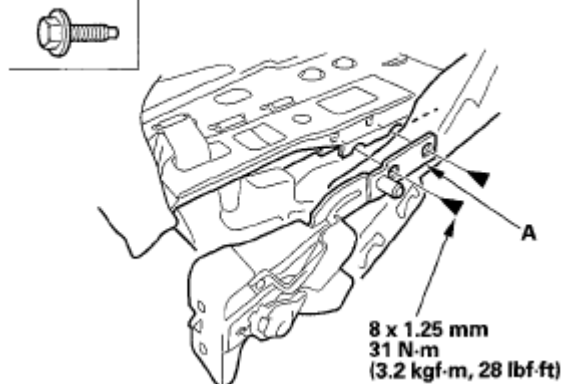


Fig. 141: Identifying Seat Pivot And Bolts With torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the pivot in the reverse order of removal.

THIRD ROW SEAT-BACK RECLINE LEVER REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to kink the seat-back recline cable.

1. Remove the left third row seat or right third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Remove the seat-back (see **THIRD ROW SEAT DISASSEMBLY/REASSEMBLY**).
3. Pry out the lid (A), and remove the screws securing the third row seat-back recline lever (B).

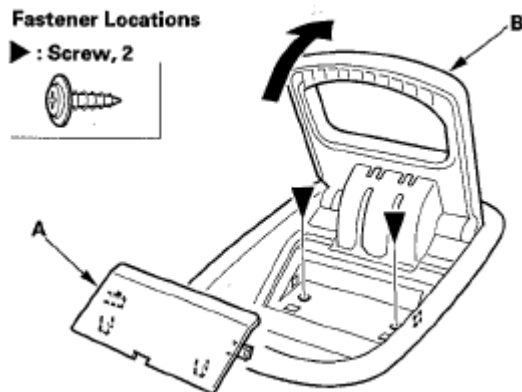


Fig. 142: Identifying Seat-Back Recline Lever And Lid
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the back cover (see step 4 , and 5).
5. Remove the outer latch cover (see step 5).
6. Disconnect the seat-back recline cable (see step 7).
7. Remove the clips, then remove the seat-back recline lever (A) with the recline cable (B).

Fastener Locations

▷ : Clip, 2

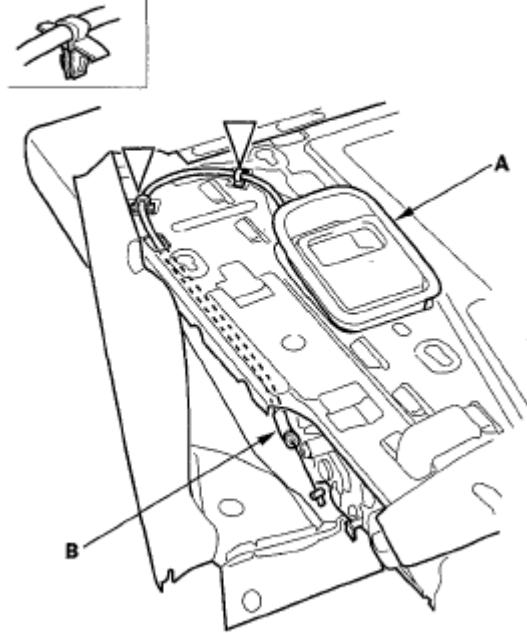


Fig. 143: Identifying Recline Cable And Seat-Back Recline Lever
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the lever in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Make sure the recline cable is connected securely.
 - Make sure the seat unlatches properly and latches securely.

THIRD ROW SEAT-BACK RECLINE CABLE REPLACEMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to kink the cable.

1. Remove the third row seat-back recline lever (see **THIRD ROW SEAT-BACK RECLINE LEVER REPLACEMENT**).
2. While holding the lever (A) open, carefully pry out the cover (B) with trim tool to release the tabs (C), then remove the cover.

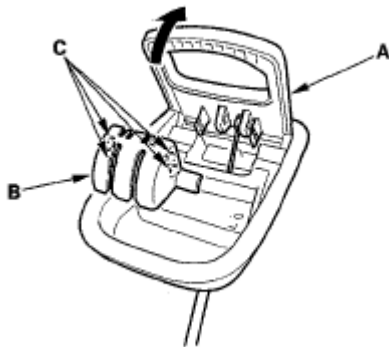


Fig. 144: Identifying Lever And Tabs

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the recline cable (A).

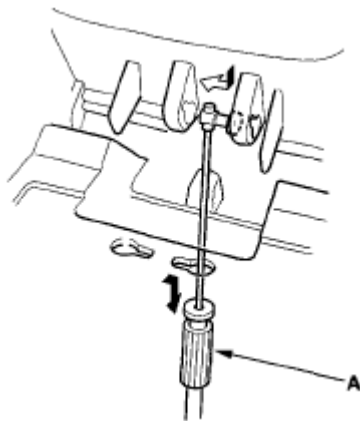


Fig. 145: Identifying Recline Cable

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the third row seat-back recline cable in the reverse order of removal, and note these items:
 - Make sure the cable is connected securely.
 - Make sure the seat unlatches properly and latches securely.

THIRD ROW SEAT COVER REPLACEMENT

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the interior trim.
- Take care not to tear the seams or damage the seat covers.

SEAT-BACK COVER

1. Remove the third row seat (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).

2. Remove these items.
 - Seat cushion (see **THIRD ROW SEAT DISASSEMBLY/REASSEMBLY**)
 - Head restraint
3. Remove the screws securing the seat-back recline lever (see step 3).
4. Release the three clips (A) at the top of the back cover from the seat-back frame.

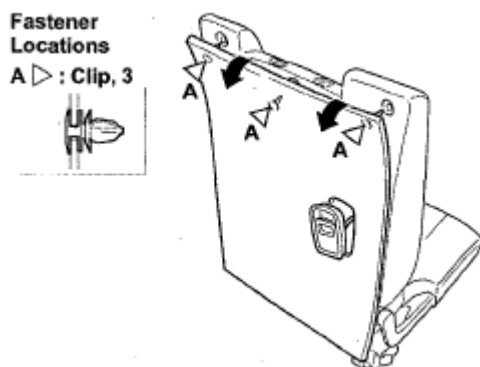


Fig. 146: Identifying Seat Back Cover Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Slide the back cover (D) up to release the remaining clips (A, B) from the keyholes on the frame.

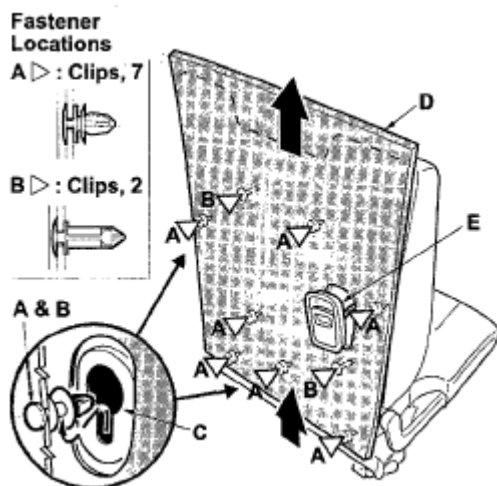


Fig. 147: Identifying Back Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Turn the back cover to pass the recline lever (E) through the hole in the back cover.
7. Release all of the hooks (A; B) from behind the seat-back (C). Unhook the edge of the seat-back cover (D) from the hook (E) of the seat-back frame.

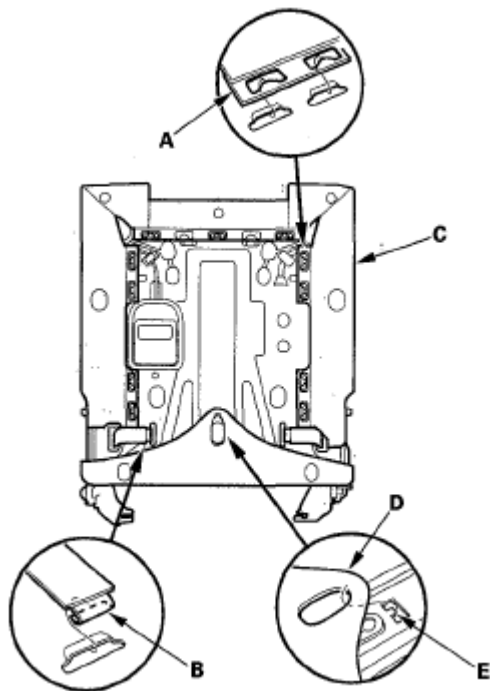


Fig. 148: Identifying Hooks, Seat-Back, Seat-Back Cover And Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Pull the seat-back cover (A) back, and release the hooks (B).

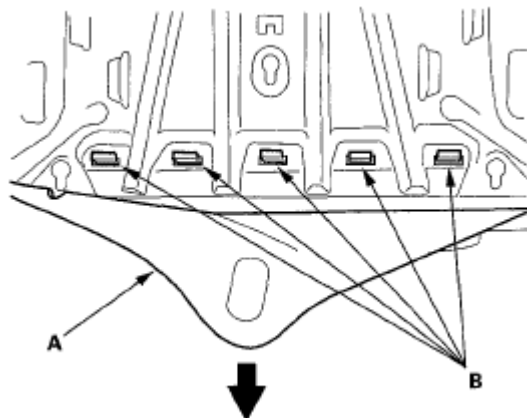


Fig. 149: Identifying Seat-Back Cover And Hooks
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Pull out the head restraint guides (A) while pinching the tabs (B) on the end of the guides, and remove them.

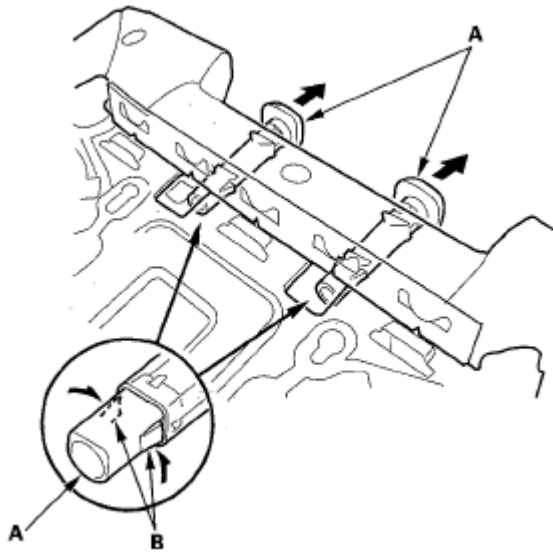


Fig. 150: Identifying Head Restraint Guides And Tabs
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the seat-back cover/pad (A) from the seat-back frame (B).

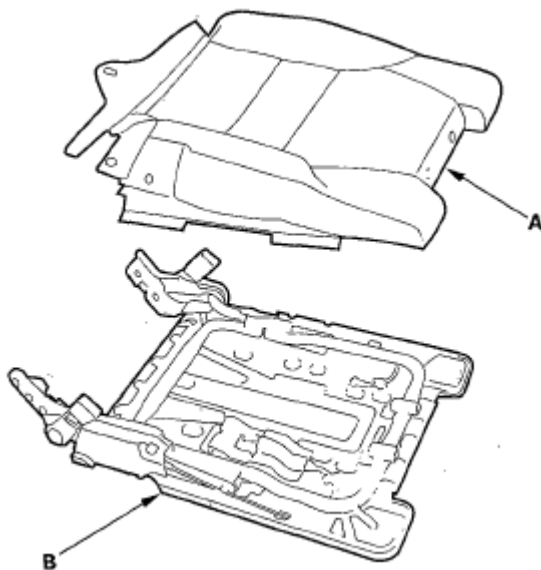


Fig. 151: Identifying Seat-Back Cover, Pad And Seat-Back Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Pull back the edge of the seat-back cover (A) all the way around, then release all of the clips (B). Remove the seat-back cover.

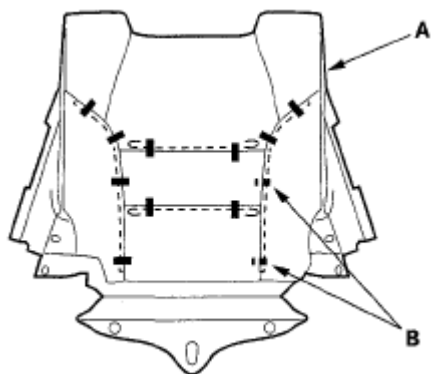


Fig. 152: Identifying Seat-Back Cover And Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the seat-back cover in the reverse order of removal, and note these items:
- To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hook and clips.
 - Replace any clips (A) you removed with new ones using commercially available upholstery ring pliers (B).

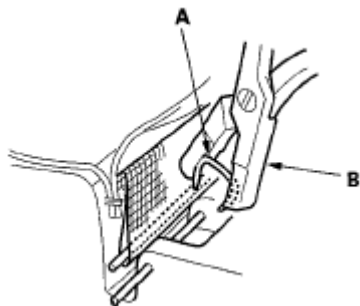


Fig. 153: Identifying Clips

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the back cover, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
 - Make sure the clips are positioned properly in the keyholes on the back cover.
 - Align the clips on the back cover with the keyholes on the seat-back frame.
 - Push the clips into place securely.

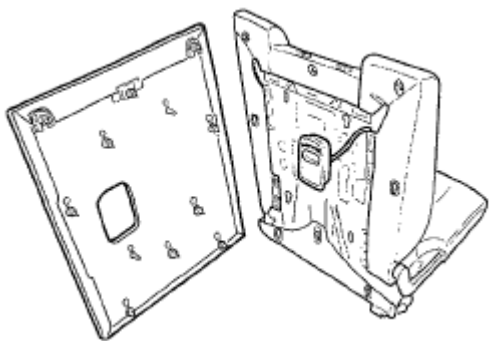


Fig. 154: Identifying Seat Back Covers

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SEAT CUSHION COVER

1. Remove both front mounting bolts (see **THIRD ROW SEAT REMOVAL/INSTALLATION**).
2. Release the hook strips (A) from under the seat cushion (B).

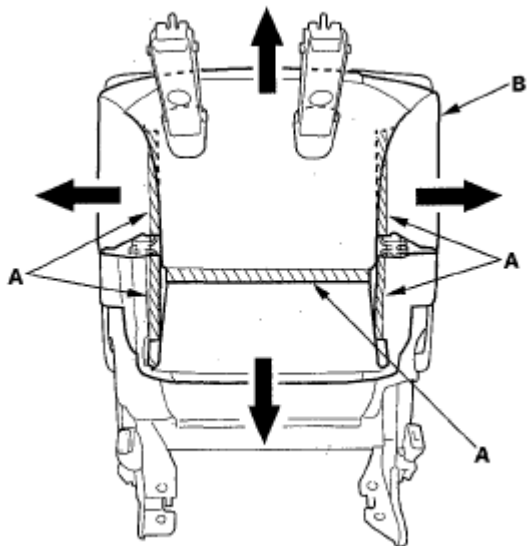


Fig. 155: Identifying Hook Strips And Seat Cushion

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the pivot bolt cover from both sides (see step 2).
4. Detach the retainers (A) from both sides of the link (B), and release all of the hook strips (C) from under the seat cushion (D).

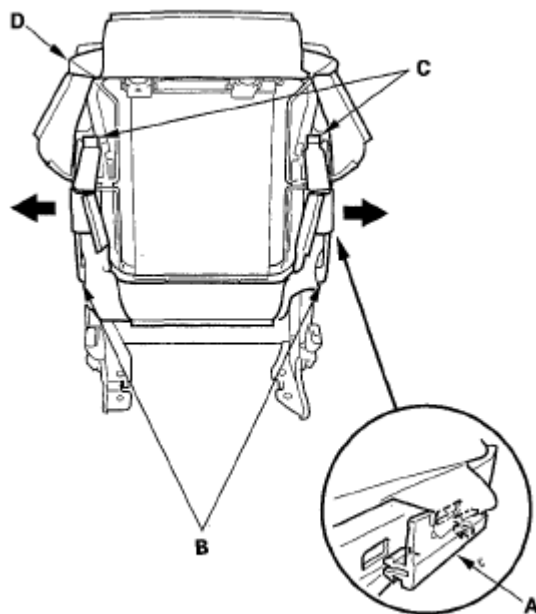


Fig. 156: Identifying Retainers, Link, Hook Strips And Seat Cushion
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the seat cushion cover/pad (A) from the seat cushion frame (B).

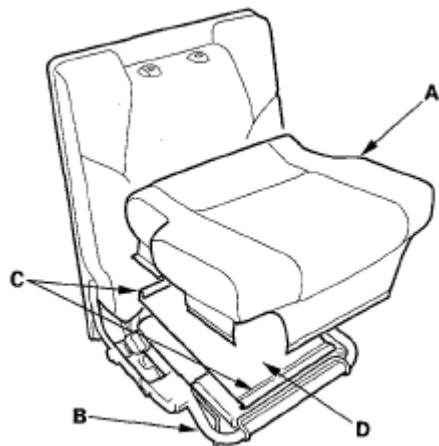


Fig. 157: Identifying Cushion Cover, Pad And Seat Cushion Frame
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. If necessary, release the hooks (C), then remove the suspension mat (D).
7. Pull back the edge of the seat cushion cover (A) all the way around, release all of the clips (B), under the right seat cushion cover, then remove the seat cushion cover.

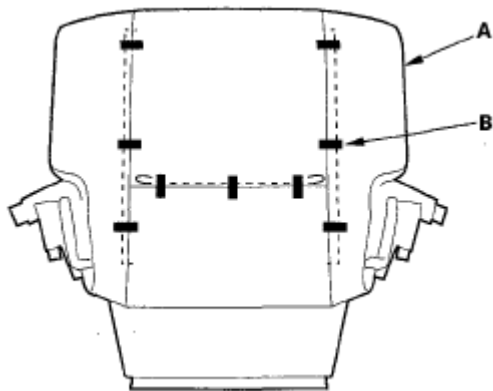


Fig. 158: Identifying Seat Cushion Cover And Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the seat cushion cover in the reverse order of removal, and note these items:
- To prevent wrinkles, make sure the material is stretched evenly over the pad before securing all the clips.
 - Replace all of the clips fastening the seat-back cover (A) and pad wire (B) with new ones (C) using commercially available upholstery ring pliers (D).

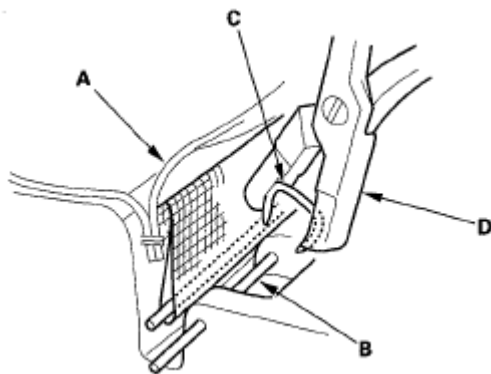


Fig. 159: Identifying Clips
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

2007-09 GENERAL INFORMATION**Specifications - MDX****STANDARDS AND SERVICE LIMITS****ENGINE ELECTRICAL****ENGINE ELECTRICAL SERVICE SPECIFICATIONS**

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12V	
	Firing order		1-4-2-5-3-6	
Spark plug	Type		NGK: IZFR6K11 DENSO: SKJ20DR-M11	
	Gap		1.0-1.1 mm (0.039-0.043 in.)	-
Ignition timing	At idle Check the red mark	In N or P position	10 ± 2° BTDC	
Drive belt	Tension		Auto-tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130 A	
	Coil (rotor) resistance	At 68°F(20°C)	2.3-2.7 k ohms	
	Slip ring O.D.		14.2-14.4 mm (0.56-0.57 in.)	13.8 mm (0.54 in.)
	Brush length		10.5 mm (0.41 in.)	1.5 mm (0.06 in.)
	Brush spring tension		2.94-3.53 N (0.30-0.36 kgf, 0.66-0.80 lbf)	
Starter	Output		1.8 kW	
	Commutator mica depth		0.50-0.90 mm (0.020-0.035 in.)	0.20 mm (0.008 in.)
	Commutator runout		0.02 mm (0.0008 in.) max.	0.05 mm (0.002 in.)
	Commutator O.D.		28.9-29.0 mm (1.138-1.142 in.)	28.0 mm (1.102 in.)
	Brush length		15.0-16.0 mm (0.59-0.63 in.)	9.0 mm (0.35 in.)
	Brush spring tension (new)		22.3-27.3 N (2.27-2.78 kgf, 5.00-6.13 lbf)	

ENGINE ASSEMBLY**ENGINE ASSEMBLY SERVICE SPECIFICATIONS**

				Service
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2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Item	Measurement	Qualification	Standard or New	Limit
Compression	Pressure Check the engine with the starter cranking	Minimum	930 kPa (9.5 kgf/cm ² , 135 psi)	-
		Maximum variation	200 kPa (2.0 kgf/cm ² , 28 psi)	-

CYLINDER HEAD

CYLINDER HEAD SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		-	0.05 mm (0.002 in.)
	Height		120.95-121.05 mm (4.7618-4.7657 in.)	-
Camshaft	End play		0.05-0.20 mm (0.002-0.008 in.)	0.20 mm (0.008 in.).
	Camshaft-to-holder oil clearance		0.050-0.089 mm (0.0020-0.0035 in.)	0.15 mm (0.006 in.)
	Total runout		0.03 mm (0.001 in.) max.	0.04 mm (0.002 in.)
	Cam lobe height	Intake, primary	35.112 mm (1.3824 in.)	-
		Intake, mid	36.394 mm (1.4328 in.)	-
		Intake, secondary	35.112 mm (1.3824 in.)	-
		Exhaust	36.389 mm (1.4326 in.)	-
Valve	Clearance (cold)	Intake	0.20-0.24 mm (0.008-0.009 in.)	-
		Exhaust	0.28-0.32 mm (0.011-0.013 in.)	-
	Stem O.D.	Intake	5.485-5.495 mm (0.2159-0.2163 in.)	5.455 mm (0.2148 in.)
		Exhaust	5.450-5.460 mm (0.2146-0.2150 in.)	5.420 mm (0.2134 in.)
	Stem-to-guide clearance	Intake	0.020-0.045 mm (0.0008-0.0018 in.)	0.08 mm (0.003 in.)
		Exhaust	0.055-0.080 mm (0.0022-0.0031 in.)	0.11 mm (0.004 in.)
Valve seat	Width	Intake	1.25-1.55 mm (0.049-0.06,1 in.)	2.00 mm (0.079 in.)
		Exhaust	1.25-1.55 mm (0.049-0.061 in.)	2.00 mm (0.079 in.)
	Stem installed height	Intake	46.75-47.55 mm (1.841-1.872 in.)	47.80 mm (1.882 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

		Exhaust	46.68-47.48 mm (1.838-1.869 in.)	47.73 mm (1.879 in.)
Valve spring	Free length	Intake	51.48 mm (2.027 in.)	-
		Exhaust	51.05 mm (2.010 in.)	-
Valve guide	I.D.	Intake	5.515-5.530 mm (0.2171-0.2177 in.)	5.55 mm (0.219 in.)
		Exhaust	5.515-5.530 mm (0.2171-0.2177 in.)	5.55 mm (0.219 in.)
	Installed height	Intake	21.20-22.20 mm (0.835-0.874 in.)	-
		Exhaust	20.60-21.60 mm (0.811-0.850 in.)	-
Rocker arm	Arm-to-shaft clearance	Intake	0.026-0.067 mm (0.0010-0.0026 in.)	0.067 mm (0.0026 in.)
		Exhaust	0.026-0.077 mm (0.0010-0.0030 in.)	0.077 mm (0.0030 in.)

ENGINE BLOCK

ENGINE BLOCK SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.003 in.) max.	-
	Bore diameter		90.000-90.015 mm (3.5433-3.5439 in.)	-
Piston	Skirt O.D. at 16.0 mm (0.63 in.) from bottom of skirt		89.983-89.996 mm (3.5426-3.5431 in.)	-
	Clearance in cylinder		0.004-0.032 mm (0.0002-0.0013 in.)	0.08 mm (0.003 in.)
	Ring groove width	Top	1.240-1.255 mm (0.0488-0.0494 in.)	1.27 mm (0.050 in.)
		Second	1.220-1.235 mm (0.0480-0.0486 in.)	1.25 mm (0.049 in.)
		Oil	2.805-2.825 mm (0.1104-0.1112 in.)	2.85 mm (0.112 in.)
Piston ring	Ring-to-groove clearance	Top	0.055-0.085 mm (0.0022-0.0033 in.)	0.15 mm (0.006 in.)
		Second	0.030-0.060 mm (0.0012-0.0024 in.)	0.13 mm (0.005 in.)
	Ring end gap	Top	0.30-0.40 mm (0.012-0.016 in.)	0.60 mm (0.024 in.)
		Second	0.40-0.55 mm (0.016-0.022 in.)	0.70 mm (0.028 in.)
		Oil	0.20-0.70 mm (0.008-0.028 in.)	0.80 mm (0.031 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Piston pin	O.D.		21.962-21.965 mm (0.8646-0.8648 in.)	21.954 mm (0.8643 in.)
	Pin-to-piston clearance		-0.0050 to + 0.0010 mm (-0.00020 to +0.00004 in.)	0.004 mm (0.0002 in.)
Connecting rod	Pin-to-rod clearance		0.005-0.014 mm (0.0002-0.0006 in.)	0.019 mm (0.0007 in.)
	Small-end bore diameter		21.970-21.976 mm (0.8650-0.8652 in.)	-
	Large-end bore diameter		60.0 mm (2.36 in.)	-
	End play installed on crankshaft		0.15-0.35 mm (0.006-0.014 in.)	0.45 mm (0.018 in.)
Crankshaft	Main journal diameter		71.976-72.000 mm (2.8337-2.8346 in.)	-
	Rod journal diameter		56.976-57.000 mm (2.2431-2.2441 in.)	-
	Rod/main journal taper		0.005 mm (0.0002 in.) max.	0.010 mm (0.0004 in.)
	Rod/main journal out-of-round		0.005 mm (0.0002 in.) max.	0.010 mm (0.0004 in.)
	End play		0.10-0.35 mm (0.004-0.014 in.)	0.45 mm (0.018 in.)
	Runout		0.025 mm (0.0010 in.) max.	0.030 mm (0.0012 in.)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.019-0.045 mm (0.0007-0.0018 in.)	0.050 mm (0.0020 in.)
	Rod bearing clearance		0.020-0.044 mm (0.0008-0.0017 in.)	0.050 mm (0.0020 in.)

ENGINE LUBRICATION

ENGINE LUBRICATION SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
Engine oil	Capacity	Engine overhaul	5.0 L (5.3 US qt)	
		Oil change, including filter	4.3 L (4.5 US qt)	
		Oil change, without filter	4.0 L (4.2 US qt)	
Oil pump	Inner-to-outer rotor clearance		0.04-0.16 mm (0.002-0.006 in.)	0.20 mm (0.008 in.)
	Pump housing-to-outer rotor clearance		0.10-0.19 mm (0.004-0.007 in.)	0.20 mm (0.008 in.)
	Pump housing-to-outer rotor axial clearance		0.02-0.07 mm (0.001-0.003 in.)	0.12 mm (0.005 in.)

2008 Acura MDX**2007-09 GENERAL INFORMATION Specifications - MDX**

	Oil pressure with oil temperature at 176°F (80°C)	At idle	70 kPa (0.7 kgf/cm ² , 10 psi)
		At 3,000 rpm	490 kPa (5.0 kgf/cm ² , 71 psi)

COOLING SYSTEM**COOLING SYSTEM SPECIFICATIONS**

Item	Measurement	Qualification	Standard or New
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir) Use Acura Long Life Antifreeze/ Coolant Type 2	Engine overhaul	9.2 L (2.43 US gal)
		Coolant change	7.3 L (1.93 US gal)
Coolant reservoir	Coolant capacity		0.7 L (0.19 US gal)
Radiator cap	Opening pressure		93-123 kPa (0.95-1.25 kgf/cm ² , 14-18 psi)
Thermostat	Opening temperature	Begins to open	169-176°F (76-80°C)
		Fully open	194°F (90°C)
	Valve lift at fully open		10.0 mm (0.39 in.) min.

FUEL AND EMISSIONS**FUEL AND EMISSIONS SPECIFICATIONS**

Item	Measurement	Qualification	Standard or New
Fuel pressure regulator	Pressure with regulator vacuum hose disconnected		390-440 kPa (4.0-4.5 kgf/cm ² , 57-64 psi)
Fuel tank	Capacity		79.5 L (21.0 US gal)
Engine idle	Idle speed without load	In N or P position	710±50 rpm
	Idle speed with high electrical load (A/C switch ON, temperature set to Max Cool, blower fan on High, rear window defogger ON, and headlights on high beam)	In N or P position	710±50rpm

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL**AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL SERVICE SPECIFICATIONS**

Item	Measurement	Qualification	Standard or New	Service Limit
Automatic transmission fluid	Capacity Use Acura ATF-Z1	Fluid change	2.8 L (3.0 US qt)	
		Overhaul	7.9 L (8.3 US qt)	

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

ATF pressure	Line pressure	At 2,000 rpm in N or P position	950-1,010 kPa (9.7-10.3 kgf/cm ² , 138-147 psi)	900 kPa (9.2 kgf/cm ² , 131 psi)
	5th clutch pressure	At 2,000 rpm in D position	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
	4th clutch pressure	At 2,000 rpm in D position	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
	3rd clutch pressure	At 2,000 rpm in D position	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
	2nd clutch pressure	At 2,000 rpm in M position 2nd gear	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
	1st clutch pressure	At 2,000 rpm in M position 1st gear	940-1,020 kPa (9.6-10.4 kgf/cm ² , 137-148 psi)	890 kPa (9.1 kgf/cm ² , 130 psi)
	1st-hold clutch pressure	At 2,000 rpm in M position 1st gear	680-760 kPa (6.9-7.7 kgf/cm ² , 98-110 psi)	630 kPa (6.4 kgf/cm ² , 91 psi)
Torque converter	Stall speed Check with vehicle on level ground		1,950 rpm	1,800-2,100 rpm
	Clearance between clutch end-plate top disc	1st	-	1.15-1.35 mm (0.045-0.053 in.)
		2nd	-	1.05-1.25 mm (0.041-0.049 in.)
		3rd	-	0.9-1.1 mm (0.035-0.043 in.)
		4th	-	0.75-0.95 mm (0.030-0.037 in.)
		5th	-	0.75-0.95 mm (0.030-0.037 in.)
		1st-hold	-	0.6-1.0 mm (0.024-0.039 in.)
		1st	68.3 mm (2.69 in.)	66.3 mm (2.61 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Clutch	Clutch return spring free length	2nd	48.3 mm (1.90 in.)	46.3 mm (1.82 in.)
		3rd	52.0 mm (2.05 in.)	50.0 mm (1.97 in.)
		4th	37.4 mm (1.47 in.)	35.5 mm (1.39 in.)
		5th	53.7 mm (2.11 in.)	51.7 mm (2.64 in.)
	Clutch disc thickness		1.94 mm (0.076 in.)	-
	Clutch plate thickness	1st	1.6 mm (0.063 in.)	When discolored
		2nd	1.8 mm (0.071 in.)	When discolored
		3rd	1.8 mm (0.071 in.)	When discolored
		4th	1.6 mm (0.063 in.)	When discolored
		5th	1.6 mm (0.063 in.)	When discolored
		1st-hold	1.8 mm (0.071 in.)	When discolored
	1st clutch end-plate thickness	Mark 1	3.1 mm (0.122 in.)	When discolored
		Mark 2	3.2 mm (0.126 in.)	When discolored
		Mark 3	3.3 mm (0.130 in.)	When discolored
		Mark 4	3.4 mm (0.134 in.)	When discolored
		Mark 5	3.5 mm (0.138 in.)	When discolored
		Mark 6	3.6 mm (0.142 in.)	When discolored
		Mark 7	3.7 mm (0.146 in.)	When discolored
		Mark 8	3.8 mm (0.150 in.)	When discolored
		Mark 9	3.9 mm (0.154 in.)	When discolored
	1st-hold clutch plate B thickness		5.0 mm (0.197 in.)	When discolored
		Mark 1	2.1 mm (0.083 in.)	When discolored
				When

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	2nd, 3rd, 4th, and 5th clutch end plate thickness	Mark 2	2.2 mm (0.087 in.)	discolored
		Mark 3	2.3 mm (0.091 in.)	When discolored
		Mark 4	2.4 mm (0.094 in.)	When discolored
		Mark 5	2.5 mm (0.098 in.)	When discolored
		Mark 6	2.6 mm (0.102 in.)	When discolored
		Mark 7	2.7 mm (0.106 in.)	When discolored
		Mark 8	2.8 mm (0.110 in.)	When discolored
		Mark 9	2.9 mm (0.114 in.)	When discolored
Stator shaft	I.D. at needle bearing contact area	Torque converter side	27.000-27.021 mm (1.063-1.064 in.)	When worn or damaged
		ATF pump side	31.000-31.025 mm (1.220-1.221 in.)	-
	I.D. at mainshaft sealing ring contact area		31.000-31.025 mm (1.220-1.221 in.)	31.05 mm (1.222 in.)
ATF pump	Gear-to-body thrust clearance		0.03-0.06 mm (0.001-0.002 in.)	0.07 mm (0.003 in.)
	Gear-to-body clearance	Drive gear	0.210-0.265 mm (0.008-0.010 in.)	-
		Driven gear	0.070-0.125 mm (0.003-0.005 in.)	-
	Driven gear I.D.		14.016-14.034 mm (0.5518-0.5525 in.)	When worn or damaged
	Driven gear shaft O.D.		13.980-13.990 mm (0.5504-0.5508 in.)	When worn or damaged
Reverse shift fork	Fork finger thickness		5.90-6.00 mm (0.232-0.236 in.)	5.4 mm (0.213 in.)
Park gear and pawl	-		-	When worn or damaged
Regulator valve body	Shift fork shaft bore I.D.		14.000-14.010 mm (0.5512-0.5516 in.)	-
	Shift fork shaft/servo valve bore I.D.		37.000-37.039 mm (1.4567-1.4582 in.)	37.045 mm (1.4585 in.)
	Mainshaft sealing ring contact I.D.		31.000-31.025 mm (1.220-1.221 in.)	31.05 mm (1.222 in.)
Main valve body	Intermediary shaft sealing ring contact I.D.		35.000-35.025 mm (1.3780-1.3789 in.)	35.05 mm (1.3799 in.)
	Secondary shaft sealing		29.000-29.021 mm	29.05 mm

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

ATF guide collar	ring contact ID.		(1.1417-1.1426 in.)	(1.1437 in.)
Mainshaft	Diameter at stator shaft needle bearing contact area		22.984-23.000 mm (0.9049-0.9055 in.)	When worn or damaged
	5th gear collar diameter at needle bearing contact area		39.981-39.991 mm (1.5741-1.5744 in.)	When worn or damaged
	5th gear collar length		48.7-48.8 mm (1.917-1.921 in.)	-
	5th gear collar flange thickness		4.5-4.7 mm (0.177-0.185 in.)	When worn or damaged
	5th gear I.D.		46.000-46.016 mm (1.8110-1.8116 in.)	When worn or damaged
	5th gear axial clearance		0.10-0.22 mm (0.004-0.009 in.)	-
	Sealing ring thickness		1.90-1.96 mm (0.074-0.077 in.)	1.85 mm (0.073 in.)
	Sealing ring groove width		2.025-2.060 mm (0.080-0.081 in.)	2.08 mm (0.082 in.)
	Diameter at bearing contact area	Torque converter housing bearing	40.505-40.515 mm (1.5947-1.5951 in.)	When worn or damaged
		5th gear	34.975-34.991 mm (1.3770-1.3776 in.)	When worn or damaged
	Diameter of 2nd gear at needle bearing contact area		61.975-61.991 mm (2.4400-2.4406 in.)	When worn or damaged
	Reverse gear collar O.D.		39.979-40.000 mm (1.5740-1.5748 in.)	When worn or damaged
	Reverse selector hub O.D.		55.885-55.900 mm (2.200-2.201 in.)	When worn or damaged
	Cotter thickness	4th gear	1.99-2.02 mm (0.078-0.080 in.)	-
		2nd gear	7.44-7.52 mm (0.293-0.296 in.)	-
	I.D. of gears	5th gear	41.000-41.016 mm (1.6142-1.6148 in.)	When worn or damaged
		Idler gear	70.000-70.019 mm (2.7559-2.7566 in.)	When worn or damaged
		Reverse gear	46.000-46.016 mm (1.8110-1.8116 in.)	When worn or damaged
		2nd gear	0.005-0.040 mm (0.0002-0.0016 in.)	-
		5th gear	0.12-0.27 mm (0.0047-0.0106 in.)	-

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Axial clearance of gears	Idler gear	0.005-0.040 mm (0.0002-0.0016 in.)	-
	Reverse gear	0.10-0.25 mm (0.0039-0.0098 in.)	-
61 mm washer thickness	A	1.525 mm (0.0600 in.)	When worn or damaged
	B	1.505 mm (0.0593 in.)	When worn or damaged
	C	1.485 mm (0.0585 in.)	When worn or damaged
	D	1.465 mm (0.0577 in.)	When worn or damaged
	E	1.445 mm (0.0569 in.)	When worn or damaged
	F	1.425 mm (0.0561 in.)	When worn or damaged
	G	1.405 mm (0.0553 in.)	When worn or damaged
	A	1.91 mm (0.0752 in.)	When worn or damaged
	B	1.93 mm (0.0760 in.)	When worn or damaged
	C	1.95 mm (0.0768 in.)	When worn or damaged
	D	1.97 mm (0.0776 in.)	When worn or damaged
	E	1.99 mm (0.0783 in.)	When worn or damaged
	F	2.01 mm (0.0791 in.)	When worn or damaged
	G	2.03 mm (0.0799 in.)	When worn or damaged
	H	2.05 mm (0.0807 in.)	When worn or damaged
	I	2.07 mm (0.0815 in.)	When worn or damaged
	J	2.09 mm (0.0823 in.)	When worn or damaged
	K	2.11 mm (0.0831 in.)	When worn or damaged
	L	2.13 mm (0.0839 in.)	When worn or damaged
	M	2.15 mm (0.0846 in.)	When worn or damaged

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

50.8 mm washer thickness	N	2.17 mm (0.0854 in.)	When worn or damaged
	O	2.19 mm (0.0862 in.)	When worn or damaged
	P	2.21 mm (0.0870 in.)	When worn or damaged
	Q	2.23 mm (0.0878 in.)	When worn or damaged
	R	2.25 mm (0.0886 in.)	When worn or damaged
	S	2.27 mm (0.0894 in.)	When worn or damaged
	T	2.29 mm (0.0902 in.)	When worn or damaged
	U	2.31 mm (0.0909 in.)	When worn or damaged
	V	2.33 mm (0.0917 in.)	When worn or damaged
	W	2.35 mm (0.0925 in.)	When worn or damaged
	X	2.37 mm (0.0933 in.)	When worn or damaged
	Y	2.39 mm (0.0941 in.)	When worn or damaged
	Z	2.41 mm (0.0949 in.)	When worn or damaged
	AA	2.43 mm (0.0957 in.)	When worn or damaged
	AB	2.45 mm (0.0965 in.)	When worn or damaged
35 x 47 mm thrust washer thickness		2.97-3.00 mm (0.1169-0.1181 in.)	When worn or damaged
Diameter at bearing contact area	2nd gear	43.986-43.999 mm (1.7317-1.7322 in.)	When worn or damaged
	Torque converter housing bearing	32.002-32.015 mm (1.2599-1.2604 in.)	When worn or damaged
	Torque converter housing bearing (shaft end side)	28.592-28.608 mm (1.1257-1.1263 in.)	When worn or damaged
Diameter of 1st gear collar at needle bearing contact area		38.981-38.991 mm (1.5347-1.5351 in.)	When worn or damaged
	1st gear	44.000-44.013 mm (1.7323-1.7328 in.)	When worn or damaged

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

I.D. of gears	2nd gear	50.00-50.02 mm (1.9685-1.9693 in.)	When worn or damaged
Axial clearance of gears	1st gear	0.100-0.145 mm (0.004-0.006 in.)	-
	2nd gear	0.060-0.488 mm (0.0024-0.0192 in.)	-
52 mm thrust washer thickness	M	2.405 mm (0.095 in.)	When worn or damaged
	L	2.430 mm (0.096 in.)	When worn or damaged
	K	2.455 mm (0.097 in.)	When worn or damaged
	J	2.480 mm (0.098 in.)	When worn or damaged
	I	2.505 mm (0.099 in.)	When worn or damaged
	H	2.530 mm (0.100 in.)	When worn or damaged
	G	2.555 mm (0.101 in.)	When worn or damaged
	F	2.580 mm (0.102 in.)	When worn or damaged
	E	2.605 mm (0.103 in.)	When worn or damaged
	D	2.630 mm (0.104 in.)	When worn or damaged
	C	2.655 mm (0.105 in.)	When worn or damaged
	B	2.680 mm (0.106 in.)	When worn or damaged
	A	2.705 mm (0.106 in.)	When worn or damaged
1st gear collar length		63.3-63.4 mm (2.4921-2.4961 in.)	-
Sealing ring thickness		1.91-1.97 mm (0.075-0.078 in.)	1.86 mm (0.073 in.)
Sealing ring groove width		2.025-2.060 mm (0.080-0.081 in.)	2.08 mm (0.082 in.)
ATF feed pipe O.D.	1st clutch	11.47-11.48 mm (0.4516-0.4520 in.)	11.45 mm (0.4508 in.)
	1st-hold clutch	5.97-5.98 mm (0.2350-0.2354 in.)	5.95 mm (0.2343 in.)
	1st clutch	11.518-11.530 mm (0.4535-0.4539 in.)	11.545 mm (0.4545 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Feed pipe bushing I.D.	1st-hold clutch	6.018-6.030 mm (0.2369-0.2374 in.)	6.045 mm (0.2380 in.)
65 mm thrust shim thickness	0A	0.80 mm (0.031 in.)	When worn or damaged
	A	0.84 mm (0.033 in.)	When worn or damaged
	B	0.88 mm (0.035 in.)	When worn or damaged
	C	0.92 mm (0.036 in.)	When worn or damaged
	D	0.96 mm (0.038 in.)	When worn or damaged
	E	1.00 mm (0.039 in.)	When worn or damaged
	F	1.04 mm (0.041 in.)	When worn or damaged
	G	1.08 mm (0.043 in.)	When worn or damaged
	H	1.12 mm (0.044 in.)	When worn or damaged
	I	1.16 mm (0.046 in.)	When worn or damaged
	J	1.20 mm (0.047 in.)	When worn or damaged
	K	1.24 mm (0.049 in.)	When worn or damaged
	L	1.28 mm (0.050 in.)	When worn or damaged
	M	1.32 mm (0.052 in.)	When worn or damaged
	N	1.36 mm (0.054 in.)	When worn or damaged
	O	1.40 mm (0.055 in.)	When worn or damaged
	P	1.44 mm (0.057 in.)	When worn or damaged
	Q	1.48 mm (0.058 in.)	When worn or damaged
	R	1.52 mm (0.060 in.)	When worn or damaged
	S	1.56 mm (0.061 in.)	When worn or damaged
	T	1.60 mm (0.063 in.)	When worn or damaged

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	U	1.64 mm (0.065 in.)	When worn or damaged
	V	1.68 mm (0.066 in.)	When worn or damaged
	W	1.72 mm (0.068 in.)	When worn or damaged
	X	1.76 mm (0.069 in.)	When worn or damaged
	Y	1.80 mm (0.071 in.)	When worn or damaged
	Z	1.84 mm (0.072 in.)	When worn or damaged
	AA	1.88 mm (0.074 in.)	When worn or damaged
	AB	1.92 mm (0.076 in.)	When worn or damaged
	AC	1.96 mm (0.077 in.)	When worn or damaged
	AD	2.00 mm (0.079 in.)	When worn or damaged
	AE	2.04 mm (0.080 in.)	When worn or damaged
	AF	2.08 mm (0.082 in.)	When worn or damaged
	AG	2.12 mm (0.083 in.)	When worn or damaged
	AH	2.16 mm (0.085 in.)	When worn or damaged
	AI	2.20 mm (0.087 in.)	When worn or damaged
	AJ	2.24 mm (0.088 in.)	When worn or damaged
	AK	2.28 mm (0.090 in.)	When worn or damaged
	AL	2.32 mm (0.091 in.)	When worn or damaged
I.D. of 3rd gear		36.000-36.016 mm (1.4173-1.4179 in.)	When worn or damaged
Axial clearance of 3rd gear		0.005-0.045 mm (0.0002-0.0018 in.)	-
Cotter thickness		2.99-3.02 mm (0.1177-0.1189 in.)	-
Sealing ring thickness		1.89-1.95 mm (0.0744-0.0768 in.)	1.84 mm (0.0724 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Intermediary shaft	Sealing ring groove width		2.025-2.060 mm (0.080-0.081 in.)	2.08 mm (0.082 in.)
	53 mm splined washer thickness	A	3.995 mm (0.1573 in.)	When worn or damaged
		B	4.015 mm (0.1581 in.)	When worn or damaged
		C	4.035 mm (0.1589 in.)	When worn or damaged
		D	4.055 mm (0.1596 in.)	When worn or damaged
		E	4.075 mm (0.1604 in.)	When worn or damaged
		F	4.095 mm (0.1612 in.)	When worn or damaged
		G	4.115 mm (0.1620 in.)	When worn or damaged
		H	4.135 mm (0.1628 in.)	When worn or damaged
		I	4.155 mm (0.1636 in.)	When worn or damaged
		J	4.175 mm (0.1644 in.)	When worn or damaged
		K	4.195 mm (0.1652 in.)	When worn or damaged
		L	4.215 mm (0.1659 in.)	When worn or damaged
		M	4.235 mm (0.1667 in.)	When worn or damaged
		N	4.255 mm (0.1675 in.)	When worn or damaged
	26.5 mm washer	A	1.05 mm (0.041 in.)	When worn or damaged
		B	1.13 mm (0.044 in.)	When worn or damaged
		C	1.21 mm (0.048 in.)	When worn or damaged
		D	1.29 mm (0.051 in.)	When worn or damaged
		E	1.37 mm (0.054 in.)	When worn or damaged
		F	1.45 mm (0.057 in.)	When worn or damaged
		G	1.53 mm (0.060 in.)	When worn or damaged

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	thickness	H	1.61 mm (0.063 in.)	When worn or damaged
		I	1.69 mm (0.067 in.)	When worn or damaged
		J	1.77 mm (0.070 in.)	When worn or damaged
		K	1.85 mm (0.073 in.)	When worn or damaged
		L	1.93 mm (0.076 in.)	When worn or damaged
		M	2.01 mm (0.079 in.)	When worn or damaged
		N	2.09 mm (0.082 in.)	When worn or damaged
Reverse idler gear	Gear shaft O.D.		13.99-14.00 mm (0.5508-0.5512 in.)	When worn or damaged
	I.D. of transmission housing of gear shaft contact area		14.006-14.024 mm (0.5514-0.5521 in.)	-
	I.D.		18.007-18.020 mm (0.7089-0.7094 in.)	When worn or damaged
	Axial clearance		0.07-0.38 mm (0.003-0.015 in.)	-
	Thrust washer thickness	Transmission housing	0.97-1.05 mm (0.038-0.041 in.)	-
		Holder side	0.97-1.05 mm (0.038-0.041 in.)	-

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New			
			Wire Diameter	O.D.	Free Length	No. of Coil
	Torque converter check valve spring		1.1 mm (0.043 in.)	8.6 mm (0.339 in.)	34.3 mm (1.350 in.)	10.1
	Lock-up shift valve spring		1.0 mm (0.039 in.)	6.6 mm (0.260 in.)	35.5 mm (1.398 in.)	18.2
	Shift valve E spring		0.7 mm (0.028 in.)	6.6 mm (0.260 in.)	42.4 mm (1.669 in.)	17.6
	Shift valve A spring		0.9 mm (0.035 in.)	6.6 mm (0.260 in.)	50.5 mm (1.988 in.)	23.3

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Main valve body spring (see <u>MAIN VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY</u>)				in.)	in.)	
	Shift valve B spring		0.8 mm (0.031 in.)	6.6 mm (0.260 in.)	49.1 mm (1+.933 in.)	21.7
	Modulator valve spring		1.6 mm (0.063 in.)	10.4 mm (0.409 in.)	33.5 mm (1.319 in.)	9.8
	CPC valve A spring		0.7 mm (0.028 in.)	6.1 mm (0.240 in.)	17.8 mm (0.701 in.)	7.9
	Servo control valve spring		0.9 mm (0.035 in.)	9.6 mm (0.378 in.)	30.2 mm (1.189 in.)	8.4
	Lubrication control valve spring		0.9 mm (0.035 in.)	8.7 mm (0.343 in.)	25.0 mm (0.984 in.)	7.2
	Lock-up timing valve spring		0.6 mm (0.024 in.)	6.6 mm (0.260 in.)	30.9 mm (1.217 in.)	11.1
Secondary valve body spring (see <u>SECONDARY VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY</u>)	Relief valve spring		1.0 mm (0.039 in.)	9.6 mm (0.378 in.)	28.1 mm (1.106 in.)	7.7
	CPC valve C spring		0.7 mm (0.028 in.)	6.1 mm (0.240 in.)	17.8 mm (0.701 in.)	7.9
	Shift valve D spring		0.7 mm (0.028 in.)	6.6 mm (0.260 in.)	42.4 mm (1.669 in.)	17.6
	Reverse CPC valve spring		0.8 mm (0.031 in.)	6.1 mm (0.240 in.)	24.4 mm (0.961 in.)	14.6
	Shift valve C spring		0.8 mm (0.031 in.)	6.6 mm (0.260 in.)	49.1 mm (1.933 in.)	21.7
	CPC valve B spring		0.7 mm (0.028 in.)	6.1 mm (0.240 in.)	17.8 mm (0.701 in.)	7.9
	Reverse control valve spring		0.8 mm (0.031 in.)	6.6 mm (0.260 in.)	49.1 mm (1.933 in.)	21.7
	3rd accumulator spring		3.1 mm (0.122 in.)	19.6 mm (0.772 in.)	41.4 mm (1.630 in.)	5.5

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Regulator valve body spring (see <u>REGULATOR VALVE BODY DISASSEMBLY, INSPECTION, AND REASSEMBLY</u>)	Coolant check valve spring		0.9 mm (0.035 in.)	6.7 mm (0.264 in.)	31.5 mm (1.240 in.)	14.2
	Lock-up control valve spring		0.7 mm (0.028 in.)	6.6 mm (0.260 in.)	42.9 mm (1.689 in.)	14.2
			0.8 mm (0.031 in.)	6.6 mm (0.260 in.)	44.3 mm (1.744 in.)	25.5
	Regulator valve spring B		1.4 mm (0.055 in.)	8.8 mm (0.346 in.)	44.0 mm (1.732 in.)	12.0
	Regulator valve spring A		1.85 mm (0.073 in.)	14.7 mm (0.579 in.)	86.9 mm (3.421 in.)	16.2
	Stator reaction spring		5.5 mm (0.217 in.)	37.4 mm (1.472 in.)	30.3 mm (1.193 in.)	2.1
Accumulator body spring (see <u>ACCUMULATOR BODY DISASSEMBLY; INSPECTION, AND REASSEMBLY</u>)	4th accumulator spring		3.3 mm (0.130 in.)	19.6 mm (0.772 in.)	39.1 mm (1.539 in.)	5.8
	2nd accumulator spring		3.1 mm (0.122 in.)	19.6 mm (0.772 in.)	53.4 mm (2.102 in.)	7.5
	1st accumulator spring A		2.3 mm (0.091 in.)	19.6 mm (0.772 in.)	60.8 mm (2.394 in.)	9.5
	1st accumulator spring B		2.5 mm (0.098 in.)	12.8 mm (0.504 in.)	46.0 mm (1.811 in.)	9.5
	5th accumulator spring A		2.4 mm (0.094 in.)	19.6 mm (0.772 in.)	65.5 mm (2.579 in.)	12.0
	5th accumulator spring B		2.6 mm (0.102 in.)	13.2 mm (0.520 in.)	50.5 mm (1.988 in.)	10.1
	1st-hold			13.1	42.9 mm	

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	accumulator spring		2.0 mm (0.079 in.)	mm (0.516 in.)	(1.689 in.)	9.8
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AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
A/T differential carrier	Pinion shaft contact area I.D.		18.000-18.025 mm (0.7087-0.7096 in.)	-
	Clearance between carrier and pinion shaft		0.013-0.054 mm (0.0005-0.0021 in.)	0.1 mm (0.004 in.)
	Driveshaft contact area I.D.		30.025-30.055 mm (1.182-1.183 in.)	-
	Clearance between carrier and driveshaft		0.045-0.096 mm (0.002-0.004 in.)	0.13 mm (0.005 in.)
	Clearance between carrier and intermediate shaft		0.080-0.126 mm (0.003-0.005 in.)	-
	Tapered roller bearing starting torque (preload)	For new bearing	3.9-5.1 N.m (40-52 kgf.cm, 35-45 lbf.in.)	Adjust
		For used bearing	3.6-4.8 N.m (37-49 kgf.cm, 32-43 lbf.in.)	Adjust
A/T differential pinion gear	Backlash		0.05-0.15 mm (0.002-0.006 in.)	-
	I.D.		18.042-18.066 mm (0.7103-0.7113 in.)	-
	Clearance between pinion gear and pinion shaft		0.055-0.095 mm (0.0022-0.0037 in.)	0.12 mm (0.005 in.)

AUTOMATIC TRANSMISSION AND A/T DIFFERENTIAL SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
	Diameter at bearing contact area	Transmission housing side	21.977-21.990 mm (0.8652-0.8657 in.)	21.92 mm (0.8630 in.)
		Torque converter housing side	40.002-40.018 mm (1.5749-1.5755 in.)	39.95 mm (1.5728 in.)
	Axial clearance		0-0.39 mm (0-0.015 in.)	-
		A	1.82 mm (0.0717 in.)	When worn or damaged
		B	1.84 mm (0.0724 in.)	When worn or damaged
		C	1.86 mm (0.0732 in.)	When worn or damaged
				When worn

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

Transfer output shaft	28.5 mm thrust washer thickness	D	1.88 mm (0.0740 in.)	or damaged
		E	1.90 mm (0.0748 in.)	When worn or damaged
		F	1.92 mm (0.0756 in.)	When worn or damaged
		G	1.94 mm (0.0764 in.)	When worn or damaged
		H	1.96 mm (0.0772 in.)	When worn or damaged
		I	1.98 mm (0.0780 in.)	When worn or damaged
		J	2.00 mm (0.0787 in.)	When worn or damaged
		K	2.02 mm (0.0795 in.)	When worn or damaged
		L	2.04 mm (0.0803 in.)	When worn or damaged
		M	2.06 mm (0.0811 in.)	When worn or damaged
		N	2.08 mm (0.0819 in.)	When worn or damaged
		O	2.10 mm (0.0827 in.)	When worn or damaged
		P	2.12 mm (0.0835 in.)	When worn or damaged
		Q	2.14 mm (0.0843 in.)	When worn or damaged
		R	2.16 mm (0.0850 in.)	When worn or damaged
		S	2.18 mm (0.0858 in.)	When worn or damaged
		T	2.20 mm (0.0866 in.)	When worn or damaged
		U	2.22 mm (0.0874 in.)	When worn or damaged
		V	2.24 mm (0.0882 in.)	When worn or damaged
		W	2.26 mm (0.0890 in.)	When worn or damaged
		X	2.28 mm (0.0898 in.)	When worn or damaged
		Y	2.30 mm (0.0906 in.)	When worn or damaged
				When worn

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

		Z	2.32 mm (0.0913 in.)	or damaged
		AA	2.34 mm (0.0921 in.)	When worn or damaged
Transfer assembly fluid	Capacity Hypoid gear oil SAE 90 or SAE 80W-90 viscosity, API classified GL4 or GL5 only	Fluid change	0.43 L (0.45 us qt)	
		Overhaul	0.45 L (0.48 us qt)	
Transfer assembly	Diameter of transfer hypoid drive gear/ shaft assembly at tapered roller bearing contact area	Transfer cover side	50.002-50.018 mm (1.9686-1.9692 in.)	49.95 mm (1.9665 in.)
		Transfer gear side	24.987-25.000 mm (0.9837-0.9843 in.)	24.93 mm (0.9815 in.)
	Diameter of transfer output shaft (hypoid gear) at tapered roller bearing contact area	Transfer gear side	40.002-40.018 mm (1.5749-1.5755 in.)	39.95 mm (1.5728 in.)
		Companion flange side	27.975-27.990 mm (1.1014-1.1020 in.)	31.92 mm (1.2567 in.)
	Transfer gear backlash		0.06-0.16 mm (0.002-0.006 in.)	Adjust
	Tapered roller bearing total starting torque (preload)		2.74-4.64 N.m (27.9-47.3 kgf.cm, 24.2-41.1 lbf.in.)	Adjust

REAR DIFFERENTIAL

REAR DIFFERENTIAL SPECIFICATIONS

Item	Measurement	Qualification	Standard or New
Rear differential fluid	Capacity Use Acura ATF-Z1	Fluid change	2.53 L (2.67 US qt)
		Overhaul	2.77 L (2.93 US qt)

STEERING

STEERING SPECIFICATIONS

Item	Measurement	Qualification	Standard or New
Steering wheel	Rotational play measured at outside edge with engine running		0-10 mm (0-0.39 in.)
	Initial turning load measured at outside edge with engine running		29N (3.0 kgf, 6.6 lbf)
Gearbox	Angle of rack guide screw loosened from locked position		15 ± 5°
Pump	Output pressure with shut-off valve closed		8,920-9,420 kPa (91-96 kgf/cm ² , 1,290-1,370 psi)
Power steering fluid	Capacity Use Acura Power Steering Fluid	Reservoir capacity	0.34 L (0.36 US qt)
		System overhaul	1.03 L (1.09 US qt)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

SUSPENSION

SUSPENSION SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
Wheel alignment	Camber	Front	-0°30'±1°	
		Rear	-0°30'±45'	
	Caster	Front	4°12'±35'	
	Total toe-in	Front	0±2mm(0±0.08in.)	
		Rear	2±2 mm (0.08±0.08 in.)	
	Front wheel turning angle	Inward	38°12'±2°	
		Outward (reference)	31°44'	
Wheel	Runout	Axial	0-0.3 mm (0-0.01 in.)	2.0 mm (0.08 in.)
		Radial	0-0.3 mm (0-0.01 in.)	1.5 mm (0.06 in.)
Wheel bearing	End play	Front	0-0.05 mm (0-0.002 in.)	
		Rear	0-0.05 mm (0-0.002 in.)	

BRAKES

BRAKES SERVICE SPECIFICATIONS

Item	Measurement	Qualification	Standard or New	Service Limit
Parking brake	Number of clicks when pedal pressed with 294 N (30 kgf, 66 lbf) of force (reference)		9 to 11 clicks	
	Drum I.D		210.0-210.1 mm (8.268-8.272 in.)	211.0 mm (8.307 in.)
	Shoe lining thickness		3.9 mm (0.15 in.)	1.0 mm (0.04 in.)
Brake pedal	Pedal height (carpet removed)		178 mm (7 in.)	
	Free play		1-5 mm (1/16-3/16 in.)	
Master cylinder	Piston-to pushrod clearance		0 mm (0 in.)	
Brake disc	Thickness	Front	27.9-28.1 mm (1.10-1.11 in.)	26.0 mm (1.02 in.)
		Rear	10.9-11.1 mm (0.43-0.44 in.)	9.0 mm (0.35 in.)
	Runout		-	0.04 mm (0.0016 in.)
	Parallelism		-	0.015 mm (0.0006 in.)
Brake pad	Thickness	Front	10.6-11.2 mm (0.42-0.44 in.)	1.6 mm (0.06 in.)
		Rear	9.6-10.2 mm (0.38-0.40 in.)	1.6 mm (0.06 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

AIR CONDITIONING**AIR CONDITIONING SPECIFICATIONS**

Item	Measurement	Qualification	Standard or New
Refrigerant	Type		HFC-134a(R-134a)
	Capacity of system	Dual	600-650 g (20.3-22.0 oz)
Refrigerant oil	Type		DENSO ND-OIL 8 (P/N 38897--PR7--A01AH or 38899--PR7--A01)
	Capacity of components	Condenser	35 mL(1 1/6 fl.oz)
		Evaporator (front)	40 mL (1 1/3 fl.oz)
		Evaporator (rear)	30mL(1fl.oz)
		Each line and hose	10 mL (1/3 fl.oz)
		Compressor	125-137 mL (4 2/9-4 5/8 fl.oz)
Compressor (DENSO)	Field coil resistance	At 68°F (20°C)	3.9-4.3 ohms
	Pulley-to-pressure plate clearance		0.35-0.60 mm (0.014-0.024 in.)

DESIGN SPECIFICATIONS**DESIGN SPECIFICATIONS**

Item	Measurement	Qualification	Specification
DIMENSIONS	Overall length		4,844 mm (190.7 in.)
	Overall width		1,995 mm (78.5 in.)
	Overall height		1,733 mm (68.2 in.)
	Wheelbase		2,750 mm (108.3 in.)
	Track	Front	1,720 mm (67.7 in.)
		Rear	1,715 mm (67.5 in.)
	Ground clearance		207 mm (8.15 in.)
	Seating capacity		Seven (7)
WEIGHT (USA models)	Gross Vehicle Weight Rating (GVWR)		5,952 lbs
WEIGHT (Canada models)	Gross Vehicle Weight Rating (GVWR)		2,700 kg
ENGINE	Type		Water-cooled, 4-stroke SOHC VTEC V6 gasoline engine
	Cylinder arrangement		60° V6-cylinder, transverse
	Bore and stroke		90.0 x 96.0 mm (3.54 x 3.78 in.)

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	Displacement		3,664 cm ³ (ml) (224 cu in.)
	Compression ratio		11.0
	Valve train		Belt driven, SOHC VTEC 4 valves per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Oil pump displacement	At 6,000 rpm	58.4L(61.7 US qt)/minute
	Water pump displacement	At 6,000 rpm	172L(182 US qt)/minute
	Fuel required		Premium UNLEADED gasoline with 91 Pump Octane Number or higher
STARTER	Type		Gear reduction
	Normal output		1.8 kW
	Nominal voltage		12V
	Hour rating		30 seconds
	Direction of rotation		Counterclockwise as viewed from gear end
AUTOMATIC TRANSMISSION	Type	BYFA	Electronically-controlled automatic, five-speed forward, one reverse
	Primary reduction		Direct 1:1
	Gear ratio	1st	2.697
		2nd	1.606
		3rd	1.071
		4th	0.766
		5th	0.538
		Reverse	1.888
	Final reduction	Type	Single helical gear
		Gear ratio	4.533
STEERING	Type		Hydraulic power-assisted rack and pinion
	Gear ratio		47.4
	Overall ratio		17.0
	Turns, lock-to-lock		3.29
	Steering wheel diameter		380 mm (15.0 in.)
SUSPENSION	Type	Front	Independent strut with stabilizer, coil spring
		Rear	Independent multi-link with trailing arm, stabilizer, coil spring

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	Shock absorber (Without active damper system)	Front	Telescopic, hydraulic, nitrogen gas-filled
		Rear	Telescopic, hydraulic, nitrogen gas-filled
	Shock absorber (With active damper system)	Front	Magnet rheological variable active damper
		Rear	Magnet rheological variable active damper
TIRES	Size of front and rear tires		P255/55R18 104H
	Size of spare tire		T165/80D17 104M
WHEEL ALIGNMENT	Camber	Front	--0°30'
		Rear	--0°30'
	Caster	Front	4°12'
	Total Toe-in	Front	0 mm (0 in.)
		Rear	2 mm (0.08 in.)
	Front wheel turning angle	Inward	38°12'
		Outward (reference)	31°44'
	SAI at camber (kingpin axis)		12°48'
BRAKES	Type of service brake	Front	Power-assisted self-adjusting ventilated disc
		Rear	Power-assisted self-adjusting solid disc
	Type of parking brake		Foot type mechanical actuating, rear wheels
	Pad friction surface area (swept area)	Front	63.5 cm ² (9.84 sq in.) x2
		Rear	25.3 cm ² (3.92 sq in.) x2
	Parking brake shoe friction surface area		60.2 cm ² (9.33 sq in.) x2
AIR CONDITIONING	Cooling capacity	Front	3,506 kcal/h (13,910 BTU/h)
		Rear	1,728 kcal/h (6,860 BTU/h)
	Compressor	Type/Manufacturer	Swash plate/DENSO
		Number of cylinders	10
		Capacity	177 mL/rev. (10.8 cu in./rev.)
		Maximum speed	8,400 rpm
		Lubricant capacity	125 mL (4 2/9 fl.oz)
		Lubricant type	ND-OIL 8 (DENSO)
	Condenser	Type	Corrugated fin

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

	Evaporator	Type	Corrugated fin
	Blower	Type	Stabilized swirling flow
		Motor input (Front)	245W/12V
		Motor input (Rear)	115W/12V
		Speed control (Front)	Infinite variable
		Speed control (Rear)	Infinite variable
		Maximum capacity (Front)	525 m ³ /h (18,510 cu ft/h)
		Maximum capacity (Rear)	275 m ³ /h (9,695 cu ft/h)
	Temperature control		Air-mix type
	Compressor clutch	Type	Dry, single plate, Poly-V belt drive
		Electrical power consumption at 68°F (20° C)	35 W maximum at 12 V
	Refrigerant	Type	HFC-134a (R-134a>
		Quantity (Dual)	600-650 g (20.3-22.0 fl.oz)
ELECTRICAL RATINGS	Battery		12 V-76 Ah/20 HR (12 V-65 Ah/5 HR)
	Fuses	Main under-hood fuse box	120 A, 60 A, 50 A, 40 A, 30 A, 20 A, 15 A, 7.5 A
		Under-hood fuse/relay box	40 A, 30 A, 20 A, 15 A, 10 A 7.5 A
		Under-dash fuse/relay box	30 A, 20 A, 15 A, 10 A, 7.5 A
		Auxiliary under-dash fuse holder 1	7.5 A
		Auxiliary under-dash fuse holder 2	7.5 A
		Rear fuse/relay box	40 A, 30 A, 20 A, 15 A, 10 A, 7.5 A
	Light bulbs	Headlight high beam	12V-60W
		Headlight low beam	12V-35W(HID)
		Daytime running lights	12V-60W
		Front turn signal lights	12V-21 W
		Front side turn signal lights	LED
		Front parking lights	12 V-3 CP
		Front side marker lights	12V-3 CP
		Fog lights	12V-55W
		Rear turn signal lights	12V-21W

2008 Acura MDX

2007-09 GENERAL INFORMATION Specifications - MDX

		Brake/taillights	LED/LED
		Rear side marker lights	12V-3 CP
		High mount brake light	LED
		Back-up lights	12V-18W
		License plate lights	12V-3 CP
		Ceiling light	12V-8W
		Cargo area lights	12V-5W
		Front map light	12V-5W
		Rear map light	12V-5W
		Ambient light	LED
		Vanity mirror lights	12V-2W
		Glove box light	12V-3.4W
		Door courtesy lights	12V-3.4W
		Foot well lights	12V-3.4W
		Gauge lights	LED
		Indicator lights	14V-1.4W, 10V-0.6W
	Washer reservoir	Capacity (USA models)	4.0 L (4.2 US qt)
		Capacity (Canada models)	5.8 L (6.1 US qt)

BODY SPECIFICATIONS

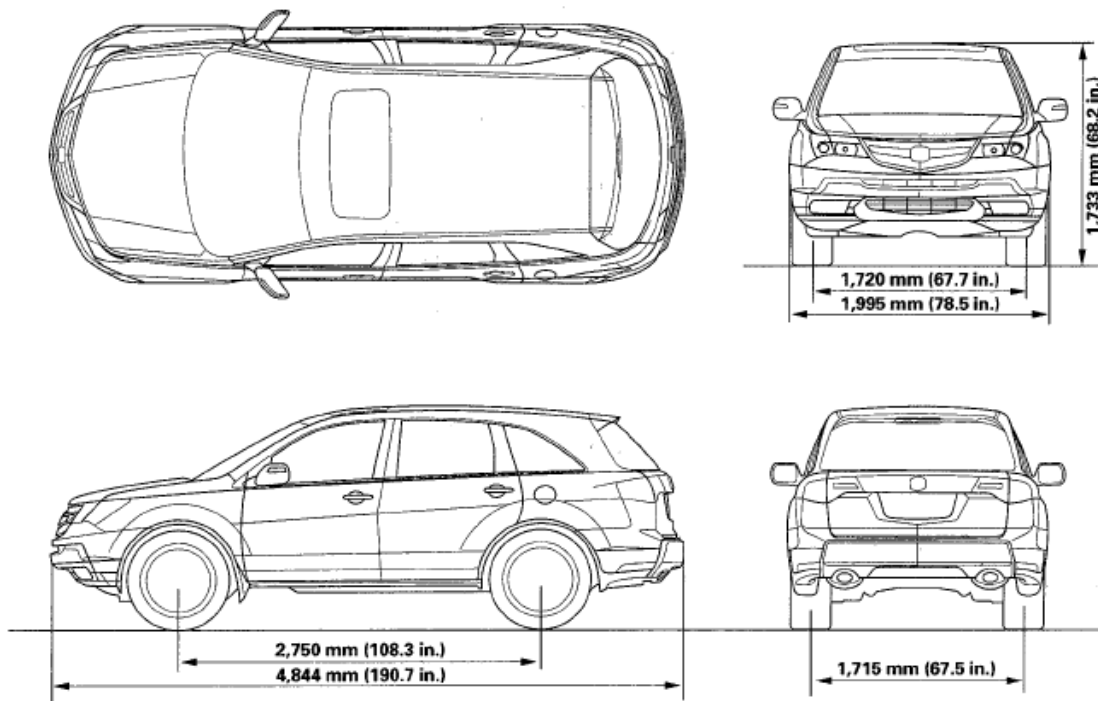


Fig. 1: Identifying Body Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ENGINE Starting System - MDX

2007-09 ENGINE

Starting System - MDX

COMPONENT LOCATION INDEX

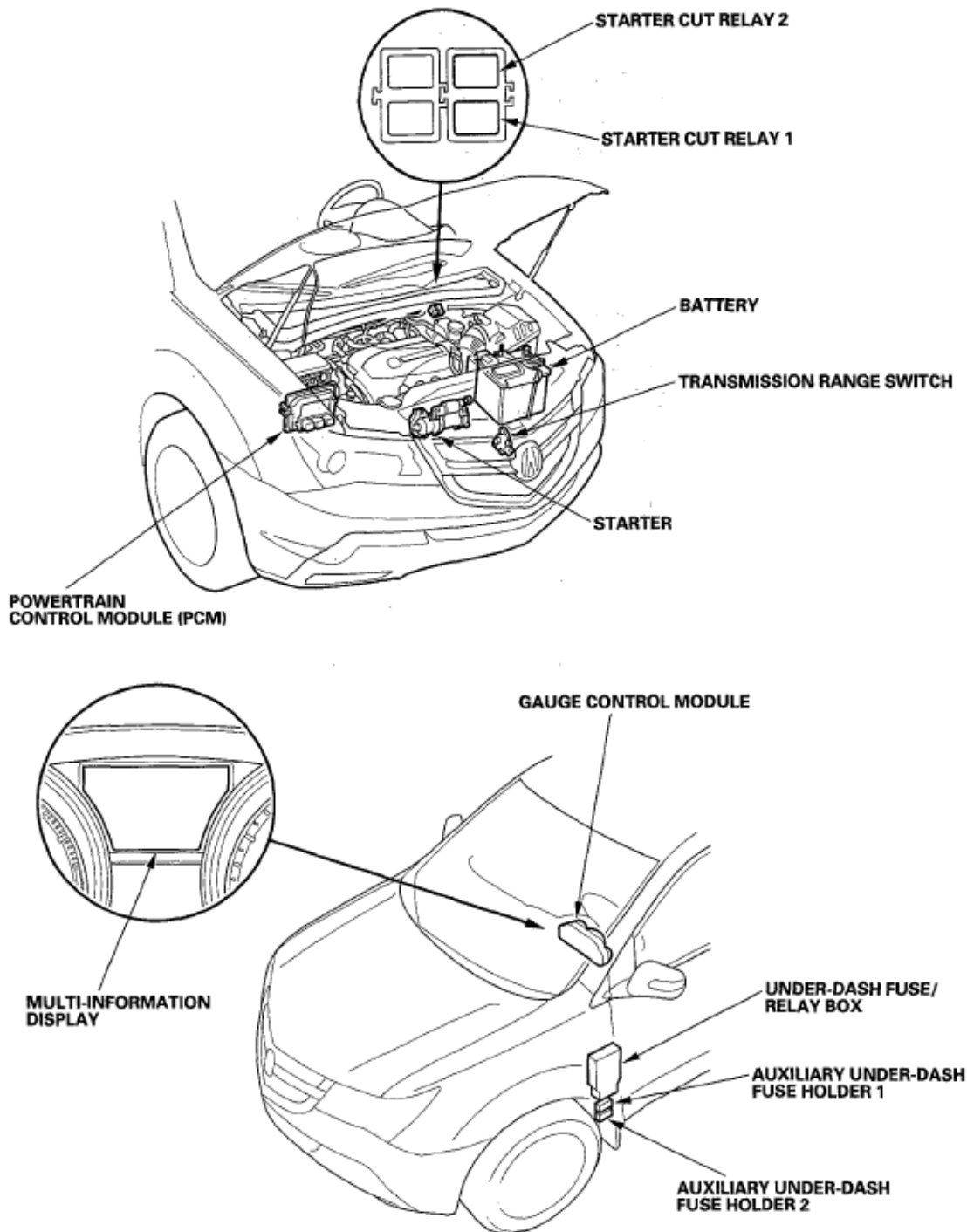


Fig. 1: Identifying Starting System Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING INDEX**TROUBLESHOOTING CHART**

Symptom	Diagnostic procedure	Also check for
Engine does not start (does not crank)	1. Check for loose battery terminals or connections. 2. Test the battery for a low charge (see <u>BATTERY TEST</u>). 3. Check the starter (see <u>STARTER SYSTEM CIRCUIT TROUBLESHOOTING</u>). 4. Check starter cut relay 1 and starter cut relay 2 (see <u>POWER RELAY TEST</u>). 5. Check the transmission range switch (see <u>TRANSMISSION RANGE SWITCH TEST</u>). 6. Check the ignition switch or wire (see <u>TEST</u>).	Poor ground at G101
Engine cranks, but does not start	1. Check for PGM-FI DTCs. 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Check for a plugged or damaged fuel line (see <u>FUEL LINE INSPECTION</u>). 4. Check for a plugged fuel filter (see <u>FUEL PRESSURE REGULATOR REPLACEMENT</u>). 5. Check the throttle body (see <u>THROTTLE BODY TEST</u>). 6. Check for low engine compression (see <u>ENGINE COMPRESSION INSPECTION</u>). 7. Check for a damaged or broken timing belt.	
Engine is hard to start	1. Check for PGM-FI DTCs. 2. Check the fuel pressure (see <u>FUEL PRESSURE TEST</u>). 3. Check for a plugged or damaged fuel line (see <u>FUEL LINE INSPECTION</u>). 4. Check for a plugged fuel filter (see <u>FUEL PRESSURE REGULATOR REPLACEMENT</u>).	
Engine cranks slowly	1. Check for loose battery terminals or connections. 2. Test the battery for a low charge (see <u>BATTERY TEST</u>). 3. Check the starter for binding (see <u>STARTER</u>)	

	<u>OVERHAUL</u>).	
	4. Check for excessive drag in the engine.	
Multi-information display warning CHECK STARTING SYSTEM	Check for PGM-FI DTCs (see <u>GENERAL TROUBLESHOOTING INFORMATION</u>).	

CIRCUIT DIAGRAM

2008 Acura MDX

2007-09 ENGINE Starting System - MDX

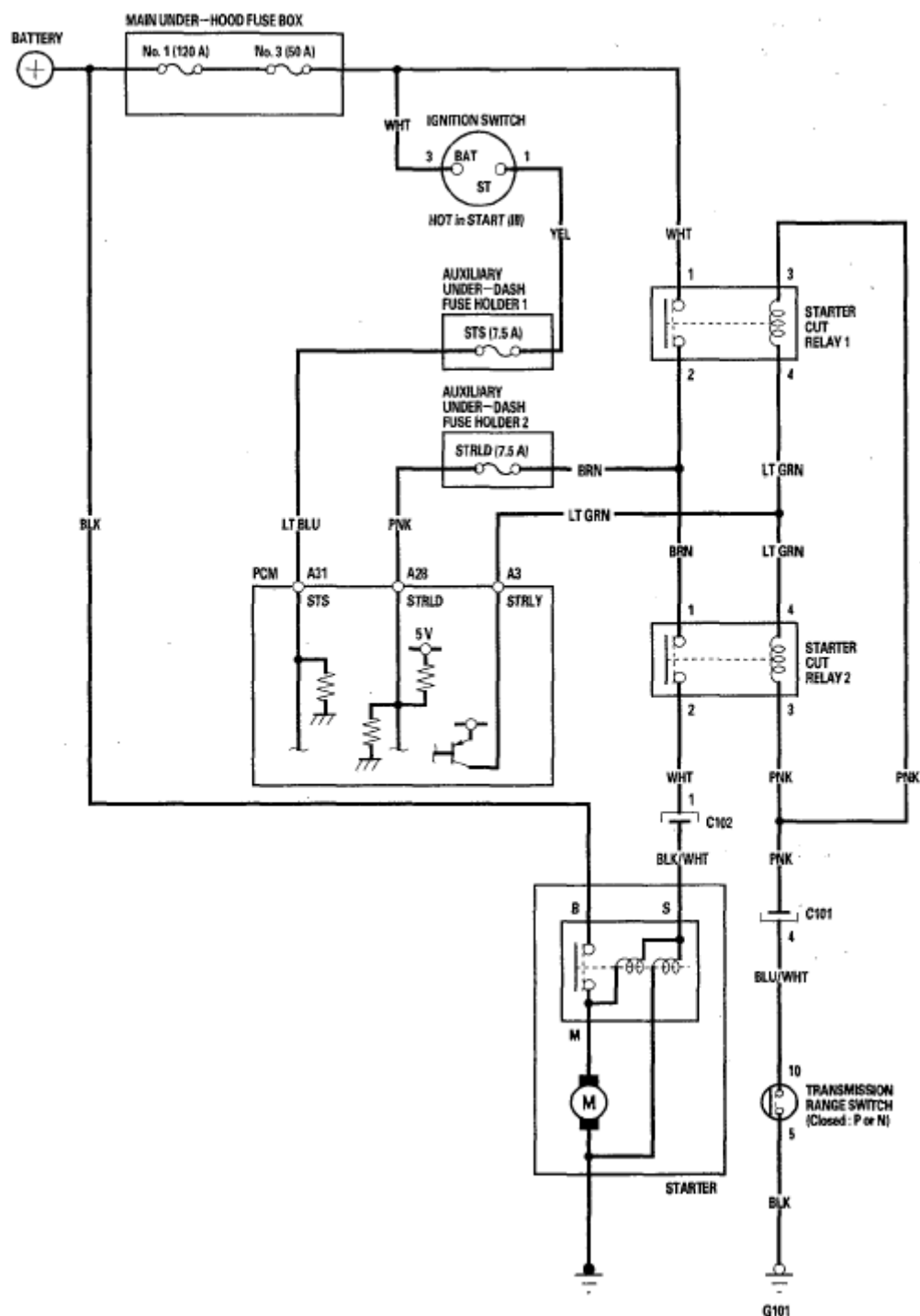


Fig. 2: Starting System - Circuit Diagram

Courtesy of AMERICAN HONDA MOTOR CO., INC.

STARTER SYSTEM CIRCUIT TROUBLESHOOTING

Alternator, Regulator, Battery & Starter tester OTC3131 Available through the Acura Tool and Equipment

Program 888-424-6857

NOTE:

- Air temperature must be between 59 and 100°F (15 and 38°C) during this procedure.
- After the inspection, you must reset the powertrain control module (PCM). Otherwise, the PCM will continue to stop the fuel injectors from functioning.
- The battery must be in good condition and fully charged.

1. Connect the alternator, regulator, battery & starter tester (OTC3131) to the battery as shown.
 - Ammeter, 0-400 A
 - Voltmeter, 0-20 V (accurate within 0.1 volt)

NOTE: The probe is not used for battery testing.

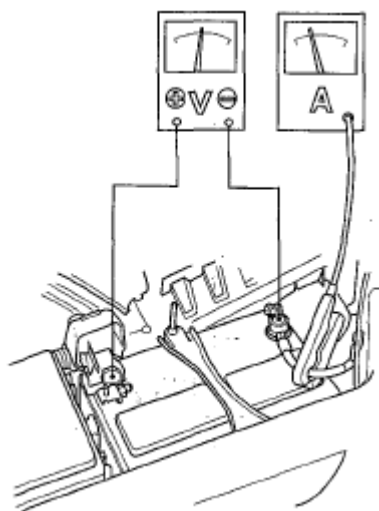


Fig. 3: Measuring Voltage

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Do the BATTERY TEST.

Does the display indicate GOOD or LOW CHARGE?

YES - The battery is OK. Go to step 3.

NO -If the tester indicates BAD BATTERY, replace the battery, then retest. If the tester indicates CHARGE & RETEST, charge the battery, then retest.

3. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on **HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)**).

4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
6. Select PGM-FI, INSPECTION, then ALL INJECTORS OFF on the HDS.
7. Set the parking brake, then with the shift lever in the N or P position, turn the ignition switch to START (III).

Does the starter crank the engine normally?

YES - The starting system is OK. Go to step 15.

NO - Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Check the electrical connections at the battery, the negative battery cable to the body, the engine ground cables, and the starter for looseness and corrosion. Then try cranking the engine again.

Does the starter crank the engine normally?

YES - Repairing the loose connection corrected the problem. The starting system is OK. Go to step 15.

NO - Based on the following symptoms, take the appropriate action:

- If the starter will not crank the engine at all, go to step 10.
 - If the starter cranks the engine erratically or too slowly, go to step 12.
 - If the starter does not disengage from the torque converter ring gear when you release the key, replace the starter, or remove and disassemble it, and check for the following:
 - Starter solenoid and switch malfunction
 - Dirty drive gear or damaged overrunning clutch
10. Make sure the shift lever is in the N or P position, then disconnect the connector from the starter solenoid S terminal. Connect a jumper from the battery positive terminal to the solenoid S terminal.

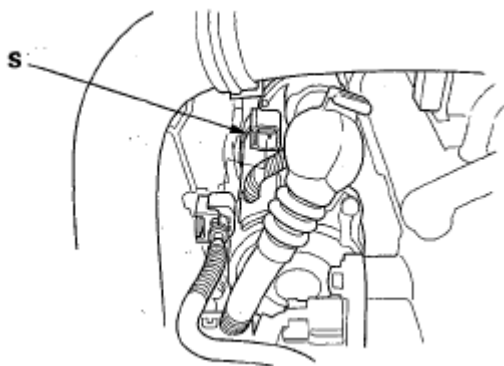


Fig. 4: Identifying Starter Solenoid Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Does the starter crank the engine?

YES - Go to step 11.

NO - Remove the starter, and repair or replace it as necessary.

11. Check the following items in the order listed until you find the open circuit:

NOTE: **After the open circuit or high resistance in the circuit is found and repaired, go to step 15.**

- The WHT wire and connectors between the starter cut relay 1 and main under-hood fuse box.
- The BRN wire and connectors between the starter cut relay 2 and the starter cut relay 1.
- The WHT wire, BLK/WHT wire and connectors between the starter cut relay 2 and the starter.
- The ignition switch.(See **TEST**).
- The transmission range switch and connector(See **TRANSMISSION RANGE SWITCH TEST**).
- The starter cut relay 1 and the starter cut relay 2. (see **POWER RELAY TEST**).

Are these items OK?

YES - Go to step 12.

NO - Repair or replace it, then go to step 12.

12. Connect alternator, regulator, battery & starter tester (OTC3131) to the battery.

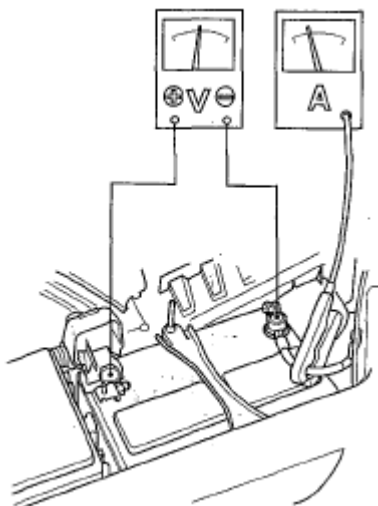


Fig. 5: Measuring Voltage

Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Do the STARTING TEST.

Does the display indicate cranking voltage greater than or equal to 8.0 V and is the current draw less than or equal to 375 A?

YES - Go to step 14.

NO - Replace the starter, or remove and disassemble it, and check for these problems

- Drag in the starter armature
 - Short in the armature winding
 - Excessive drag in the engine
 - Open circuit in starter armature commutator segments
 - Excessively worn starter brushes
 - Open circuit in the starter brushes
 - Dirty or damaged helical splines or drive gear
 - Faulty over running clutch
14. Remove the starter, and inspect its drive gear and the torque converter ring gear for damage. Replace any damaged parts.
15. Select PCM reset (see **PCM RESET**) to cancel ALL INJECTORS OFF on the HDS.

STARTER SOLENOID TEST

1. Do the battery terminal disconnection procedure(See **DISCONNECTION** .
2. Remove the battery and battery base (see step 11 on **ENGINE REMOVAL**).
3. Disconnect the positive starter cable (A), S terminal connector (B), and motor cable (C).

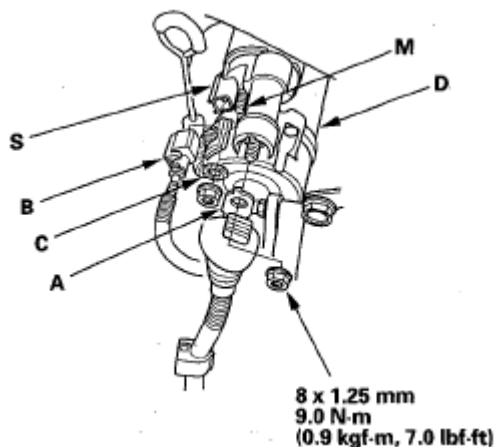


Fig. 6: Identifying Positive Starter Cable And Terminal Connector And Motor Cable With torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check the hold-in coil for continuity between the S terminal and the armature housing (ground) (D). There should be continuity.
 - If there is continuity, go to step 6.
 - If there is no continuity, replace the solenoid.
5. Check the pull-in coil for continuity between the S terminal and the M terminal. There should be continuity.
 - If there is continuity, the solenoid is OK.
 - If there is no continuity, replace the solenoid.
6. Reconnect the starter cable, S terminal connector, and motor cable.
7. Install the battery and battery base (See step 62 on **ENGINE INSTALLATION** .
8. Do the battery terminal reconnection procedure (See **RECONNECTION** .

STARTER PERFORMANCE TEST

1. Disconnect the wire from the M terminal.
2. Make a connection for this test using the thickest (gauge) wire possible (preferably the same gauge as used on the vehicle).

NOTE: To avoid damaging the starter, never leave the battery connected for more than 10 seconds.

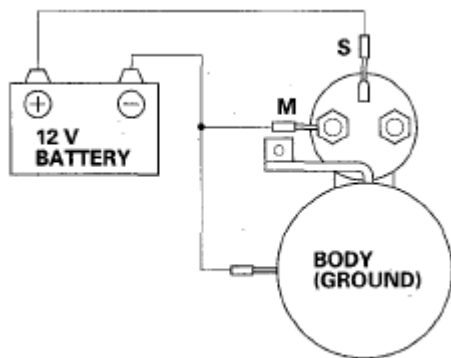


Fig. 7: Applying Battery Voltage To Starter Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Connect the battery as shown. Make sure you disconnect the starter motor wire from the solenoid. If the starter pinion moves out, it is working properly.
4. Disconnect the battery from the M terminal. If the pinion does not retract, the hold-in coil of the solenoid is working properly.

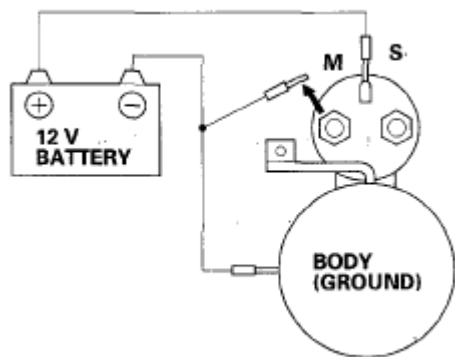


Fig. 8: Disconnecting Battery From M Terminal
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the battery from the starter body. If the pinion retracts immediately, it is working properly.

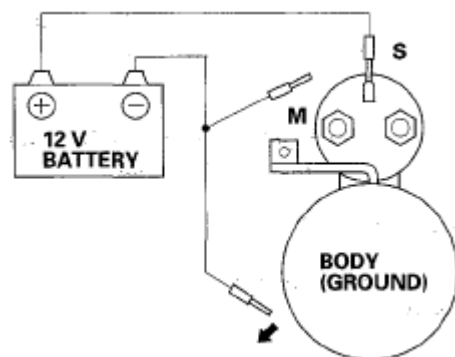


Fig. 9: Disconnecting Battery From Starter Body
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Clamp the starter firmly in a vise.
7. Reconnect the wire to the M terminal.
8. Connect the starter to the battery as shown in the diagram, and confirm that the motor starts and keeps rotating.

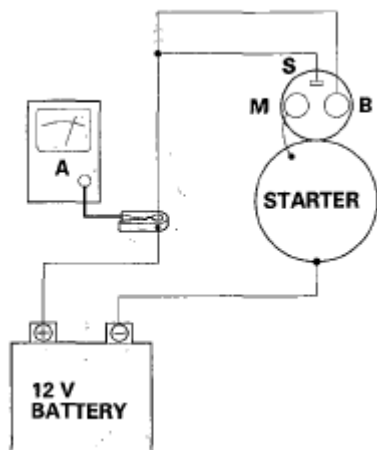


Fig. 10: Identifying Starter To Battery

Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. If the electric current meets the specification when the battery voltage is at 11.5 V, the starter is working properly.

Specification

Electric Current: 90 A or less

STARTER REMOVAL AND INSTALLATION

REMOVAL

1. Do the battery terminal disconnection procedure (See DISCONNECTION).
2. Remove the air cleaner assembly (See AIR CLEANER ELEMENT INSPECTION/REPLACEMENT).
3. Remove the battery and battery base (See step 11 on ENGINE REMOVAL .
4. Remove the harness clamp (A).

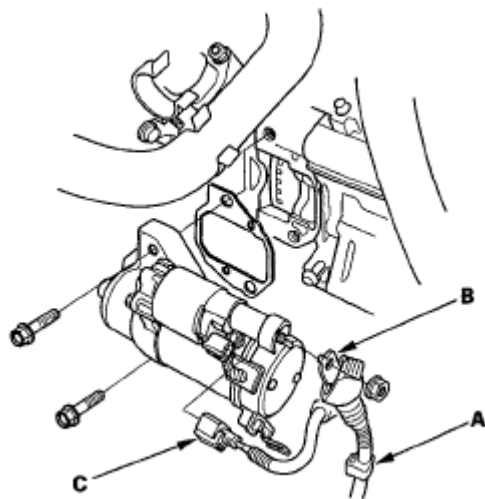


Fig. 11: Identifying Starter Remove \ Install Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the positive starter cable (B) from the B terminal, then disconnect the connector (C) from the S terminal.
6. Remove the two bolts holding the starter.

INSTALLATION

1. Install the starter (A) using a new gasket (B), then install the harness clamp (C), and positive starter cable (D) and S terminal connector (E). Make sure the crimped side of the B terminal is facing out, away from the starter.

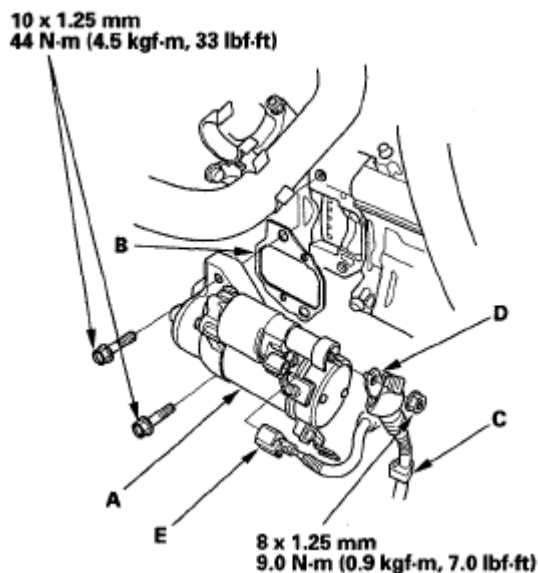


Fig. 12: Identifying Starter Remove \ Install Components With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the battery base and battery (See step 62 on ENGINE INSTALLATION .
3. Install the air cleaner assembly (see AIR CLEANER ELEMENT INSPECTION/ REPLACEMENT).
4. Do the battery terminal reconnection procedure (See RECONNECTION).
5. Start the engine to make sure the starter works properly.

STARTER OVERHAUL

DISASSEMBLY/REASSEMBLY

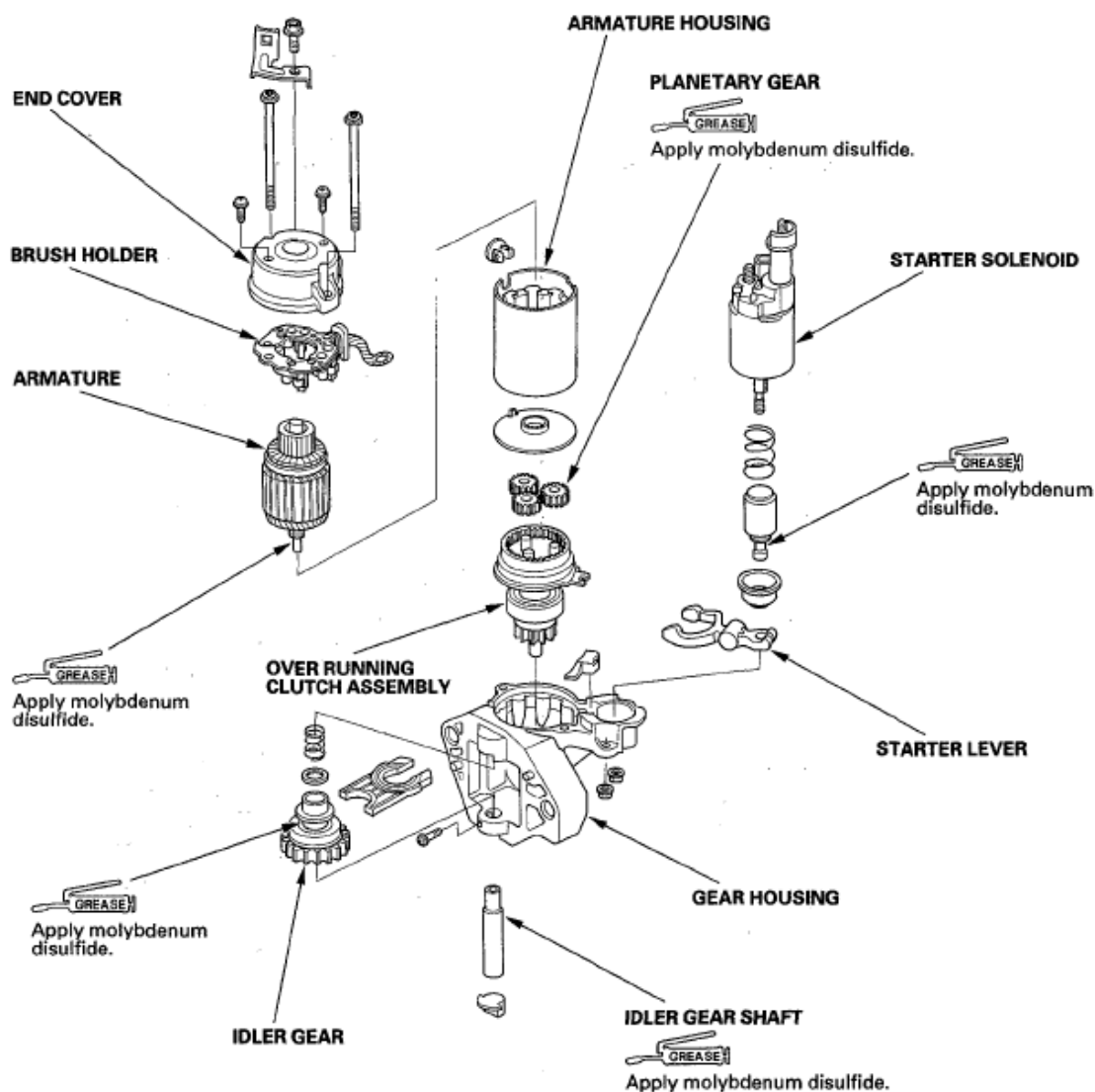


Fig. 13: Exploded View Of Starter Overhaul Components
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

BRUSH HOLDER REMOVAL

1. Remove the starter (see **STARTER REMOVAL AND INSTALLATION**).
2. Disconnect the wire from the M terminal, and remove the end cover.
3. Place a plastic pipe with an outside diameter of 29.4 mm (1.16 in.) on the armature.

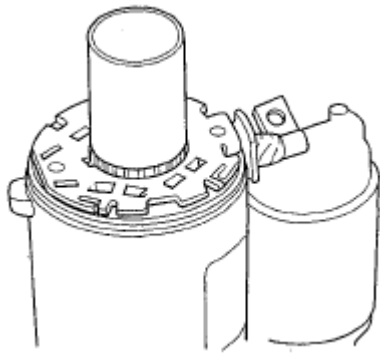


Fig. 14: Identifying Plastic Pipe

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Move the brush holder (A) up to the pipe (B) while holding the pipe so the brushes do not pop out from the holder.

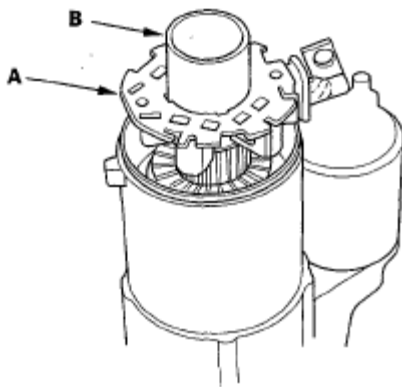


Fig. 15: Identifying Brush Holder

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Armature Inspection and Test

5. Disassemble the starter as shown at the beginning of this procedure.
6. Inspect the armature for wear or damage from contact with the permanent magnet. If there is wear or damage, replace the armature.

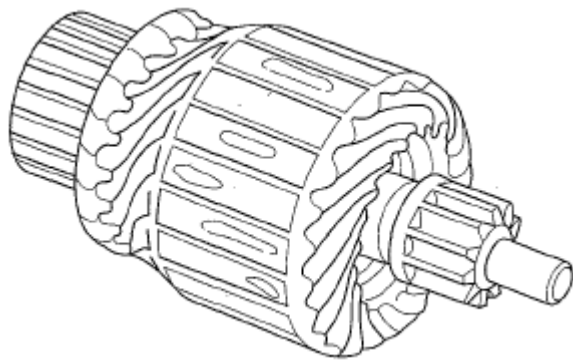


Fig. 16: Identifying Armature

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Check the commutator (A) surface. If the surface is dirty or burnt, resurface it with an emery cloth or a lathe to the specifications in step 8, or recondition with #500 or #600 sandpaper (B).

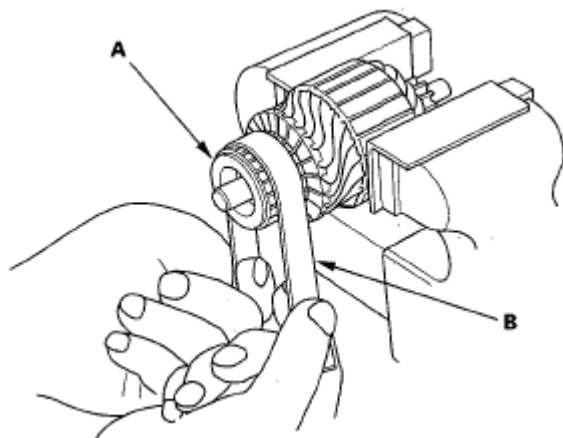


Fig. 17: Identifying Commutator Surface

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Check the commutator diameter. If the diameter is below the service limit, replace the armature.

Commutator Diameter

Standard (New): 28.90-29.00 mm (1.138-1.142 in.)

Service Limit: 28.00 mm (1.102 in.)

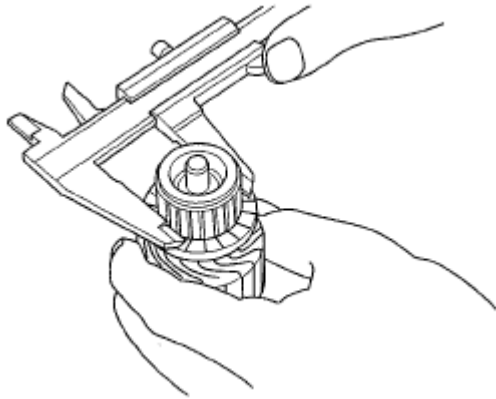


Fig. 18: Identifying Commutator Diameter
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Measure the commutator (A) runout.
 - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
 - If the commutator runout is not within the service limit, replace the armature.

Commutator Runout

Standard (New): 0.02 mm (0.0008 in.) max.

Service Limit: 0.05 mm (0.0002 in.)

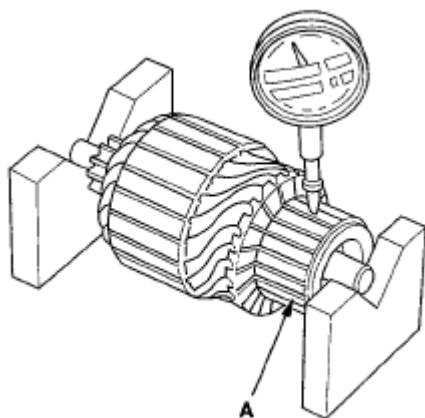


Fig. 19: Measuring Commutator Runout
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the mica depth (A). If the mica is too high (B), undercut the mica with a hacksaw blade to the proper depth. Cut away all the mica (C) between the commutator segments. The undercut should not be too shallow, too narrow, or V-shaped (D).

Commutator Mica Depth

Standard (New): 0.50-0.90 mm (0.020-0.035 in.)

Service Limit: 0.20 mm (0.008 in.)

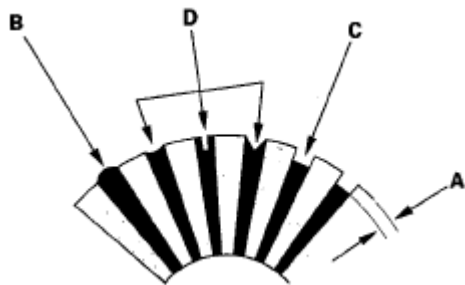


Fig. 20: Identifying Commutator Segments

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Check for continuity between the segments of the commutator. If there is an open circuit between any segments, replace the armature.

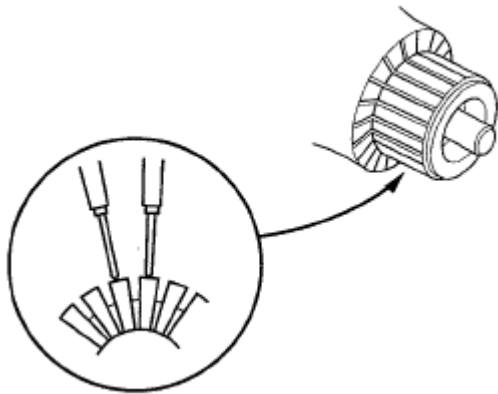


Fig. 21: Identifying Continuity Between Segments Of Commutator

Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Place the armature (A) on an armature tester (B). Hold a hacksaw blade (C) on the armature core. If the blade is attracted to the core or vibrates while the core is turned, the armature is shorted. Replace the armature.

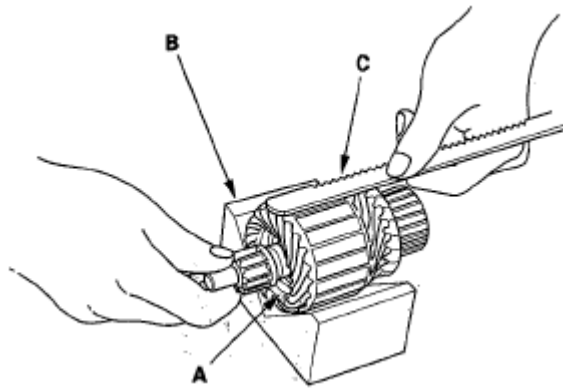


Fig. 22: Placing Armature On Armature Tester
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Use an ohmmeter to check for continuity between the commutator (A) and the armature coil core (B), and between the commutator and the armature shaft (C). If there is continuity, replace the armature.

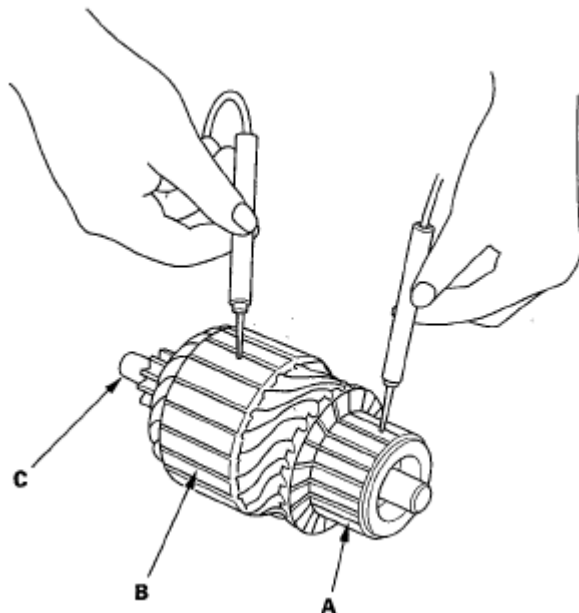


Fig. 23: Checking Continuity Between Commutator And Armature Coil Core
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Brush Inspection

14. Measure the brush length. If it is shorter than the service limit, replace the brush holder assembly.

Brush Length

Standard (New): 15.0-16.0 mm (0.59-0.63 in.)

Service Limit: 9.0 mm (0.35 in.)

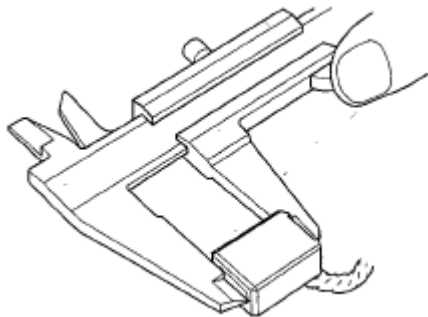


Fig. 24: Measuring Brush Length

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Starter Brush Holder Test

15. Check for continuity between the (+) brush (A) and (-) brush (B). If there is continuity, replace the brush holder assembly.

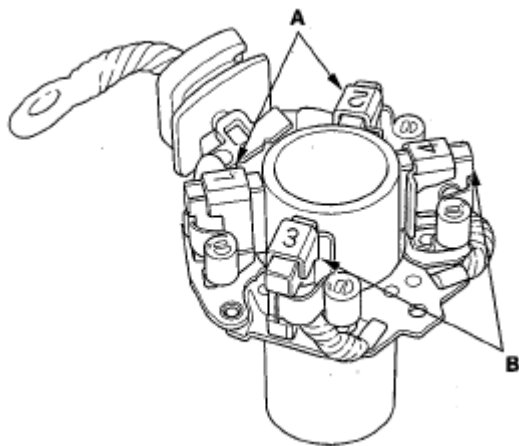


Fig. 25: Identifying Continuity Between (+) Brush And (-) Brush

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Brush Spring Inspection

16. Insert the brush (A) into the brush holder, and bring the brush into contact with the commutator, then attach a spring scale (B) to the spring (C). Measure the spring tension at the moment the spring lifts off the brush. If it is not within the standard, replace the brush holder assembly.

Spring Tension

Standard (New): 22.3-27.3 N (2.27-2.78 kgf, 5.00-6.13 lbf)

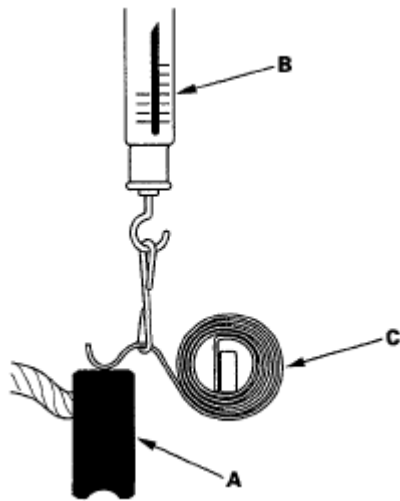


Fig. 26: Measuring Spring Tension

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Planetary Gear Inspection

17. Check the planetary gears (A) and internal gear (B). Replace them if they are worn or damaged.

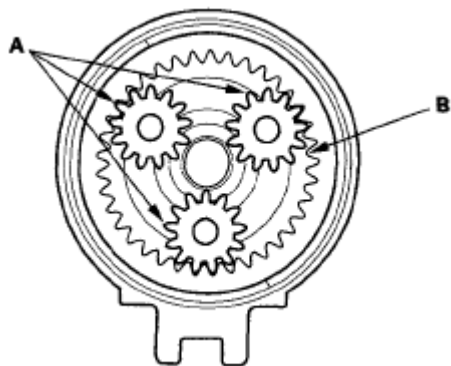


Fig. 27: Identifying Planetary Gears And Internal Gear

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Overrunning Clutch Inspection

18. Slide the overrunning clutch (A) along the shaft. Replace it, if it does not slide smoothly.

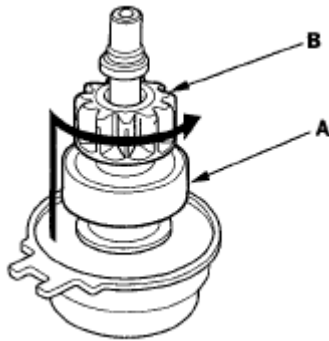


Fig. 28: Identifying Drive Gear

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Hold the drive gear (B), and turn the overrunning clutch in the direction shown to make sure it turns freely. Also make sure the overrunning clutch locks in the opposite direction. If it does not lock, replace the overrunning clutch assembly.
20. If the starter drive gear is worn or damaged, replace the overrunning clutch assembly; the gear is not available separately.

Check the condition of the torque converter ring gear. Replace it if the starter drive gear teeth are damaged.

Starter Reassembly

21. When you replace the brush holder or the armature housing, you need to seat the new brushes. Slip a strip of #500 or #600 sandpaper, with the grit side up, between the commutator and each brush, and smoothly turn the armature. The contact surface of the brushes will be sanded to the same contour as the commutator.
22. Pry back each brush spring with a screwdriver, then position the brush on the brush holder about halfway out of its holder. Release the spring to hold it in place.

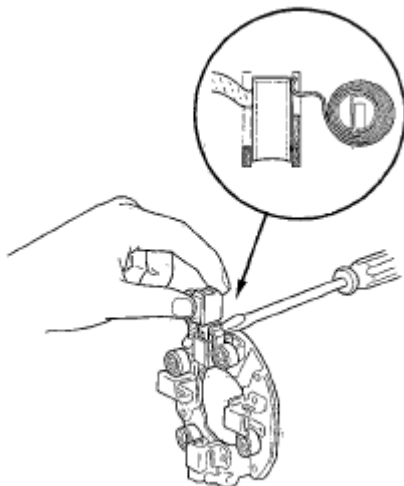


Fig. 29: Prying Back Each Brush Spring With Screwdriver
Courtesy of AMERICAN HONDA MOTOR CO., INC.

23. Push each brush down until it seats against the commutator, then release the spring against the end of the brush.

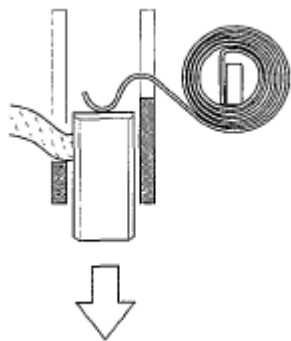


Fig. 30: Pushing Brush
Courtesy of AMERICAN HONDA MOTOR CO., INC.

24. Install the armature housing (A) and armature (B) by aligning the slotted point (C) to the projection (D).

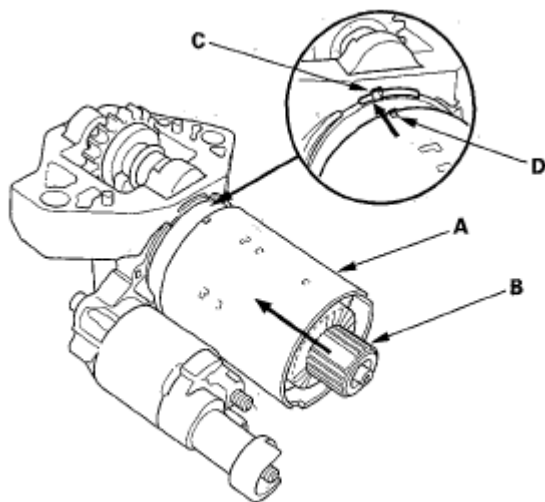


Fig. 31: Identifying Slotted Point To Projection
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the armature into the housing.
26. Place the brush holder assembly on the armature, then move the brush holder (A) down to the armature.

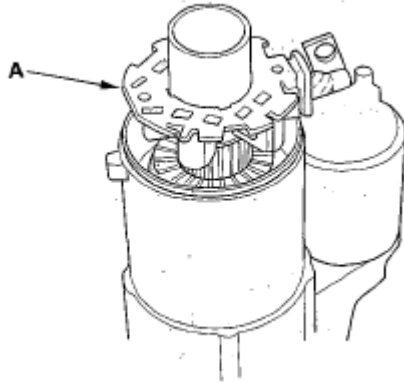


Fig. 32: Identifying Brush Holder Assembly On Armature
Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Install the end cover to retain the brush holder.

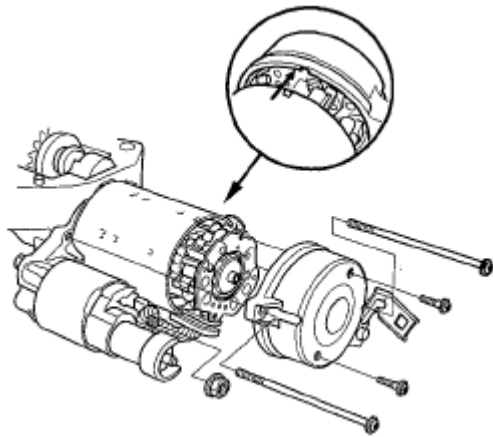


Fig. 33: Identifying Cover To Retain Brush Holder
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT

Tailgate - MDX

TAILGATE ADJUSTMENT

Special Tools Required

KTC trim tool set SOJATP2014 *

* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. With power tailgate: Do the battery terminal disconnection procedure (See DISCONNECTION .

NOTE: Open the tailgate by using the emergency lever while adjusting the tailgate:

- Without power tailgate (see WITHOUT POWER TAILGATE)
 - With power tailgate (see WITH POWER TAILGATE)
2. Remove the Support strut from each side (see TAILGATE SUPPORT STRUT REPLACEMENT).
 3. Remove the striker cap (A) from the rear trim panel (B).

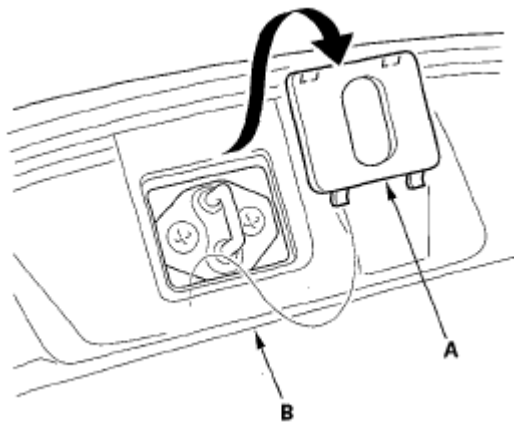


Fig. 1: Identifying Striker Cap Of Rear Trim Panel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Slightly loosen each bolt (A).

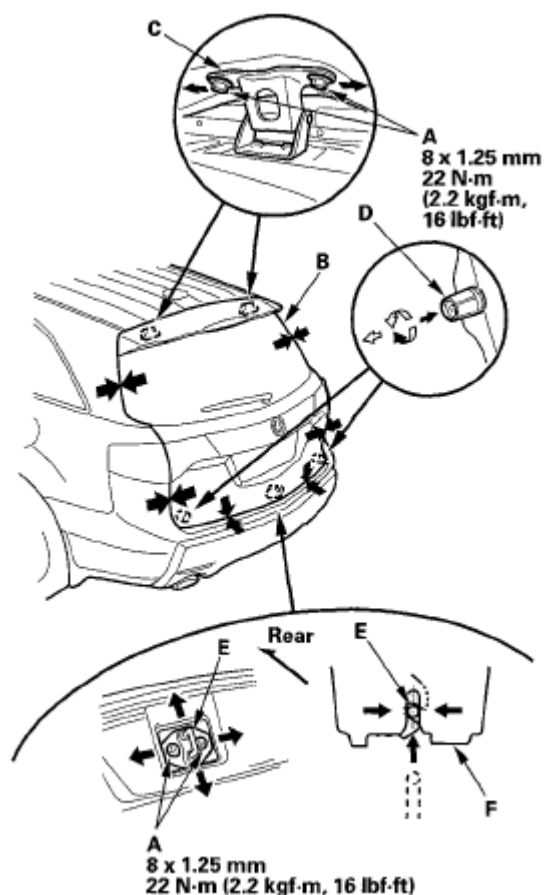


Fig. 2: Identifying Tailgate Bolt With Torque Specifications

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Adjust the tailgate (B) alignment in the following sequence:
 - Adjust the tailgate right and left, using the elongated holes in the tailgate hinges (C).
 - Turn the tailgate edge cushions (D), in or out as necessary, to make the tailgate fit flush with the body at the side edges.
 - Adjust the fit between the tailgate and tailgate opening by moving the striker (E), and adjust the striker right or left until it is centered in the tailgate latch (F).
6. Tighten each bolt securely.
7. Check that the tailgate opens properly and locks securely.
8. Reinstall the support struts securely.
9. Apply touch-up paint to the hinge mounting bolts and around the hinges, and let the paint dry.
10. Apply multipurpose grease to the pivot portion of the tailgate hinges (A) as indicated by the arrows.

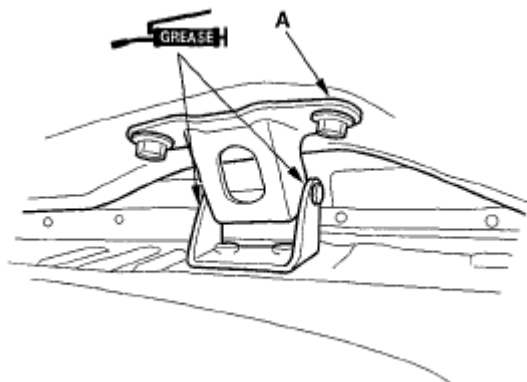


Fig. 3: Identifying Tailgate Hinges

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Reinstall all of the removed parts.
12. With power tailgate: Do the battery terminal reconnection procedure (See **RECONNECTION**).

NOTE:

- Check for any DTCs that may have been set during repairs, and clear them.

TAILGATE SUPPORT STRUT REPLACEMENT

NOTE:

Use eye protection when prying the support strut clips.

1. With the help of an assistant, use a flat-tip screwdriver (A) to pry the support strut clips (B) from each end of the support strut (C) at the tailgate and body, then release the support strut from the pivot bolt (D) and from the pivot bracket (E). Do not remove the clips from the support strut.

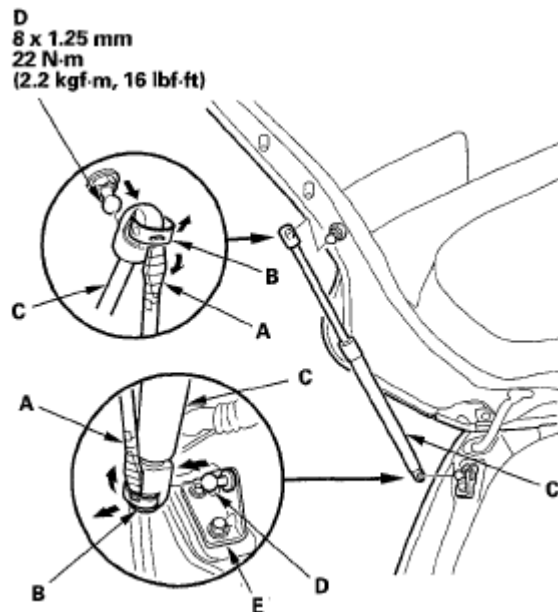


Fig. 4: Identifying Tailgate Support Strut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolts, then remove the pivot bracket (A).

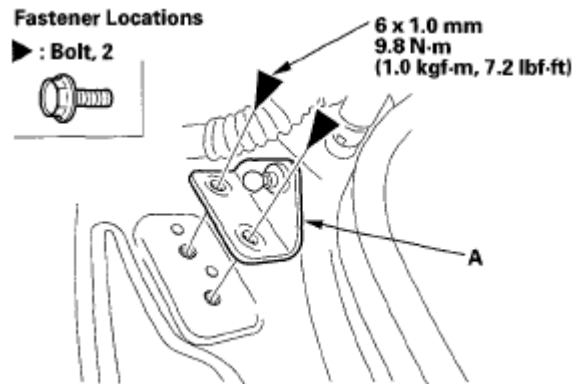


Fig. 5: Identifying Pivot Bracket And Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Reinstall the pivot bracket.
4. Set the clips (A) on the original position, then reattach the support strut (B) on the pivot bolt (C) and pivot bracket (D) by pushing the support strut onto the pivot.

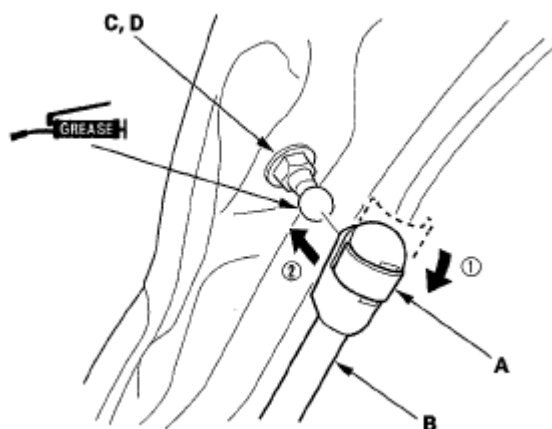


Fig. 6: Identifying Support Strut Onto Pivot

Courtesy of AMERICAN HONDA MOTOR CO., INC.

TAILGATE WEATHERSTRIP REPLACEMENT

1. With power tailgate: Remove the left tailgate side trim (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. With power tailgate: Remove the pivot bracket mounting bolts, then push the power tailgate rod (A) in the quarter pillar trim (B).

Fastener Locations

► : Bolt, 2

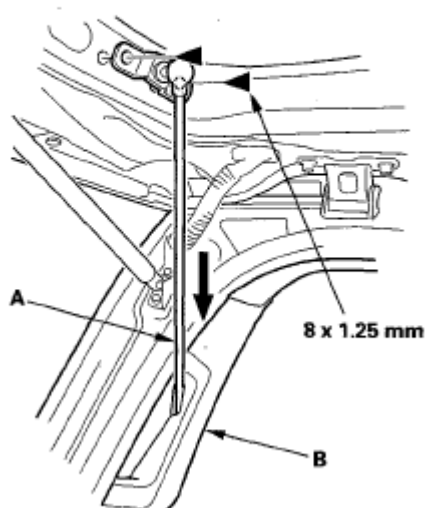


Fig. 7: Identifying Power Tailgate Rod And Quarter Pillar Trim

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the tailgate weatherstrip (A) by pulling it out.

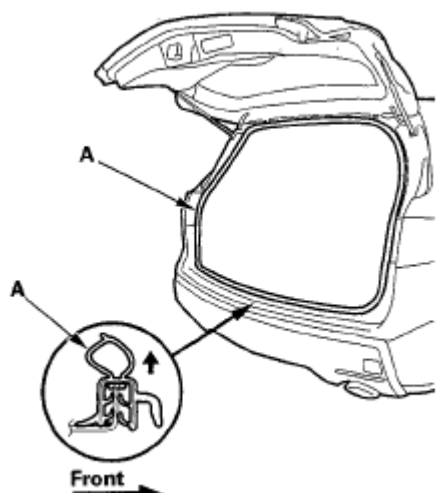


Fig. 8: Identifying Tailgate Weatherstrip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Locate the painted alignment mark (A) on the tailgate weatherstrip (B). Align the painted mark with the alignment notch in the center of the tailgate opening, and install the tailgate weatherstrip all the way around. Slip the weatherstrip in under the lips (C) of both rear gutter covers (D). Make sure there are no wrinkles in the weatherstrip.

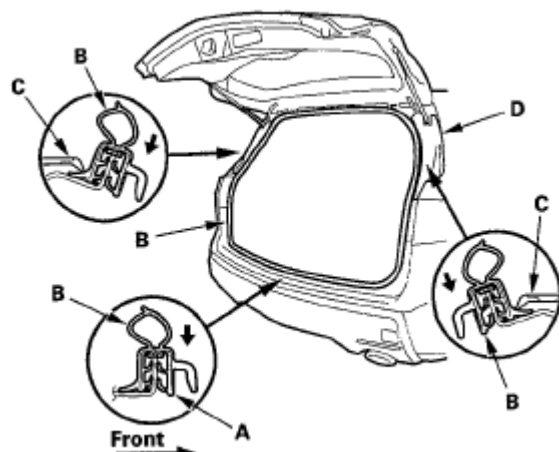


Fig. 9: Identifying Alignment Mark On Tailgate Weatherstrip

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. With power tailgate: Fasten the pivot bracket (A) on the tailgate.

Fastener Locations

► : Bolt, 2

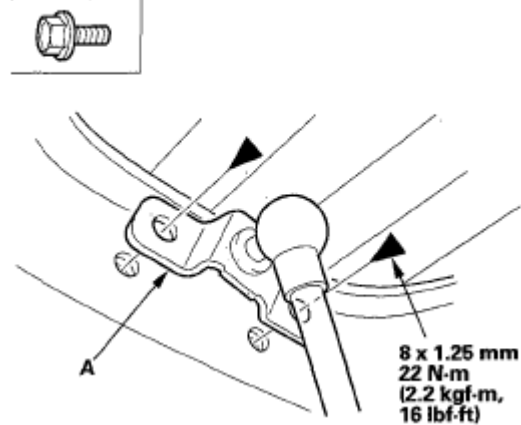


Fig. 10: Identifying Pivot Bracket On Tailgate With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. With power tailgate: Reinstall the left tailgate side trim (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
7. Check for water leaks.

2007-09 SUSPENSION

TPMS (Tire Pressure Monitoring System) - MDX

COMPONENT LOCATION INDEX

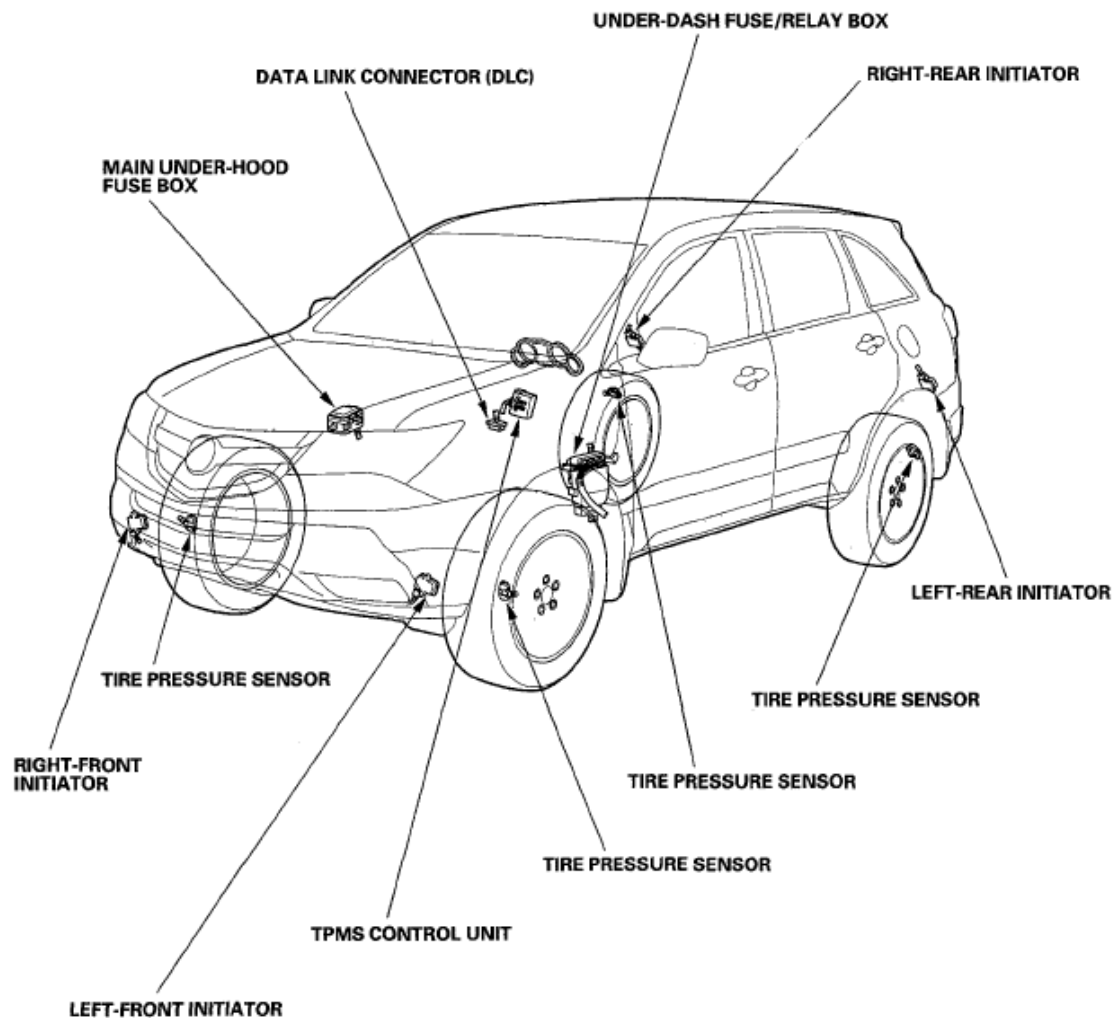


Fig. 1: Identifying TPMS Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

SYSTEM INDICATOR ('07 MODEL)

The system has seven indicators.

- The low tire pressure indicator (A)

- The message indicator (B)
- The TPMS indicator (C)
- The right-front (RF) tire indicator (D)
- The left-front (LF) tire indicator (E)
- The right-rear (RR) tire indicator (F)
- The left-rear (LR) tire indicator (G)

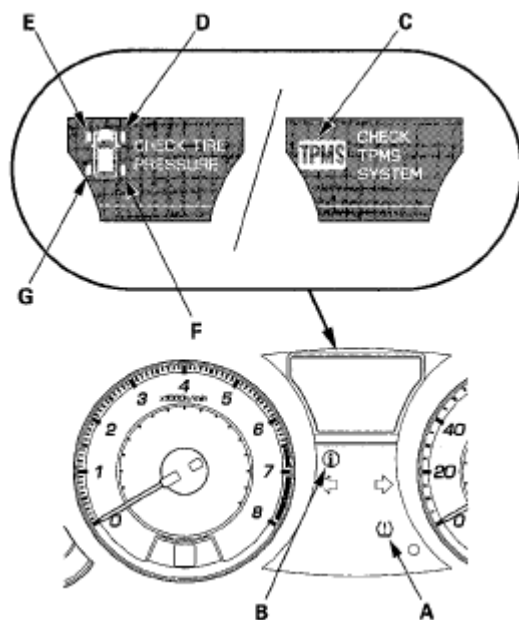


Fig. 2: Identifying Low Tire Pressure Indicator, Message Indicator, And TPMS Indicator
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

The TPMS (tire pressure monitoring system) has seven indicators: four tire indicators (on the multi-information display), a low tire pressure indicator (LED indicator), a message indicator (LED indicator), and a TPMS indicator (on the multi-information display). When the TPMS control unit detects low pressure in a tire, or a problem in the system, it turns on the appropriate indicator(s), as well as the message indicator.

The low tire pressure indicator ('07 Model)

- If the system detects low tire pressure in any of the four tires, the low tire pressure indicator and the appropriate tire indicator(s) come on, as well as the message indicator.
- If the control unit detects a problem in the system during an indication of low tire pressure, it will turn off the tire indicator(s), store the DTC(s), and turn on the TPMS indicator.

The TPMS indicator

- If a problem in the system is detected, the TPMS indicator come on, as well as the message indicator.
- If low tire pressure and a problem in the system are detected, the TPMS indicator comes on, as well as the

message indicator.

If the system is OK, the low tire pressure indicator should come on when you turn the ignition switch to ON (II), and then go off 2 seconds later. If it doesn't, there is a problem with the system.

If a problem is detected in the system, most DTCs will cause the TPMS indicator with the message indicator to come on and stay on until the system returns to normal. If DTC 45, 61, 63, 65, 67, 81, 83, or 85 is set, the TPMS indicator will go off only when the ignition switch is turned to LOCK (0).

SYSTEM INDICATOR ('08-09 MODELS)

- The low tire pressure indicator (A)
- The message indicator (B)
- The TPMS indicator (C)
- The right-front (RF) tire indicator (D)
- The left-front (LF) tire indicator (E)
- The right-rear (RR) tire indicator (F)
- The left-rear (LR) tire indicator (G)

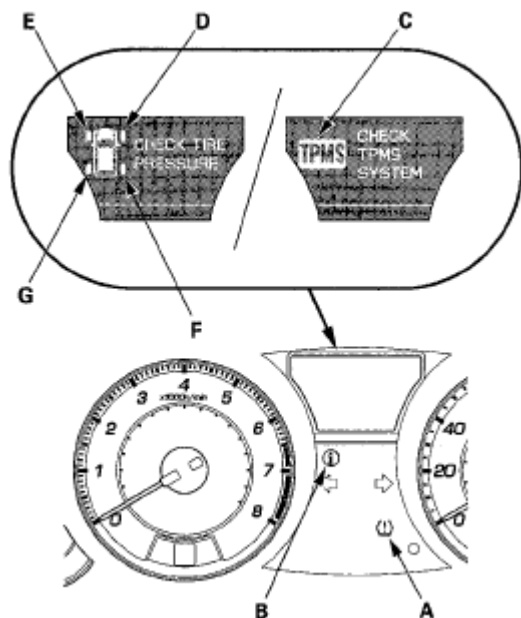


Fig. 3: Identifying Low Tire Pressure Indicator, Message Indicator, And TPMS Indicator
Courtesy of AMERICAN HONDA MOTOR CO., INC.

The TPMS (tire pressure monitoring system) has seven indicators: four tire indicators (on the multi-information display), a low tire pressure indicator (LED indicator), a message indicator (LED indicator), and a TPMS indicator (on the multi-information display). When the TPMS control unit detects low pressure in a tire, or a problem in the system, it turns on the appropriate indicator(s), as well as the message indicator.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

The low tire pressure indicator

- If the system detects low tire pressure in any of the four tires, the low tire pressure indicator and the appropriate tire indicator(s) come on, as well as the message indicator.
- If the control unit detects a problem in the system during an indication of low tire pressure, it will turn off the tire indicator(s), store the DTC(s), and turn on the TPMS indicator.

The TPMS indicator

- If a problem in the system is detected, the TPMS indicator come on, as well as the message indicator, and the low tire pressure indicator comes on after blinking for about 75 seconds.
- If low tire pressure and a problem in the system are detected, the TPMS indicator comes on, as well as the message indicator.

If the system is OK, the low tire pressure indicator should come on when you turn the ignition switch to ON (II), and then go off 2 seconds later. If it doesn't, there is a problem with the system.

If a problem is detected in the system, most DTCs will cause the TPMS indicator and the low tire pressure indicator (starts blinking) to come on and stay on until the system returns to normal. If DTC 45, 61, 63, 65, 67, 81, 83, or 85 is set, the TPMS indicator with the message indicator and the low tire pressure indicator will go off only when the ignition switch is turned to LOCK (0).

DTC 11, 13, 15, 17

If the system detects low tire pressure in any of the four tires, the low tire pressure indicator and the appropriate tire indicator(s) with the message indicator come on, and the control unit sets one or more of these codes: DTC 11, 13, 15, 17. When the tire pressure returns to normal, and TPMS control unit receives the normal pressure signal from, the tire pressure sensor, control unit turns off the indicators.

Pressure changing by Temperature

Tire pressures will increase slightly as the temperature in the tires rises during driving.

Pressures will also increase or decrease slightly with changes in outside air temperature. A temperature change of about 18 °F (10 °C) will change tire pressure by about 10 kPa (0.1 kgf/cm², 1.5 psi). If the temperature drops, tire pressure could decrease just enough to turn on the low tire pressure indicator and tire indicator(s), but later as tire temperature increases, the tire pressure could increase enough to turn them off. To resolve a complaint of such intermittent indications, confirm and clear the stored DTC(s) and check the tire pressures.

Then explain to the client how temperature changes can affect the system.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

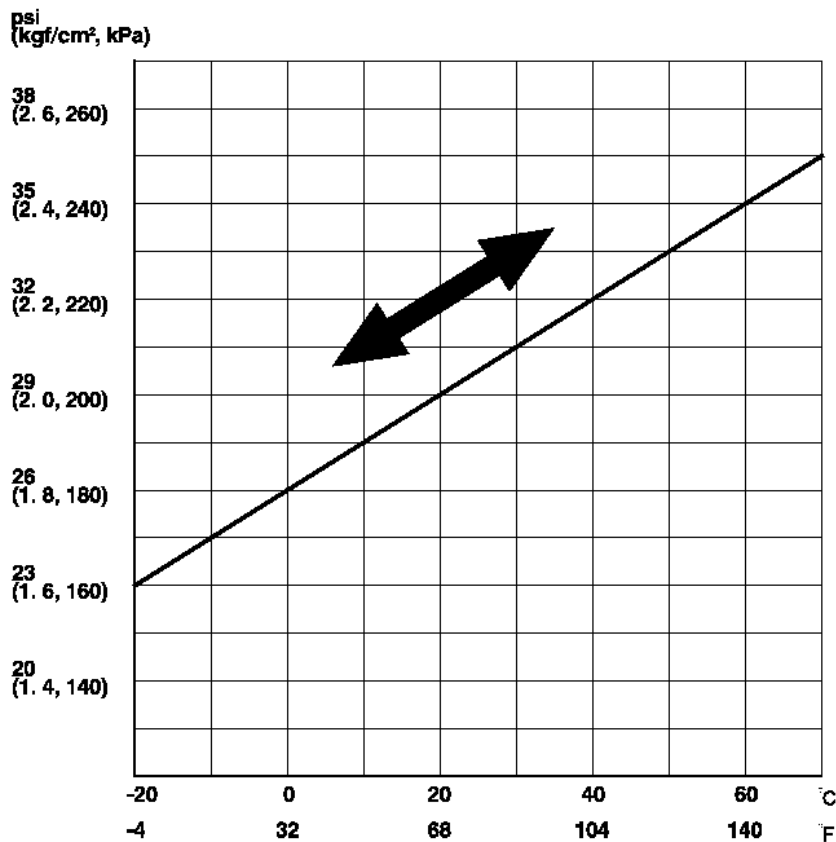


Fig. 4: Identifying Temperature Chart

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Problems That Are Not System Faults

- Tire Sealant

Fluid sealant used to repair a punctured tire can damage the tire pressure sensor mounted on each wheel. It can prevent the system from detecting the correct tire pressure, which sets a DTC 11, 13, 15, or 17 even though the system is normal.

- Cold Weather

When the weather is extremely cold - about -40°F (-40°C) or colder - the output of the lithium battery in each tire pressure sensor may drop far enough that the control unit sets a DTC for low battery voltage (31, 33, 35, or 37) even though the system is normal.

- Non-TPMS Wheels

Vehicles equipped with TPMS must use wheels made for the system. Every TPMS wheel has an exclusive mark; do not use any other type of wheel.

How a Diagnostic Trouble Code (DTC) is Set ('07 Model)

- When the system detects a problem, the TPMS control unit sets a code, but shifts to fail-safe mode, and will not alert the driver to low tire pressures.
- If the TPMS control unit loses power, or fails, the TPMS indicator will come on, but no DTC will be set.
- The memory can hold all the DTCs that could possibly be set. However, when the same DTC is detected more than once, the most recent one overwrites the previous one, so only the latest DTC of each type is stored.
- DTCs are indicated in ascending order, not in the order they occurred.
- Set DTCs are stored in the EEPROM (nonvolatile memory), they cannot be cleared by disconnecting the battery. To clear a DTC, connect the HDS (Honda Diagnostic System) to the data link connector (DLC), and follow the screen prompts.

How a Diagnostic Trouble Code (DTC) is Set ('08-09 Models)

- When the system detects a problem, the TPMS control unit sets a code, but shifts to fail-safe mode, and will not alert the driver to low tire pressures.
- If the TPMS control unit loses power, or fails, the TPMS indicator and the low tire pressure indicator (starts blinking) will come on, but no DTC will be set.
- The memory can hold all the DTCs that could possibly be set. However, when the same DTC is detected more than once, the most recent one overwrites the previous one, so only the latest DTC of each type is stored.
- DTCs are indicated in ascending order, not in the order they occurred.
- Set DTCs are stored in the EEPROM (nonvolatile memory), they cannot be cleared by disconnecting the battery. To clear a DTC, connect the HDS (Honda Diagnostic System) to the data link connector (DLC), and follow the screen prompts.

How to Troubleshoot DTCs ('07 Model)

DTC troubleshooting procedures assume the cause of the problem is still present and the TPMS indicator is still on. (NOTE: The TPMS indicator comes on for DTCs 11, 13, 15, and 17 only if the low tire pressure indication is false, caused by a problem in the system.) Do not use a troubleshooting procedure unless the system has set the DTC listed for it.

1. Ask the client to describe the conditions when the indicator came on, and try to reproduce the same conditions for troubleshooting. Find out if the client checked and/or adjusted tire pressures since the indicator came on.
2. If an indicator does not come on during the test-drive, check for loose terminals, poor contact due to damaged terminals, etc. before you start troubleshooting.
3. After troubleshooting, clear the DTCs, and test-drive the vehicle. Make sure no indicators come on.
4. Check for other unit DTCs which are connected via F-CAN. If there are DTCs that are related to F-CAN, the most likely cause was that the ignition switch was turned to ON (II) with the TPMS control unit connector disconnected. Clear the DTCs. Check for PGM-FI and TPMS codes, and troubleshoot those first.

How to Troubleshoot DTCs ('08 -'09 Models)

DTC troubleshooting procedures assume the cause of the problem is still present and the TPMS indicator and the low tire pressure indicator (starts blinking) are still on. (NOTE: The TPMS indicator comes on and the low tire pressure indicator starts blinking then turn on for DTCs 11, 13, 15, and 17 only if the low tire pressure indication is false, caused by a problem in the system.) Do not use a troubleshooting procedure unless the system has set the DTC listed for it.

1. Ask the client to describe the conditions when the indicators came on or blinked, and try to reproduce the same conditions for troubleshooting. Find out if the client checked and/or adjusted tire pressures since the indicator came on.
2. If an indicator does not come on during the test-drive, check for loose terminals, poor contact due to damaged terminals, etc. before you start troubleshooting.
3. After troubleshooting, clear the DTCs, and test-drive the vehicle. Make sure no indicators come on.
4. Check for other unit DTCs which are connected via F-CAN. If there are DTCs that are related to F-CAN, the most likely cause was that the ignition switch was turned to ON (II) with the TPMS control unit connector disconnected. Clear the DTCs. Check for PGM-FI and TPMS codes, and troubleshoot those first.

How to Retrieve DTCs

1. With the ignition switch LOCK (0), connect the HDS (Honda Diagnostic System) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

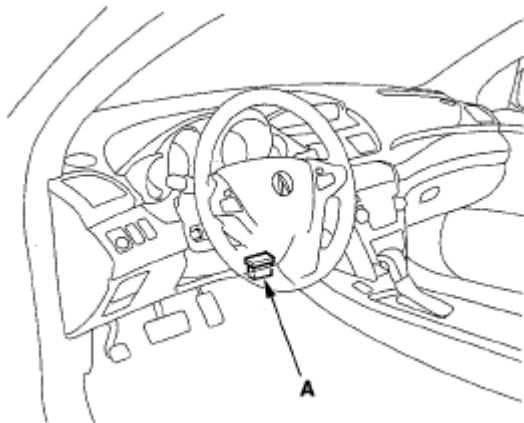


Fig. 5: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the **DTC TROUBLESHOOTING**.

NOTE: See the HDS Help menu for specific instructions.

5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

1. With the ignition switch LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the dash on the driver's side of the dashboard.

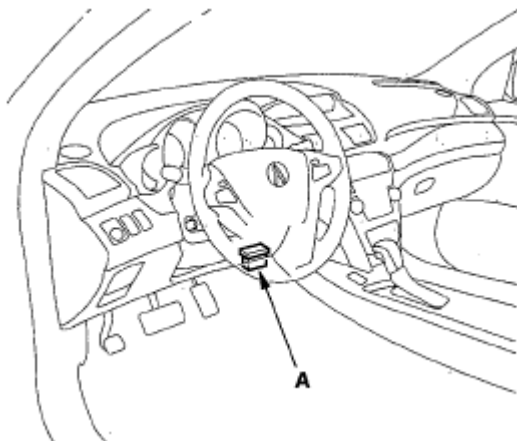


Fig. 6: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Clear the DTC(s) by following the screen prompts on the HDS.

NOTE: See the HDS Help menu for specific instructions.

5. Turn the ignition switch to LOCK (0).

MEMORIZING THE TIRE PRESSURE SENSOR ID

MEMORIZING A TIRE PRESSURE SENSOR ID

When a tire pressure sensor is replaced, the sensor ID must be memorized by the TPMS control unit.

NOTE: To ensure the control unit memorizes the correct ID, the vehicle with the new sensor must be at least 10 ft (3 m) from any other TPMS pressure sensor not installed on that vehicle.

After rotating the tires or replacing a tire pressure sensor, drive the vehicle for at least 40 seconds at a speed of 15 mph (24 km/h) or more, and all the sensor IDs will be memorized automatically.

NOTE:

- When replacing the TPMS control unit, use the HDS to memorize IDs.
- After the IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.

Memorize the ID with the HDS

The HDS can memorize the ID of a new tire pressure sensor or a previously memorized ID.

1. With the ignition switch LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

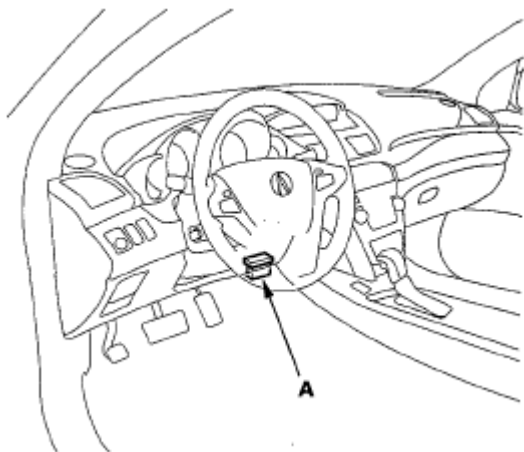


Fig. 7: Identifying Data Link Connector (DLC)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it doesn't, troubleshoot the DLC circuit (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Memorize the ID of the tire pressure sensor by following the screen prompts on the HDS.

NOTE:

- See the HDS Help menu for specific instructions.
- When replacing the TPMS control unit, use the HDS to memorize IDs.
- After the IDs are memorized, reduce the pressure in all four tires to less than the appropriate specification, and check to see that the four tire indicators come on.

5. Turn the ignition switch to LOCK (0).

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

DTC TROUBLESHOOTING INDEX**DTC TROUBLESHOOTING INDEX**

DTC	Detection Item
<u>11</u>	Right-front Tire Low Air Pressure
<u>13</u>	Left-front Tire Low Air Pressure
<u>15</u>	Right-rear Tire Low Air Pressure
<u>17</u>	Left-rear Tire Low Air Pressure
<u>21</u>	Right-front Tire Pressure Sensor Abnormally High Temperature
<u>22</u>	Left-front Tire Pressure Sensor Abnormally High Temperature
<u>23</u>	Right-rear Tire Pressure Sensor Abnormally High Temperature
<u>24</u>	Left-rear Tire Pressure Sensor Abnormally High Temperature
<u>31</u>	Right-front Tire Pressure Sensor Low Battery Voltage
<u>32</u>	Right-front Tire Pressure Sensor Transmission Failure
<u>33</u>	Left-front Tire Pressure Sensor Low Battery Voltage
<u>34</u>	Left-front Tire Pressure Sensor Transmission Failure
<u>35</u>	Right-rear Tire Pressure Sensor Low Battery Voltage
<u>36</u>	Right-rear Tire Pressure Sensor Transmission Failure
<u>37</u>	Left-rear Tire Pressure Sensor Low Battery Voltage
<u>38</u>	Left-rear Tire Pressure Sensor Transmission Failure
<u>41</u>	Abnormal Signal Reception Error
<u>45</u>	Initiator Circuit Short Detection
<u>51</u>	Right-front Tire Pressure Sensor Registration Error
<u>53</u>	Left-front Tire Pressure Sensor Registration Error
<u>55</u>	Right-rear Tire Pressure Sensor Registration Error
<u>57</u>	Left-rear Tire Pressure Sensor Registration Error
<u>61</u>	Right-front Initiator Circuit Open Detection
<u>63</u>	Left-front Initiator Circuit Open Detection
<u>65</u>	Right-rear Initiator Circuit Open Detection
<u>67</u>	Left-rear Initiator Circuit Open Detection
<u>81</u>	TPMS Control Unit Failure
<u>83</u>	No VSP Signal

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

<u>85</u>	F-CAN Communication Failure
<u>91</u>	Right-front Tire Pressure Sensor Internal Error
<u>93</u>	Left-front Tire Pressure Sensor Internal Error
<u>95</u>	Right-rear Tire Pressure Sensor Internal Error
<u>97</u>	Left-rear Tire Pressure Sensor Internal Error

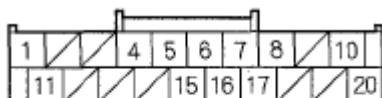
SYMPTOM TROUBLESHOOTING INDEX

DTC TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the TPMS control unit or the vehicle	Troubleshoot the DLC circuit (see <u>DLC CIRCUIT TROUBLESHOOTING</u>)	
Low tire pressure indicator does not come on, and no DTCs are stored ('07 model)	Symptom Troubleshooting (see <u>LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED ('07 MODEL)</u>)	
Low tire pressure indicator does not come on, and no DTCs are stored ('08 model)	Symptom Troubleshooting (see <u>LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED ('08 MODEL)</u>)	
Low tire pressure indicator does not go off, and no DTCs are stored ('07 model)	Symptom Troubleshooting (see <u>LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED ('07 MODEL)</u>)	
Low tire pressure indicator does not go off, and no DTCs are stored ('08 model)	Symptom Troubleshooting (see <u>LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED ('08 MODEL)</u>)	
TPMS indicator does not come on, and no DTCs are stored	Symptom Troubleshooting (see <u>TPMS indicator does not come on, and no DTCs are stored</u>)	
TPMS indicator does not go off, and no DTCs are stored	Symptom Troubleshooting (see <u>TPMS indicator does not go off, and no DTCs are stored</u>)	

SYSTEM DESCRIPTION

TPMS CONTROL UNIT INPUTS AND OUTPUTS 20P CONNECTOR



Wire side of female terminals

Fig. 8: Identifying TPMS Control Unit Inputs And Outputs 20P Connector

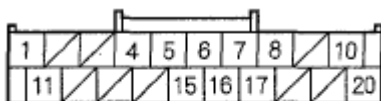
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2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

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VOLTAGE SPECIFICATION

Terminal number	Wire color	Terminal sign (Terminal name)	Description	Signal		
				Terminal	Conditions	Voltage
1	WHT	CAN H (CAN communication signal high)	Sends the communication signal	-	Ignition switch ON (II)	Pulses
4	BLK	GND (Ground)	Ground for the TPMS control unit	4--GND	At all times	Less than 0.1 V
5	GRY	LF LF SIG. (LF low frequency signal)	Sends the signal to the left-front initiator	5--GND	For the first 5-16 seconds after turning the ignition switch to ON (II)	Pulses 0-2 V
					With ignition switch ON (II) for more than 5-16 seconds	Less than 0.1 V
6	LT GRN	RF LF SIG. (RF low frequency signal)	Sends the signal to the right-front initiator	6--GND	For the first 5-16 seconds after turning the ignition switch to ON (II)	Pulses 0-2 V
					With ignition switch ON (II) for more than 5-16 seconds	Less than 0.1 V
7	LT BLU	K-LINE (Data link connector)	Communications with the HDS	-	-	-
8	YEL	IG1 (Ignition switch 1)	Power source for activating the system	8--GND	Ignition switch ON (II)	Battery voltage
					Ignition switch OFF	Less than 0.1 V
10	WHT	+B (Battery positive)	Power source for the TPMS control unit	10--GND	At all times	Battery voltage



Wire side of female terminals

Fig. 9: Identifying TPMS Control Unit Inputs And Outputs 20P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

VOLTAGE SPECIFICATION

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2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

Terminal number	Wire color	Terminal sign (Terminal name)	Description	Signal		
				Terminal	Conditions	Voltage
11	RED	CAN L (CAN communication signal low)	Sends the communication signal	-	Ignition switch ON (II)	Pulses
15	LT BLU	LF GND (LF low frequency ground)	Ground for the initiators	15--GND	Ignition switch ON (II)	Less than 0.1 V
16	PNK	LR LF SIG. (LR low frequency signal)	Sends the signal to the left-rear initiator	16--GND	For the first 5-16 seconds after turning the ignition switch to ON (II)	Pulses 0-2 V
					With ignition switch ON (II) for more than 5-16 seconds	Less than 0.1 V
17	GRY	RR LF SIG. (RR low frequency signal)	Sends the signal to the right-rear initiator	17--GND	For the first 5-16 seconds after turning the ignition switch to ON (II)	Pulses 0-2 V
					With ignition switch ON (II) for more than 5-16 seconds	Less than 0.1 V
20	BRN	LF PWR. (LF low frequency power)	Power source for the initiators	20--GND	For 5 seconds with ignition switch ON (II)	About 7 V
					After 5 seconds with ignition switch ON (II)	-

System Structure

Whenever the engine is running, the TPMS control unit continuously monitors all four tires and the system. If it detects low pressure in a tire, it alerts the driver by turning on the low tire pressure indicator and the appropriate tire indicator. If it detects a problem in the system, it turns on the TPMS indicator.

Initiators

Mounted on each wheel well, each initiator sends a start/stop signal to the tire pressure sensor in the tire below it.

Control unit

Mounted on the brake pedal bracket, the control unit sends signals to the initiators and receives signals from them to verify pressure sensor IDs every time the engine starts. It also receives signals from the transmitters in the tire pressure sensors, and it continuously monitors and controls the system.

Indicators

All indicators are in the gauge control module: The low tire pressure indicator (LED indicator), four tire

indicators (on the multi-information display) to show which tire is affected, and the TPMS indicator (on the multi-information display) that comes on only if there's a problem with the system. The message indicator (LED indicator) comes on when there is one or more indication in the multi-information display. When two or more tire pressures are low, the low tire pressure indicator comes on about 5 seconds before the appropriate tire indicator. Once low pressure is detected, the system scans all four pressure sensors to ensure that it turns on the correct tire indicator.

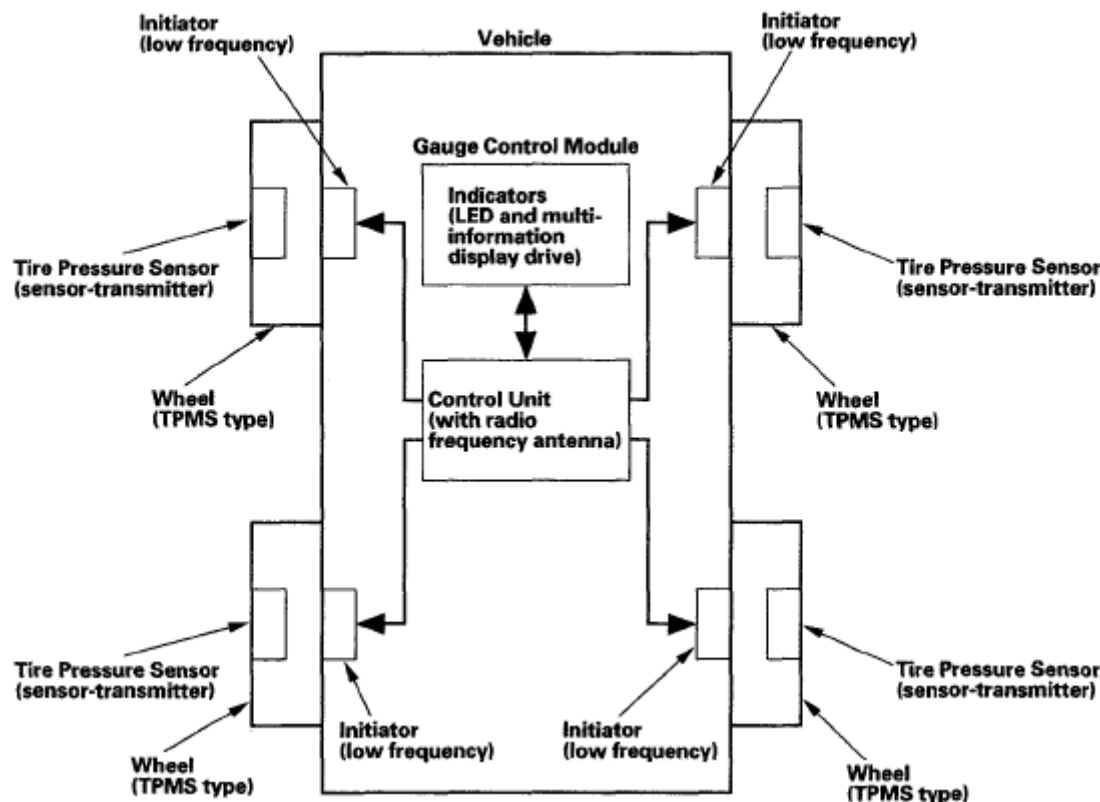


Fig. 10: Indicators And Gauge Control Module System Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Tire pressure sensor

Each sensor is an integrated unit made up of the tire valve stem, a pressure sensor, and a transmitter. The unit is attached to the inside of the wheel, around the valve stem. The sensor transmits the internal tire information to the control unit once every 60 seconds. When the TPMS control unit receives tire pressure of less than 175 kPa (1.8 kgf/cm², 25 psi), the control unit then turns on the low tire pressure indicator and the appropriate tire(s) indicator. When that tire's pressure is increased to more than 200 kPa (2.0 kgf/cm², 29 psi), the transmitter sends tire pressure to the control unit, and then the control unit turns the indicators off.

Wheels

The TPMS will not work unless TPMS type wheels are installed on the vehicle. There are two different type wheels used. The original equipment wheels have a "TPMS" stamp (A) on the back of the wheel and counterweights (B) cast into the opposite side of the spoke to balance the weight of the tire pressure sensor (C).

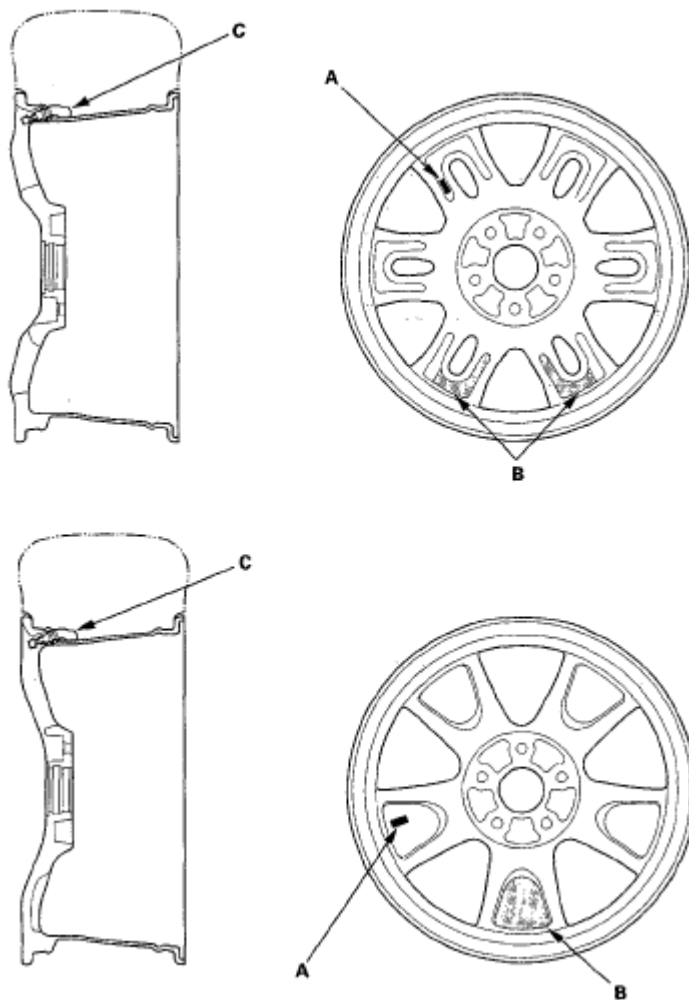


Fig. 11: Identifying "TPMS" Stamp, Counterweights And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

System Communication

- When the vehicle is running, a RF (radio frequency) band wave signal is continuously transmitted from each tire pressure sensor to the control unit.
- When the ignition switch is turned to ON (II), the initiators send a LF (low frequency) band wave signal to the tire pressure sensors, switching them from sleep mode to normal function mode. When the ignition switch is turned to LOCK (0), the sensors switch from normal function mode back to sleep mode to extend their battery life.
- Each tire pressure sensor has its own ID to prevent jamming by similar systems on other vehicles. After memorizing all the sensor IDs, the control unit receives only those specific signals.
- An ID can be memorized manually or automatically. Each initiator is hardwired to the control unit. Every time the ignition is turned to ON (II), the control unit asks each initiator for a sensor ID. The initiators then transmit the sensor IDs, and the control unit receives and memorizes them. The control unit then knows which ID belongs to each tire location. This recurring ID confirmation prevents any confusion in the system as a result of normal tire rotation.

NOTE: Be careful not to bend the brackets on the TPMS control unit and the front/rear initiators. Misalignment of the control unit and initiators could interfere with sending and receiving signals.

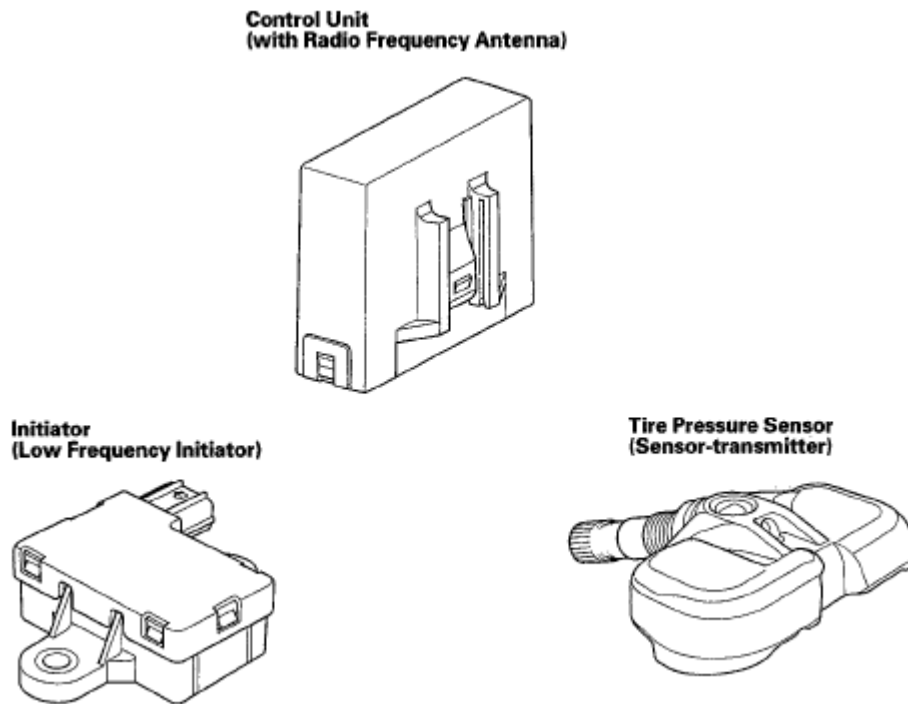


Fig. 12: Identifying Control Unit, Initiator And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

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2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

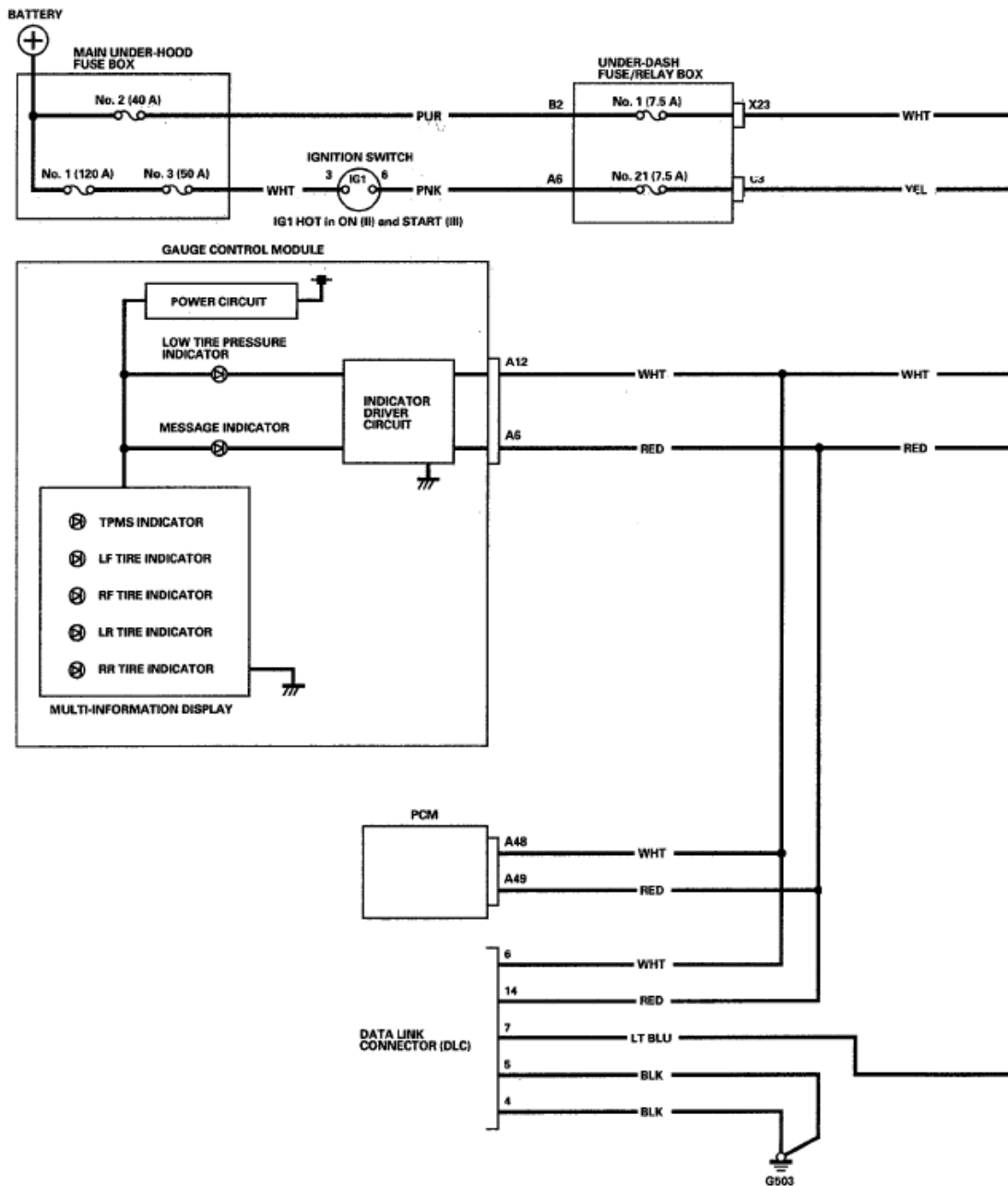


Fig. 13: TPMS Circuit Diagram (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

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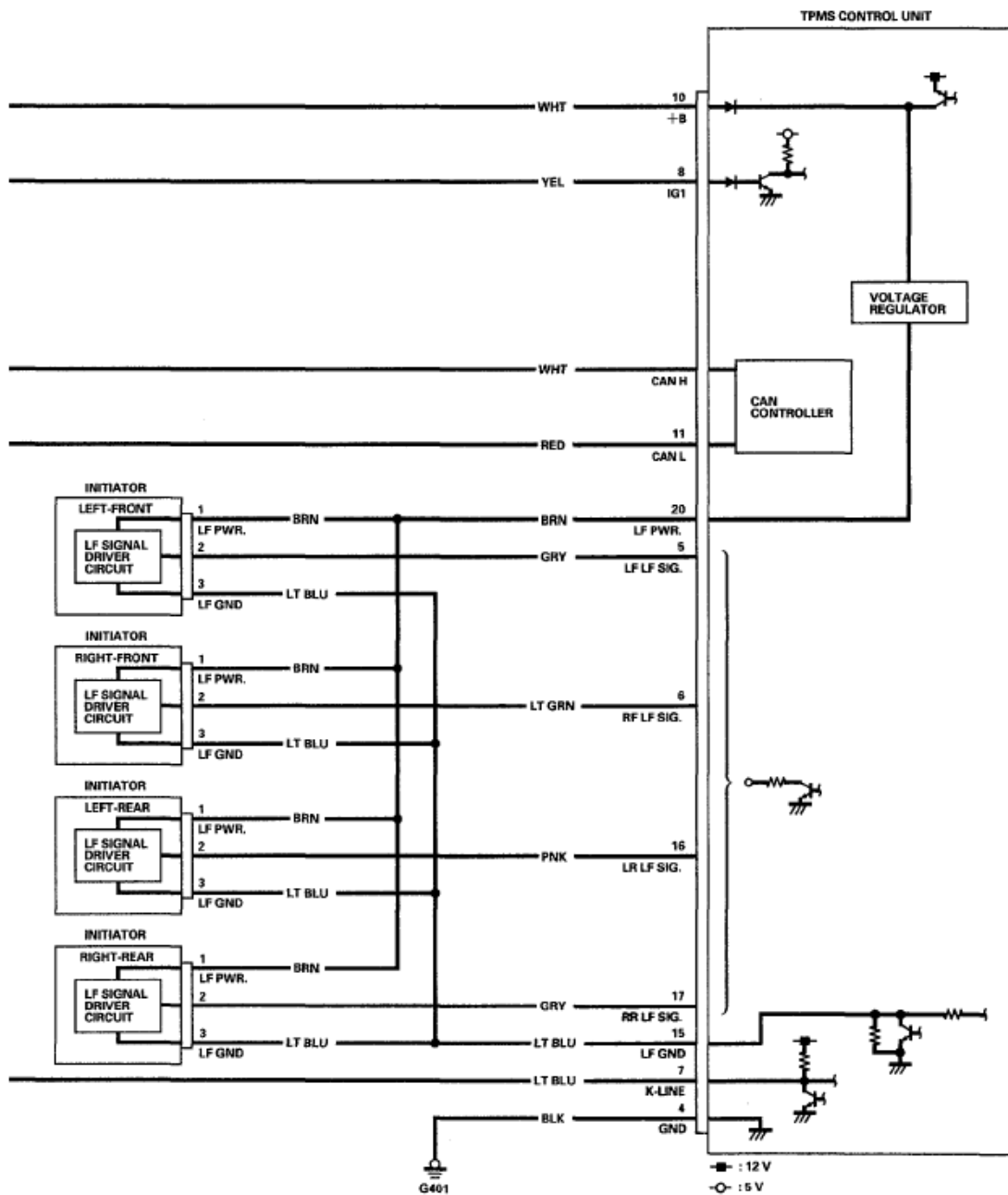


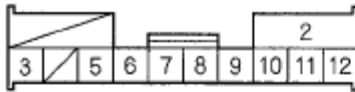
Fig. 14: TPMS Circuit Diagram (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

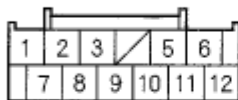
2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

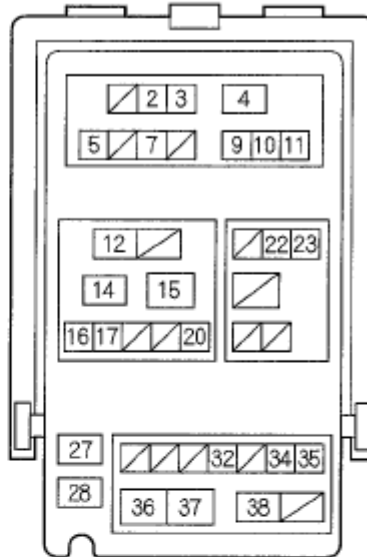
**UNDER-DASH FUSE/RELAY BOX
CONNECTOR C (12P)**



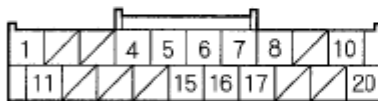
**GAUGE CONTROL MODULE
CONNECTOR A (12P)**



**UNDER-DASH FUSE/RELAY BOX
CONNECTOR X (39P)**



TPMS CONTROL UNIT 20P CONNECTOR

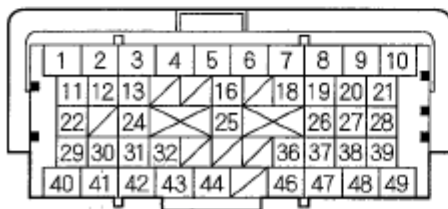


INITIATOR 3P CONNECTOR



Wire side of female terminals

PCM CONNECTOR A (49P)



DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Fig. 15: Identifying TPMS Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC 11, 13, 15, 17: TIRE LOW AIR PRESSURE

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

NOTE: If low tire pressure is detected, the control unit will set one or more of these DTCs, and turn on the low tire pressure indicator and the appropriate tire indicator(s). If the low tire pressure and tire indicators come on due to true low tire pressure, and the client corrects it before bringing the vehicle in, the DTCs will have been stored, but all the indicators will be off.

1. Turn the ignition switch to LOCK (0).
2. Make sure the tires are inflated to the specified tire pressure listed on the doorjamb sticker.
3. Test-drive the vehicle.

Does the low tire pressure indicator go off?

YES - The system is OK at this time. Check for and repair the cause of air loss.

NO - Go to step 4.

4. Turn the ignition switch to ON (II).
5. Check the RF, LF, RR, or LR TIRE PRESSURE in the TPMS DATA RIST with the HDS, and compare with measured actual tire pressure.

NOTE: If the HDS screen shows **UNDEFINED** for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If **UNDEFINED** is still shown, repeat the procedure in the previous sentence until **NORMAL** is shown.

Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm², 6 psi) of the actual tire pressure?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Check that the tire pressure sensor is properly mounted. Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

DTC 21, 22, 23, 24: TIRE PRESSURE SENSOR ABNORMALLY HIGH TEMPERATURE

1. Turn the ignition switch to ON (II).
2. Check the tire indicated by the DTCs you retrieved.

NOTE: An abnormal rise in the internal temperature of the tires can be caused by:

- Excessive braking
- Failure to release the parking brake (rear tires only)
- Leaving the vehicle running while parked
- Improper assembly of a wheel and tire

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

DTC REFERENCE

DTC	Tire location
21	Right-front
22	Left-front
23	Right-rear
24	Left-rear

3. Turn the ignition switch to LOCK (0).
4. Make sure the tires have cooled down.
5. Turn the ignition switch to ON (II).

Does the TPMS indicator go off within one minute?

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 6.

6. Check the RF, LF, RR, or LR TIRE PRESSURE SENSOR TEMPERATURE in the TPMS DATA LIST with the HDS.

NOTE: If the HDS screen shows **UNDEFINED** for sensor status, turn the ignition switch to **LOCK (0)**, rotate the tire 1/4 turn, then turn the ignition switch to **ON (II)**, and try again. If **UNDEFINED** is still shown, repeat the procedure in the previous sentence until **NORMAL** is shown.

Is 176°F (80°C) or more indicated?

YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 31, 33, 35, 37: TIRE PRESSURE SENSOR LOW BATTERY VOLTAGE

NOTE: This problem occurs when the temperature around the sensor is -40°F (-40°C) or less. Note that the diagnosis must be made in a place where ambient temperature is -4°F (-20°C) or more.

1. Turn the ignition switch to ON (II).

Does the TPMS indicator go off within one minute?

YES - The system is OK at this time. Clear the DTC with the HDS.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

NO - Go to step 2.

2. Check the RF, LF, RR, or LR TIRE PRESSURE SENSOR TRANSMITTER BATTERY in the TPMS DATA LIST with the HDS.

NOTE: If the HDS screen shows **UNDEFINED** for sensor status, turn the ignition switch to **LOCK (0)**, rotate the tire 1/4 turn, then turn the ignition switch to **ON (II)**, and try again. If **UNDEFINED** is still shown, repeat the procedure in the previous sentence until **NORMAL** is shown.

DTC REFERENCE

DTC	Tire location
31	Right-front
33	Left-front
35	Right-rear
37	Left-rear

Is LOW indicated?

YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 32, 34, 36, 38: TIRE PRESSURE SENSOR TRANSMISSION FAILURE

- NOTE:**
- Inspect for an aftermarket device interfering with the RF signal from the sensors when turning the ignition switch to **ON (II)**.
 - Vehicle must be driven for 3 minutes at 15 mph (24 km/h) or more for DTC 32, 34, 36, or 38 to set.

1. Turn the ignition switch to **ON (II)**.
2. Check the indicated location to make sure the wheel is a TPMS type with the tire pressure sensor.

DTC REFERENCE

DTC	Tire location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is a TPMS type wheel with a tire pressure sensor mounted on the vehicle?

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

YES - Go to step 3.

NO - Install a TPMS type wheel, and memorize the sensor ID. Drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the ID with the HDS. **MEMORIZE THE ID WITH THE HDS**

3. Test-drive the vehicle
4. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

Is the vehicle speed indicated?

YES - Go to step 8.

NO - Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Turn the ignition switch to ON (II).
7. Check for DTCs with the HDS.

Is DTC 85 indicated?

YES - Go to the **DTC 85 troubleshooting** (see).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

8. Turn the ignition switch to LOCK (0).
9. Turn the ignition switch to ON (II).
10. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If the status does not change to normal, repeat the procedure in the previous sentence until NORMAL is shown.

DTC REFERENCE

DTC	Tire location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Install a wheel with a known-good tire pressure sensor on the vehicle.
13. To memorize the sensor ID, drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the ID with the HDS (see **MEMORIZE THE ID WITH THE HDS**).
14. Turn the ignition switch to LOCK (0).
15. Turn the ignition switch to ON (II).
16. Check TPMS DATA LIST for RF, LF, RR, and LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

DTC REFERENCE

DTC	Tire location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the client's wheel (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Go to step 17.

17. Turn the ignition switch to LOCK (0).
18. Replace the appropriate initiator with a known-good initiator. (see **INITIATOR REPLACEMENT**)
19. Turn the ignition switch to ON (II).
20. Check TPMS DATA LIST for RF, LF, RR, and LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

CONTINUITY REFERENCE

DTC	Initiator location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the client's wheel.

NO - Go to step 21.

21. Disconnect the appropriate initiator 3P connector.

CONTINUITY REFERENCE

DTC	Initiator location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

22. Disconnect the TPMS control unit 20P connector.
23. Check for continuity between TPMS control unit 20P connector terminal No. 20 and the appropriate initiator 3P connector terminal No. 1.

CONTINUITY REFERENCE

DTC	Initiator location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

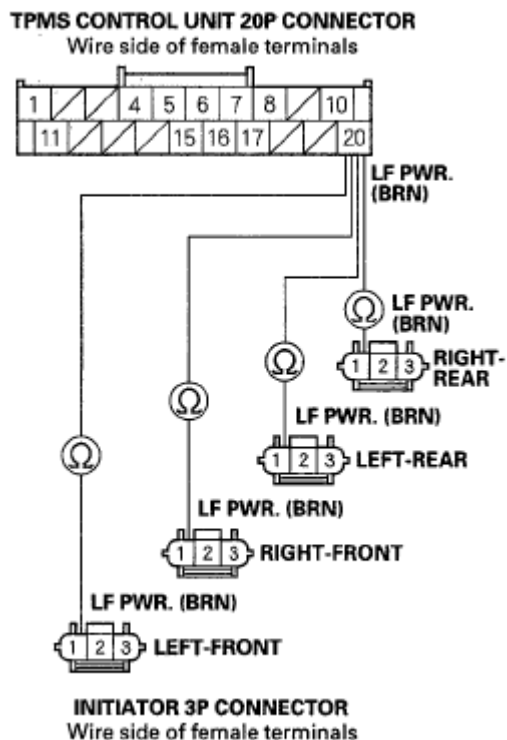


Fig. 16: Identifying Continuity Between TPMS Control Unit Connector Terminal 20 And Initiator 3P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 24.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

24. Check for continuity between TPMS control unit 20P connector terminal No. 15 and the appropriate initiator 3P connector terminal No. 3.

CONTINUITY REFERENCE

DTC	Initiator location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

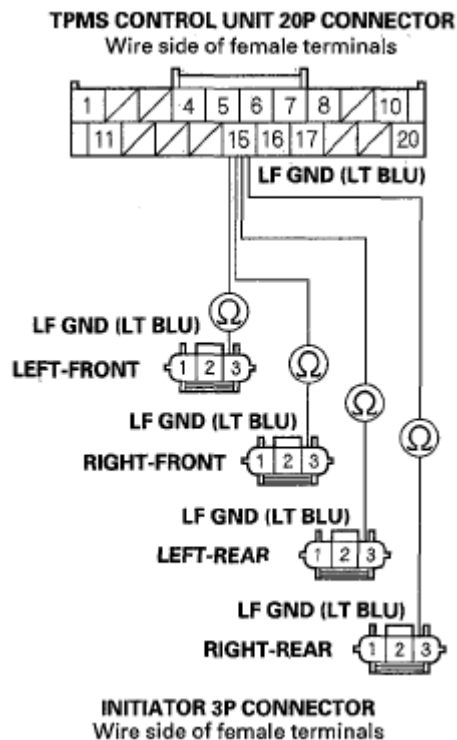


Fig. 17: Identifying Continuity Between TPMS Control Unit Connector Terminal 15 And Initiator Connector Terminal 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 25.

NO - Repair short to body ground in the wire between the TPMS control unit and the appropriate initiator.

25. Check for continuity between the appropriate TPMS control unit 20P connector terminal and the appropriate initiator 3P connector terminal No. 2 (see table).

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal	Initiator location
32	No. 6	Right-front
34	No. 5	Left-front
36	No. 17	Right-rear
38	No. 16	Left-rear

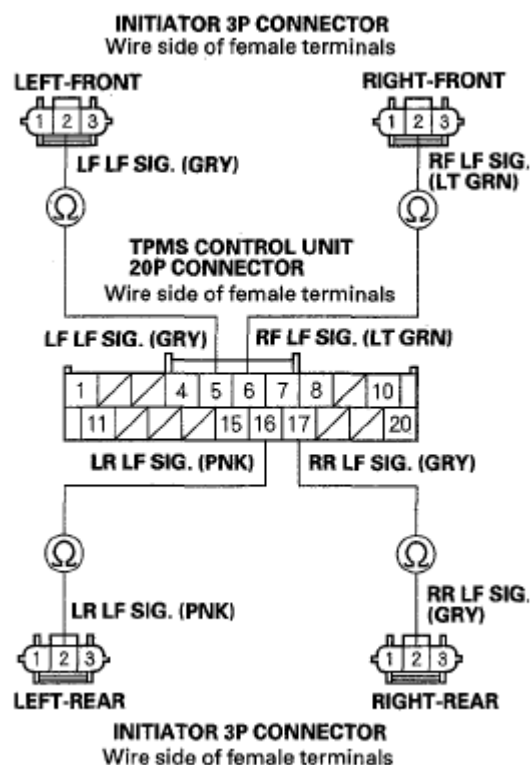


Fig. 18: Identifying Continuity Between TPMS Control Unit Connector Terminal And Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Go to step 26.

NO - Repair short to body ground in the wire between the TPMS control unit and the appropriate initiator.

26. Check for continuity between body ground and the appropriate TPMS control unit 20P connector terminal (see table).

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal
32	No. 6
34	No. 5
36	No. 17
38	No. 16

Is there continuity?

YES - Repair short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Go to step 27

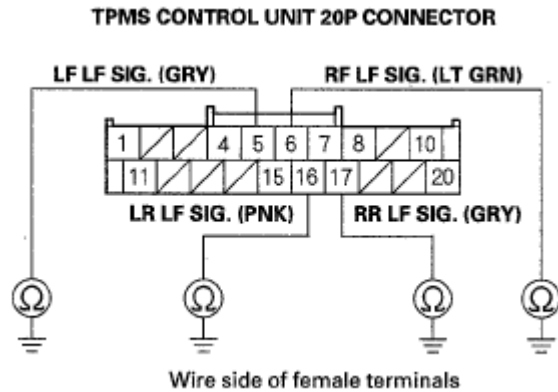


Fig. 19: Identifying Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

27. Turn the ignition switch to ON (II).
28. Measure voltage between body ground and the appropriate TPMS control unit 20P connector terminal (see table).

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal
32	No. 6
34	No. 5
36	No. 17
38	No. 16

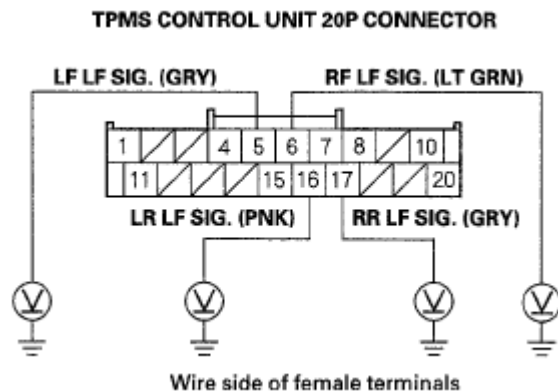


Fig. 20: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the TPMS control unit. **TPMS CONTROL UNIT REPLACEMENT**

DTC 41: ABNORMAL SIGNAL RECEPTION ERROR

NOTE: **Inspect for an aftermarket device interfering with the RF signal from the sensors when turning the ignition switch to ON (II).**

1. Turn the ignition switch to LOCK(O).
2. Check all four wheels to make sure they are the TPMS type with the tire pressure sensor.

Is each wheel a TPMS type with a tire pressure sensor mounted on the vehicle?

YES - Go to step 5.

NO - Go to step 3.

3. Install known-good TPMS wheel(s).
4. To memorize the sensor ID(s), drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the ID(s) with the HDS (see **MEMORIZE THE ID WITH THE HDS**).
5. Test-drive the vehicle.
6. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

Is the vehicle speed indicated?

YES - Go to step 10.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Turn the ignition switch to ON (II).
9. Check for DTCs with the HDS.

Is DTC 85 indicated?

YES - Go to the **DTC 85 troubleshooting** (see).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

10. Turn the ignition switch to LOCK (0).
11. Turn the ignition switch to ON (II).
12. Check TPMS DATA LIST for LF, RF, LR, and RR TIRE PRESSURE SENSOR TRANSMITTER

STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

Is NORMAL indicated within one full turn of the tire?

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 45: INITIATOR CIRCUIT SHORT DETECTION

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 45 indicated?

YES - Go to step 5.

NO - The system is OK at this time.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the TPMS control unit 20P connector.
7. Check for continuity between body ground and TPMS control unit 20P connector terminal No. 20.

TPMS CONTROL UNIT 20P CONNECTOR

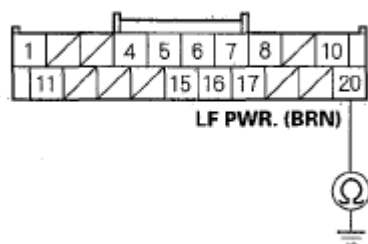


Fig. 21: Identifying Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

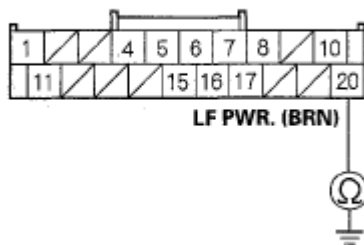
Is there continuity?

YES - Go to step 8.

NO - Go to step 11.

8. Disconnect all four of the initiator 3P connectors.
9. Check for continuity between body ground and TPMS control unit 20P connector terminal No. 20.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 22: Identifying Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

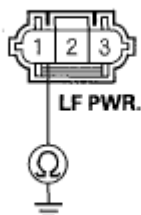
YES - Repair short to body ground in the wire between the TPMS control unit and the initiators.

NO - Go to step 10.

10. On each individual initiator, check for continuity between body ground and initiator 3P connector terminal No. 1.

NOTE: Check the initiators when mounted on the vehicle.

INITIATOR 3P CONNECTOR



Terminal side of male terminals

Fig. 23: Identifying Continuity Between Body Ground And Initiator 3P Connector Terminal No. 1
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

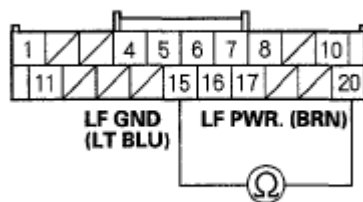
Is there continuity?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit, if necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

11. Check for continuity between TPMS control unit 20P connector terminals No. 15 and No. 20.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 24: Identifying Continuity Between TPMS Control Unit 20P Connector Terminals No. 15 And No. 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

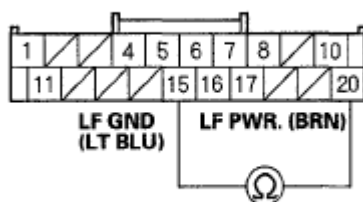
Is there continuity?

YES - Go to step 12.

NO - Go to step 15.

12. Disconnect all four of the initiator 3P connectors.
13. Check for continuity between TPMS control unit 20P connector terminals No. 15 and No. 20.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 25: Identifying Continuity Between TPMS Control Unit 20P Connector Terminals No. 15 And No. 20

Courtesy of AMERICAN HONDA MOTOR CO., INC.

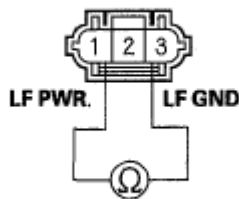
Is there continuity?

YES - Repair short in the wire between TPMS control unit 20P connector terminals No. 15 (LF GND line) and No. 20 (LF PWR. line).

NO - Go to step 14.

14. On each individual initiator, check for continuity between initiator 3P connector terminals No. 1 and No. 3.

INITIATOR 3P CONNECTOR



Terminal side of male terminals

Fig. 26: Identifying Continuity Between Initiator 3P Connector Terminals No. 1 And No. 3
Courtesy of AMERICAN HONDA MOTOR CO., INC.

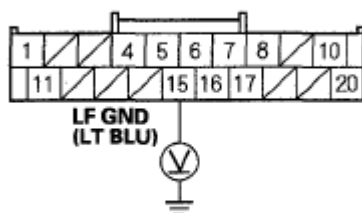
Is there continuity?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

15. Turn the ignition switch to ON (II).
16. Measure voltage between body ground and TPMS control unit 20P connector terminal No. 15.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 27: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 15

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the TPMS control unit and the initiators.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 51, 53, 55, 57: TIRE PRESSURE SENSOR REGISTRATION ERROR

NOTE: These DTCs will only set during initialization with the HDS.

1. Turn the ignition switch to LOCK (0).
2. Check the DTC indicated to the tire location to make sure the wheel is a TPMS type with the tire pressure sensor.

DTC REFERENCE

DTC	Tire location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is a TPMS type wheel with a tire pressure sensor mounted on the vehicle?

YES - Go to step 6.

NO - Install a TPMS type wheel, and memorize the ID, drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the ID with The HDS. (see **MEMORIZE THE ID WITH THE HDS**).

3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II).
5. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

DTC REFERENCE

DTC	Tire location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is NORMAL indicated within one full turn of the tire?

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

YES - The system is OK at this time. Clear the DTC with the HDS.

NO - Go to step 11.

6. Install a wheel with a known-good tire pressure sensor on the vehicle.
7. To memorize the sensor ID, drive the vehicle above 15 mph (24 km/h) for 40 continuous seconds, or memorize the ID with the HDS (see **MEMORIZE THE ID WITH THE HDS**).
8. Turn the ignition switch to LOCK (0).
9. Turn the ignition switch to ON (II).
10. Check TPMS DATA LIST for RF, LF, RR, or LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with the HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

DTC REFERENCE

DTC	Tire location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

Is NORMAL indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the client's wheel (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Replace the appropriate initiator with a knowngood initiator (see **INITIATOR REPLACEMENT**).
13. Turn the ignition switch to ON (II).
14. Check TPMS DATA LIST for RF,LF,RR and LR TIRE PRESSURE SENSOR TRANSMITTER STATUS changing to NORMAL with HDS.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

CONTINUITY REFERENCE

2008 Acura MDX**2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX**

DTC	Initiator location
32	Right-front
34	Left-front
36	Right-rear
38	Left-rear

Is normal indicated within one full turn of the tire?

YES - Replace the tire pressure sensor on the client's wheel (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - Go to step 15.

15. Disconnect the appropriate initiator 3P connector.

CONTINUITY REFERENCE

DTC	Initiator location
51	Right-front
53	Left-front
55	Right-rear
57	Left-rear

16. Disconnect the TPMS control unit 20P connector.
17. Check for continuity between TPMS control unit 20P connector terminal No.20 the appropriate initiator 3P connector terminal No.1.

CONTINUITY REFERENCE

DTC	Initiator Location
51	Right-front
53	Left-front
55	Right-rear
57	left-rear

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

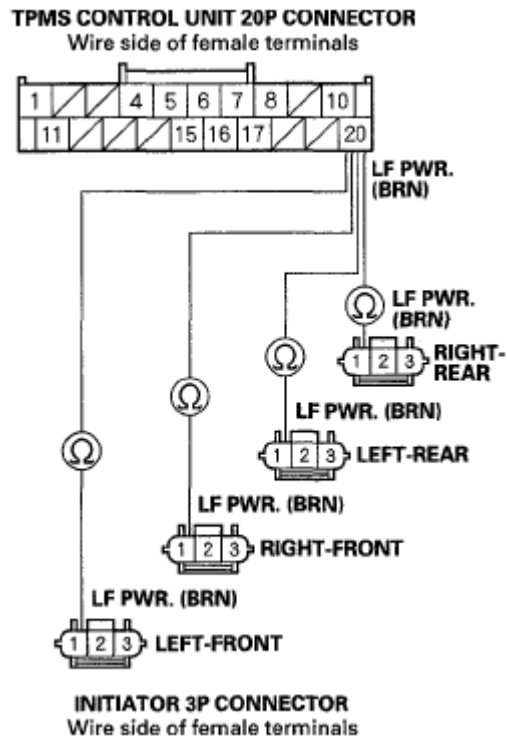


Fig. 28: Identifying Continuity Between TPMS Control Unit Connector Terminal No. 20 And Initiator 3P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator

18. Check for continuity between TPMS control unit 20P connector terminal No.15 the appropriate initiator 3P connector terminal No.3.

CONTINUITY REFERENCE

DTC	Initiator Location
51	Right-front
53	Left-front
55	Right-rear
57	left-rear

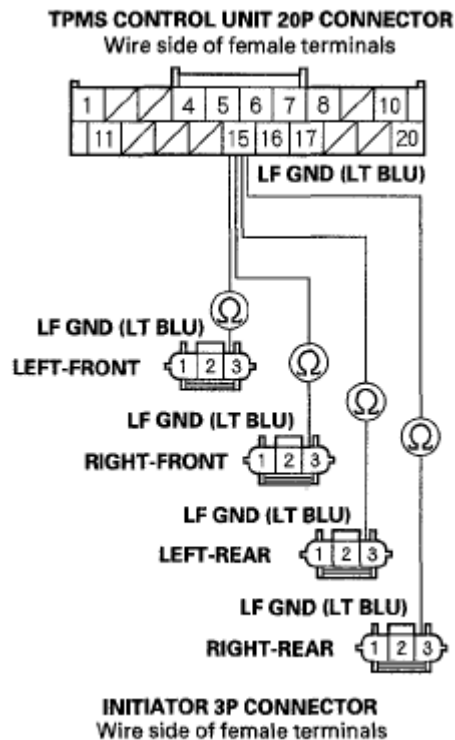


Fig. 29: Identifying Continuity Between TPMS Control Unit Connector Terminal No. 15 And Initiator 3P Connector Terminal No. 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 19.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

19. Check for continuity between the appropriate TPMS control unit 20P connector terminal and the appropriate initiator 3P connector terminal No.2.(see table)

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal
51	No. 6
53	No. 5
55	No. 17
57	No. 16

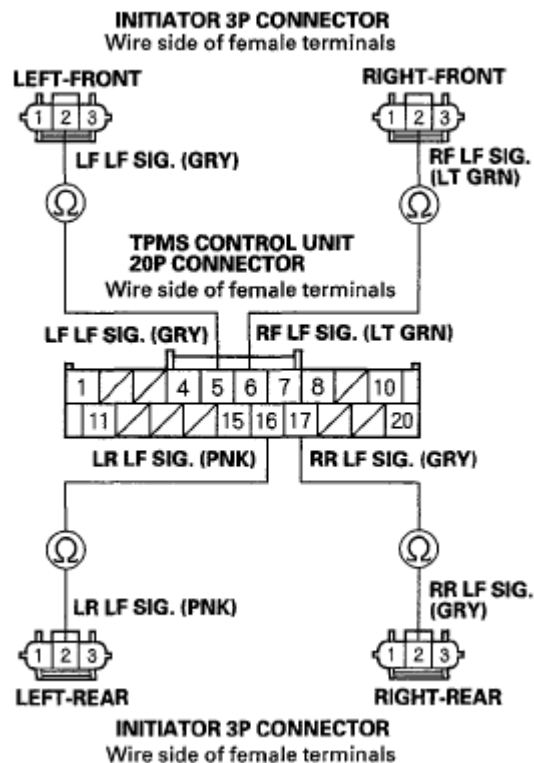


Fig. 30: Identifying Continuity Between TPMS Control Unit 20P Connector Terminal And Initiator 3P Connector Terminal No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 20.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

20. Check for continuity between the appropriate TPMS control unit 20P connector terminal and the appropriate initiator 3P connector terminal No.2.(see table)

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal
51	No. 6
53	No. 5
55	No. 17
57	No. 16

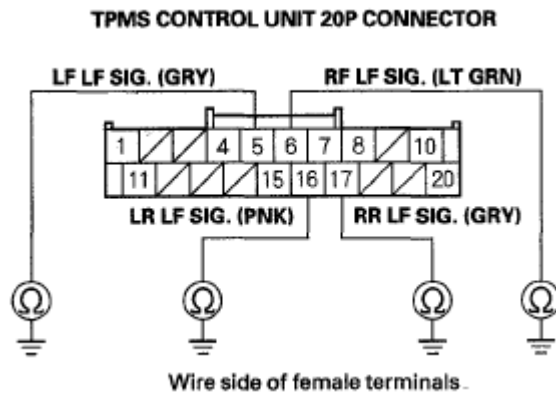


Fig. 31: Identifying Continuity Between Body Ground And TPMS Control Unit 20P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES -Repair short to body ground in the wire between the TPMS control unit and the appropriate initiator.

NO - Go to step 21.

21. Turn the ignition switch to ON (II).
22. Measure voltage between body ground and the appropriate TPMS control unit 20P connector terminal (see table).

VOLTAGE SPECIFICATION

DTC	TPMS control unit terminal
51	No. 6
53	No. 5
55	No. 17
57	No. 16

Is there battery voltage?

YES -Repair short to power in the wire between the TPMS control unit and the appropriate initiator.

NO - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

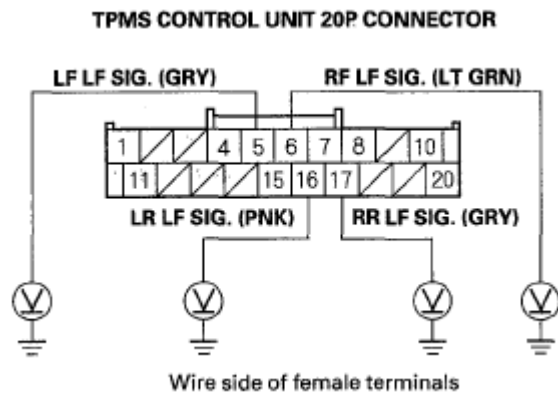


Fig. 32: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC 61, 63, 65, 67: INITIATOR CIRCUIT OPEN DETECTION

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
4. Check for DTCs with the HDS, and note the indicated DTC(s).

Is DTC 61, 63, 65, and/or 67 indicated?

YES - Go to step 5.

NO - The system is OK at this time.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the appropriate initiator 3P connector.

DTC REFERENCE

DTC	Initiator location
61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

7. Disconnect the TPMS control unit 20P connector.
8. Check for continuity between TPMS control unit 20P connector terminal No. 20 and appropriate initiator 3P connector terminal No. 1.

CONTINUITY REFERENCE

DTC	Initiator location
-----	--------------------

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

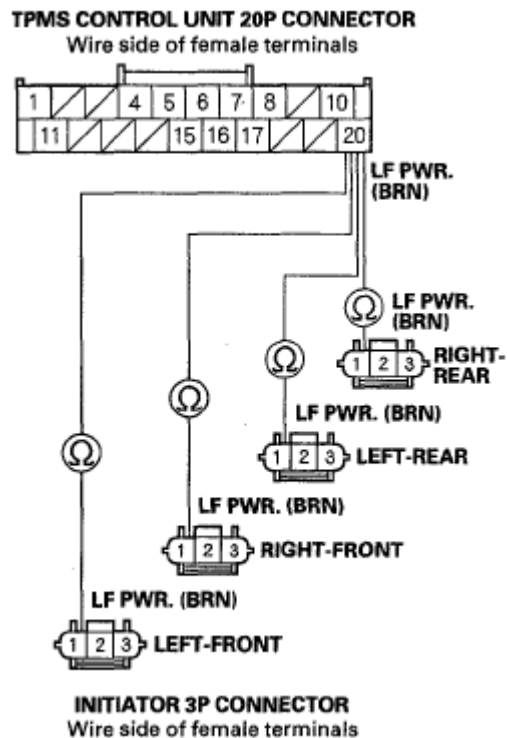


Fig. 33: Identifying Continuity Between TPMS Control Unit Connector Terminal 20 And Initiator 3P Connector Terminal 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

- Check for continuity between TPMS control unit 20P connector terminal No. 15 and appropriate initiator 3P connector terminal No. 3.

CONTINUITY REFERENCE

DTC	Initiator location
61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

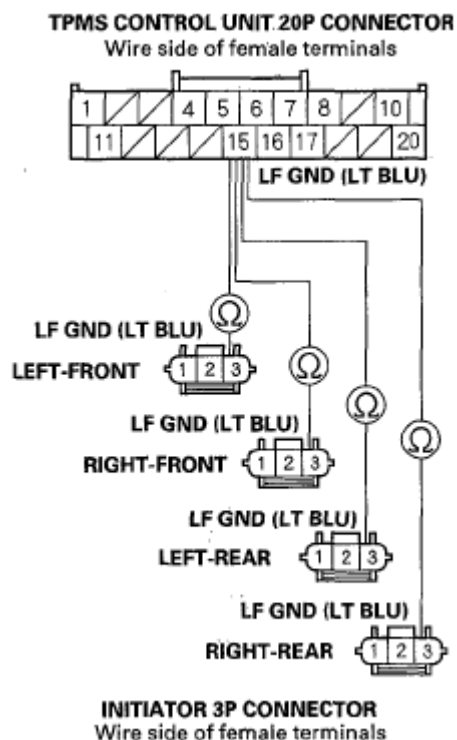


Fig. 34: Identifying Continuity Between TPMS Control Unit 20P Connector Terminal No. 15 And Initiator 3P Connector Terminal 3

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

10. Check for continuity between the appropriate TPMS control unit 20P connector terminal and appropriate initiator 3P connector terminal No. 2 (see table).

CONTINUITY REFERENCE

DTC	TPMS control unit terminal	Initiator location
61	No. 6	Right-front
63	No. 5	Left-front
65	No. 17	Right-rear
67	No. 16	Left-rear

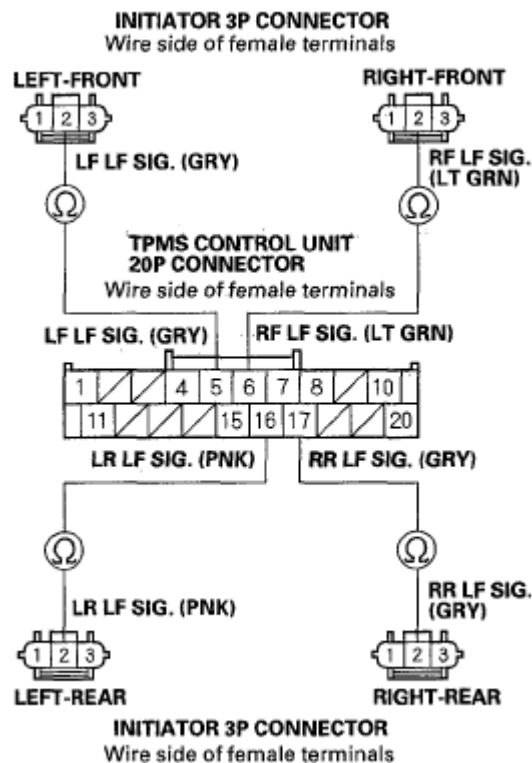


Fig. 35: Identifying Continuity Between TPMS Control Unit Connector Terminal And Initiator 3P Connector Terminal 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 11.

NO - Repair open in the wire between the TPMS control unit and the appropriate initiator.

11. Check for noted DTC(s) in step 4.

Were DTC 61, 63, 65, and 67 indicated at the same time?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Go to step 12.

12. Swap a known-good initiator with the initiator indicated by the DTC (see **INITIATOR REPLACEMENT**).

DTC REFERENCE

DTC	Initiator location

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Clear the DTC with the HDS.
16. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
17. Check for DTCs with the HDS, and compare the indicated DTC with the noted DTC(s) in step 4.

DTC REFERENCE

DTC	Initiator location
61	Right-front
63	Left-front
65	Right-rear
67	Left-rear

Does the indicated DTC change between the initiators that were replaced in step 12?

YES - Replace the appropriate initiator (see **INITIATOR REPLACEMENT**).

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

DTC 81: TPMS CONTROL UNIT FAILURE

NOTE: **Low battery voltage can cause this DTC. Make sure the battery is fully charged and in good condition.**

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
4. Check for DTCs with the HDS.

Is DTC 81 indicated?

YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO - The system is OK at this time.

DTC 83: NO VSP SIGNAL

NOTE: Check the fuel and emission systems DTCs with the HDS, and troubleshoot the PCM and F-CAN communication errors first (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle.
4. Check for DTCs with the HDS.

Is DTC 83 indicated?

YES -Go to step 5.

NO -The system is OK at this time.

5. Check for DTCs with the HDS.

Is DTC 85 indicated?

YES -Go to **DTC 85 troubleshooting** (see).

NO -Go to step 6.

6. Test-drive the vehicle.
7. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

Is the vehicle speed indicated?

YES -Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO -Go to step 8.

8. Check the speedometer.

Does the speedometer register speed?

YES -Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO -Substitute a known-good PCM (see **SUBSTITUTING THE PCM**), and retest. If no codes are shown, replace the original PCM.

DTC 85: F-CAN COMMUNICATION FAILURE

NOTE: Check the fuel and emission systems DTCs with the HDS, and troubleshoot the

PCM and F-CAN communication errors first (see GENERAL TROUBLESHOOTING INFORMATION).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
4. Wait about 5 seconds.
5. Check for DTCs with the HDS.

Is DTC 85 indicated?

YES - Go to step 6.

NO - The system is OK at this time.

6. Test-drive the vehicle.

Does the speedometer work?

YES - Go to step 10.

NO - Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the TPMS control unit 20P connector.
9. Test-drive the vehicle.

Does the speedometer work?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see TPMS CONTROL UNIT REPLACEMENT), and recheck.

NO - Turn the ignition switch to LOCK (0), and reconnect all connectors, then check and troubleshoot the fuel and emissions systems (see GENERAL TROUBLESHOOTING INFORMATION).

10. Turn the ignition switch to LOCK (0).
11. Short the SCS line with the HDS.
12. Disconnect PCM connector A (49P).
13. Disconnect the TPMS control unit 20P connector.
14. Check for continuity between the TPMS control unit 20P connector terminals and the PCM connector A (49P) terminals individually (see table).

CONTINUITY REFERENCE

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2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

Terminal name	TPMS control unit terminal	PCM A terminal
CANL	No. 11	No. 49
CANH	No. 1	No. 48

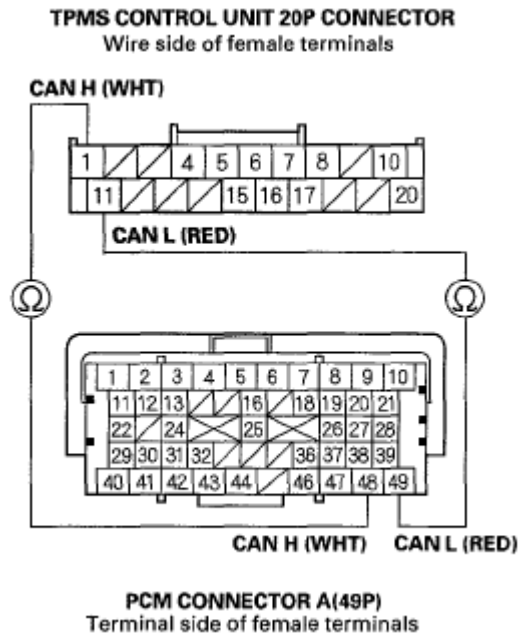


Fig. 36: Identifying Continuity Between TPMS Control Unit 20P Connector Terminals And PCM Connector A (49P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Repair open in the wire between the TPMS control unit and the PCM.

DTC 91, 93, 95, 97: TIRE PRESSURE SENSOR INTERNAL ERROR

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again.
4. Wait about 1 minute.
5. Check for DTCs with the HDS.

NOTE: The tire pressure sensor of the appropriate wheel is shown.

DTC REFERENCE

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2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

DTC	Tire location
91	Right-front
93	Left-front
95	Right-rear
97	Left-rear

Is DTC 91, 93, 95 or 97 indicated?

YES - Replace the appropriate tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

NO - The system is OK at this time.

SYMPTOM TROUBLESHOOTING

LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED ('07 MODEL)

NOTE: Check for gauge DTCs with the HDS (see **WIRE COLOR CODES**). If gauge DTCs are stored, troubleshoot those DTCs first.

1. Turn the ignition switch to ON (II).
2. Check the low tire pressure indicator for several seconds when the ignition switch is turned to ON (II).

Did the indicator come on and then go off?

YES - Go to step 3.

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

3. Lower the pressure in any tire until the low tire pressure indicator comes on.

NOTE: If 5 minutes has passed since the ignition switch has been turned to ON (II), turn the ignition switch to LOCK (0) and wait 2 minutes, then turn back ON (II) again.

Does the indicator come on when the pressure drops below 175 kPa (1.8 kgf/cm² , 25 psi) or less?

YES - The system is OK at this time.

NO - Go to step 4.

4. Check the TIRE PRESSURE in the TPMS DATA LIST with the HDS, and compare with measured actual tire pressure.

NOTE: If the HDS screen shows **UNDEFINED** for sensor status, turn the ignition switch to **LOCK (0)**, rotate the appropriate tire 1/4 turn, then turn the ignition switch to **ON (II)**, and try again. If **UNDEFINED** is still shown, repeat the procedure in the previous sentence until **NORMAL** is shown.

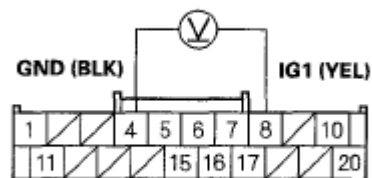
Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm², 6 psi) of the actual tire pressure?

YES - Go to step 5.

NO - Replace the tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

5. Turn the ignition switch to **LOCK (0)**.
6. Disconnect the TPMS control unit 20P connector.
7. Measure voltage between TPMS control unit 20P connector terminals No. 4 and No. 8.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Fig. 37: Identifying Voltage Between TPMS Control Unit 20P Connector Terminals No. 4 And No. 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Repair short to power in the wire between the TPMS control unit and the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

NO - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

LOW TIRE PRESSURE INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED ('08-09 MODELS)

1. Turn the ignition switch to **ON (II)**.
2. Check the low pressure indicator for several seconds when the ignition switch is turned to **ON (II)**.

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

Did the indicator come on and then go off?

YES - Go to step 3.

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

3. Lower the pressure in any tire until the low tire pressure indicator comes on.

NOTE: If 5 minutes has passed since the ignition switch has been turned to ON (II), turn the ignition switch to LOCK (0) and wait 2 minutes, then turn back ON (II) again.

Does the indicator come on when the pressure drops below 175 kPa (1.8 kgf/cm² , 25 psi) or less?

YES - The system is OK at this time.

NO - Go to step 4.

4. Check the TIRE PRESSURE in the TPMS DATA LIST with the HDS, and compare with measured actual tire pressure.

NOTE: If the HDS screen shows UNDEFINED for sensor status, turn the ignition switch to LOCK (0), rotate the appropriate tire 1/4 turn, then turn the ignition switch to ON (II), and try again. If UNDEFINED is still shown, repeat the procedure in the previous sentence until NORMAL is shown.

Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm² , 6 psi) of the actual tire pressure?

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Replace the tire pressure sensor (see **TIRE PRESSURE SENSOR REPLACEMENT**).

LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED ('07 MODEL)

1. Turn the ignition switch to LOCK (0).
2. Disconnect the TPMS control unit 20P connector.
3. Turn the ignition switch to ON (II).
4. Check the low tire pressure indicator for several seconds when the ignition switch is turned to ON (II).

Did the indicator come on and then go off?

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

LOW TIRE PRESSURE INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED ('08-09 MODELS)

NOTE: If the low tire pressure indicator is turned on at the same time as the TPMS indicator, go to: troubleshoot the TPMS indicator does not go off, and no DTCS are stored in the TPMS symptom troubleshooting (see **TPMS indicator does not go off, and no DTCS are stored**) first.

1. Turn the ignition switch to ON (II).
2. Check the low tire pressure indicator for several seconds when the ignition switch is turned to ON (II).

Did the indicator come on and then blink for about 75 seconds?

YES - Check for gauge DTCS with the HDS (see **WIRE COLOR CODES**) and go to the indicated gauge DTCS troubleshooting.

NO - Go to step 3

3. Turn the ignition switch to LOCK (0).
4. Disconnect the TPMS control unit 20P connector.
5. Turn the ignition switch to ON (II).
6. Check the low tire pressure indicator for several seconds when the ignition switch is turned to ON (II).

Did the indicator come on and then blink for about 75 seconds?

YES - Replace the TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**).

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

TPMS INDICATOR DOES NOT COME ON, AND NO DTCS ARE STORED

1. Turn the ignition switch to LOCK (0).
2. Disconnect the TPMS control unit 20P connector.
3. Turn the ignition switch to ON (II).
4. Check the TPMS indicator when the ignition switch is turned to ON (II).

Did the indicator come on?

2008 Acura MDX

2007-09 SUSPENSION TPMS (Tire Pressure Monitoring System) - MDX

YES - Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If necessary, substitute a known-good gauge control module (see **GAUGE CONTROL MODULE REPLACEMENT**), and recheck.

TPMS INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

NOTE: Check for gauge DTCs with the HDS (see **WIRE COLOR CODES**). If gauges DTCs are stored, troubleshoot those DTCs first.

1. Turn the ignition switch to LOCK (0).
2. Check the No. 1 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse blown?

YES - Replace the No. 1 (7.5 A) fuse, and recheck.

NO - Reinstall the fuse, then go to step 3.

3. Check the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse blown?

YES - Replace the No. 21 (7.5 A) fuse, and recheck.

NO - Reinstall the fuse, then go to step 4.

4. Measure voltage between body ground and TPMS control unit 20P connector terminal No. 10.

TPMS CONTROL UNIT 20P CONNECTOR

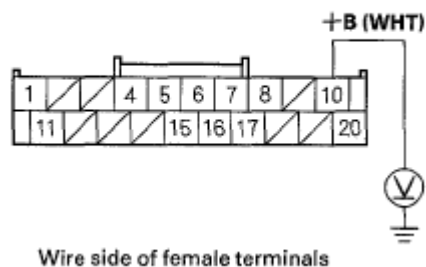


Fig. 38: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 10

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - Repair open in the wire between the TPMS control unit and the No. 1 (7.5 A) fuse in the under-dash fuse/relay box.

5. Turn the ignition switch to ON (II).
6. Measure voltage between body ground and TPMS control unit 20P connector terminal No. 8.

TPMS CONTROL UNIT 20P CONNECTOR

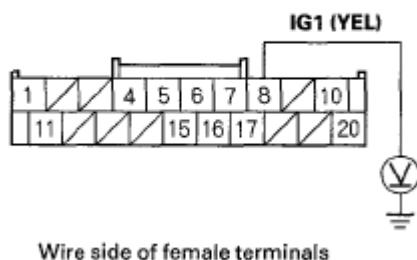


Fig. 39: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 8

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 7.

NO - Repair open in the wire between the TPMS control unit and the No. 21 (7.5 A) fuse in the under-dash fuse/relay box.

7. Measure voltage between body ground and TPMS control unit 20P connector terminal No. 4.

TPMS CONTROL UNIT 20P CONNECTOR

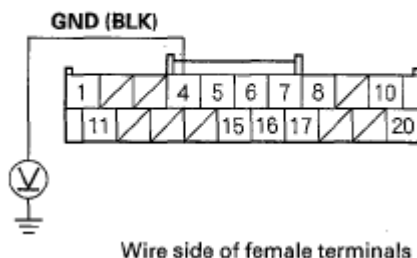


Fig. 40: Identifying Voltage Between Body Ground And TPMS Control Unit 20P Connector Terminal No. 4

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 0.1 V or more?

YES - Repair open or high resistance in the wire between the TPMS control unit and body ground (G401).

NO - Do the troubleshooting for the gauge control module (see **SELF-DIAGNOSTIC FUNCTION**). If the gauge control module is OK, check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control (see **TPMS CONTROL UNIT REPLACEMENT**), and recheck.

TPMS CONTROL UNIT REPLACEMENT

NOTE: Make sure the TPMS control unit mounting bracket is not bent or twisted as this may affect its communication with the initiators and the tire pressure sensors.

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's dashboard undercover (see **DRIVER'S DASHBOARD UNDERCOVER REMOVAL/INSTALLATION**).
3. Disconnect the TPMS control unit connector (A).

NOTE: The TPMS control unit is located on the brake pedal bracket.

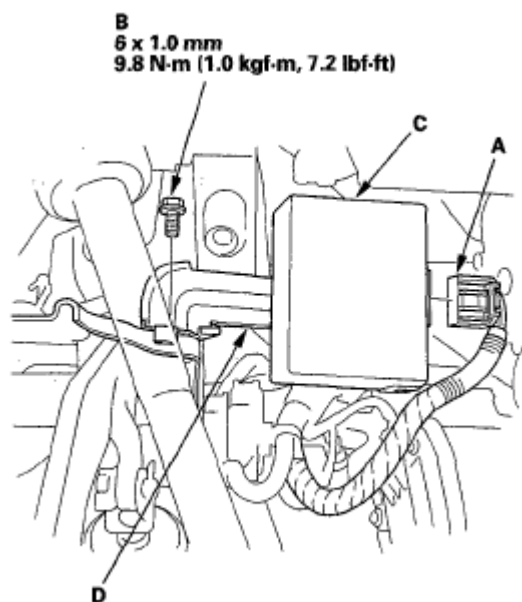


Fig. 41: Identifying TPMS Control Unit Connector, Flange Bolt And TPMS Control Unit With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the flange bolt (B) from the brake pedal bracket.
5. Remove the TPMS control unit (C) with the bracket (D).
6. Remove the TPMS control unit (A) from the bracket (B).

NOTE: While separating the TPMS control unit from the bracket, release the hook (C) on the TPMS control unit using a flat-tipped screwdriver (D), and push it up to remove the bracket.

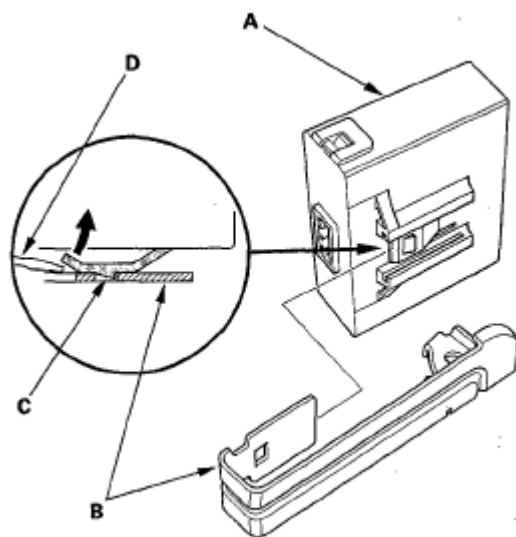


Fig. 42: Identifying TPMS Control Unit And Hook
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the TPMS control unit in the reverse order of removal.

NOTE: Make sure the TPMS control unit is properly installed. You will hear a click when the TPMS control unit is securely mounted on the bracket.

8. Connect the HDS, and memorize the tire pressure sensor IDs (see MEMORIZING A TIRE PRESSURE SENSOR ID). Do not memorize the IDs automatically.

INITIATOR REPLACEMENT

NOTE: Make sure the initiator mounting bracket is not bent or twisted as this may affect its communication with the TPMS control unit and the tire pressure sensor.

FRONT

1. Turn the ignition switch to LOCK (0).
2. Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
3. Remove the front wheel.
4. Remove the front inner fender (see FRONT INNER FENDER REPLACEMENT).
5. Disconnect the initiator connector (A).

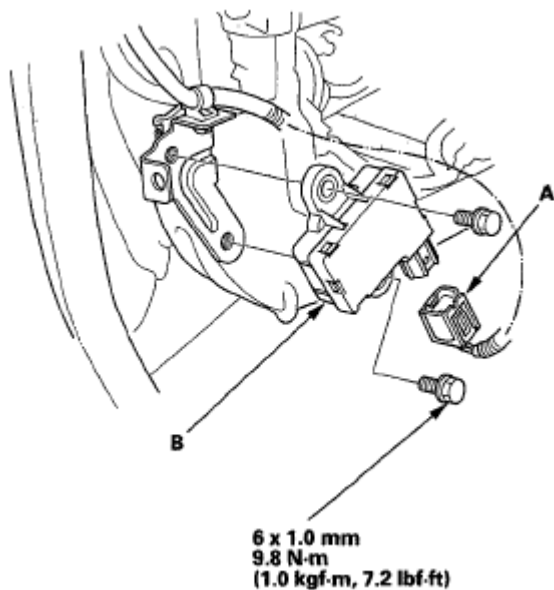


Fig. 43: Identifying Initiator Connector And Initiator With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the initiator (B) from the inner side of the wheelwell.
7. Install the initiator in the reverse order of removal.

REAR

1. Turn the ignition switch to LOCK (0).
2. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
3. Remove the rear wheel.
4. Remove the rear fender cover (see **REAR FENDER COVER REPLACEMENT**).
5. Disconnect the initiator connector (A).

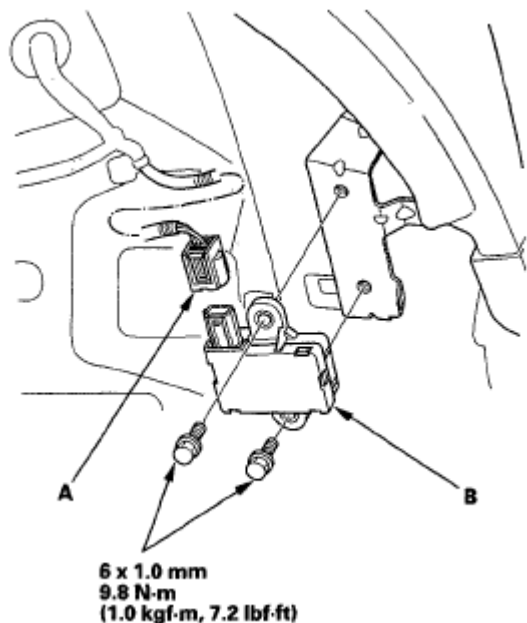


Fig. 44: Identifying Initiator Connector And Initiator With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the initiator (B) from the inner side of the wheelwell.
7. Install the initiator in the reverse order of removal.

TIRE PRESSURE SENSOR REPLACEMENT

REMOVAL

1. Raise the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheel with the faulty sensor.
3. Remove the tire valve stem cap and the valve stem core, and let the tire deflate.
4. Remove any balance weights, and then break the bead loose from the wheel with a commercially available tire changer (A).

NOTE: Note these items to avoid damaging the tire pressure sensor:

- Do the outside of the wheel first.
- Position the wheel as shown so the valve stem (B) is 90 degrees from the bead breaker (C) as shown.
- Do not position the bead breaker of the tire changer too close to the rim.

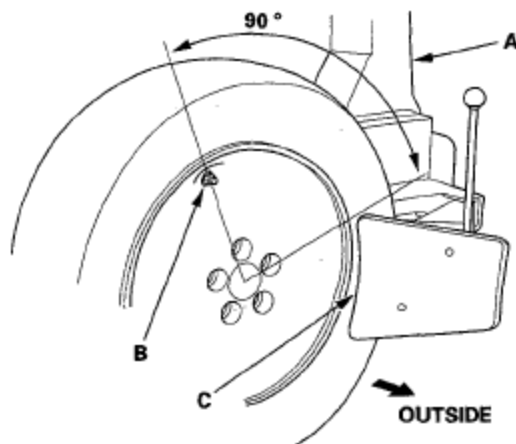


Fig. 45: Identifying Tire Changer And Bead Breaker
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Position the wheel so the tire machine (A) and tire iron (B) are next to the valve stem (C) and will move away from it when the machine starts. Then remove the tire from the wheel.

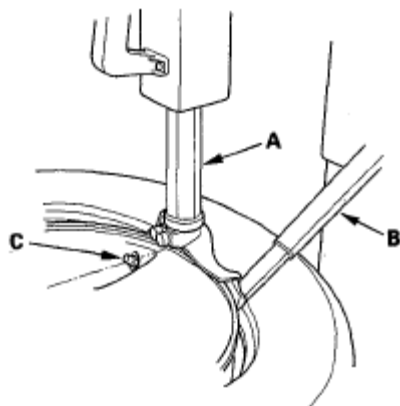


Fig. 46: Identifying Tire Machine And Tire Iron
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the valve stem nut (A) and washer (B), then remove the tire pressure sensor with valve stem (C) from the wheel.

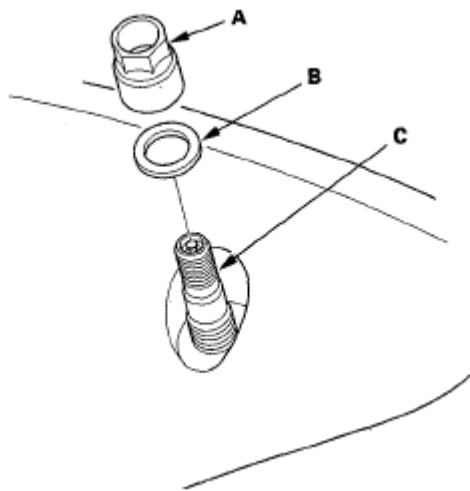


Fig. 47: Identifying Valve Stem Nut And Washer And Valve Stem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove and discard the valve stem grommet (A), from the tire pressure sensor (B).

NOTE:

- The valve stem grommet might stay in the wheel; make sure you remove it.
- Always use a new valve stem grommet whenever the tire pressure sensor has been removed from the wheel. When only removing a tire from the wheel, replace the valve stem grommet if it is possible.

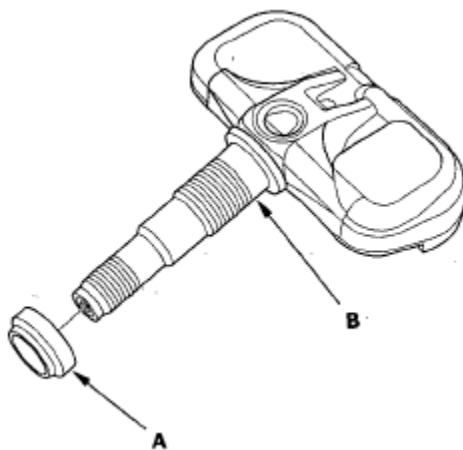


Fig. 48: Identifying Valve Stem Grommet And Tire Pressure Sensor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

NOTE:

- Use only wheels that have a "TPMS" stamp (A) on them.

- This vehicle may be equipped with one of the two types of wheels.

Type 1

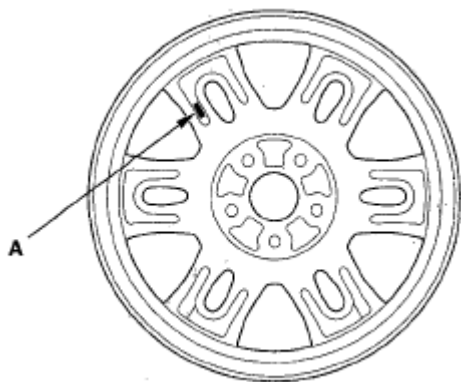


Fig. 49: Identifying "TPMS" Stamp (Type 1)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Type 2

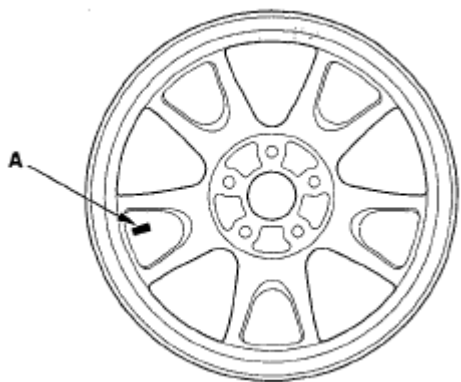


Fig. 50: Identifying "TPMS" Stamp (Type 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

1. Before installing the tire pressure sensor, clean the mating surfaces on the sensor and the wheel.
2. Install the tire pressure sensor (A) and the washer (B) to the wheel (C), and tighten the valve stem nut (D) finger tight. Make sure the pressure sensor is resting on the wheel.

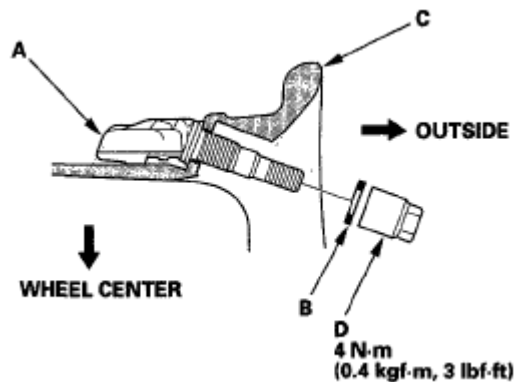


Fig. 51: Identifying Tire Pressure Sensor, Washer And Valve Stem Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Tighten the valve stem nut to the specified torque while holding the tire pressure sensor.

NOTE: Do not use air or electric impact tools to tighten a valve stem nut.

4. Lube the tire bead, and position the wheel so the tire machine (A) and tire iron (B) are next to the valve stem (C) and will move away from it when the machine starts. Then install the tire onto the wheel.

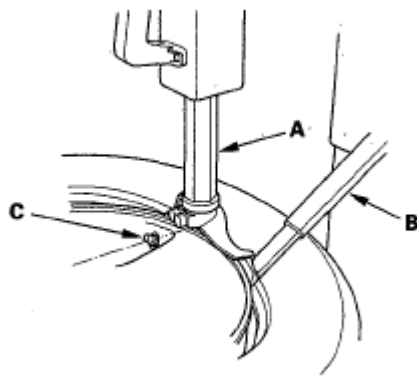


Fig. 52: Identifying Tire Machine, Tire Iron And Valve Stem
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Inflate the tire to 300 kPa (3.1 kgf/cm², 44 psi) to seat the tire bead to the rim, then adjust the tire pressure (see **WHEEL ALIGNMENT**), then install the valve stem cap.

NOTE: Make sure the tire bead is uniformly seated on both sides of the rim.

6. Check and adjust the wheel balance, then install the wheels on the vehicle.
7. Remove the jack stands, and lower the vehicle. Torque the wheel nuts to specifications.
8. Connect the HDS and memorize the tire pressure sensor IDs (see **MEMORIZING A TIRE PRESSURE SENSOR ID**).

2008 Acura MDX

2007-08 DTC INDEX MDX

2007-08 DTC INDEX**MDX****ACURALINK DTCS (A00293919)**

NOTE: Retrieval of some diagnostic codes may require the use of special OEM tester or flash method using instrument cluster indicator. For procedures/testing of codes not shown below, refer to appropriate system article.

ACURALINK DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
<u>DTC B2202</u>	AcuraLink Control Unit EEPROM Error
<u>DTC B2204</u>	B-CAN Communication Line Error
<u>DTC B2205</u>	F-CAN Communication Line Error
<u>DTC B2207</u>	Navigation Unit Lost Communication with AcuraLink Control Unit
<u>DTC B2208</u>	HandsFreeLink Control Unit Lost Communication with AcuraLink Control Unit
<u>DTC B2209</u>	AcuraLink Control Unit Internal Error
<u>DTC B2240</u>	XM Antenna Error

AUTOMATIC TRANSMISSION DTCS (A00293924)**AUTOMATIC TRANSMISSION DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0107</u>	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage Input
<u>DTC P0108</u>	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage Input
<u>DTC P0335</u>	Crankshaft Position (CKP) Sensor A No Signal
<u>DTC P0339</u>	Crankshaft Position (CKP) Sensor A Intermittent Interruption
<u>DTC P0340</u>	Camshaft Position (CMP) Sensor No signal
<u>DTC P0344</u>	Camshaft Position (CMP) Sensor Intermittent Interruption
<u>DTC P0385</u>	Crankshaft Position (CKP) Sensor B No signal
<u>DTC P0389</u>	Crankshaft Position (CKP) Sensor B Intermittent Interruption
<u>DTC P062F</u>	Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error
<u>DTC P0705</u>	Short in Transmission Range Switch Circuit (Multiple Shift-position Input)

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P0706</u>	Open in Transmission Range Switch Circuit
<u>DTC P0711</u>	Problem in ATF Temperature Sensor Circuit
<u>DTC P0712</u>	Short in ATF Temperature Sensor Circuit
<u>DTC P0713</u>	Open in ATF Temperature Sensor Circuit
<u>DTC P0716; P0717</u>	Problem in Input Shaft (Mainshaft) Speed Sensor Circuit; Problem in Input Shaft (Mainshaft) Speed Sensor Circuit (No Signal Input)
<u>DTC P0718</u>	Input Shaft (Mainshaft) Speed Sensor Intermittent Failure
<u>DTC P0721; P0722</u>	Problem in Output Shaft (Countershaft) Speed Sensor Circuit; Problem in Output Shaft (Countershaft) Speed Sensor Circuit (No Signal Input)
<u>DTC P0723</u>	Output Shaft (Countershaft) Speed Sensor Intermittent Failure
<u>DTC P0731</u>	Problem in 1st Clutch and 1st Clutch Hydraulic Circuit
<u>DTC P0732</u>	Problem in 2nd Clutch and 2nd Clutch Hydraulic Circuit
<u>DTC P0733</u>	Problem in 3rd Clutch and 3rd Clutch Hydraulic Circuit
<u>DTC P0734</u>	Problem in 4th Clutch and 4th Clutch Hydraulic Circuit
<u>DTC P0735</u>	Problem in 5th Clutch and 5th Clutch Hydraulic Circuit
<u>DTC P0741</u>	Torque Converter Clutch Hydraulic Circuit Stuck OFF
<u>DTC P0746</u>	A/T Clutch Pressure Control Solenoid Valve A Stuck OFF
<u>DTC P0747</u>	A/T Clutch Pressure Control Solenoid Valve A Stuck ON
<u>DTC P0751</u>	Shift Solenoid Valve A Stuck OFF
<u>DTC P0752</u>	Shift Solenoid Valve A Stuck ON
<u>DTC P0756</u>	Shift Solenoid Valve B Stuck OFF
<u>DTC P0757</u>	Shift Solenoid Valve B Stuck ON
<u>DTC P0761</u>	Shift Solenoid Valve C Stuck OFF
<u>DTC P0762</u>	Shift Solenoid Valve C Stuck ON
<u>DTC P0766</u>	Shift Solenoid Valve D Stuck OFF
<u>DTC P0767</u>	Shift Solenoid Valve D Stuck ON
<u>DTC P0776</u>	A/T Clutch Pressure Control Solenoid Valve B Stuck OFF
<u>DTC P0777</u>	A/T Clutch Pressure Control Solenoid Valve B Stuck ON

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P0796</u>	A/T Clutch Pressure Control Solenoid Valve C Stuck OFF
<u>DTC P0797</u>	A/T Clutch Pressure Control Solenoid Valve C Stuck ON
<u>DTC P0812</u>	Open in Transmission Range Switch ATP R Switch Circuit
<u>DTC P0815</u>	Short in Transmission Gear Selection Switch Upshift Switch Circuit, or Transmission Gear Selection Switch Upshift Switch Stuck ON
<u>DTC P0816</u>	Short in Transmission Gear Selection Switch Downshift Switch Circuit, or Transmission Gear Selection Switch Downshift Switch Stuck ON
<u>DTC P0842</u>	Short in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck ON
<u>DTC P0843</u>	Open in 2nd Clutch Transmission Fluid Pressure Switch Circuit, or 2nd Clutch Transmission Fluid Pressure Switch Stuck OFF
<u>DTC P0847</u>	Short in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck ON
<u>DTC P0848</u>	Open in 3rd Clutch Transmission Fluid Pressure Switch Circuit, or 3rd Clutch Transmission Fluid Pressure Switch Stuck OFF
<u>DTC P0872</u>	Short in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Stuck ON
<u>DTC P0873</u>	Open in 4th Clutch Transmission Fluid Pressure Switch Circuit, or 4th Clutch Transmission Fluid Pressure Switch Stuck OFF
<u>DTC P0957</u>	Short in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck ON
<u>DTC P0958</u>	Open in Transmission Gear Selection Switch Circuit, or Transmission Gear Selection Switch Stuck OFF
<u>DTC P0962</u>	Problem in A/T Clutch Pressure Control Solenoid Valve A Circuit
<u>DTC P0963</u>	Problem in A/T Clutch Pressure Control Solenoid Valve A
<u>DTC P0966</u>	Problem in A/T Clutch Pressure Control Solenoid Valve B Circuit
<u>DTC P0967</u>	Problem in A/T Clutch Pressure Control Solenoid Valve B
<u>DTC P0970</u>	Problem in A/T Clutch Pressure Control Solenoid Valve C Circuit

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P0971</u>	Problem in A/T Clutch Pressure Control Solenoid Valve C
<u>DTC P0973</u>	Short in Shift Solenoid Valve A Circuit
<u>DTC P0974</u>	Open in Shift Solenoid Valve A Circuit
<u>DTC P0976</u>	Short in Shift Solenoid Valve B Circuit (Short)
<u>DTC P0977</u>	Open in Shift Solenoid Valve B Circuit (Open)
<u>DTC P0979</u>	Short in Shift Solenoid Valve C Circuit
<u>DTC P0980</u>	Open in Shift Solenoid Valve C Circuit
<u>DTC P0982</u>	Short in Shift Solenoid Valve D Circuit
<u>DTC P0983</u>	Open in Shift Solenoid Valve D Circuit
<u>DTC P16C0</u>	PCM A/T Control System Incomplete Updated
<u>DTC P1717</u>	Open in Transmission Range Switch ATP RVS Switch Circuit
<u>DTC P1743</u>	Problem in Shift Control System; Shift Valve E Stuck OFF
<u>DTC P1744</u>	Problem in Shift Control System; Shift Valve E Stuck ON
<u>DTC P1745</u>	Problem in Shift Control System; Servo Control Valve Stuck OFF or Servo Control Valve Stuck ON
<u>DTC P1780</u>	Problem in Shift Control System
<u>DTC P2122</u>	Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit Low Voltage Input
<u>DTC P2123</u>	Accelerator Pedal Position (APP) Sensor A (Throttle Position Sensor D) Circuit High Voltage Input
<u>DTC U0028</u>	F-CAN Communication Circuit Error (F-CAN Bus OFF)
<u>DTC U0122</u>	Lost Communication with VSA Modulator-Control Unit
<u>DTC U0155</u>	Lost Communication with Gauge Control Module

CATALYTIC CONVERTER DTCS (A00293951)**CATALYTIC CONVERTER DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0420; P0430</u>	Rear Bank Catalyst System Efficiency Below Threshold (Bank 1); Front Bank Catalyst System Efficiency Below Threshold (Bank 2)

CLIMATE CONTROL (A00293940)**CLIMATE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC B1202</u>	Climate Control Unit Internal Error
<u>DTC B1205; B1206; B1207</u>	Climate Control Unit Lost Communication with Gauge Control Module (VSP/NE message); Climate Control Unit Lost Communication with Gauge Control Module (ECT message); Climate Control Unit Lost Communication with Gauge Control Module (ILLUMI message)
<u>DTC B1213</u>	An Open in the Rear Evaporator Temperature Sensor Circuit
<u>DTC B1214</u>	A Short in the Rear Evaporator Temperature Sensor Circuit
<u>DTC B1215</u>	An Open or Short in the Recirculation Control Motor Circuit
<u>DTC B1223</u>	A Problem in the Rear Blower Motor Circuit
<u>DTC B1225</u>	An Open in the In-car Temperature Sensor Circuit
<u>DTC B1226</u>	A Short in the In-car Temperature Sensor Circuit
<u>DTC B1227</u>	An Open in the Outside Air Temperature Sensor Circuit
<u>DTC B1228</u>	A Short in the Outside Air Temperature Sensor Circuit
<u>DTC B1229</u>	An Open in the Sunlight Sensor Circuit
<u>DTC B1230</u>	A Short in the Sunlight Sensor Circuit
<u>DTC B1231</u>	An Open in the Front Evaporator Temperature Sensor Circuit
<u>DTC B1232</u>	A Short in the Front Evaporator Temperature Sensor Circuit
<u>DTC B1233</u>	An Open in the Driver's Air Mix Control Motor Circuit
<u>DTC B1234</u>	A Short in the Driver's Air Mix Control Motor Circuit
<u>DTC B1235</u>	A Problem in the Driver's Air Mix Control Linkage, Door, or Motor Circuit
<u>DTC B1236</u>	An Open in the Passenger's Air Mix Control Motor Circuit
<u>DTC B1237</u>	A Short in the Passenger's Air Mix Control Motor Circuit
<u>DTC B1238</u>	A Problem in the Passenger's Air Mix Control Linkage, Door, or Motor Circuit
<u>DTC B1239</u>	An Open or Short in the Front Mode Control Motor Circuit
<u>DTC B1240</u>	A Problem in the Front Mode Control Linkage, Doors, or Motor Circuit
<u>DTC B1241</u>	A Problem in the Front Blower Motor Circuit
<u>DTC B1244</u>	An Open in the Rear Air Mix Control Motor Circuit

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC B1245</u>	A Short in the Rear Air Mix Control Motor Circuit
<u>DTC B1246</u>	A Problem in the Rear Air Mix Control Linkage, Door, or Motor Circuit
<u>DTC B2965</u>	Climate Control Unit Lost Communication with Rear Climate Control Panel
<u>DTC B2967</u>	An Open in the Humidity Sensor Circuit
<u>DTC B2968</u>	A Short in the Humidity Sensor Circuit
<u>DTC B2969</u>	Climate Control Unit Lost Communication with Combination Switch Control Unit (WIPSW message)
<u>DTC B2970</u>	Climate Control Unit Lost Communication with Relay Control Module (RM message)
<u>DTC B2979</u>	An Open in the A/C Pressure Sensor Circuit
<u>DTC B2980</u>	A short in the A/C Pressure Sensor Circuit
<u>DTC B2981</u>	Climate Control Unit Lost Communication with Navigation Unit
<u>DTC B2983</u>	A problem in the Recirculation Control Linkage, Door, or Motor Circuit
<u>DTC B2991</u>	Climate Control Unit Lost Communication with Audio Unit

DRIVER POSITION MEMORY (A00293971)**DRIVER POSITION MEMORY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1802</u>	Power Seat Control Unit Internal (EEPROM) Error
<u>DTC B1805</u>	Power Seat Control Unit Lost Communication with Gauge Control Module (VSP/NE Message); DTC B1808: Power Seat Control Unit Lost Communication with Gauge Control Module (A/T Message)
<u>DTC B1806; B1810; B1811</u>	Power Seat Control Unit Lost Communication with MICU (MICU Message); Power Seat Control Unit Lost Communication with MICU (MIRROR SW Message); Power Seat Control Unit Lost Communication with MICU (DOOR SW Message)
<u>DTC B1812</u>	Power Seat Control Unit Lost Communication with Driver's MPCU Unit (MEM SW Message)
<u>DTC B1825</u>	Power Seat Slide Motor Pulse Error
<u>DTC B1826</u>	Power Seat Front Up-down Motor Pulse Error
<u>DTC B1827</u>	Power Seat Rear Up-down Motor Pulse Error
<u>DTC B1828</u>	Power Seat Recline Motor Pulse Error
<u>DTC B1829</u>	A/T P Signal and VSS Signal Mismatch
<u>DTC B1835</u>	Power Tilt/Telescopic Steering Switch Signal Input

2008 Acura MDX

2007-08 DTC INDEX MDX

	Error
<u>DTC B1836</u>	Power Seat Position Sensor Circuit Short
<u>DTC B1837</u>	Driving Position Memory Recall Timeout
<u>DTC B1840</u>	Tilt Motor Pulse Error
<u>DTC B1841</u>	Telescopic Motor Pulse Error
<u>DTC B1842</u>	Power Tilt/Telescopic Position Sensor Power Supply Circuit (SVCC Line) Short
<u>DTC B1843</u>	Power Seat Control Unit Lost Communication with Power Tilt/Telescopic Steering Control Unit (UART line)
<u>DTC B1844</u>	Power Seat Slide Switch Circuit Malfunction
<u>DTC B1845</u>	Power Seat Recline Switch Circuit Malfunction
<u>DTC B1846</u>	Power Seat Front Up-Down Switch Circuit Malfunction
<u>DTC B1847</u>	Power Seat Rear Up-Down Switch Circuit Malfunction
<u>DTC B2182</u>	Left Power Mirror Horizontal Sensor Signal Error
<u>DTC B2183</u>	Left Power Mirror Vertical Sensor Signal Error
<u>DTC B2184</u>	Right Power Mirror Horizontal Sensor Signal Error
<u>DTC B2185</u>	Right Power Mirror Vertical Sensor Signal Error

EGR DTCS (A00293952)**EGR DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0401</u>	EGR Insufficient Flow
<u>DTC P0404</u>	EGR Control Circuit Range/ Performance Problem
<u>DTC P0406</u>	EGR Valve Position Sensor Circuit High Voltage
<u>DTC P2413</u>	EGR System Malfunction

ELECTRONIC THROTTLE CONTROL (A00293956)**ELECTRONIC THROTTLE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0122</u>	TP Sensor A Circuit Low Voltage
<u>DTC P0123</u>	TP Sensor A Circuit High Voltage
<u>DTC P0222</u>	TP Sensor B Circuit Low Voltage
<u>DTC P0223</u>	TP Sensor B Circuit High Voltage
<u>DTC P1658</u>	ETCS Control Relay ON Malfunction
<u>DTC P1659</u>	ETCS Control Relay OFF Malfunction
<u>DTC P1683</u>	Throttle Valve Default Position Spring Performance

2008 Acura MDX

2007-08 DTC INDEX MDX

	Problem
<u>DTC P1684</u>	Throttle Valve Return Spring Performance Problem
<u>DTC P2101</u>	ETCS Malfunction
<u>DTC P2118</u>	Throttle Actuator Current Range/ Performance Problem
<u>DTC P2122</u>	APP Sensor A (TP Sensor D) Circuit Low Voltage
<u>DTC P2123</u>	APP Sensor A (TP Sensor D) Circuit High Voltage
<u>DTC P2127</u>	APP Sensor B (TP Sensor E) Circuit Low Voltage
<u>DTC P2128</u>	APP Sensor B (TP Sensor E) Circuit High Voltage
<u>DTC P2135</u>	TP Sensor A/B Voltage Incorrect Correlation
<u>DTC P2138</u>	APP Sensor A/B (TP Sensor D/E) Incorrect Voltage Correlation
<u>DTC P2176</u>	Throttle Actuator Control System Idle Position Not Learned

EVAP DTCS (A00293957)**EVAP DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0443</u>	EVAP Canister Purge Valve Circuit Malfunction
<u>DTC P0451</u>	FTP Sensor Range/Performance Problem
<u>DTC P0452</u>	FTP Sensor Circuit Low Voltage
<u>DTC P0453</u>	FTP Sensor Circuit High Voltage
<u>DTC P0455; P0456</u>	EVAP System Very Large Leak Detected; EVAP System Very Small Leak Detected
<u>DTC P0457</u>	EVAP System Leak Detected/Fuel Fill Cap Loose or Missing
<u>DTC P0496</u>	EVAP System High Purge Flow
<u>DTC P0497</u>	EVAP System Low Purge Flow
<u>DTC P0498</u>	EVAP Canister Vent Shut Valve Control Circuit Low Voltage
<u>DTC P0499</u>	EVAP Canister Vent Shut Valve Control Circuit High Voltage
<u>DTC P1454; P2422</u>	FTP Sensor Range/Performance Problem; EVAP Canister Vent Shut Valve Close Malfunction
<u>DTC P145C</u>	EVAP System Purge Flow Malfunction (Vacuum Line)

FUEL SUPPLY DTCS (A00293926)**FUEL SUPPLY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P0461</u>	Fuel Level Sensor (Fuel Gauge Sending Unit) Range/Performance Problem
<u>DTC P0462</u>	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage
<u>DTC P0463</u>	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage
<u>DTC P0627</u>	Fuel Pump Control Module System Malfunction

GAUGES DTCS (A00293913)**GAUGES DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1152</u>	Gauge Control Module Internal (EEPROM) Error
<u>DTC B1155; B1156</u>	Gauge Control Module Lost Communication with Combination Switch Control Unit (HLSW Message); Gauge Control Module Lost Communication with Combination Switch Control Unit (WIPSW Message)
<u>DTC B1157; B1159; B1180; B1188</u>	Gauge Control Module Lost Communication with MICU (MICU Message); Gauge Control Module Lost Communication with MICU (DOORSW Message); Gauge Control Module Lost Communication with MICU (AUTOLT Message); Gauge Control Module Lost Communication with the MICU (RM Message)
<u>DTC B1158</u>	Gauge Control Module Lost Communication with Relay Control Module (RM Message)
<u>DTC B1162</u>	Gauge Control Module Lost Communication with Power Tailgate (PTG Message)
<u>DTC B1168; B1169; B1178</u>	Gauge Control Module Lost Communication with PCM (ENG Message); Gauge Control Module Lost Communication with the PCM (A/T Message); F- CAN Communication Line Error
<u>DTC B1170</u>	Gauge Control Module Lost Communication with the VSA Modulator-Control Unit (VSA Message)
<u>DTC B1173</u>	Gauge Control Module Lost Communication with the TPMS Control Unit (TPMS Message)
<u>DTC B1175</u>	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Open
<u>DTC B1176</u>	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Short
<u>DTC B1177</u>	Battery Voltage Abnormal
<u>DTC B1182</u>	Gauge Control Module Lost Communication with Driver's MPCS Unit (DRLOCKSW Message)

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC B1187</u>	Gauge Control Module Lost Communication with SRS Unit (SRS Message)
<u>DTC B1189</u>	Gauge Control Module Lost Communication with Active Damper System Control Unit (ADS Message)

HANDSFREELINK DTCS (A00293916)**HANDSFREELINK DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1775</u>	Microphone Input/Output Short to Power/Open
<u>DTC B1776</u>	Microphone Input/Output Short to Ground/Open
<u>DTC B1779</u>	HFL Switch (HFL TALK/HFL BACK Buttons) Circuit Open/Short
<u>DTC B1780</u>	HFL Switch (HFL TALK/HFL BACK Buttons) Circuit Short
<u>DTC B1785</u>	Incorrect Configuration (VEHINFO Frame)
<u>DTC B1786</u>	HandsFreeLink Control Unit Lost Communication with Gauge Control Module (VEHINFO Frame)
<u>DTC B1792</u>	HandsFreeLink Control Unit Internal Error

IDLE CONTROL DTCS (A00293944)**IDLE CONTROL DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0506</u>	Idle Control System RPM Lower Than Expected
<u>DTC P0507</u>	Idle Control System RPM Higher Than Expected

IMMOBILIZER DTCS (A00293960)**IMMOBILIZER DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1905</u>	Immobilizer-Keyless Control Unit Lost Communication with Driver's MPCs Unit (DRLOCKSW Message)
<u>DTC B1906</u>	Immobilizer-Keyless Control Unit Lost Communication with Gauge Control Module (A/T Message)

INTAKE AIR DTCS (A00293927)**INTAKE AIR DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P1077</u>	IMT Valve Stuck in High RPM Position
<u>DTC P1078</u>	IMT Valve Stuck in Low RPM Position

KEYLESS/POWER DOOR LOCKS/SECURITY (A00293991)**KEYLESS/POWER DOOR LOCKS/SECURITY DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B2179</u>	Driver's Door Key Cylinder Switch LOCK/UNLOCK Signal Error
<u>DTC B2180</u>	Driver's Door Lock Switch LOCK/ UNLOCK Signal Error
<u>DTC B2181</u>	Driver's Door Lock Knob Switch LOCK/UNLOCK Signal Error
<u>DTC B2186</u>	Front Passenger's Door Lock Switch LOCK/UNLOCK Signal Error

MULTIPLEX INTEGRATED CONTROL DTCS (A00293917)**MULTIPLEX INTEGRATED CONTROL DIAGNOSTIC TROUBLE CODE (DTC) LIST IDENTIFICATION**

DTC	Description
<u>DTC B1000</u>	Communication Bus Line Error
<u>DTC B1001; B1002</u>	MICU Internal (CPU) Error; MICU Internal (EEPROM) Error
<u>DTC B1005</u>	MICU Lost Communication with Relay Control Module (RM Message)
<u>DTC B1007</u>	MICU Lost Communication with Combination Switch Control Unit (HLSW Message)
<u>DTC B1011</u>	MICU Lost Communication with Gauge Control Module (VSP/NE Message)
<u>DTC B1012</u>	MICU Lost Communication with Rear MICU (RJC Message)
<u>DTC B1013; B1015</u>	MICU Lost Communication with Driver's MPCS Unit (ASLOCKSW Message); MICU Lost Communication with Driver's MPCS Unit (DRLOCKSW Message)
<u>DTC B1032</u>	MICU Lost Communication with the SRS Unit (CDS Message)
<u>DTC B1080</u>	Ignition Key Switch Circuit Malfunction
<u>DTC B1050; B1150; B1200; B1250; B1350; B1750; B1800; B1900; B1950; B2150; B2200</u>	Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus

2008 Acura MDX

2007-08 DTC INDEX MDX

	Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error; Communication Bus Line Error
<u>DTC B2152</u>	Driver's MPCS Unit Internal (EEPROM) Error
<u>DTC B2155; B2156; B2161</u>	Driver's MPCS Unit Lost Communication with MICU (MICU Message); Driver's MPCS Unit Lost Communication with MICU (MIRRORSW Message); Driver's MPCS Unit Lost Communication with MICU (DOORSW Message)
<u>DTC B2157; B2160</u>	Driver's MPCS Unit Lost Communication with Gauge Control Module (ILLUMI Message); Driver's MPCS Unit Lost Communication with Gauge Control Module (VSP/NE Message)
<u>DTC B2162</u>	Driver's MPCS Unit Lost Communication with Relay Control Module (RM Message)

PCV DTCS (A00293958)**PCV DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P2279</u>	Intake Air System Leak

PGM-FI DTCS (A00293906)**PGM-FI DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC P0101</u>	MAF Sensor Range/Performance Problem
<u>DTC P0102</u>	MAF Sensor Circuit Low Voltage
<u>DTC P0103</u>	MAF Sensor Circuit High Voltage
<u>DTC P0107</u>	MAP Sensor Circuit Low Voltage
<u>DTC P0108</u>	MAP Sensor Circuit High Voltage
<u>DTC P0111</u>	IAT Sensor Circuit Range/ Performance Problem
<u>DTC P0112</u>	IAT Sensor Circuit Low Voltage
<u>DTC P0113</u>	IAT Sensor Circuit High Voltage
<u>DTC P0116</u>	ECT Sensor 1 Range/ Performance Problem
<u>DTC P0117</u>	ECT Sensor 1 Circuit Low Voltage
<u>DTC P0118</u>	ECT Sensor 1 Circuit High Voltage
<u>DTC P0125</u>	ECT Sensor 1 Malfunction/Slow Response
<u>DTC P0128</u>	Cooling System Malfunction
<u>DTC P0133; P0153</u>	Rear A/F Sensor (Bank 1, Sensor 1) Response Malfunction/Slow Response; Front A/F Sensor (Bank

2008 Acura MDX

2007-08 DTC INDEX MDX

	2, Sensor 1) Response Malfunction/Slow Response
<u>DTC P0134; P0154</u>	Rear A/F Sensor (Bank 1, Sensor 1) Heater System Malfunction; Front A/F Sensor (Bank 2, Sensor 1) Heater System Malfunction
<u>DTC P0135; P0155</u>	Rear A/F Sensor (Bank 1, Sensor 1) Heater Circuit Malfunction; Front A/F Sensor (Bank 2, Sensor 1) Heater Circuit Malfunction
<u>DTC P0137; P0157</u>	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Low Voltage; Front Secondary HO2S (Bank 2, Sensor 2) Circuit Low Voltage
<u>DTC P0138; P0158</u>	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit High Voltage; DTC : Front Secondary HO2S (Bank 2, Sensor 2) Circuit High Voltage
<u>DTC P0139; P0159</u>	Rear Secondary HO2S (Bank 1, Sensor 2) Slow Response; DTC : Front Secondary HO2S (Bank 2, Sensor 2) Slow Response
<u>DTC P0141; P0161</u>	Rear Secondary HO2S (Bank 1, Sensor 2) Heater Circuit Malfunction; DTC : Front Secondary HO2S (Bank 2, Sensor 2) Heater Circuit Malfunction
<u>DTC P0171; P0172; P0174; P0175</u>	Rear Bank (Bank 1) Fuel System Too Lean; Rear Bank (Bank 1) Fuel System Too Rich; Front Bank (Bank 2) Fuel System Too Lean; Front Bank (Bank 2) Fuel System Too Rich
<u>DTC P0300</u>	Random Misfire and Any Combination of the Following: DTC P0301: No. 1 Cylinder Misfire Detected; DTC P0302: No. 2 Cylinder Misfire Detected; DTC P0303: No. 3 Cylinder Misfire Detected; DTC P0304: No. 4 Cylinder Misfire Detected; DTC P0305: No. 5 Cylinder Misfire Detected; DTC P0306: No. 6 Cylinder Misfire Detected
<u>DTC P0301; P0302; P0303; P0304; P0305; P0306</u>	No. 1 Cylinder Misfire Detected; DTC No. 2 Cylinder Misfire Detected; No. 3 Cylinder Misfire Detected; No. 4 Cylinder Misfire Detected; No. 5 Cylinder Misfire Detected; No. 6 Cylinder Misfire Detected
<u>DTC P0325</u>	Knock Sensor Circuit Malfunction
<u>DTC P0335; P0385</u>	CKP Sensor A No Signal; CKP Sensor B No Signal
<u>DTC P0339; P0389</u>	CKP Sensor A Intermittent Interruption; CKP Sensor B Intermittent Interruption
<u>DTC P0340</u>	CMP Sensor No Signal
<u>DTC P0344</u>	CMP Sensor Circuit Intermittent Interruption
<u>DTC P050A</u>	Cold Start Idle Air Control System Performance Problem
<u>DTC P050B</u>	Cold Start Ignition Timing Performance Problem

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P0562</u>	Charging System Low Voltage
<u>DTC P0563</u>	PCM Power Source Circuit Unexpected Voltage
<u>DTC P0602</u>	PCM Programming Error
<u>DTC P060A</u>	PCM (A/T system) Internal Control Module Malfunction
<u>DTC P0615</u>	Starter Cut Relay STRLD Circuit Malfunction
<u>DTC P062F</u>	PCM Internal Control Module Keep Alive Memory (KAM) Error
<u>DTC P0630</u>	VIN Not Programmed or Mismatch
<u>DTC P0685</u>	PCM Power Control Circuit/ Internal Circuit Malfunction
<u>DTC P1109</u>	BARO Sensor Circuit Out of Range High
<u>DTC P1116</u>	ECT Sensor 1 Range/ Performance Problem
<u>DTC P1128</u>	MAP Sensor Signal Lower Than Expected
<u>DTC P1129</u>	MAP Sensor Signal Higher than Expected
<u>DTC P1172; P1174</u>	Rear A/F Sensor (Bank 1, Sensor 1) Circuit Out of Range High; Front A/F Sensor (Bank 2, Sensor 1) Circuit Out of Range High
<u>DTC P1297</u>	ELD Circuit Low Voltage
<u>DTC P1298</u>	ELD Circuit High Voltage
<u>DTC P1549</u>	Charging System High Voltage
<u>DTC P16BB</u>	Alternator B Terminal Circuit Low Voltage
<u>DTC P16BC</u>	Alternator FR Terminal Circuit/ IGP Circuit Low Voltage
<u>DTC P16BD</u>	Starter Cut Relay 2 Malfunction
<u>DTC P16BE</u>	Starter Cut Relay 1 Malfunction
<u>DTC P16BF</u>	Starter Cut Relay STRLY Circuit Malfunction
<u>DTC P2183</u>	ECT Sensor 2 Range/ Performance Problem
<u>DTC P2184</u>	ECT Sensor 2 Circuit Low Voltage
<u>DTC P2185</u>	ECT Sensor 2 Circuit High Voltage
<u>DTC P2195; P2197</u>	Rear A/F Sensor (Bank 1, Sensor 1) Signal Stuck Lean; Front A/F Sensor (Bank 2, Sensor 1) Signal Stuck Lean
<u>DTC P2227</u>	BARO Sensor Range/ Performance Problem
<u>DTC P2228</u>	BARO Sensor Circuit Low Voltage
<u>DTC P2229</u>	BARO Sensor Circuit High Voltage
<u>DTC P2237; P2240</u>	Rear A/F Sensor (Bank 1, Sensor 1) IP Circuit High Voltage; Front A/F Sensor (Bank 2, Sensor 1) IP Circuit High Voltage
<u>DTC P2238; P2241</u>	Rear A/F Sensor (Bank 1, Sensor DIP Circuit Low Voltage; Front A/F Sensor (Bank 2, Sensor 1) IP Circuit Low Voltage

2008 Acura MDX

2007-08 DTC INDEX MDX

<u>DTC P2243; P2247</u>	Rear A/F Sensor (Bank 1, Sensor 1) VCENT Circuit High Voltage; Front A/F Sensor (Bank 2, Sensor 1) VCENT Circuit High Voltage
<u>DTC P2245; P2249</u>	Rear A/F Sensor (Bank 1, Sensor 1) VCENT Circuit Low Voltage; Front A/F Sensor (Bank 2, Sensor 1) VCENT Circuit Low Voltage
<u>DTC P2251; P2254</u>	Rear A/F Sensor (Bank 1, Sensor 1) VS Circuit High Voltage; Front A/F Sensor (Bank 2, Sensor 1) VS Circuit High Voltage
<u>DTC P2252; P2255</u>	Rear A/F Sensor (Bank 1, Sensor 1) VS Circuit Low Voltage; Front A/F Sensor (Bank 2, Sensor 1) VS Circuit Low Voltage
<u>DTC P2270; P2271; P2272; P2273</u>	Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Signal Stuck Lean; Rear Secondary HO2S (Bank 1, Sensor 2) Circuit Signal Stuck Rich; Front Secondary HO2S (Bank 2, Sensor 2) Circuit Signal Stuck Lean; Front Secondary HO2S (Bank 2, Sensor 2) Circuit Signal Stuck Rich
<u>DTC P2610</u>	PCM Internal Power Off Timer Performance Problem
<u>DTC P2A00; P2A03</u>	Rear A/F Sensor (Bank 1, Sensor 1) Range/Performance Problem; Front A/F Sensor (Bank 2, Sensor 1) Range/Performance Problem
<u>DTC U0028</u>	F-CAN Malfunction (BUS-OFF (PCM))
<u>DTC U0114</u>	F-CAN Malfunction (PCM-SH-AWD Control Unit)
<u>DTC U0122</u>	F-CAN Malfunction (PCM-VSA Modulator-Control Unit)
<u>DTC U0155</u>	F-CAN Malfunction (PCM-Gauge Control Module)
<u>DTC U0300</u>	PGM-FI System and A/T System Program Version Mismatch

POWER TAILGATE DTCS (A00293990)**POWER TAILGATE DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1352</u>	Power Tailgate Control Unit Internal (EEPROM) Error
<u>DTC B1355</u>	Power Tailgate Control Unit Lost Communication with MICU (MICU Message)
<u>DTC B1356; B1358</u>	Power Tailgate Control Unit Lost Communication with Driver's MPCS Unit (DRLOCKSW Message); Power Tailgate Control Unit Lost Communication with Driver's MPCS Unit (ASLOCKSW Message)
<u>DTC B1357; B1359</u>	Power Tailgate Control Unit Lost Communication with Gauge Control Module (VSP/NE Message);

2008 Acura MDX

2007-08 DTC INDEX MDX

	Power Tailgate Control Unit Lost Communication with Gauge Control Module (A/T Message)
<u>DTC B1375</u>	Driver's Door Power Tailgate Switch Circuit Malfunction
<u>DTC B1376</u>	Tailgate Outer Handle Switch Circuit Malfunction
<u>DTC B1377</u>	Inside Tailgate Switch Circuit Malfunction
<u>DTC B1378</u>	Power Tailgate Right Pinch Sensor Circuit Malfunction
<u>DTC B1379</u>	Power Tailgate Left Pinch Sensor Circuit Malfunction
<u>DTC B1380</u>	Power Tailgate Closer Unit Neutral Switch Circuit Malfunction
<u>DTC B1381</u>	Power Tailgate Closer Unit Release Switch Circuit Malfunction
<u>DTC B1382</u>	Power Tailgate Closer Unit Full Latch Switch Circuit Malfunction
<u>DTC B1383</u>	Power Tailgate Closer Unit Ratchet Switch Circuit Malfunction
<u>DTC B1384</u>	Power Tailgate Closer Unit Half Latch Switch Circuit Malfunction
<u>DTC B1386</u>	Power Tailgate Sensor Pulse A Circuit Malfunction
<u>DTC B1387</u>	Power Tailgate Sensor Pulse B Circuit Malfunction
<u>DTC B1388</u>	Power Tailgate Motor Circuit Malfunction
<u>DTC B1389</u>	Power Tailgate Motor Clutch Circuit Malfunction
<u>DTC B1390</u>	Power Tailgate Closer Function Error

POWER WINDOWS DTCS (A00293970)**POWER WINDOWS DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B2175</u>	Driver's Power Window Motor Pulse A Error
<u>DTC B2176</u>	Driver's Power Window Motor Pulse B Error
<u>DTC B2177</u>	Front Passenger's Power Window Motor Pulse A Error
<u>DTC B2178</u>	Front Passenger's Power Window Motor Pulse B Error
<u>DTC B2187</u>	Communication Line (UART Line) Driver's MPCU Unit cannot send UART messages.
<u>DTC B2188</u>	Communication Line (UART Line) Driver's MPCU Unit cannot receive UART messages from Front Passenger's MPCU Unit.
<u>DTC B2189</u>	Driver's Power Window Position Detect Circuit Error
<u>DTC B2190</u>	Front Passenger's Power Window Position Detect

2008 Acura MDX

2007-08 DTC INDEX MDX

	Circuit Error
<u>DTC B2191</u>	Front Passenger's MPCS Unit Internal (EEPROM) Error

REAR FUSE/RELAY BOX DTCS (A00293989)**REAR FUSE/RELAY BOX DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1955</u>	Rear MICU Lost Communication with MICU (MICU Message)
<u>DTC B1956</u>	Rear MICU Lost Communication with Gauge Control Module (A/T Message)
<u>DTC B1957; B1958</u>	Rear MICU Lost Communication with Combination Switch Control Unit (HLSW Message); Rear MICU Lost Communication with Combination Switch Control Unit (WIPSW Message)
<u>DTC B1959</u>	Rear MICU Lost Communication with Relay Control Module (RM Message)

UNDER-HOOD FUSE/RELAY BOX DTCS (A00293961)**UNDER-HOOD FUSE/RELAY BOX DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1051; B1052</u>	Relay Control Module Internal (CPU) Error; Relay Control Module Internal (EEPROM) Error
<u>DTC B1055; B1056; B1057</u>	Relay Control Module Lost Communication with MICU (MICU Message); Relay Control Module Lost Communication with MICU (ALARM Message); Relay Control Module Lost Communication with MICU (DOOR SW Message)
<u>DTC B1060; B1061</u>	Relay Control Module Lost Communication with Gauge Control Module (VPS/NE Message); Relay Control Module Lost Communication with Gauge Control Module (A/T Message)
<u>DTC B1062; B1063</u>	Relay Control Module Lost Communication with Combination Switch Control Unit (HLSW Message); Relay Control Module Lost Communication with Combination Switch Control Unit (WIPSW Message)
<u>DTC B1065</u>	Relay Control Module Lost Communication with Driver's MPCS Unit (DRLOCKSW Message)

VTEC DTCS (A00293959)

2008 Acura MDX

2007-08 DTC INDEX MDX

VTEC DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

DTC	Description
<u>DTC P2646</u>	Rocker Arm Oil Pressure Switch Circuit Low Voltage
<u>DTC P2647</u>	Rocker Arm Oil Pressure Switch Circuit High Voltage
<u>DTC P2648</u>	Rocker Arm Oil Control Solenoid Circuit Low Voltage
<u>DTC P2649</u>	Rocker Arm Oil Control Solenoid Circuit High Voltage

WIPERS/WASHERS DTCS (A00293938)**WIPERS/WASHERS DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

DTC	Description
<u>DTC B1076</u>	Windshield Wiper Switch Backup Circuit Malfunction
<u>DTC B1077</u>	Windshield Wiper Auto Switch Circuit Malfunction
<u>DTC B1281; B1282; B1283; B1284</u>	Windshield Wiper Switch MIST Position Circuit Malfunction; Windshield Wiper Switch INT (AUTO) Position Circuit Malfunction; Windshield Wiper Switch LOW Position Circuit Malfunction; Windshield Wiper Switch HIGH Position Circuit Malfunction

2007-09 ACCESSORIES AND EQUIPMENT

Turn Signal/Hazard Warning Lights - MDX

COMPONENT LOCATION INDEX

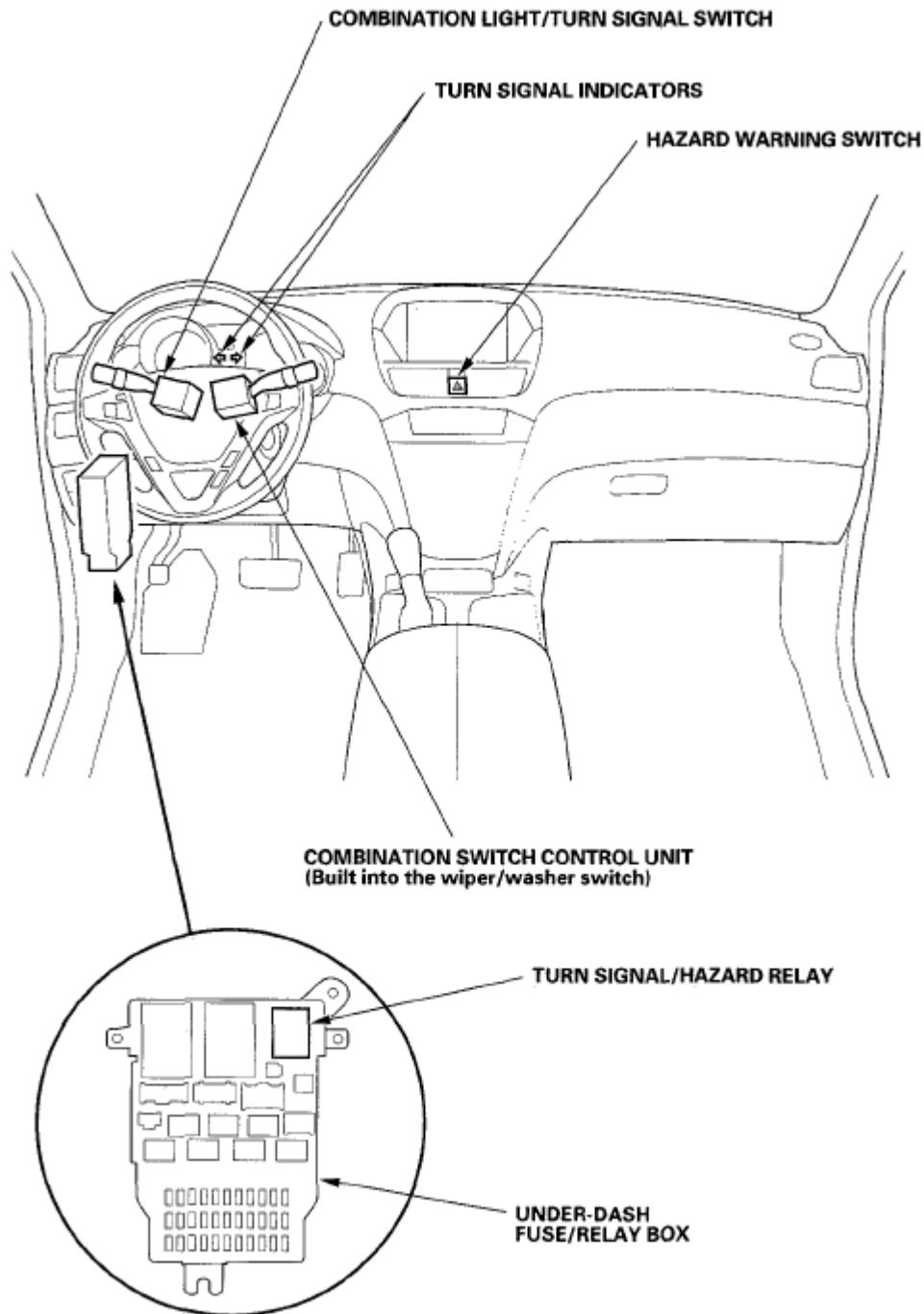


Fig. 1: Identifying Turn Signal/Hazard Warning Lights Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

BATTERY

MAIN UNDER-HOOD FUSE BOX

No. 1 (BAT) (120 A) No. 3 (IG) (50 A) No. 4 (40 A) No. 10 (15 A)

UNDER-DASH FUSE/RELAY BOX

B1 A2 WHT WHT BAT IG1 IG1 HOT in ON (I) and START (II) PNK A6 No. 21 (7.5 A) B4 No. 7 (10 A) D17 LT BLU X35 X34

WIPER/WASHER SWITCH

8 7 4 WHT YEL LT GRN

COMBINATION SWITCH CONTROL UNIT

VBU IG1 B-CAN

COMBINATION LIGHT SWITCH

1 3 4 LEFT RIGHT TURN SIGNAL SWITCH

REAR FUSE/RELAY BOX

BLU BRN B1 B20 C41 C40

LEFT REAR TURN SIGNAL LIGHT (21 W)

RIGHT REAR TURN SIGNAL LIGHT (21 W)

BLK BLK

G601 G701 G702

Fig. 2: Turn Signal/Hazard Warning Lights - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

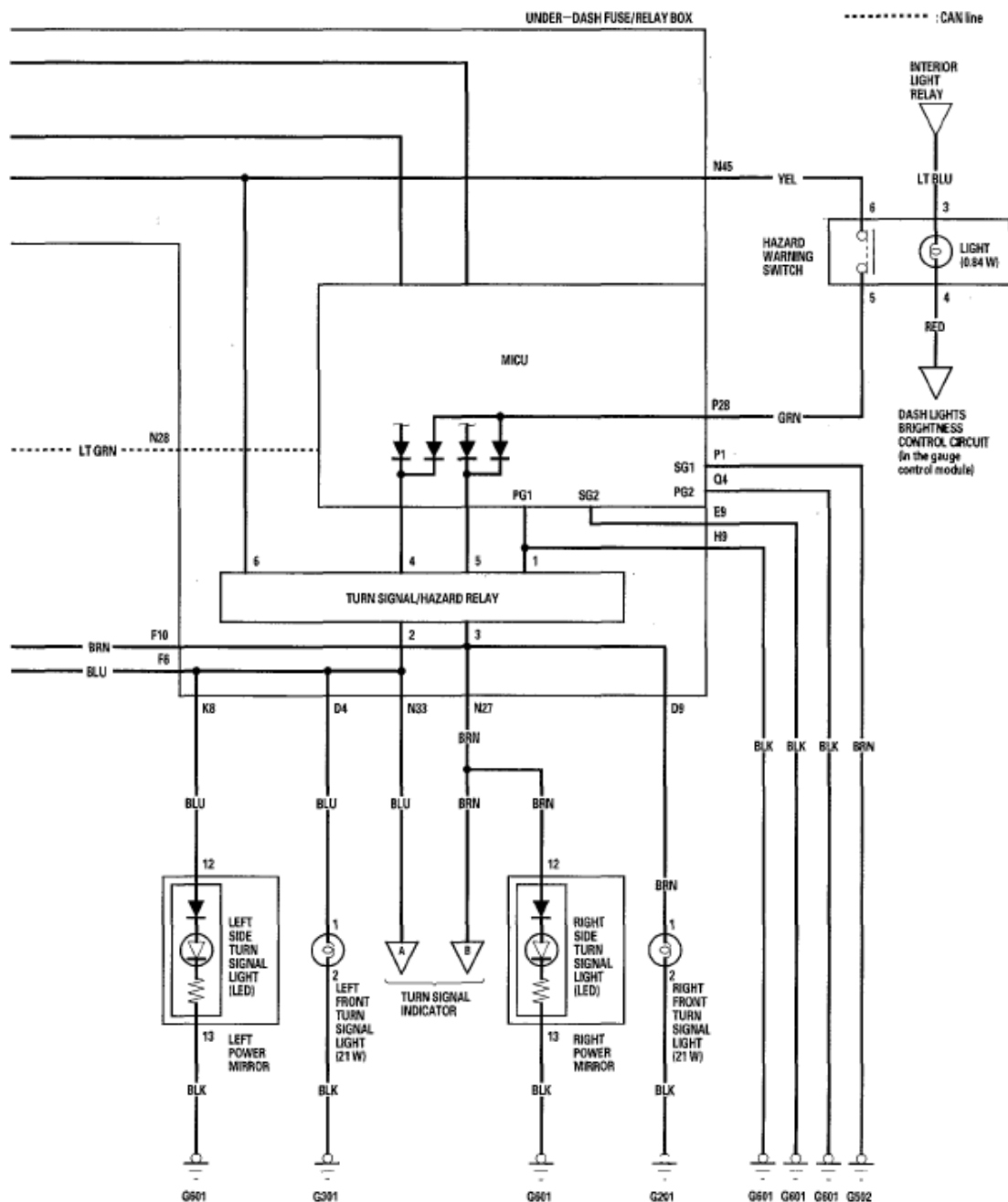


Fig. 3: Turn Signal/Hazard Warning Lights - Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

TURN SIGNAL/HAZARD RELAY INPUT TEST

1. Remove the turn signal/hazard relay (A) from the under-dash fuse/relay box (B).

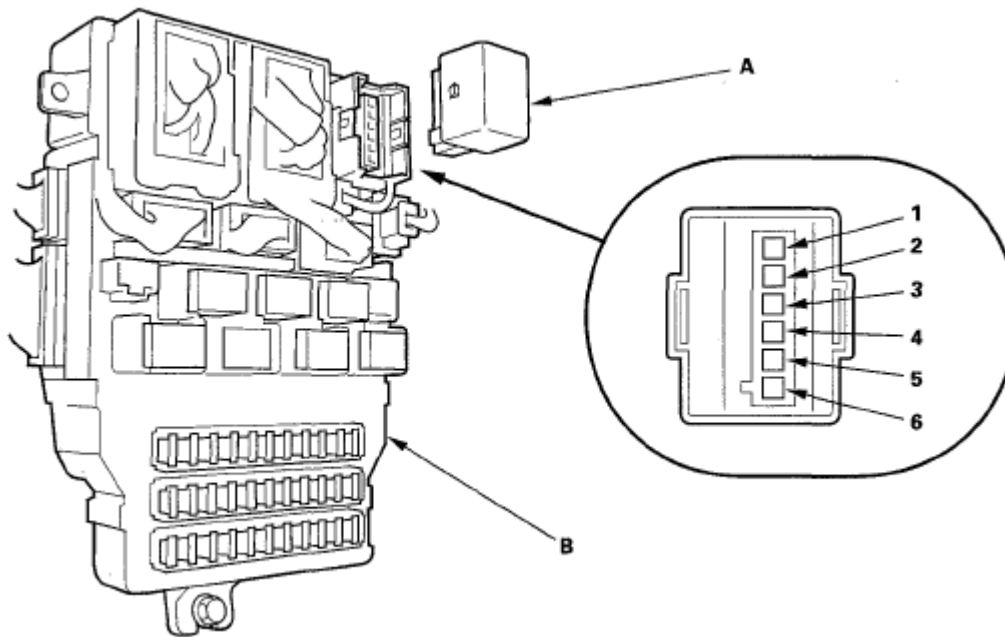


Fig. 4: Identifying Turn Signal/Hazard Relay
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Inspect the relay and fuse/relay box socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 3.
3. Make these input tests at the under-dash fuse/relay box.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the turn signal/hazard relay must be faulty; replace it.

CAVITY AND TEST CONDITION CHART

Cavity	Teat condition	Test: Desired result	Possible cause if desired result is not obtained
6	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 10 (15 A) fuse in the main under-hood fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
1	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G601) • Faulty under-dash fuse/relay box • An open in the wire
		Check the turn signal lights	• Blown bulb

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Turn Signal/Hazard Warning Lights - MDX

2	Connect the No. 6 and the No. 2 terminals with a jumper wire.	operation. The left turn signal lights and indicator should come on.	• Poor ground(G301, G601, G701) • Faulty LED • An open in the wire
3	Connect the No. 6 and the No. 3 terminals with a jumper wire.	Check the turn signal lights operation. The right turn signal lights and indicator should come on.	• Blown bulb • Poor ground (G201, G601, G701) • Faulty LED • An open in the wire
4	Ignition switch ON (II) and turn signal switch in Left position.	Measure the voltage to ground. There should be about 10 V or more.	• Poor ground (G601) • Faulty turn signal switch • Faulty under-dash fuse/relay box • An open in the wire • Faulty combination switch control unit⁽¹⁾ • Faulty MICU⁽¹⁾
5	Ignition switch ON (II) and turn signal switch in Right position.	Measure the voltage to ground. There should be about 10 V or more.	
4	Hazard warning switch ON	Measure the voltage to ground. There should be about 10 V or more.	• Poor ground(G601) • Blown No. 10 (15 A) fuse in the main under-hood fuse/relay box • Faulty under-dash fuse/relay box • Faulty hazard warning switch • An open in the wire • Faulty MICU⁽¹⁾
5		Measure the voltage to ground. There should be about 10 V or more.	

(1) Go to B-CAN System Diagnosis Test Mode A (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

HAZARD WARNING SWITCH TEST/ REPLACEMENT

1. Remove the center panel (see **DASHBOARD CENTER PANEL REMOVAL/ INSTALLATION**).
2. Disconnect the 6P connector (A) from the hazard warning switch (B).

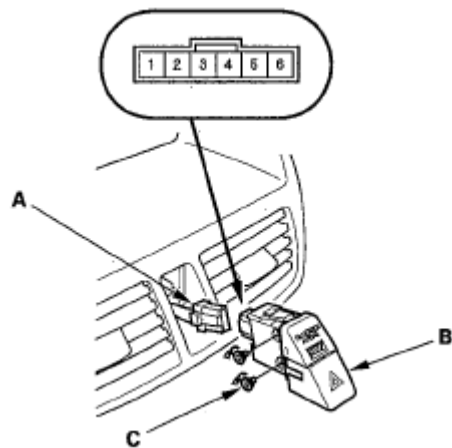


Fig. 5: Identifying 6P Connector From Hazard Warning Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the hazard warning switch from the center panel.
4. Check for continuity between the terminals in each switch position.

Terminal Position	5	6	3		4
OFF			○	⊕	○
ON	○	○	○	⊕	○

Fig. 6: Checking For Continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. If the continuity is not as specified, replace the bulb (C) or the hazard warning switch.

SIDE TURN SIGNAL LIGHT REPLACEMENT

1. Remove the mirror holder (see MIRROR HOLDER REPLACEMENT).
2. Remove the screw, then pull out the side turn signal light (A).

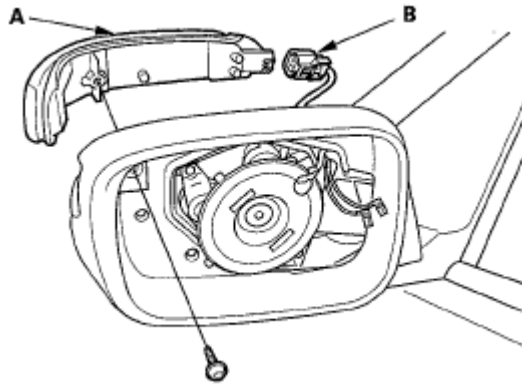


Fig. 7: Identifying 2P Connector From Light And Screw
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 2P connector (B) from the light.
4. Install the parts in the reverse order of removal.

2007-09 ENGINE PERFORMANCE

VTEC - MDX

COMPONENT LOCATION INDEX

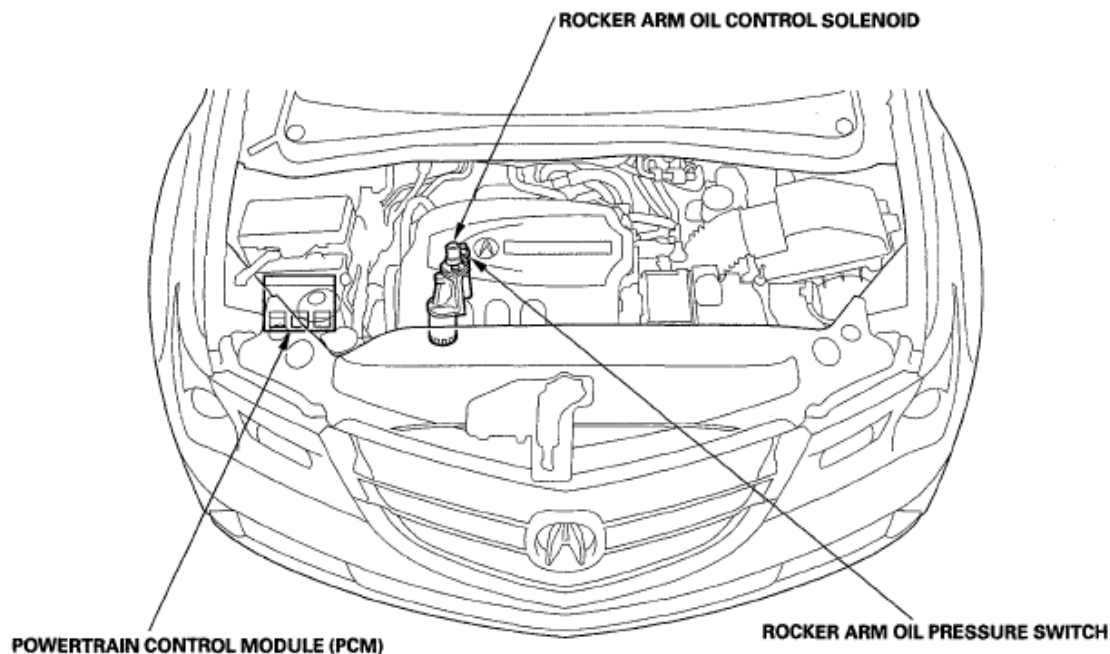


Fig. 1: Identifying VTEC Component Location

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC P2646: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT LOW VOLTAGE

Special Tools Required

- Pressure gauge adapter 07NAJ-P07010A
- A/T low pressure gauge w/panel 07406-0070301
- A/T pressure hose 07406-0020201
- A/T pressure hose, 2,210 mm 07MAJ-PY4011A
- A/T pressure adapter 07MAJ-PY40120
- Oil pressure hose 07ZAJ-S5AA200

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL

TROUBLESHOOTING INFORMATION).

1. Check the engine oil level.

Is the engine oil level OK?

YES - Go to step 2.

NO - Adjust the engine oil to the proper level, then go to step 20.

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM.

NO - Go to step 5.

5. Turn the ignition switch OFF.
6. Disconnect the rocker arm oil pressure switch 2P connector.
7. Turn the ignition switch ON (II).
8. Check the VTEC PRES SW in the DATA LIST with the HDS.

Is SWITCH ON indicated?

YES - Go to step 15.

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Remove the rocker arm oil pressure switch (A), install the special tools as shown, then install the rocker arm oil pressure switch on the oil pressure gauge adapter (B).

NOTE: **Install the parts in the reverse order of removal with a new O-ring.**

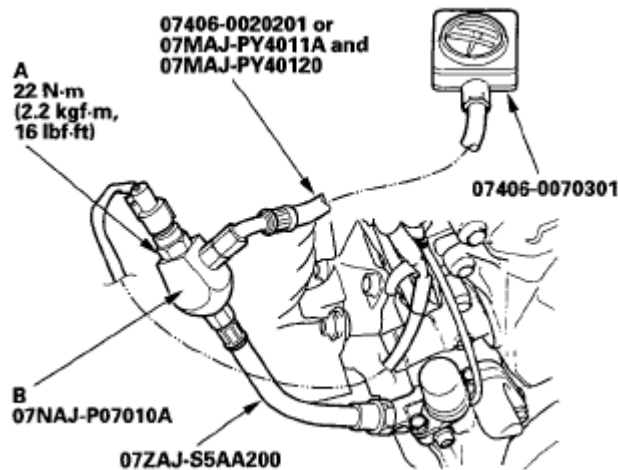


Fig. 2: Identifying Rocker Arm Oil Pressure Switch With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Reconnect the rocker arm oil pressure switch 2P connector.
12. Start the engine.
13. Do the VTEC TEST in the INSPECTION MENU with the HDS.
14. Check the oil pressure.

Does the oil pressure increase to at least 392 kPa (4.0 kgf/cm² , 56.9 psi)?

YES - Replace the rocker arm oil pressure switch (see **ROCKER ARM OIL PRESSURE SWITCH REMOVAL/INSTALLATION**), then go to step 19.

NO - Inspect the following items. If they are OK, replace the rocker arm oil control solenoid (see **ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT**), then go to step 19.

- VTEC system's oil line
- Operation of the rocker arm (see **VTEC ROCKER ARM TEST**)

15. Turn the ignition switch to LOCK (0).
16. Jump the SCS line with the HDS.
17. Disconnect PCM connector B (49P).
18. Check for continuity between PCM connector terminal B20 and body ground.

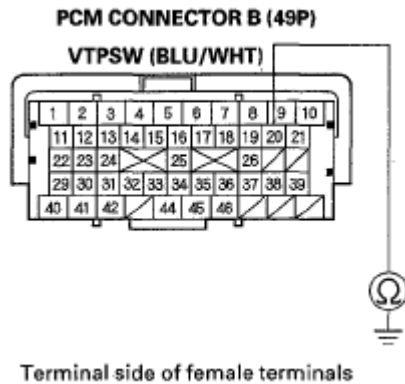


Fig. 3: Identifying Continuity Between PCM Connector Terminal B20 And Body Ground
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B20) and the rocker arm oil pressure switch, then go to step 19.

NO - Go to step 26.

19. Reconnect all connectors.
20. Turn the ignition switch ON (II).
21. Reset the PCM with the HDS.
22. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
23. Do the VTEC TEST in the INSPECTION MENU with the HDS.
24. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2646 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control valve, and the PCM, then go to step 1.

NO - Go to step 25.

25. Monitor the OBD STATUS for DTC P2646 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 24, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control valve, and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 23.

26. Reconnect all connectors.
27. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
28. Do the VTEC TEST in the INSPECTION MENU with the HDS.
29. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2646 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 30.

30. Monitor the OBD STATUS for DTC P2646 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 28, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2647: ROCKER ARM OIL PRESSURE SWITCH CIRCUIT HIGH VOLTAGE

NOTE: **Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION).**

1. Check the engine oil level.

Is the engine oil level OK?

YES - Go to step 2.

NO - Adjust the engine oil to the proper level, then go to step 16.

2. Turn the ignition switch ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM.

NO - Go to step 5.

5. Check the result of step 4.
 - VTEC Switch Failure
 - VTEC Switch Open
 - VTEC Switch SIG Line Open
 - VTEC Switch GND Line Open

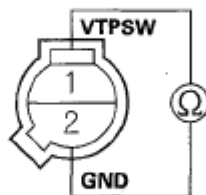
Is the test result any of the above?

YES - Go to step 6.

NO - Check for poor connections or loose terminals at the rocker arm oil pressure switch. If it is OK, replace the rocker arm oil control solenoid assembly (see **ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT**), then go to step 15.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the rocker arm oil pressure switch 2P connector.
8. At the rocker arm oil pressure switch side, check for continuity between rocker arm oil pressure switch 2P connector terminals No. 1 and No. 2.

**ROCKER ARM OIL PRESSURE SWITCH
2P CONNECTOR**



Terminal side of male terminals

Fig. 4: Identifying Continuity Between Rocker Arm Oil Pressure Switch 2P Connector Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

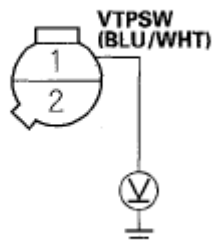
YES - Go to step 9.

NO - Replace the rocker arm oil pressure switch (see **ROCKER ARM OIL PRESSURE SWITCH**

REMOVAL/INSTALLATION), then go to step 16.

9. Turn the ignition switch ON (II).
10. Measure voltage between rocker arm oil pressure switch 2P connector terminal No. 1 and body ground.

**ROCKER ARM OIL PRESSURE SWITCH
2P CONNECTOR**



Wire side of female terminals

Fig. 5: Identifying Voltage Between Rocker Arm Oil Pressure Switch 2P Connector Terminal No. 1 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

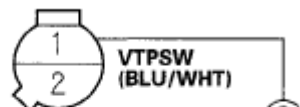
Is there battery voltage?

YES - Repair open in the wire between the rocker arm oil pressure switch and G101, then go to step 15.

NO - Go to step 11.

11. Turn the ignition switch OFF.
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (49P).
14. Check for continuity between PCM connector terminal B20 and rocker arm oil pressure switch 2P connector terminal No. 1.

**ROCKER ARM OIL PRESSURE SWITCH
2P CONNECTOR**



Wire side of female terminals

PCM CONNECTOR B (49P)

VTPSW (BLU/WHT)



Terminal side of female terminals

Fig. 6: Identifying Continuity Between PCM Connector Terminal B20 And Rocker Arm Oil

Pressure Switch 2P Connector Terminal No. 1
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 22.

NO - Repair open in the wire between the PCM (B20) and the rocker arm oil pressure switch, then go to step 16.

15. Turn the ignition switch to LOCK (0).
16. Reconnect all connectors.
17. Turn the ignition switch ON (II).
18. Reset the PCM with the HDS.
19. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
20. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2647 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM, then go to step 1.

NO - Go to step 21.

21. Monitor the OBD STATUS for DTC P2647 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 20, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

22. Reconnect all connectors.
23. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
24. Start the engine.
25. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2647 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM. If the PCM was updated, substitute a known-good PCM (see

SUBSTITUTING THE PCM), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 26.

26. Monitor the OBD STATUS for DTC P2647 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 25, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2648: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT LOW VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Do the VTEC TEST in the INSPECTION MENU with the HDS.

Is the result OK?

YES - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM.

NO - Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the rocker arm oil control solenoid 1P connector.
6. At the solenoid side, measure resistance between the rocker arm oil control solenoid 1P connector terminal and the solenoid valve body.

**ROCKER ARM OIL CONTROL SOLENOID
1P CONNECTOR**



Terminal side of male terminals

Fig. 7: Identifying Resistance Between Rocker Arm Oil Control Solenoid 1P Connector Terminal And Solenoid Valve Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

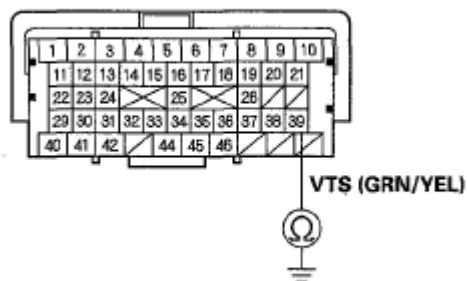
Is there 14-30 ohms at room temperature?

YES - Go to step 7.

NO - Go to step 10.

7. Jump the SCS line with the HDS.
8. Disconnect PCM connector B (49P).
9. Check for continuity between PCM connector terminal B39 and body ground.

PCM CONNECTOR B (49P)



Terminal side of female terminals

Fig. 8: Identifying Continuity Between PCM Connector Terminal B39 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Repair short in the wire between the PCM (B39) and the rocker arm oil control solenoid, then go to step 11.

NO - Go to step 18.

10. Replace the rocker arm oil control solenoid (see **ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT**).
11. Reconnect all connectors.
12. Turn the ignition switch ON (II).
13. Reset the PCM with the HDS.
14. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
15. Do the VTEC TEST in the INSPECTION MENU with the HDS.
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2648 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM, then go to step 1.

NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, go to step 15.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Do the VTEC TEST in the INSPECTION MENU with the HDS.
21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2648 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 21, go to the indicated **DTCs troubleshooting**.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

DTC P2649: ROCKER ARM OIL CONTROL SOLENOID CIRCUIT HIGH VOLTAGE

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
4. Check for Temporary DTCs or DTCs with the HDS.

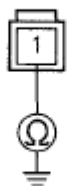
Is DTC P2649 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM.

5. Turn the ignition switch OFF.
6. Disconnect the rocker arm oil control solenoid 1P connector.
7. At the solenoid side, measure resistance between the rocker arm oil control solenoid 1P connector terminal and the solenoid valve body.

**ROCKER ARM OIL CONTROL SOLENOID
1P CONNECTOR**



Terminal side of male terminals

Fig. 9: Identifying Resistance Between Rocker Arm Oil Control Solenoid 1P Connector Terminal And Solenoid Valve Body

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there 14-30 ohms at room temperature?

YES - Go to step 8.

NO - Go to step 11.

8. Jump the SCS line with the HDS.
9. Disconnect PCM connector B (49P).
10. Check for continuity between PCM connector terminal B39 and the rocker arm oil control solenoid 1P connector terminal.

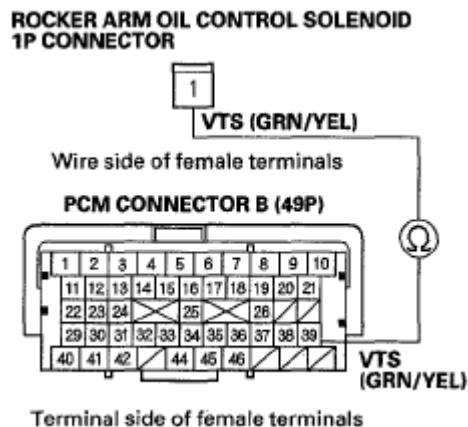


Fig. 10: Identifying Continuity Between PCM Connector B39 And Rocker Arm Oil Control Solenoid 1P Connector Terminal

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 18.

NO - Repair open in the wire between the PCM (B39) and the rocker arm oil control solenoid, then go to step 12.

11. Replace the rocker arm oil control solenoid (see **ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT**).
12. Reconnect ail connectors.
13. Turn the ignition switch ON (II).
14. Reset the PCM with the HDS.
15. Do the PCM idle learn procedure (see **PCM IDLE LEARN PROCEDURE**).
16. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2649 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM, then go to step 1.

NO - Go to step 17.

17. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 16, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM, then go to step 1. If the screen indicates NOT COMPLETED, keep idling until a result comes on.

18. Reconnect all connectors.
19. Update the PCM if it does not have the latest software (see **PCM UPDATE**), or substitute a known-good PCM (see **SUBSTITUTING THE PCM**).
20. Start the engine, and let it idle.
21. Check for Temporary DTCs or DTCs with the HDS.

Is DTC P2649 indicated?

YES - Check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1.

NO - Go to step 22.

22. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

Does the screen indicate PASSED?

YES - If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see **PCM REPLACEMENT**). If any other Temporary DTCs or DTCs were indicated in step 21, go to the indicated DTCs troubleshooting.

NO - If the screen indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see **SUBSTITUTING THE PCM**), then recheck. If the PCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, go to step 20.

1. Remove the rocker arm oil control solenoid/oil filter assembly (A) from the oil pump, and check the rocker arm oil control solenoid filter (B) for a restriction. If there is a restriction, replace the rocker arm oil control solenoid filter, the engine oil filter, and the engine oil.

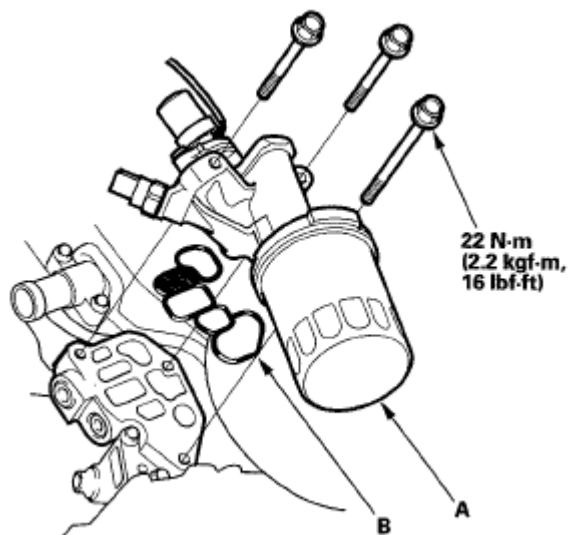


Fig. 11: Identifying Rocker Arm Oil Control Solenoid/Oil Filter Assembly With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the filter is not restricted, remove the rocker arm oil control solenoid (A), and push the valve (B) with your finger to check its movement. If the valve moves freely, it is normal; check the engine oil pressure (see **OIL PRESSURE TEST**). If the engine oil is OK, replace the rocker arm oil control solenoid (see **ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT**). If the valve binds or sticks, replace the rocker arm oil control solenoid assembly.

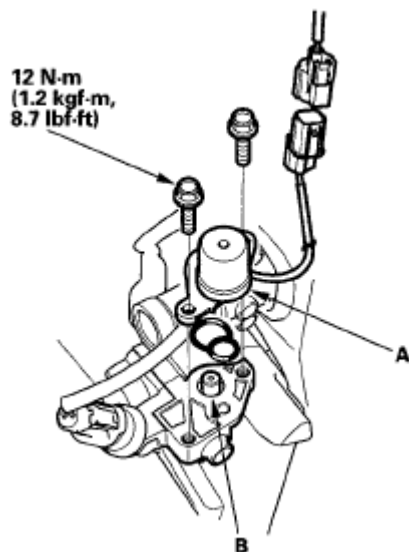


Fig. 12: Identifying Rocker Arm Oil Control Solenoid And Valve With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

ROCKER ARM OIL CONTROL SOLENOID REPLACEMENT

1. Disconnect the rocker arm oil control solenoid connector (A).

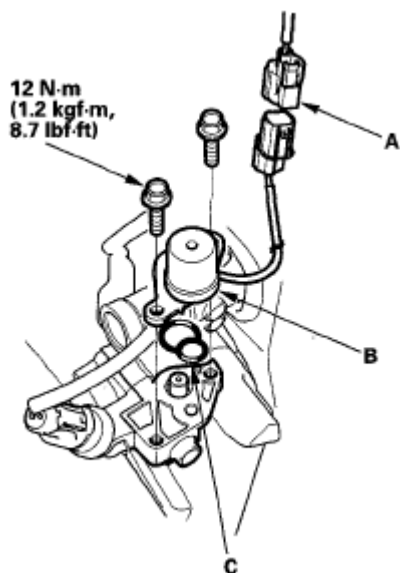


Fig. 13: Identifying Rocker Arm Oil Control Solenoid Connector With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the rocker arm oil control solenoid (B).
3. Install the parts in the reverse order of removal with a new O-ring (C).

ROCKER ARM OIL PRESSURE SWITCH REMOVAL/INSTALLATION

1. Disconnect the rocker arm oil pressure switch connector (A), then remove the rocker arm oil pressure switch (B).

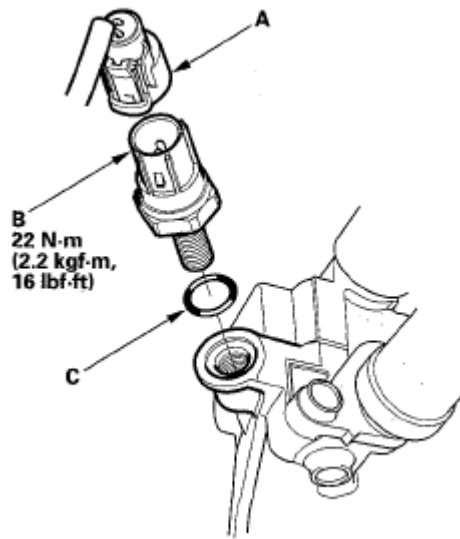


Fig. 14: Identifying Rocker Arm Oil Pressure Switch Connector And Oil Pressure Switch With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal with a new O-ring (C).

2007-09 ACCESSORIES AND EQUIPMENT

Wipers/Washers - MDX

COMPONENT LOCATION INDEX

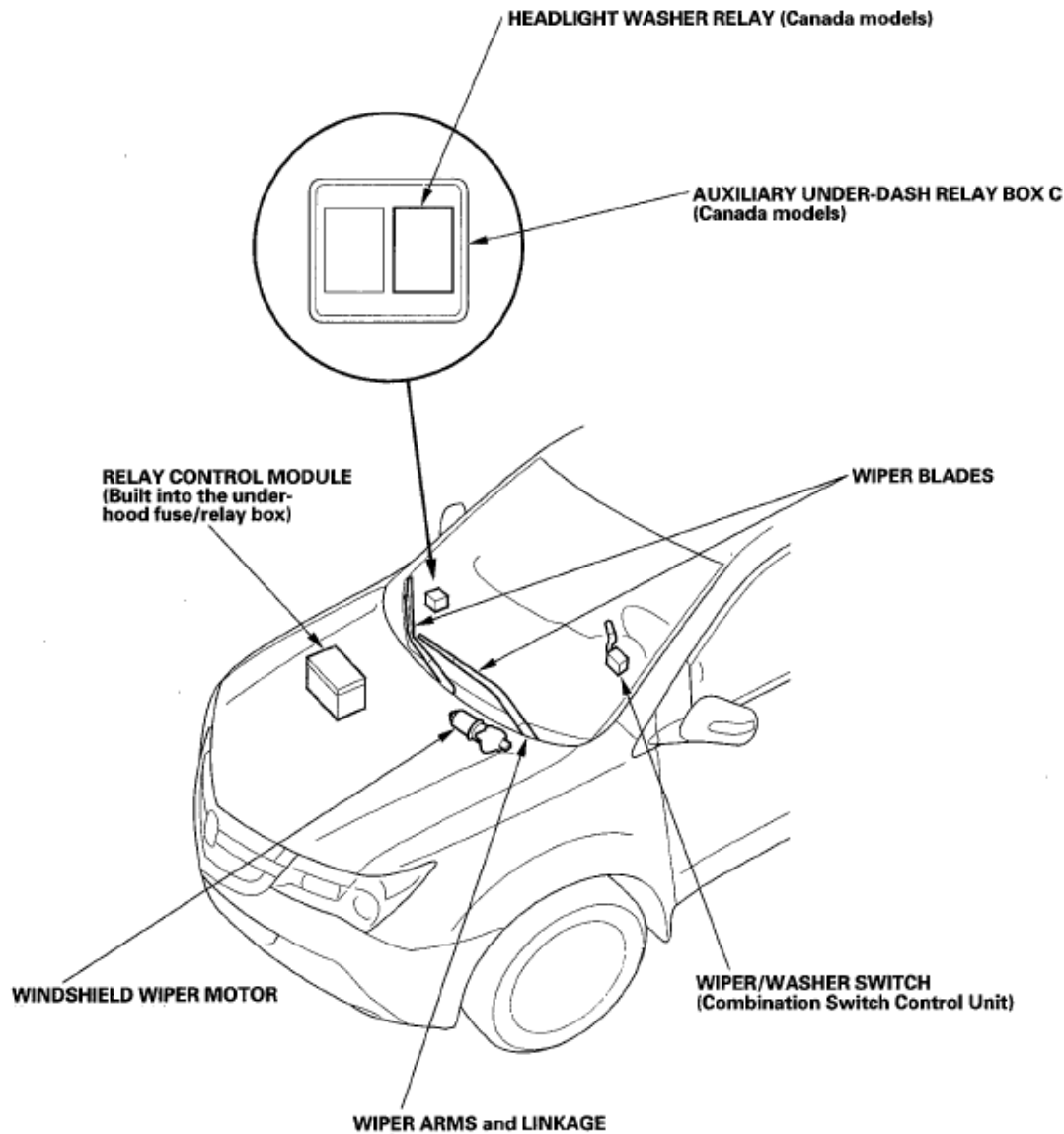


Fig. 1: Identifying Wipers/Washers Component Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

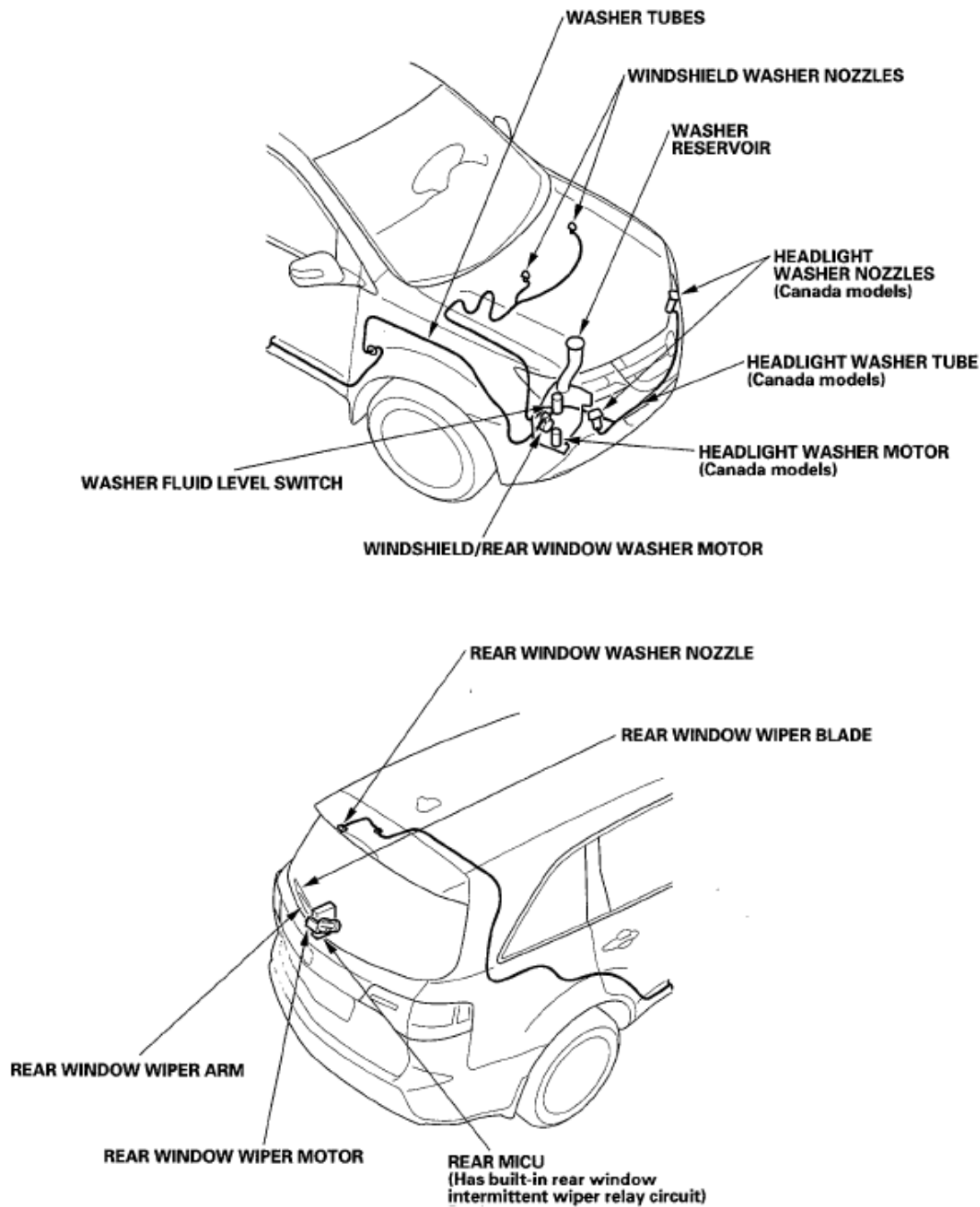


Fig. 2: Identifying Wipers/Washers Component Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - WINDSHIELD

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

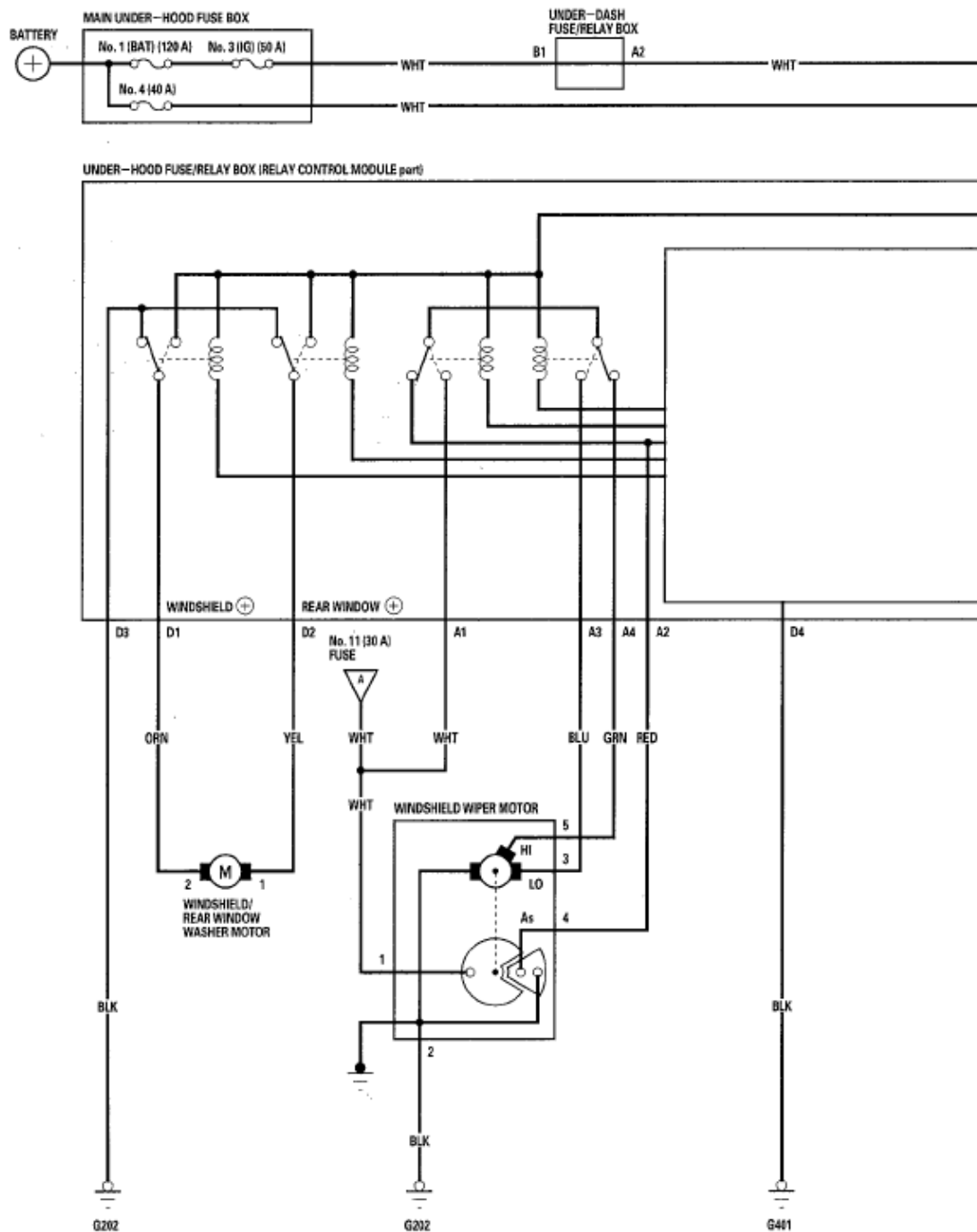


Fig. 3: Windshield - Circuit Diagram (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

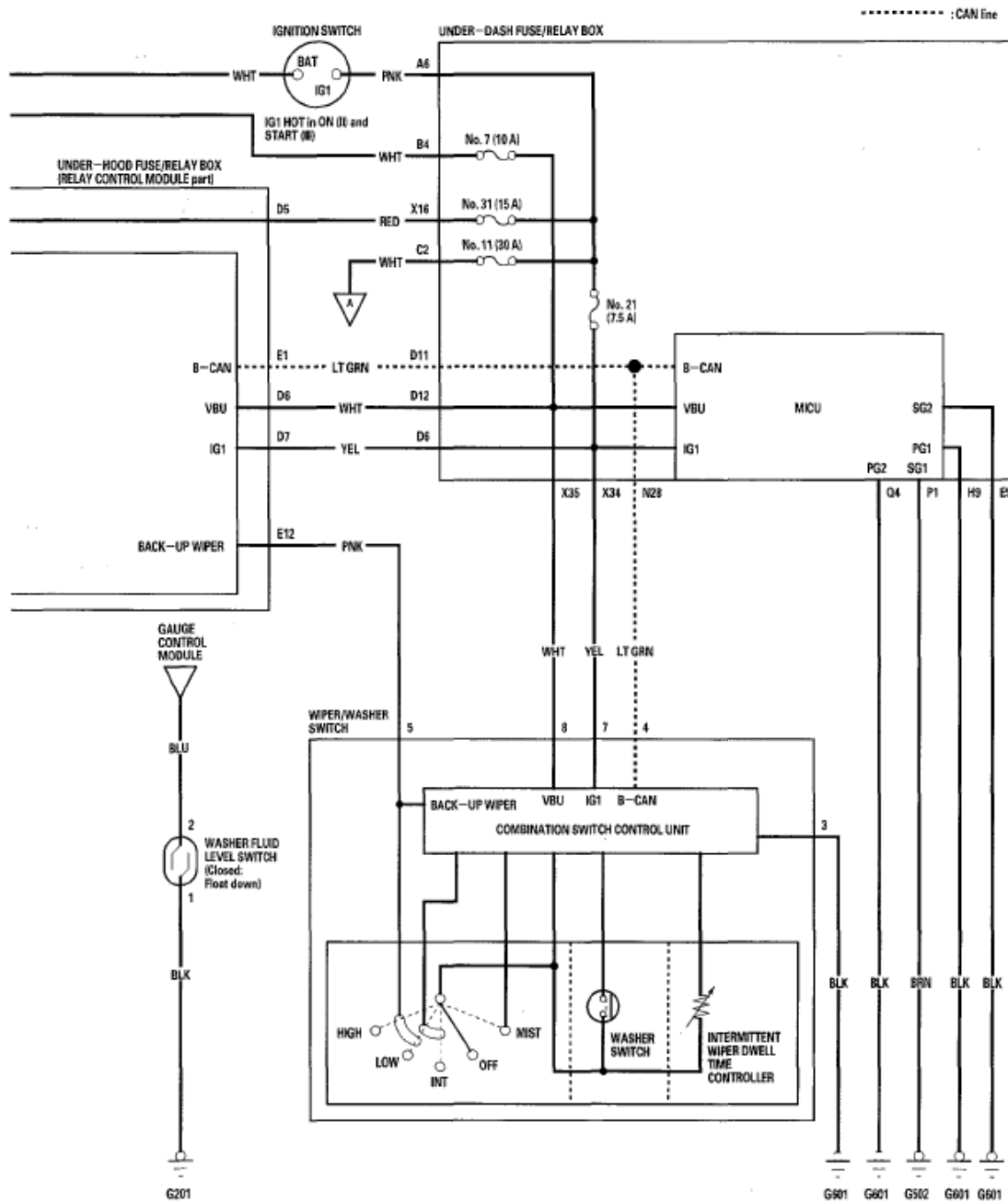


Fig. 4: Windshield - Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM - HEADLIGHT WASHER

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

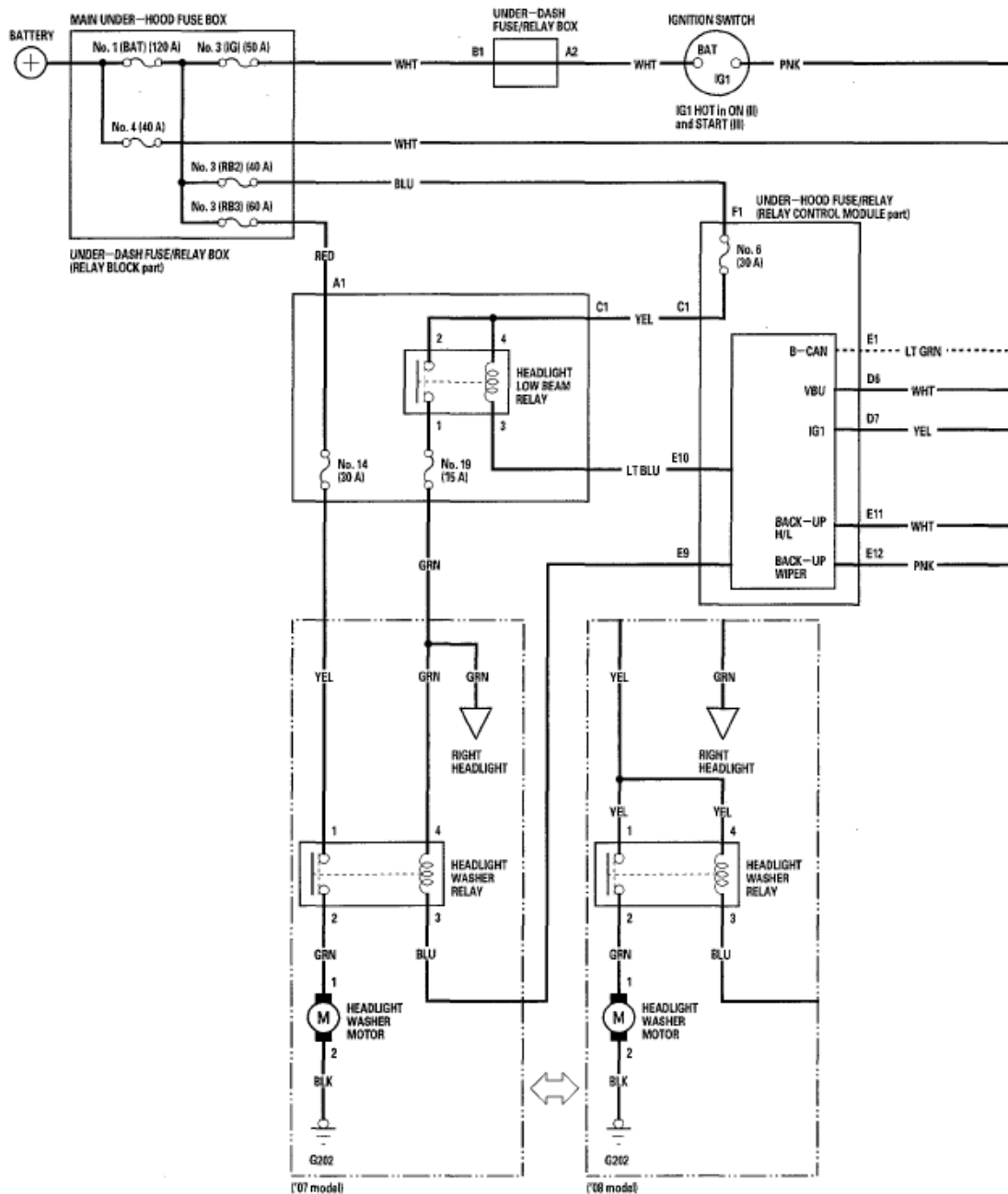


Fig. 5: Headlight Washer - Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX



2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

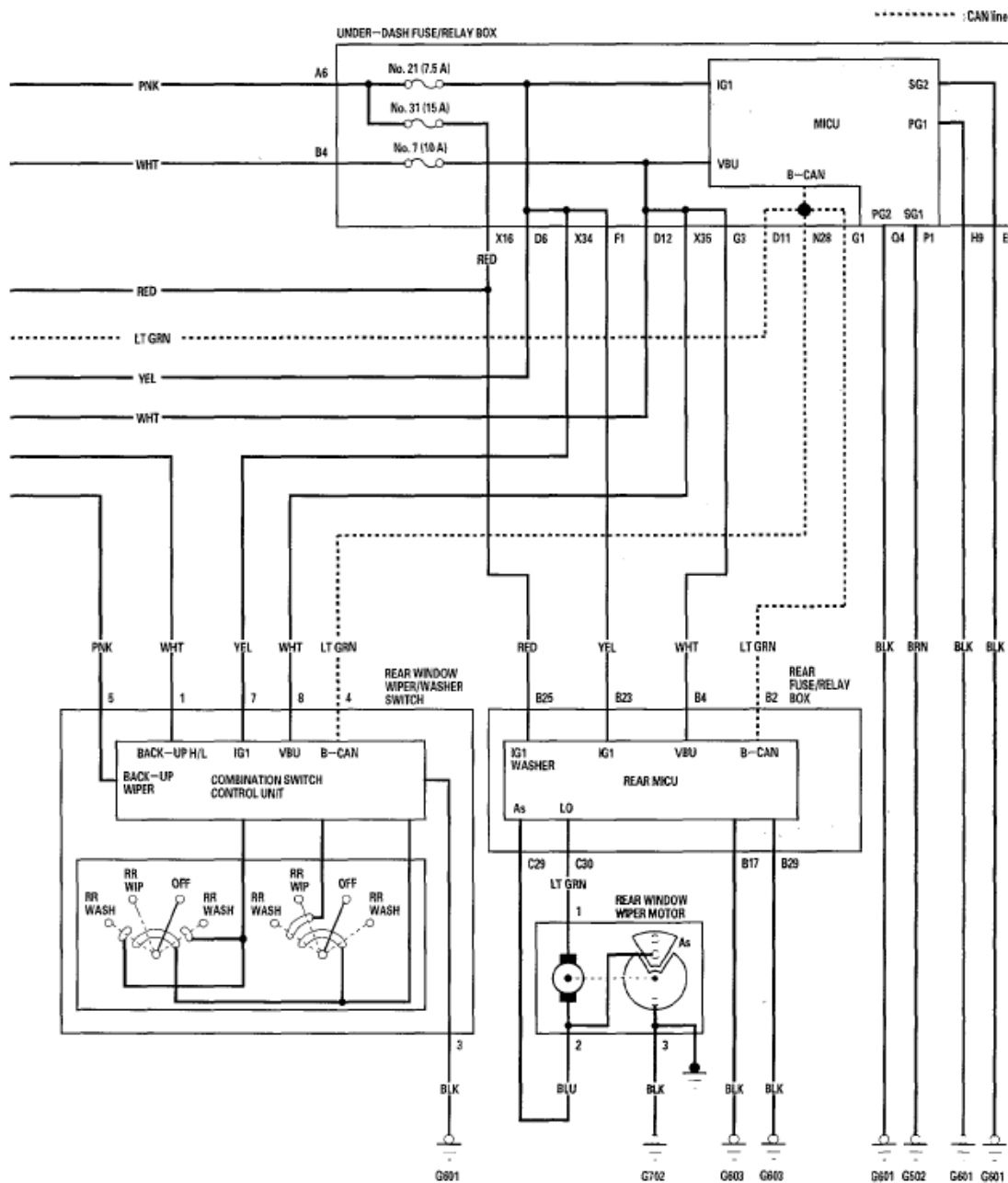


Fig. 8: Rear Window - Circuit Diagram (2 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DTC TROUBLESHOOTING

DTC B1076: WINDSHIELD WIPER SWITCH BACKUP CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A).

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the windshield wiper switch ON for 5 seconds and OFF.
4. Check for DTCs with the HDS.

Is DTC B1076 indicated?

YES - Go to step 5.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

5. Select BODY ELECTRICAL system select menu, then enter the DATA LIST menu.
6. Check the ON/OFF information of the FR WIPER BACK-UP with the HDS.

Is OFF indicated?

YES - Go to step 7.

NO - Check for a short in the wire between the combination switch control unit and the relay control module (WIPER BACK-UP line), if the harness is OK, replace the combination switch control unit (see **WIPER/WASHER SWITCH REPLACEMENT**).

7. Turn the windshield wiper switch ON.
8. Check the ON/OFF information of the FR WIPER BACK-UP with the HDS.

Is ON indicated?

YES - Go to the relay control module input test (see **RELAY CONTROL MODULE INPUT TEST**) and check for a poor ground, if the GND line is OK, replace the under-hood fuse/ relay box (see **REMOVAL AND INSTALLATION**).

NO - Check for an open in the wire between the combination switch control unit and the relay control module (WIPER BACK-UP line), if the wire is OK, replace the combination switch control unit (see **WIPER/WASHER SWITCH REPLACEMENT**).

DTC B1077: WINDSHIELD WIPER AUTO SWITCH CIRCUIT MALFUNCTION

1. Turn the ignition switch ON (II), and the windshield wiper switch ON.
2. Check the windshield wiper operation.

Does the wiper work?

YES - Go to step 3.

NO - Go to step 13.

3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0), and then back ON (II).
5. Turn the windshield wiper switch ON, and then OFF.
6. Check for DTCs with the HDS.

Is DTC B1077 indicated?

YES - Go to step 7.

NO - Intermittent failure, the system is OK at this time. Check for loose or poor connections.

7. Select BODY ELECTRICAL system select menu, then enter the DATA LIST menu.
8. Check the ON/OFF information of the FR WIPER AS with the HDS.

Is OFF indicated when the motor is stopped, and ON intermittently indicated when the motor runs?

YES - Faulty relay control module, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

NO - Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the windshield wiper motor 5P connector.
11. Disconnect under-hood fuse/relay box connector A (4P).
12. Check for continuity between the windshield wiper motor 5P connector No. 4 terminal and the under-hood fuse/relay box connector A (4P) No. 2 terminal.

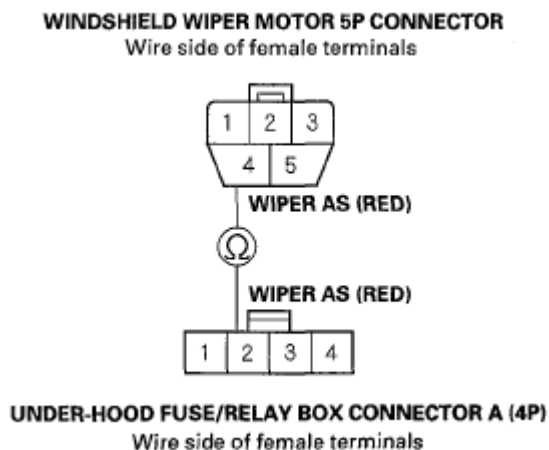


Fig. 9: Identifying Continuity Between Windshield Wiper Motor And Under-Hood Fuse/Relay Box
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

2008 Acura MDX

2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX

YES - Faulty relay control module, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

NO - Repair open in the wire.

13. Check the No. 11 (30 A) and No. 31 (15 A) fuses in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 12.

NO - Replace the fuse(s) and recheck the system.

14. Turn the ignition switch to LOCK (0).

15. Check the No. 11 (30 A) and No. 31 (15 A) fuses in the under-dash fuse/relay box.

Are the fuses OK?

YES - Go to step 16.

NO - Replace the fuse and recheck the system.

16. Do the wiper motor test (see **WIPER MOTOR TEST**).

Does the wiper motor run normally?

YES - Go to step 17.

NO - Replace the windshield wiper motor and recheck.

17. Disconnect the windshield wiper motor 5P connector.

18. Disconnect under-hood fuse/relay box connector A (4P).

19. Check for continuity between the windshield wiper motor 5P connector No. 3 and No. 5 terminals and the under-hood fuse/relay box connector A (4P) No. 3 and No. 4 terminals.

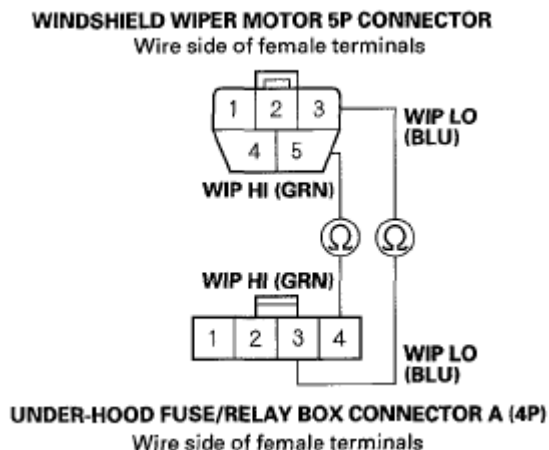


Fig. 10: Identifying Continuity Between Windshield Wiper Motor And Under-Hood Fuse/Relay Box

Courtesy of AMERICAN HONDA MOTOR CO., INC.

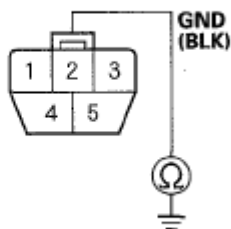
Is there continuity?

YES - Go to step 20.

NO - Repair open in the wire.

20. Check for continuity between the windshield wiper motor 5P connector No. 2 terminal and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Fig. 11: Identifying Continuity Between Windshield Wiper Motor 5P Connector Terminal 2 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Faulty relay control module, replace the under-hood fuse/relay box (see **REMOVAL AND INSTALLATION**).

NO - Repair open in the wire or poor ground (G401).

DTC B1281: WINDSHIELD WIPER SWITCH MIST POSITION CIRCUIT MALFUNCTION; DTC B1282: WINDSHIELD WIPER SWITCH INT (AUTO) POSITION CIRCUIT MALFUNCTION; DTC B1283: WINDSHIELD WIPER SWITCH LOW POSITION CIRCUIT MALFUNCTION; DTC B1284: WINDSHIELD WIPER SWITCH HIGH POSITION CIRCUIT MALFUNCTION

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Turn the windshield wiper switch to MIST, and wait for 2 seconds.
4. Turn the windshield wiper switch OFF, and wait for 2 seconds.
5. Turn the windshield wiper switch to INT (AUTO), and wait for 2 seconds.
6. Turn the windshield wiper switch to LOW, and wait for 2 seconds.
7. Turn the windshield wiper switch in HIGH, and wait for 2 seconds.
8. Check for DTCs with the HDS.

Is DTC B1281, B1282, B1283, and/or B1284 indicated?

YES - Replace the wiper/washer switch.

NO - Intermittent failure, the wiper/washer switch and the combination switch control unit are OK at this time. Check for loose or poor connections.

WIPER/WASHER SWITCH (COMBINATION SWITCH CONTROL UNIT) INPUT TEST

NOTE: Before testing the combination switch control unit, troubleshoot the multiplex integrated control unit first, using **B-CAN System Diagnosis Test Mode A** (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A**).

1. Remove the dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the 8P connector (A) from the wiper/washer switch (B).

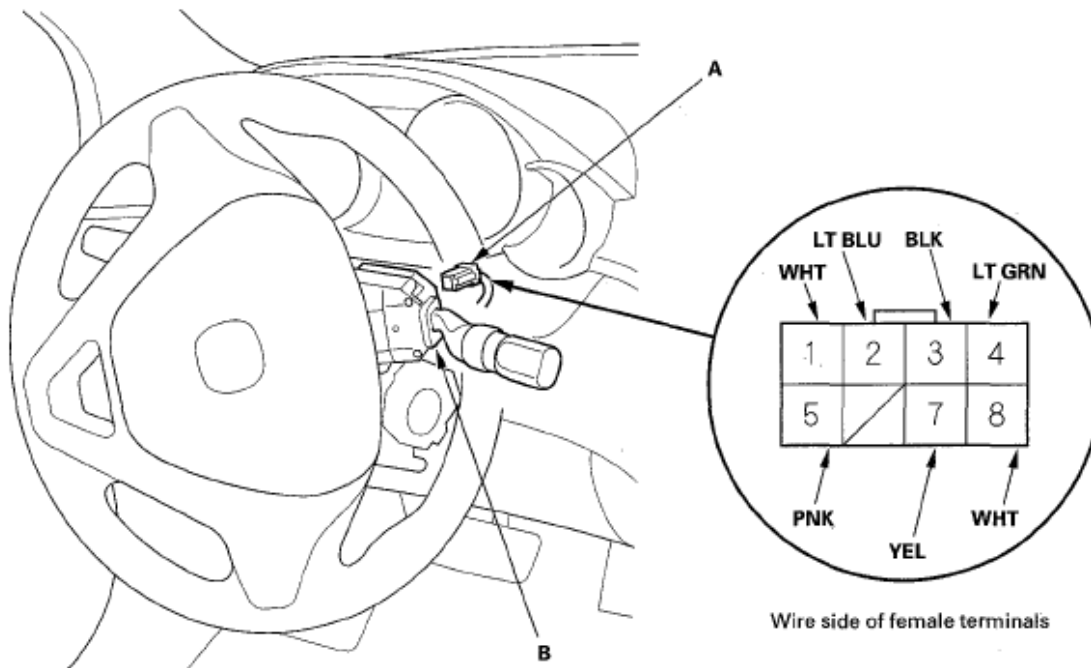


Fig. 12: Identifying Wiper/Washer Switch And 8P Connector
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connector still disconnected, make these input tests at the connector.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	WHT	Under all conditions	Check for continuity between the No. 1 terminal and the under-hood fuse/relay box connector E (14P) No. 11 terminal: There should be continuity.	An open in the wire
		Disconnect under-hood fuse/relay box connector E (14P) and the under-dash fuse/relay box connector P (30P)	Check for continuity to ground: There should be no continuity.	A short to ground in the wire
2	LT	Under all conditions	Check for continuity between the No. 2 terminal of the combination switch control unit and the headlight leveling control unit	An open in the

2008 Acura MDX**2007-09 ACCESSORIES AND EQUIPMENT Wipers/Washers - MDX**

	BLU		No. 16 terminal: There should be continuity.	wire
4	LT GRN	Under all conditions	Check for continuity between the No. 4 terminal and under-dash fuse/relay box connector N (45P) No. 28 terminal: There should be continuity.	An open in the wire
		Disconnect under-dash fuse/relay box connector N (45P)	Check for continuity to ground: There should be no continuity.	A short to ground in the wire
5	PNK	Under all conditions	Check for continuity between the No. 5 terminal and the under-hood fuse/relay box connector E (14P) No. 12 terminal: There should be continuity.	An open in the wire
		Disconnect under-hood fuse/relay box connector E (14P)	Check for continuity to ground: There should be no continuity.	A short to ground in the wire

6. Reconnect the 8P connector to the wiper/washer switch, and make these input tests at the connector.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, replace the wiper/washer switch (combination switch control unit).

CAVITY AND TEST CONDITION CHART

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
3	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.5 V.	• Poor ground (G601) • An open in the wire
8	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 4 (40 A) fuse in the main under-hood fuse box • Blown No. 7 (10 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open in the wire
7	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (7.5 A) fuse in the under-dash fuse/relay box • An open in the wire

WIPER/WASHER SWITCH REPLACEMENT

NOTE: The wiper/washer switch is built into the combination switch control unit. For the wiper/washer test, refer to the **COMBINATION SWITCH CONTROL UNIT INPUT TEST** (see).

1. Remove the dashboard lower cover (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the steering column covers (see **COLUMN COVER REMOVAL/INSTALLATION**).
3. Disconnect the combination light switch 20P connector (A), and dashboard wire harness 8P connector (B) from the wiper/washer switch (C).

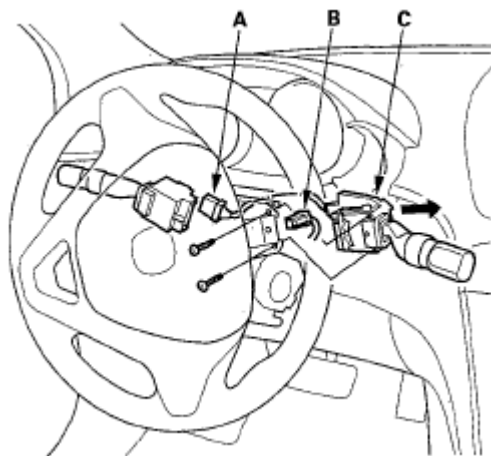


Fig. 13: Identifying Combination Light Switch 20P Connector And Screws
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the two screws, then slide out the wiper/washer switch.

HEADLIGHT WASHER SWITCH TEST/ REPLACEMENT

CANADA MODELS

1. Carefully pry the switch out from the dashboard.
2. Disconnect the 5P connector (A) from the headlight washer switch (B).

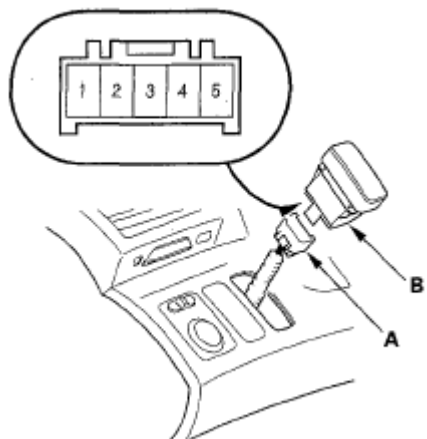


Fig. 14: Identifying Headlight Washer Switch And 5P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for continuity between the terminals in each switch position according to the table.

Terminal Position	1	2	4		5
OFF			○	⊗	○
ON	○	○	○	⊗	○

Fig. 15: Checking For continuity Between Terminals In Each Switch Position
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. If the continuity is not as specified, replace the bulb (C) or the headlight washer switch.

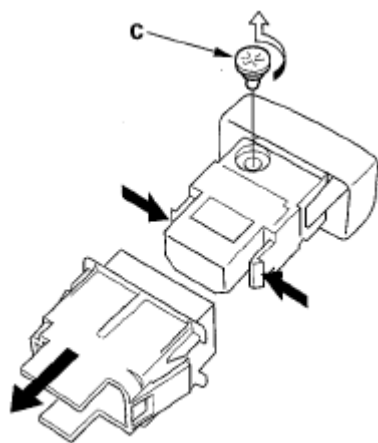


Fig. 16: Identifying Bulb And Headlight Washer Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the switch in the reverse order of removal.

WIPER MOTOR TEST

WINDSHIELD

1. Open the hood, and remove the wiper arms (see WIPER MOTOR REPLACEMENT).

NOTE: Carefully remove the wiper arms so that they do not touch the hood.

2. Remove the cowl covers (see COWL COVER REPLACEMENT).
3. Disconnect the 5P connector (A) from the windshield wiper motor (B).

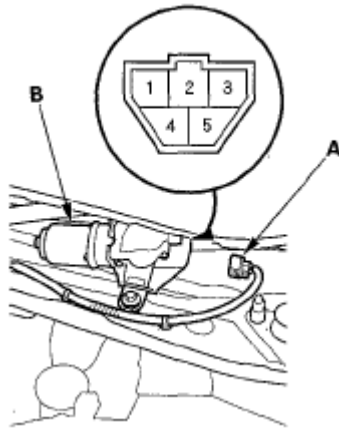


Fig. 17: Identifying Windshield Wiper Motor And 5P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Test the motor by connecting battery power to the windshield wiper motor 5P connector No. 3 terminal and ground to the No. 2 terminal. The motor should run at low speed. If the motor does not run or fails to run smoothly, replace the motor.
5. Test the motor by connecting battery power to the windshield wiper motor 5P connector No. 5 terminal and ground to the No. 2 terminal. The motor should run at high speed. If the motor does not run or fails to run smoothly, replace the motor (see **WIPER MOTOR REPLACEMENT**).
6. Connect an analog ohmmeter between the windshield wiper motor 5P connector No. 1 and No. 4 terminals, and run the motor at low or high speed. The ohmmeter should indicate continuity and no continuity alternately. If it does not, replace the motor.

REAR WINDOW

1. Open the tailgate, and remove the tailgate lower panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Disconnect the 4P connector (A) from the rear window wiper motor (B).

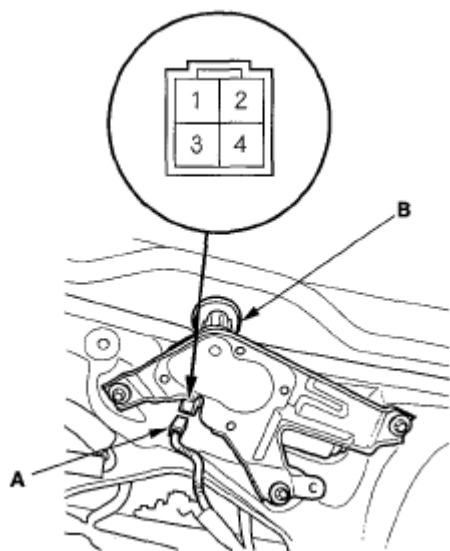


Fig. 18: Identifying Rear Window Wiper Motor And 4P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the motor by connecting battery power to the rear window wiper motor 4P connector No. 1 terminal and ground to the No. 2 terminal. The motor should run. If the motor does not run or fails to run smoothly, replace the motor (see **REAR WINDOW WIPER MOTOR REPLACEMENT**).
4. Connect an analog ohmmeter between the rear window wiper motor 4P connector No. 2 and No. 3 terminals. The ohmmeter should indicate continuity and no continuity alternately. If it does not, replace the motor.

WASHER MOTOR TEST

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the washer motor (B).

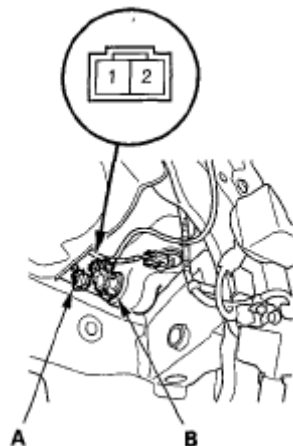


Fig. 19: Identifying Washer Motor And 2P Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the motor by connecting battery power to the No. 2 (No. 1) terminal and ground the No. 1 (No. 2) terminal of the washer motor. The motor should run.

(): Rear window washer direction.

- If the motor does not run or fails to run smoothly, replace it.
- If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.

WASHER FLUID LEVEL SWITCH TEST

1. Remove the right inner fender (see FRONT INNER FENDER REPLACEMENT).
2. Disconnect the 2P connector (A) from the washer fluid level switch.

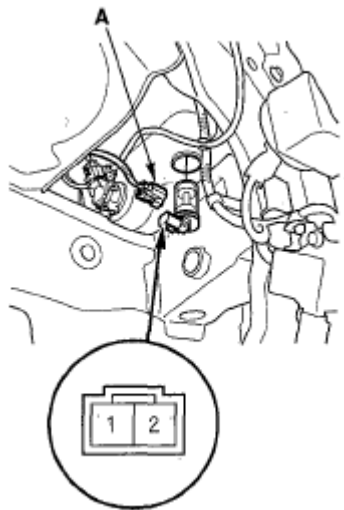


Fig. 20: Identifying Washer Fluid Level Switch And 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the washer fluid level switch from the washer reservoir.

NOTE: Fluid may flow out of the opening.

4. Check for continuity between the No. 1 and No. 2 terminals in each float position.
 - There should be continuity when the float is down.
 - There should be no continuity when the float is up.
5. If the continuity is not as specified, replace the switch.

WIPER MOTOR REPLACEMENT

1. Open the hood. Remove the caps, nuts (A), and the windshield wiper arms (B).

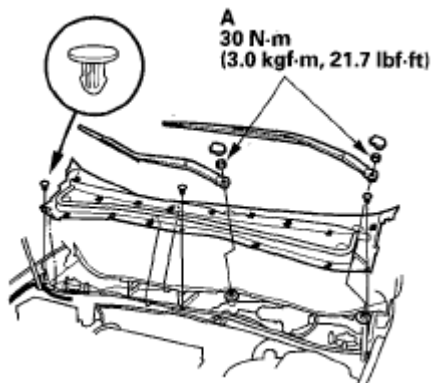


Fig. 21: Identifying Windshield Wiper Arms And Caps, Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the cowl covers (see **COWL COVER REPLACEMENT**).
3. Disconnect the 5P connector (A) from the wiper motor.

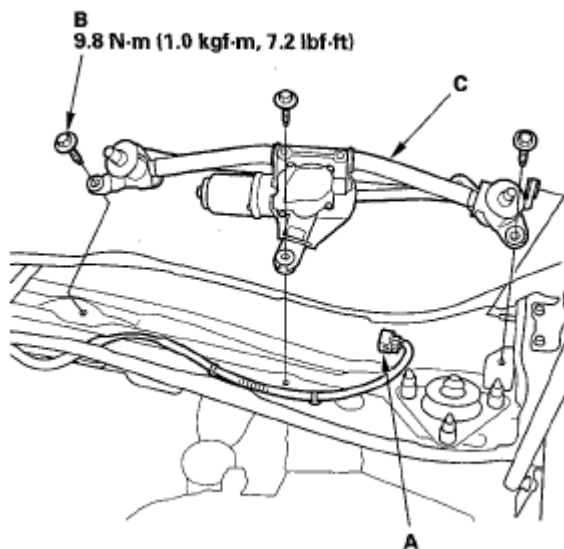


Fig. 22: Identifying Wiper Motor And 5P Connector With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the three bolts (B) and the wiper linkage assembly (C).
5. Make sure the mark of the link to show the original adjustment. Separate the windshield wiper linkage (B) from the wiper motor (C).

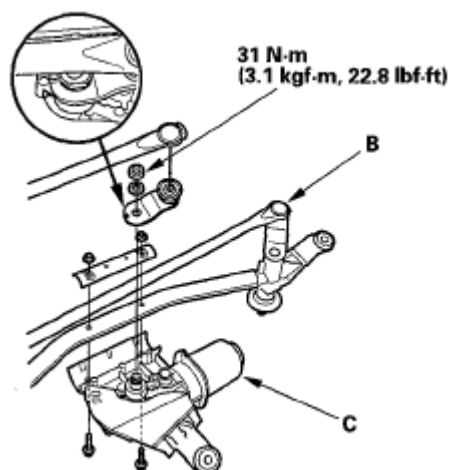


Fig. 23: Identifying Windshield Wiper Linkage From Wiper Motor With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install in the reverse order of removal, and note these items:
 - Align the marks of the link and the linkage to install the linkage with the original adjustment.
 - Apply multipurpose grease to the moving parts.
 - Before installing the wiper arms, turn the wiper switch ON, then OFF to return the shafts to the park position.
 - If necessary, replace any damaged clips.
7. After installation, adjust the wiper arms (see WIPER ARM/NOZZLE ADJUSTMENT).

REAR WINDOW WIPER MOTOR REPLACEMENT

1. Open the tailgate, and remove the tailgate lower trim panel (see TRIM REMOVAL/INSTALLATION - TAILGATE AREA).
2. Remove the mounting nut (A), the wiper arm (B) and the special nut (C).

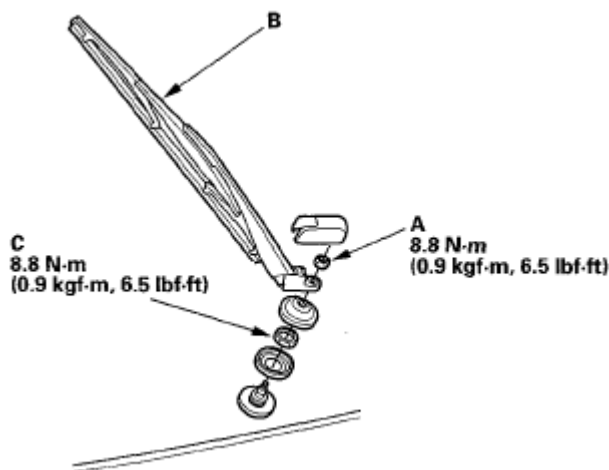


Fig. 24: Identifying Wiper Arm And Mounting Nut With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the 4P connector (A) and remove the three mounting bolts (B), then remove the rear window wiper motor (C).

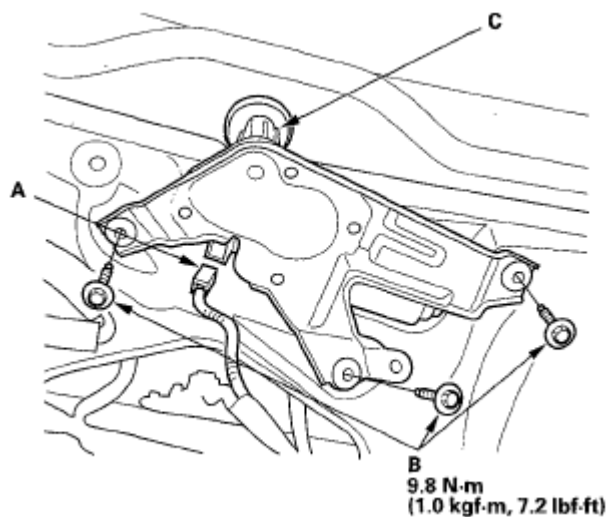


Fig. 25: Identifying Rear Window Wiper Motor And Mounting Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install in the reverse order of removal.

WASHER RESERVOIR REPLACEMENT

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the washer motor(s) (B) and the washer fluid level switch (C).

Washer Reservoir Capacity
4.0 L (4.2 US qt): USA models
5.8 L (6.1 US qt): Canada models

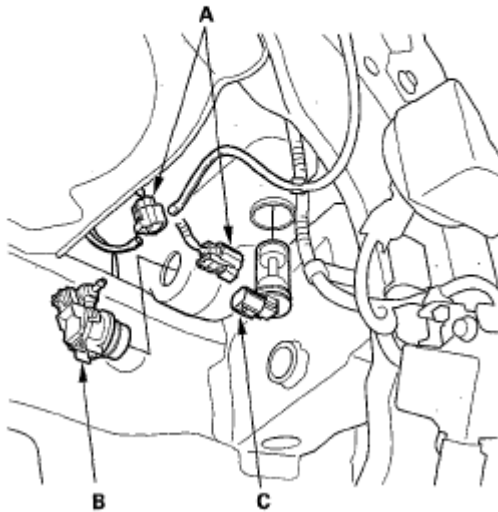


Fig. 26: Identifying Washer Motor And Washer Fluid Level Switch
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Disconnect the washer tubes.
4. Remove the bolts and the washer reservoir.

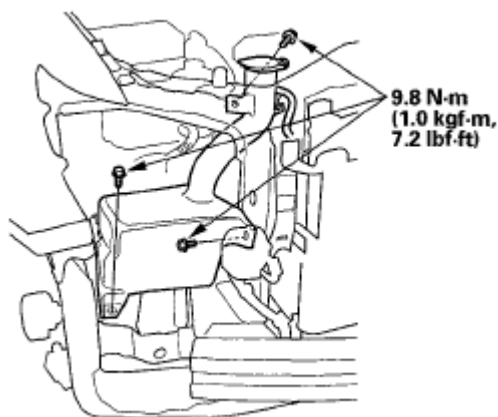


Fig. 27: Identifying Washer Reservoir Bolts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install in the reverse order of removal. Check the washer motor operation.

HEADLIGHT WASHER MOTOR TEST/ REPLACEMENT

CANADA MODELS

1. Remove the right inner fender (see **FRONT INNER FENDER REPLACEMENT**).
2. Disconnect the 2P connector (A) from the washer motor (B).

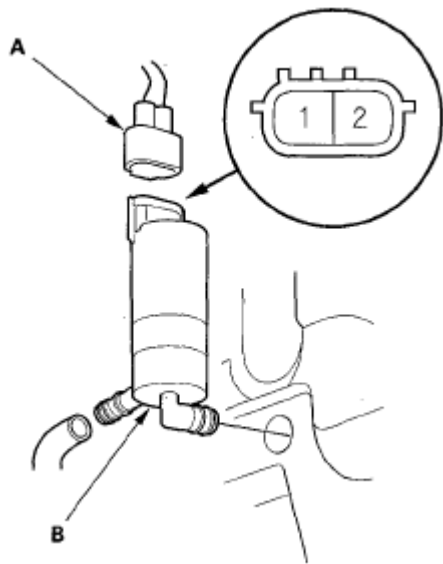


Fig. 28: Identifying Headlight Washer Motor And 2P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Test the motor by connecting battery power to the headlight washer motor 2P connector No. 1 terminal and ground to the No. 2 terminal. The motor should run.
 - If the motor does not run or fails to run smoothly, replace it.
 - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.
4. Install the washer motor in the reverse order of removal.

HEADLIGHT WASHER NOZZLE REPLACEMENT

CANADA MODELS

1. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION**), and disconnect the headlight washer tubes from the washer motor.
2. Disconnect the headlight washer tube (A) from the headlight washer nozzle (B).

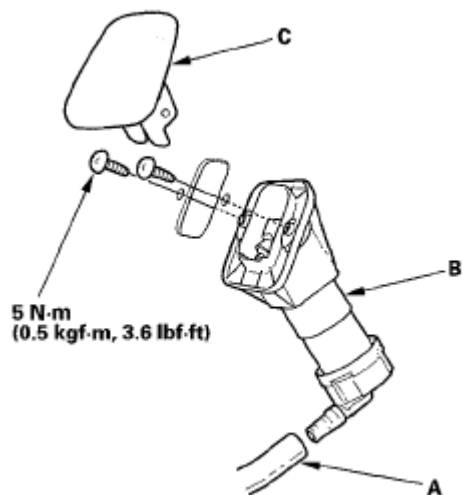


Fig. 29: Identifying Headlight Washer Tube From Headlight Washer Nozzle With Torque Specification

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the headlight washer nozzle cover (C).
4. Remove the two screws and the headlight washer nozzle.
5. Install the nozzle in the reverse order of removal. After installation, check the headlight washer operation.

WIPER BLADE REPLACEMENT

WINDSHIELD

1. Lift the wiper arms from the windshield.

NOTE: Lift the driver's side first.

2. Press and hold the tab (A) and slide the wiper blade (B) toward the tab to release it from the wiper arm.

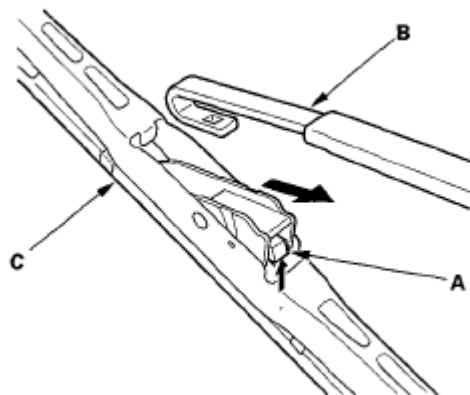


Fig. 30: Identifying Tab And Wiper Blade To Wiper Arm

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Slide the rubber (A) out from the wiper blade (B).

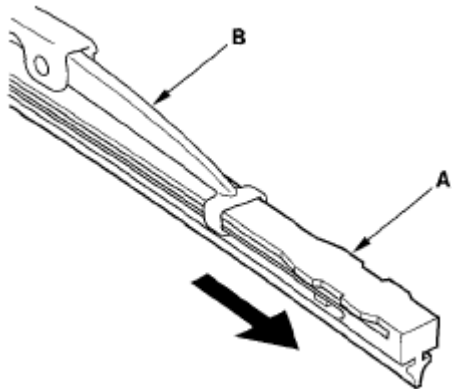


Fig. 31: Identifying Rubber From Wiper Blade

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install a new rubber to the wiper blade in the reverse order of removal.
5. Install the wiper blades onto the wiper arms in the reverse order of removal.
6. Check the wiper operation, if the blades slip, turn the wiper switch OFF, and reinstall the wiper blades securely.

REAR WINDOW

1. Lift the wiper arm from the rear window.
2. Turn the rear wiper blade (A), release the lock, and then remove the wiper blade from the rear wiper arm (B).

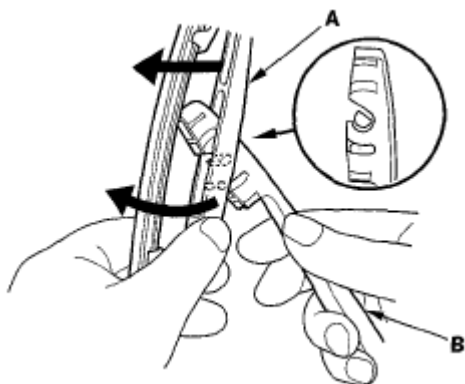


Fig. 32: Identifying Wiper Blade From Rear Wiper Arm

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Raise the old rubber (A), and remove it from the wiper blade (B).

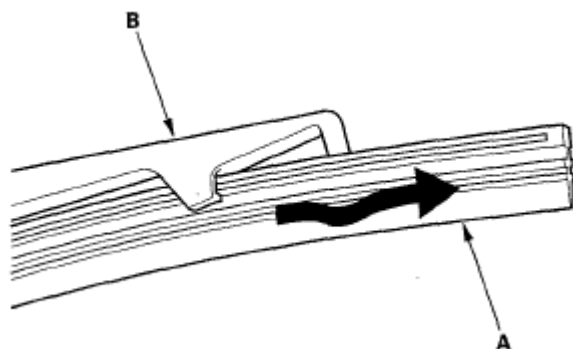


Fig. 33: Identifying Rubber And Wiper Blade
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new rubber and the wiper blade in the reverse order of removal.

NOTE: After installation, confirm that the wiper arm works smoothly.

WIPER ARM/NOZZLE ADJUSTMENT

WINDSHIELD

Wiper arms park position

1. When the wiper arms stop at the park (automatic stop) position, confirm that they are at the standard position.
 - a: Position at about 1.6 in. (40.7 mm) from the top of cowl cover (A)
 - b: Position at about 2.1 in. (54.3 mm) from the top of cowl cover (A)

Washer nozzle position

2. When you turn on the washers, confirm 50 % or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzles.
 - c: Position at about 6.2 in. (157.3 mm) from the top of the black ceramic area (B) at the lower windshield
 - d: Position at about 6.2 in. (157.3 mm) from the top of the black ceramic area (B) at the lower windshield
 - e: Position at about 11.8 in. (300 mm) from the windshield center line (C)
 - f: Position at about 11.8 in. (300 mm) from the windshield center line (C)

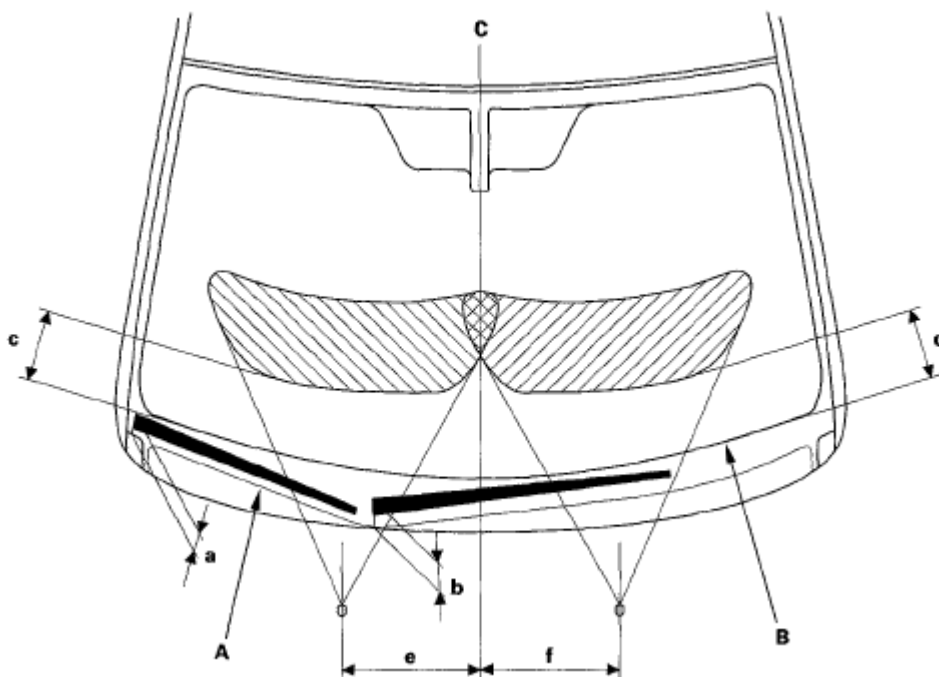


Fig. 34: Identifying Washer Nozzle Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR WINDOW

Wiper arm park position

1. When the wiper arm stops at the park position, confirm that it is at the standard position.
 - a. Position at about 0.4 in. (11.2 mm) from the black ceramic area (A)

Washer nozzle position

2. When you turn on the washers, confirm 50 % or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzles.
 - b: Position at about 5.1 in. (130.2 mm) from the rear washer nozzle (B)

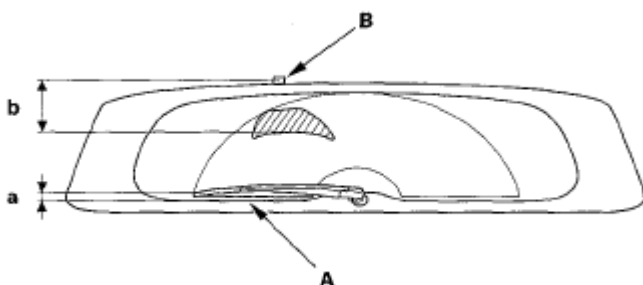


Fig. 35: Identifying Washer Nozzle Position

Courtesy of AMERICAN HONDA MOTOR CO., INC.

WASHER TUBE REPLACEMENT

1. Remove the washer nozzles and clips, then remove the washer tubes.

Windshield/Rear Window Washers

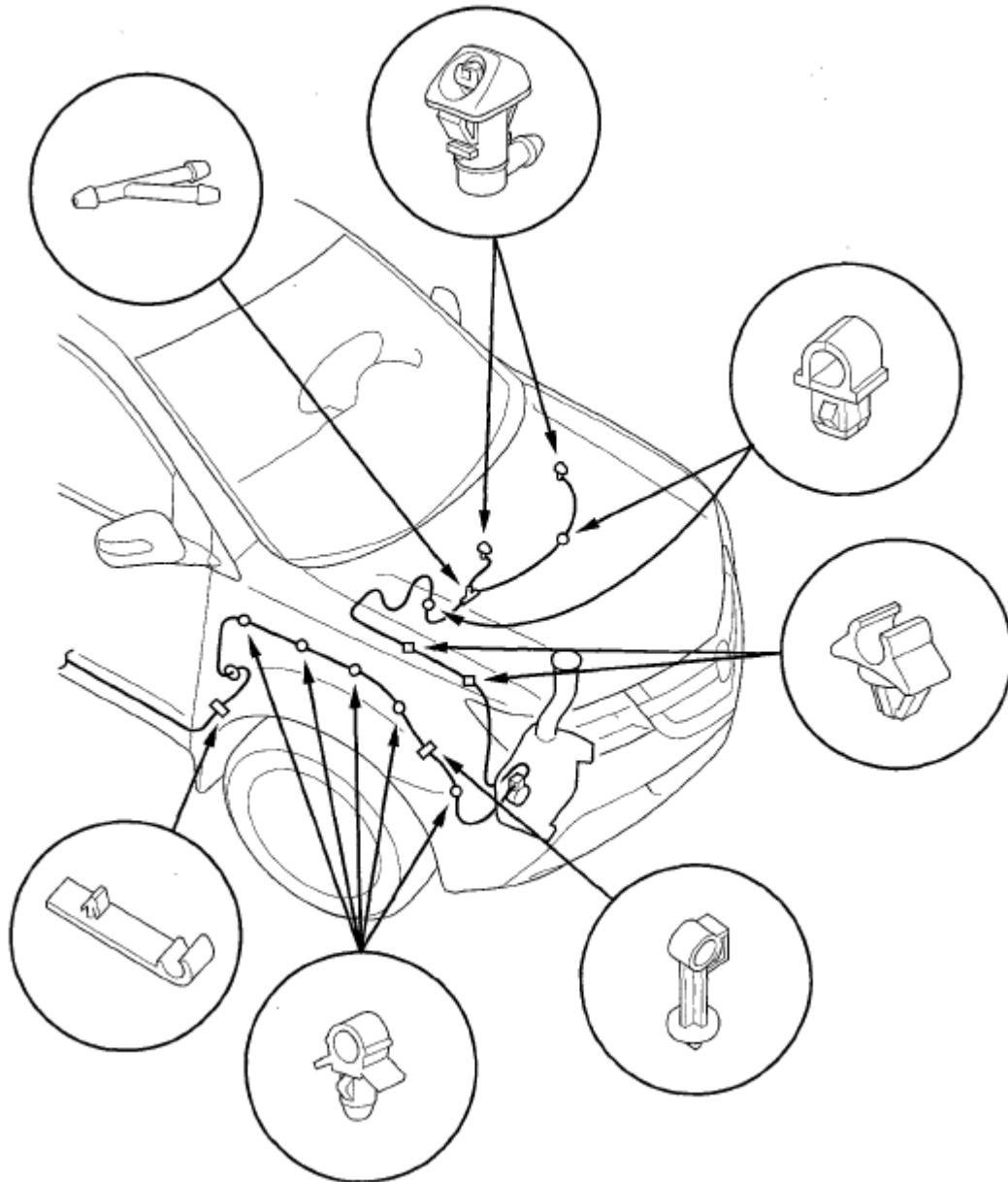


Fig. 36: Identifying Windshield/Rear Window Washers Location (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

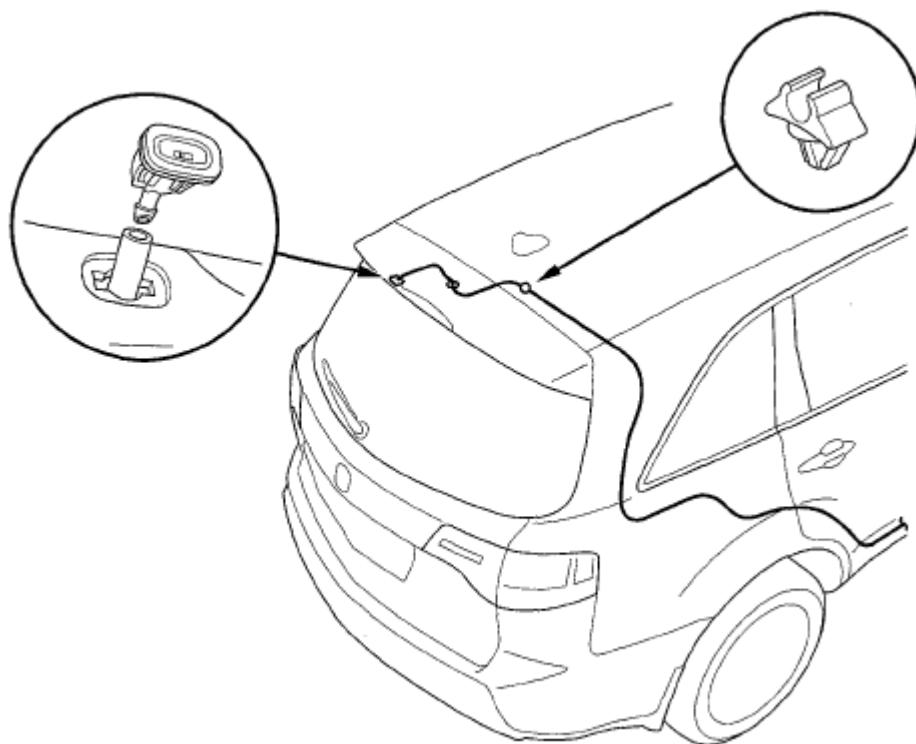


Fig. 37: Identifying Windshield/Rear Window Washers Location (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Headlight Washer (Canada models)

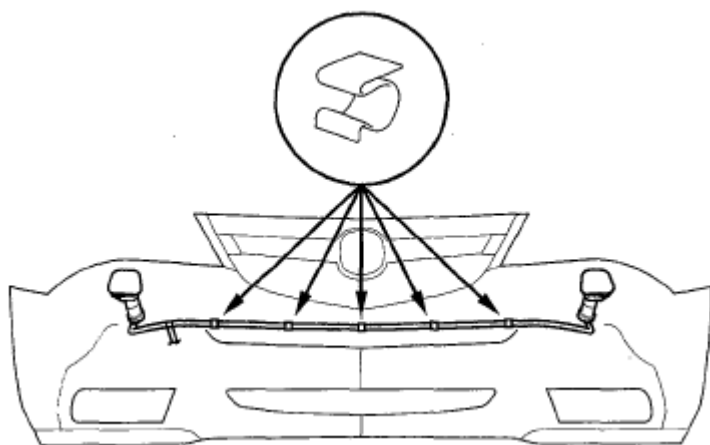


Fig. 38: Identifying Headlight Washer (Canada Models)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the parts in the reverse order of removal. Take care not to pinch the washer tubes. Check the washer operation.